

Lessons from the United Kingdom's Royal Society

by Henry Lee Allen

Around the world, leaders of most nations have renewed focus on the relationships between global scientific advancement, the welfare of higher education, and the development of societies.¹ Recognizing this trend, and celebrating its 350th anniversary as a scholarly association devoted to scientific pursuits, the Royal Society (UK), in March 2010, published *The Scientific Century: Securing Our Future Prosperity*. With a mandate to envision how the United Kingdom's infrastructure for science and innovation might produce a strategy that would remain relevant for the next 20 to 25 years, Sir Martin Taylor, Fellow of the Royal Society, worked with a group that included premier scientists, university scholars, members of learned societies, and business and industry leaders to create the document. The group's two-fold mission was to identify and assess the different forms of value (economic, social, intellectual and cultural) produced by science, technology, engineering, and mathematics and to make recommendations to policy makers and other decision makers as to how this value might be increased for public benefit.

In its report, the Royal Society argues against both the notion of withdrawing public investment from its world-class universities and the haphazard, uninformed commercialization of knowledge. Instead, it urges governmental leaders to place a policy priority on scientific innovation as a long-term strategy for economic growth. It supports a response to fiscal challenges that incorporates a new, sus-

Henry Lee Allen is currently professor of sociology and chair of the Department of Sociology and Anthropology at Wheaton College in Illinois. As part of his research in the sociology of higher education and global science, he is developing a range of mathematical models of academic systems and societies. He has just completed a substantial overview of developments in Canada's academic system—to be featured in the 2011 edition of the NEA Almanac of Higher Education. For nearly two decades, Allen has studied faculty workload and productivity issues related to tenure, contingent faculty, affirmative action, faculty diversity, and the status of the academic professions.

tained focus on university–industry collaborations and the creation of high-tech clusters of scientific and related organizations. Invariably, the Royal Society connects the future welfare of the United Kingdom to its ongoing public investments in enhancing its academic system, the source that generates scientific and intellectual capital at all levels.

Founded in 1660, the Royal Society has imprinted global science with an illustrious list of fellows, from Sir Isaac Newton to Michael Faraday to Sir Roger Penrose. To mark their 350th anniversary, the Society developed a 21st century

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vision—elucidated in the report—as a constructive attempt to address multiple crises in global science and postsecondary education. It foresees a “multi-polar, networked system of global science and innovation” emerging as China, India, Brazil, Saudi Arabia, and other nations become more competitive in scientific investment and infrastructures.² While recognizing global changes in the scientific and academic pecking order, the Royal Society report is not alarmist.

The Society suggests many robust policies for enhancing science in the UK, many of which are relevant to the plight of faculty in the United States. Among other things, the Society advocates policies that nurture the life cycle of scientific careers, improvements to promote scientific literacy for youth at all levels of pre-collegiate schooling, and new cohorts of teachers who specialize in science. Recognizing that all research emanates from curiosity, the authors argue for reflexive interactions between basic and applied research that accentuate interdependencies. The aim is to foster a societal culture sophisticated enough to realize that years of basic research may be needed to acquire the depth of knowledge needed for a scientific or technological breakthrough of epic proportions.

The Royal Society has been a global leader in encouraging a more inclusive engagement with scientific inquiry, across multiple trajectories and various stakeholders. Moving beyond mythological, utilitarian, and linear distortions of the process of science, the authors wrote:

In the same way, narrow accounts of the impact or value that science creates for our society can act as an impediment to good policymaking. The economic contribution of science—vital and significant though it is—should not eclipse its wider social, public, and cultural value. Alongside measurements of quantity and scale (levels of investment, numbers of publications, flows of Ph.D. students), 21st century science policy needs to become more adept at addressing questions of quality, purpose and direction. It should resist the temptation to treat scientific and tech-

nological progress as homogeneous or one-directional, and instead support a 'more balanced and diverse portfolio of trajectories.'³

Such advice is pertinent to scientific and intellectual inquiry as well as to teaching pursuits by faculty within U.S. higher education, too.

Interspersing its innovative report with a plethora of data tables, figures, diagrams, and case studies, the Society notes that research has many greater impacts than mere economics. The gestation period for all impacts may be difficult to decipher, given that genuine breakthroughs take a long time. Thus, in its report, the

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Society warns against a naïve, pedantic, or jingoistic approach to the measurement of scientific outcomes or innovations:

Recent policies have placed great emphasis on the economic impacts of research. This is understandable, given the scale of public investment and the economic challenges facing the UK. But targets and metrics cannot guarantee impact and, if implemented crudely, may prove counterproductive. Economic impacts are also only one dimension of the public value of science. Excellent research has by definition a significant impact, much of which is on the research field concerned. Other impacts are also likely to be significant, but are often impossible to predict in advance.⁴

Beyond the products of and technologies derived from scientific inquiry, scientists themselves have intrinsic value in public domains. The Society correctly assesses the dilemma:

The curiosity of scientists is limitless, but public funds to support research are not. Choices have to be made about what to fund and how. These choices are complicated by the time cycles involved; research yields dividends over decades, and cannot be made to dance to the rhythm of public spending rounds. The space required for curiosity-driven research needs to be protected by policy-makers.⁵

Scientific inquiry emphasizes a commitment to critical acumen, reason, transparency, open scrutiny, skepticism about reigning dogmas, assessments of countervailing assertions, and admission of ignorance or uncertainty. These norms tend to be transnational, facilitating exchanges and collaborations across sacred plus secular boundaries. Elsewhere in its seminal report, the Royal Society exams various other items related to science in the 21st century, and suggests:

- a major overhaul of research funding to promote greater freedom for proven investigators
- an increase in the UK's 'absorptive capacity' (the ability to access, adopt, adapt, exploit, and diffuse the benefits of both original research and knowledge translation)
- a reorganization of research around global challenges, international collaboration, and interdisciplinary teams
- a challenge for the UK to ascend to higher levels of global scientific leadership, by providing the incentives to attract a critical mass of distinguished scholars and enable international inquiry
- a recommendation that mathematics and science expertise be core to enhancing the teaching profession as well as avoiding pedantic, obstructionist, and irrelevant assessment regimes in the decades ahead
- an agenda that urges the UK to: (1) invest in future scientific leaders and innovation, (2) influence policy making with the best scientific advice, (3) invigorate science and mathematics education, (4) increase access to the best science internationally, and (5) inspire an interest in the joy, wonder, and excitement of scientific discovery.

If one merely expands the emphasis on science by substituting a focus on U.S. higher education, this agenda should resonate well with university and college faculty across academic disciplines and types of institutions.⁶ Indeed, those involved in higher education in this country would do well to heed the recommendations in the Royal Society's report.

How might these lessons be enacted in the U.S.? First, insert faculty welfare



as the central feature of these ideas and a constructive vision for U.S. universities and colleges emerges. Professors ought to be the core repository for increasing educational and scientific capital. Second, the nation's faculties require substantive investments to create the synergy that produces innovations. Third, our government should create an annual, media-savvy Congressional Medal of Science or Education to recognize the academic professions. Fourth, each region ought to have sufficient global research programs with collaboration across public and private sectors. Finally, teachers of math and science ought to serve as a fulcrum for enhancing the rigor of all educational pursuits at all pertinent levels.

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NEA and other faculty unions must not ignore the suggestions in *The Scientific Century: Securing Our Future Prosperity*. Rather, we ought to exceed them in the 21st century, in an era when intellectual property can generate private wealth as well as public good. Unions must redefine our historical role beyond advocacy—moving toward adjudicating the ecology of expertise: namely, the production, dissemination, and legitimization of codified or tested knowledge (tangible, virtual, digital) in civil societies. We must instigate as much as possible the kind of collaboration exemplified by the Royal Society, but on an even more inclusive basis.

Unions must become forward-looking learning entities that advance their interests, locally and globally, matching governments and corporations tit-for-tat. Always outnumbered and outspent in absolute terms, faculty unions must leverage our assets and expertise to maximize efficiency and effectiveness. Moving beyond a preoccupation with short-term benefits, we must promote faculty achievements, interests, innovations, and expertise. We must continue to expose charlatans, bogus policies, and false ideologies. Faculty unions must anticipate and police intangible intellectual innovations and their tangible ramifications within and across universities, institutions, and types of media. We must not surrender to the dictates of a misguided popular culture or a manipulative political order. In an era of increased surveillance and terrorism, unions must fight for the best democratic features of civil society—including academic freedom, tenure, and fair remuneration. Ideas always matter, more than money, power, and prestige.

In the next five years, faculty unions should sponsor an International Faculty Congress, as a prelude to publishing a report on the state of higher education systems, science, and societies around the globe. Starting with their own societies and diffusing outward from core to peripheral networks, faculty unions might energize their affiliates to organize collaborative or joint regional conferences dedicated to

finding common ground with the multiple stakeholders who depend on academic expertise or work. Networks such as the American Association of University Women, Nobel Prize winners, leading scholars, major professional associations (representing academic disciplines), innovative upstarts, geniuses from neglected communities, resilient youth, the National Academy of Sciences, the National Science Foundation, major foundations, noncommercial media, and others might be involved in the same way that an Aspen Institute occurs. The conditions of academic work, policies enhancing academic systems or science, plus matters of global interest might be discussed. Reports and plans modeled after the Royal Society's example could be generated under the right auspices and leaders.

Earlier this year, at the NEA-AFT Joint National Higher Education Conference in San Jose, California, I suggested that the NEA inaugurate "The Thinker Awards." Patterned after the Academy Awards, innovative faculty would be nominated for their outstanding academic innovations benefitting society or the world. All types of academic institutions would be included. Winners within academic disciplines would receive a statue of Rodin's "The Thinker," just as Academy Award winner receives an Oscar to celebrate his or her dramatic accomplishments. Such an event would raise public consciousness about what academics do.

In the years ahead, we must dream a new future for faculty unions, while being mindful of the dire challenges and reactionary forces that lie ahead of us. Unions must rise to the occasion, serving as the watchdogs of intellectual civility and decency in an era where the scientific rigors and ramifications of postsecondary education are in peril. Global societies need intellectual vanguards, now more than ever! 

ENDNOTES

1. Wagner, *The New Invisible College*, 2008.
2. Royal Society, *The Scientific Century: Securing Our Future Prosperity*, 2010.
3. Ibid, p. 25.
4. Ibid, p. 13.
5. Ibid, p. 24.
6. See James Trefil's *Why Science?* for other voices about the centrality of mathematics, science, and rigorous education.

WORK CITED

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