



ARIA POLICY PROPOSAL

presented to
**Commission on Higher Education,
Committee for Economic and Workforce Development
& Governor Eliot Spitzer**

July 25, 2007



NYSHEI represents the public and private academic and research libraries of New York

Executive Summary

New York is behind the curve in advancing academic research and securing the resultant scientific, medical and technological innovations.

The most cost-effective way to remedy this situation is to establish a virtual library that provides more research and development information tools to an ever-wider audience. The establishment of such an “information infrastructure” promises to deliver economic benefits on par with those realized by the creation of other essential infrastructure in past generations, such as the Erie Canal.

Academic Research Information Access (ARIA) offers a model of public and private partnership that utilizes existing resources and leverages the enormous current investments of the State’s academic and research libraries, to achieve the objective of a robust, nation-leading information infrastructure for the benefit of New York researchers, students, businesses and entrepreneurs.

Proposed cost to the State is an annual appropriation of \$15 million, representing approximately 25 percent of the total cost of the initiative. The remaining cost will be borne by the private and public member institutions of NYSHEI.

NYSHEI, the New York Higher Education Initiative, represents the public and private academic and research libraries of New York.

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Problem

New York has fallen dramatically behind competing states in supporting university, business and entrepreneurial research.

Failure to provide the requisite information infrastructure for success in the emerging innovation economy promises continued and growing economic and educational troubles for New York.

This failure also undermines the laudable targeted investments the State has already made to promote economic development and academic research.

Solution

New York must establish a partnership with public and private institutions, leveraging the combined resources of all participants, to provide access to high-end research and development information tools in the most comprehensive and cost-effective manner.

Academic Research Information Access (ARIA) is the mechanism by which New York will achieve a widely accessible electronic resource of research and development information.

ARIA is a joint effort of NYSHEI (New York State Higher Education Initiative), SUNY (State University of New York) through Nylink, and NYSED (New York State Education Department) through the New York State Library (NYSL).

NOVEL_{NY}, an established portal maintained by the NYSL, would be utilized as the delivery vehicle for ARIA content throughout the State. NOVEL_{NY} is the pilot project for New York's statewide internet library. ARIA would offer a set of high-end research databases for advanced scholarly, scientific and financial research to complement and supplement the core set of general databases offered for K-16 educational use already available through NOVEL_{NY}

Background

ARIA is a proposed state-academic partnership that would use State funds in union with existing academic library budgets to increase the amount and range of scientific, technological and medical information available to researchers at all academic institutions, among the small business community, and general populace.

The increase in accessible information occurs through increased funding (State support complementing pooled resources) and the reduced rates available to statewide consortial purchasing.

The need could not be greater. Rapid access to reliable, cutting-edge research is not something universally available in New York State.

However, the importance of this content, and access to it, is too often overlooked to the detriment of the State.

New York already has world-class institutions, a strong commercial infrastructure, an affluent and well-educated population, ready access to markets, and many other requisite components of twenty-first century success. What New York lacks is a robust “information infrastructure.”

Research content is the keystone needed to support the State’s assets. It is the piece needed to provide a revolutionary resource to the citizens, students, employers, faculty, researchers, and entrepreneurs of New York State, thereby unlocking the creative and intellectual talents of millions.

In early 2005, the New York Board of Regents adopted a Statewide Plan for Higher Education, a document meant to provide guidance for the years 2004 through 2014. The ninth priority of the Regents plan called for the “creation of new knowledge through research.”

In this context, “research” refers to much more than the undergraduate “research paper.” The implication is the need to support basic and applied research – the cornerstone for scientific, technological and economic development.

By harnessing the collective resources of the public and private academic and research libraries of New York and using them to leverage new investments in high-level scholarly content, New York could establish a far-reaching information infrastructure to empower university research, facilitate corporate developments and promote entrepreneurial endeavor. Simultaneously, New York could also provide relief to over-stretched budgets at SUNY, CUNY and

private schools, as well as two public research libraries that already receive State funding, the New York State Library and the New York Public Library.

Other states are using such innovative models and enacting new ideas to develop their information infrastructure. A shared, accessible, electronic academic library is a reality in places like Georgia and New Jersey.

Without a robust information infrastructure, New York will increasingly find itself losing in the competition with other states to recruit and retain top researchers. New York is already behind and facing the prospect of falling further. In 2005, higher education institutions nationwide secured 4,932 new licenses on innovations.ⁱ During the comparable period, SUNY institutions produced 45 licenses.ⁱⁱ Similarly, while over 10,000 patents were issued nationwide, SUNY earned 33.

It is only for a limited time that New York will retain its reputation as a national leader while resting on the achievements of a handful of elite private institutions.

Research is cumulative. One researcher's work relies on the work of others in the field. The exchange of and access to, new information is vital to modern research. In short, research that creates new knowledge requires access to all preceding knowledge. Therefore, to be successful, a researcher at all times requires access to the latest scholarship. To be successful in the increasing competitive environment of the twenty-first century, access to information must also be swift.

Libraries have always been at the center of academic research (as well as teaching and learning). The role of academic libraries will be no different in the future than it is today – only the methods change. As ever, there are new challenges and new opportunities.

More than ten years ago, the Chancellor of Indiana University noted that “more than any other traditional asset, the library is the means by which American universities will transform themselves into something entirely new.”ⁱⁱⁱ

That “something new” is presaged by all that is occurring in our society. Walls and artificial parameters are giving way to collaboration and access. The electronic is supplanting the tangible. The speed of life is accelerating, and horizons are broadening in multiple dimensions.

Benefits

The projected benefits of ARIA are numerous and far reaching.

Institutions of higher education would be able to more readily compete for faculty and researchers while promoting their research and innovations. This advance would have the ripple effect of attracting more research dollars to New York institutions while making those schools more attractive to prospective students.

On-campus teaching and lifelong learning goals would be enhanced by access to more diverse information sources.

In turn, these advances would help bolster the reputation of state institutions, thereby assisting in the recruitment of students.

Finally, individual institutions could develop greater depth in chosen subject fields and specialties by redirecting budgetary savings.

Small business and entrepreneurs would arguably gain more than anyone. Coping with the limited resources and financial constraints of start-up operations, these job producers would have access to resources that are currently far beyond their financial reach as scholarly research can cost tens of thousands of dollars annually for a single serial subscription or data set.

Small and large research firms in scientific, engineering and medical fields have always had university connections. The availability of higher end research data in STM (scientific, technical and medical) fields would only enhance those university-business relationships and advance innovations, research and development in the high-tech industries so vital to our economic future.

By increasing the available intellectual capital, New York would remove a key obstacle to innovation and ingenuity resulting in more ideas reaching the marketplace, a competitive advantage over neighboring states, new jobs and the development of the existing workforce.

Competing States

Access to cutting edge information is not available to most New Yorkers. In fact, many research and development information resources are not available to significant portions of the State's higher education community.

Competing states have not made the same error, and are therefore, well positioned to reap the rewards of success in the information age.

Data from the National Center for Education Statistics (NCES) demonstrates that while New York's academic libraries have traditionally ranked 1st in print subscriptions to periodicals and series. Today, we rank 20th among all states in offering electronic indexes and reference tools. New York ranks a lowly 35th in providing electronic journals and full text content.^{iv}

A search of articles published by faculty at New York schools reveals a decline of 11 percent during the five-year period from 1997 to 2002. While this decline is part of a national trend, New York exceeds the national rate of 8 percent, and compares unfavorably to states with a statewide virtual library like Georgia and Ohio where the declines were 5 percent and 8 percent respectively.^v

During the same period that New York was out-distanced by other states in electronic access to information, the number of scientific publications produced in New York has decreased by as much as 10% in some fields. Comparatively, while New York has been in decline, California and Massachusetts, as examples, have increased publications in the same fields by 14 percent and 26 percent respectively.^{vi} These numbers are indicative of a situation that is unacceptable to anyone concerned about the competitive ability of New York in the marketplace of ideas.

Many other states have developed means of delivering state supported academic resources. Foremost among these leading initiatives are:

- OHIOLINK – serving 85 public and private institutions of Ohio, OHIOLINK offers access to over 45 million library items and 100 electronic research databases.
- CARLI – the Consortium of Academic and Research Libraries of Illinois is based on the 2005 consolidation of three regional library consortia and is dedicated to improving economies and efficiencies in the provision of services and acquisition of resources.

- PASCAL – the Partnership Among South Carolina Academic Libraries combines public and private institutions to explore methods for broadening access to scholarly information.
- The New Jersey Knowledge Initiative provides New Jersey’s entrepreneurs, small business owners, researchers and students with access to information resources for the 21st Century through statewide web access to high-end science, technology, medical and business databases.
- VIVA – the 71 public and private academic members of the Virtual Library of Virginia has improved the cost of providing access to research and development information and estimates over \$150 million in cost savings to Virginia with an investment return of \$5 for every \$1 spent.
- Galileo – Georgia Library Learning Online has provided access to hundreds of electronic databases to 2000 academic and public institutions, while reducing costs and providing universal access to core information resources.

ARIA is conceived in a similar vein with the New Jersey Knowledge Initiative that is focusing on scientific, technical and medical information resources – the particular fields with the highest level of commercial and economic potential.

Academic Research Information Access builds on NOVELNY, which already provides some core information resources to New Yorkers. The addition of ARIA would generate new savings by lowering costs, while providing the high-end information content the State needs.

The combination of this approach, built upon the enormous strength of the public and private higher education institutions of New York, would establish the premier online research and learning environment in the United States.

Cost

Costs will be primarily borne by the public and private colleges and universities of New York with no new campus expenditures – while creating the potential for on-campus savings. Collaborating for usage of existing collections will provide ARIA an estimated seventy-five percent of its content needs.

The remaining twenty-five percent of high-level content shall be provided by New York State in the form of a \$15 million annual appropriation.^{vii}

A \$15 million commitment from the State offers a dramatic return on investment, as it would leverage considerable, existing collections and expenditures.

To date, the licensing of expensive electronic information by academic libraries in New York State has been a distributed model without statewide coordination. Simultaneously, statewide coordination may be impossible with a supporting state appropriation.

Many of the largest institutions in New York, such as Columbia, NYU and Cornell have found more cost-effective terms by going outside the state to enter into a consortia. These particular institutions have joined the neighboring New England Research Libraries (NERL) rather than spend their funds in conjunction with other New York academic libraries. Importantly, several of these institutions have indicated a preference in returning their buying power to New York with the advent of State funds. This, in turn, would further leverage better pricing for all of New York's academic and research libraries as publication costs would decline.

As a means of comparison, the \$15 million expenditure represents 1.2 percent of the total State budget, and is dwarfed by the \$7 billion expenditure in State aid to public schools and even the \$170 million allocated under 007 Community Projects for legislative member initiatives.

Importantly, the \$15 million appropriation for research and development information tools safeguards the value of the 2007-2008 General Fund investments of \$100 million in stem cell research, \$50.45 million for operating support at four regional Empire State Development capital projects and the \$7.1 million for operating support at the six state Centers of Excellence.

Structure

State funding would be administered by the New York State Department of Education, New York State Library. The State Library will negotiate relationships with approved publishers of scholarly content. NYSL will administer ARIA in accordance with regulations established by the New York State Board of Regents (NYSED).

The NYSHEI Governing Board will serve as the advisory board to the State Library, approving proposed contractual agreements, directing expenditures and recommending purchases of electronic resources for ARIA (i.e. Web of Science, Scopus, etc.).

Nylink, an office of SUNY system administration managed from the Office of the Provost, facilitates collaboration and cooperation among libraries, would serve as the fiduciary agent for ARIA-related transactions.

About NYSHEI

The New York State Higher Education Initiative is an alliance of public and private academic and research libraries. Governed by an elected volunteer board comprised of representatives of distinct categories of institutions, NYSHEI promotes access and economic efficiency in the provision of scholarly resources.

NYSHEI has 135 member institutions including all of SUNY, CUNY, the New York State Library, New York Public Library, Columbia, Cornell, NYU, Syracuse and the majority of the State's private colleges and universities. NYSHEI holds advocacy as central to the pursuit of its objectives.

About NYSL

The New York State Library is a agent of the New York State Education Department and operates under the State Board of Regents. The mission of the NYSL is to increase the knowledge and information resources of the State to serve the long-term interests of all New York residents.

About Nylink

Nylink is a membership organization of all types of libraries, cultural and heritage organizations throughout New York State. Nylink facilitates collaboration and cooperation among its members, provides training and

professional development, consulting and comprehensive operational support. It engages in consortial purchasing to reduce costs and manages LAND, a statewide ground delivery service of library resources.

APPENDIX A

NYSHEI Research Database Survey, September 2005

NYSHEI conducted a survey of its member institutions in September 2005 in order to measure the group's views of the relative importance of different research areas (e.g. engineering) in terms of state support for high-end databases.

The results show that the top three research areas in terms of NYSHEI members' interest in high-end statewide database support are, in order of importance:

- 1) Physical sciences
- 2) Business data
- 3) Clinical medicine.

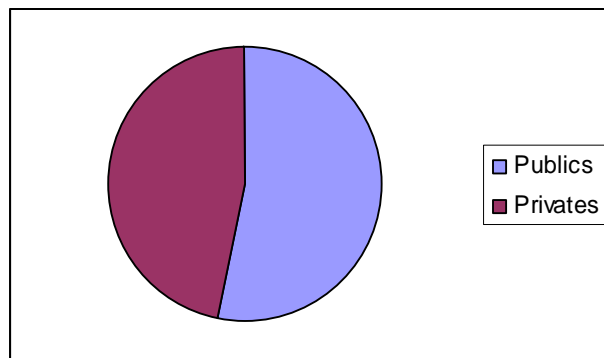
Interestingly, higher education institutions of all sizes, not merely research universities, share these priorities.

Research areas also registering significant interest were:

- 1) Technical manuals
- 2) Engineering
- 3) Biotechnology

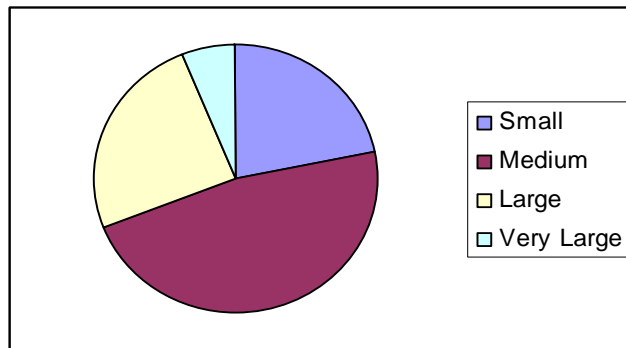
Respondents:

The survey response rate for all NYSHEI member institutions was 46 percent. Of that number the response rate for public and private institutions was comparable (47 percent of respondents were from private institutions)



Respondent rates by total library budget, were distributed roughly proportional to the institutional composition. Small libraries are defined as having annual budgets of less than \$500,000, medium libraries as having budgets of between

\$500,000 and \$2 million, large libraries as having budgets of between \$2 and \$10 million, with very large libraries having annual budgets of over \$10 million.



Respondents were asked to identify the three most important research areas for your institution, rating the subject areas by level of relative import (i.e. most important, secondary importance, etc.) Using a point system to represent importance, the fields were ranked.

The top ten results for the most important research areas for your institution, by score.

- Physical sciences (91)
- Business data (68)
- Clinical medicine (53)
- Technical books (35)
- Engineering (33)
- Biotechnology (30)
- Databanks (25)
- Environmental (22)
- Urban planning (10)
- International business (8)

Top 4 results for large and very large libraries (total library budget of more than \$2 million)

Physical	50%
Business data	10%
Clinical medicine	10%
Engineering	10%

Top 3 results for small to medium (total library budgets of \$2 million or less)

Physical sciences	16%
Clinical medicine	15%
Business	15%

Respondents were asked to list the research and development information resources that they think most worthy of statewide access. Unranked, and in alphabetical order, the resources were:

ACS (American Chemical Society)
Alexander Street Press
Art F-T
BioOne
Cell Press
CRSP - Accounting
Early English Books
Emerald
Geoscience
Grove Art
Grove Music
Historical Abstracts
History Resource Center
Humanities Abstracts
JSTOR
Lexis Nexis Universe
Nature
NAXOS - Classical Music
Project Muse
PsycInfo
RIPM - Retrospective Index to Music Periodicals
Standard & Poors
Science Direct
SciFinder Scholar
Scopus
SPIE Digital Library
Thesaurus Linguae Graecae
Web of Science
Women Writers Online

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- ⁱ Association of University Technology Managers, report titled, *AUTM U.S. Licensing Survey, FY 2005: A Survey Summary of Technology Licensing (and related) Performance for U.S. Academic and Nonprofit Institutions and Technology Investment Firms*, editors Dana Bostrom and Robert Tieckelmann.
- ⁱⁱ Research Foundation of SUNY, *Corporate Indicators, FY 2005-06*.
- ⁱⁱⁱ Plater, William M., "The Library: A Labyrinth of the Wide World," *Educom Review* 30, no.2 (March/ April 1995):39.
- ^{iv} State Library Agencies: Fiscal Year 2005 (NCES 2007-300) December 2006 U.S. Department of Education, National Center for Education Statistics.
- ^v Scopus database search, performed by Elsevier, July 9, 2007.
- ^{vi} Stuman, L.S., Sorin, M.D. and Hannum, R.J. "Opportunities Lost: NIH Research Funding to New York's Medical Schools," *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 77, no.1 (2000): 86-95.
- ^{vii} Analysis by a NYSHEI advisory committee based on review of aggregated costs incurring from the purchase of Reed-Elsevier products with an extrapolated estimate for the projected cost of extending existing contracts to a statewide audience.