

AIP|Matters

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Director's Matters

By H. Frederick Dylla, Executive Director

Open access meets the not-so-open purse

Readers of this column know that I devote considerable effort on behalf of AIP and our Member Societies to help guide the scholarly publishing enterprise along a tortuous path that is bounded by economic pressures to produce more valuable content at lower costs and political pressures to lower the access barriers. There is no single, defined path forward that can accommodate the rich diversity of scholarly publishing. Scholarly journals have existed for more than 350 years—since 1665 when *Philosophical Transactions of the Royal Society* first made its debut. The present state of the STM industry is as diverse and immense as is international scholarship: More than 2000 scholarly publishers produce and distribute more than 25,000 journals, which publish over 1.5 million articles each year.

Over the past decade, debates on open access as a business model, or public access as a civic right, have arisen, primarily because of the economic stresses on library budgets, which have not kept pace with the rising costs of the journals. The economic argument has been compounded by the ~3% increase in the number of journal titles produced each year and by the concomitant increase in the number of pages of each journal—all driven by the ever-growing number of researchers.

One of the [Scholarly Publishing Roundtable](#)'s key recommendations was that the US federal government and publishing stakeholders—librarians, academic administrators, and publishers—work in partnership to provide increased access to publications, while being careful to protect the sustainability of the enterprise. We saw several of the Roundtable's recommendations incorporated in the [America COMPETES Reauthorization Act of 2010](#); federal agencies that fund science research are now working on implementation. The lack of economic analyses of how various access options may affect publishers and consumers (for example, readers, libraries, and governments) impedes the development and implementation of public policy in this area. However, a recent report coming out of the United Kingdom will likely aid this process.

["Heading for the Open Road: Costs and Benefits of Transitions in Scholarly Communications,"](#) published April 7 on the UK's Research Information Network website, is the product of a study conducted by a consortium of five organizations invested in this topic. The study analyzed several scenarios for increasing access to publications in the UK academic environment by 2015 using options that are already in various stages of play but that do not presently dominate over the widely used institutional subscription business model. These options included: the "gold open access" model, in which the author or some institution pays publication fees and so readers have immediate, full

access on publication; the "green open access" model, where researchers deposit articles in an institutional or subject repository; nation-wide license fees for nearly all academic institutions (this is practical in the UK); delayed access, where publishers embargo content for a specified period of time; and finally, transactional access, using a pay-per-view system.

The report's primary conclusions will be useful to guide both policy and business development in this enterprise. Although the delayed-access scenario would cost the UK system almost nothing, the report cautions that if policymakers push for unreasonably short embargo periods, the dominant subscription model, and potentially the publication enterprise, could be placed at risk. The report recommends transitions to gold open access model *for specific disciplines* should be facilitated as a model that is viewed as sustainable in the long run, because if the transition is managed properly, the model could lower costs for the UK academic system.

The detailed analyses and recommendations in this report will be very important for publishers and policymakers. However, the AIP community should carefully consider the following caveats: The author-paid, open access model may be practical for well-funded fields such as physics, but it becomes problematic for fields where funding is less generous, such as mathematics and the social sciences. And given the huge diversity of the enterprise, the market should determine how much the author pays. Further, the report's conclusions underscore AIP's need to experiment with different access models—which we are pursuing with the new open access journal *AIP Advances*. APS's new open access journal, *Physical Review X*, will publish its first papers in the fall of this year. With creative ventures, persistent diligence, and constructive engagement we will find our way to a better system of disseminating knowledge while maintaining scholarship's integrity and value to the wider community.

PUBLISHING MATTERS

Helping educators tap into AIP journal content



AIP has teamed up with publishing innovator [SharedBook](#) to make AIP's catalog of journals available through SharedBook's [AcademicPub platform](#). AcademicPub is an online service that gives educators access to a broad range of timely publications and to sources available on the Web, which enables them to efficiently assemble high-

quality custom course materials without copyright barriers. Customized materials can then be distributed digitally or in print, making them cost-effective both for institutions and students.

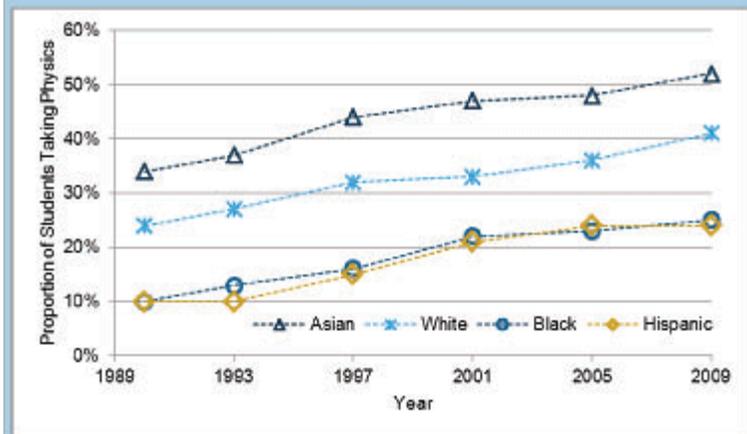
PHYSICS RESOURCES CENTER MATTERS

How diverse is high school physics?

In 2009, about 25% of Black and Hispanic high school students in the US took at least one

physics course prior to graduation. This is up from 10% in 1990. While this growth is good, high school physics-taking among Blacks and Hispanics lags that of Asians (52% in 2009) and Whites (41% in 2009). These differences in physics taking are likely driven more by socioeconomic factors than by race.

Proportion of Students in Each Racial or Ethnic Group Taking Physics*
All U.S. High Schools



* A closer examination of the data reveals that these differences are likely driven more by socioeconomic factors than by race.

<http://www.aip.org/statistics>

The Statistical Research Center's latest report in the high school series, ***focus on Under-Represented Minorities in High School Physics***, takes a close look at the data and considers socioeconomic factors that affect physics taking among under-represented minorities. You can read this report, and all the high school reports, at www.aip.org/statistics/highschooldata. If you have any questions, please contact [Susan White](#), Research Manager.

WHAT'S HAPPENING THIS WEEK

Friday, April 22

- Earth Day – [Learn more](#) about the effort and what you can do to help.

We invite your feedback to this newsletter via email to aipmatters@aip.org.

For past issues of this newsletter, visit the [AIP Matters archives](#).