

CONSORTIUM OF ACADEMIC & RESEARCH LIBRARIES IN ILLINOIS

PROPOSAL COVER SHEET
FY 2008

PROJECT: **The "New" Core: Emerging Fields in the Sciences Collection Project**

AMOUNT OF MONEY REQUESTED: \$27,500

HOST LIBRARY: DePaul University

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The "New" Core: emerging fields in the sciences– Collection Project

Introduction

What we know about the natural world is constantly evolving. New and specialized areas of research build the knowledge base of the future. The CARLI libraries participating in this award aim to cooperatively build their science collections with an eye to the future by purchasing materials in emerging fields of research, in keeping with this year's theme: "Access and Collections that Keep Pace with Curriculum and Technology." Naturally, every library participating in this award proposal has created a core collection of science titles to meet the needs of their own curriculum--titles they have deemed essential to meet the needs of their students and faculty. However, new developments in science and technology require libraries to constantly adapt their collections. The new discoveries of today will become essential inclusions in the literature reviews of tomorrow. This proposal aims to assist libraries in collecting materials on the newest scientific developments so that library collections are ready with a flexible base upon which to build for the future.

Many obstacles can stand in the way of access to scientific literature. Money is naturally one of the most obvious. According to study results published in the July 2004 *Journal of the Medical Library Association*, "The average journal price continues to rise significantly and is independent of the CPI. The study found that prices have jumped 51.9% from 1996 to 1999 and 32% from 1999 to 2002, which is consistent with nearly every recent journal price study."¹ As a result of these price increases, libraries often find it necessary to reduce other parts of their budgets to maintain access to essential journal titles.

This robbing Peter to pay Paul strategy often comes at a cost to the circulating collection. Monographs and DVDs provide essential information in the sciences, and are often better equipped to provide context, depth and historic background. Furthermore, as libraries increasingly opt to switch to online subscriptions, the opportunities for the users not affiliated with a particular institution become limited. Vendor contracts do not always allow for electronic access to non-affiliated patrons, and while these users may have access to these articles via interlibrary loan, limiting access limits discovery. It also feeds into a culture in which scientific information is not disseminated to the very public that funds it. Citizens need access to scientific information to better understand why they should support funding for research which benefits themselves, the greater human community, and the earth itself.

The subjects of this funding request do indeed address the growing research needs of both people and the planet. Curriculums at the CARLI institutions participating in the award request are adapting to the scientific information needs of the future. What alternatives to fossil fuels will we need to explore? How do human beings impact their natural environment, and how does what we do to the natural world impact us? What drug resistant bacteria will evolve (or be created), and how will we fight them? How will nanotechnology change the objects we handle, or the way we fight diseases? Our collections need to be agile and innovative to support our future research and information needs.

Who Will Benefit?

Materials collected will include both monographs and DVDs and will be available via I-Share and interlibrary loan. Reflecting this year's theme, ground floor access to research in areas such as nanotechnology, alternative fuels, molecular microbiology, and urban ecology will benefit the students and faculty of Illinois educational institutions. As noted in the explanations of requests for expenditures below, materials purchased will support evolving curricula in these areas. This new core collection will have an extended reach as well, as many of the participating institutions serve science and technology

¹ Schlimgen, Joan B.; Kronenfeld, Michael R.. *Journal of the Medical Library Association*, July 2004, Vol. 92 Issue 3, p307-314

communities beyond their students and faculty, including science and technology firms as well as teachers and high school students. By bringing these collections closer to both those who study these fields and those who practice them, this collection effort will also enhance the quality of work for both groups. Access to less technical publications written for non-specialists and the general public will further benefit the residents of Illinois by ensuring their access to new ideas, and promoting understanding of new concepts.

Cost and Funding Plan:

The total cost of this project is \$27,500. Explanations of requests for expenditures demonstrating the need for these materials at each participating institution are included at the end of this proposal. Each participating library is committed to the maintenance of this collection and the expansion of holdings in this subject area. Libraries in this partnership have agreed to cover the costs of processing, storing, cataloging, and maintaining materials purchased with CARLI award funds.

Institution	Collection Focus	Amount
Benedictine University	Health Sciences	\$3500
DePaul University	Urban Ecology	\$2000
Eastern Illinois University	Pathogenic microbiology	\$7000
Illinois College	Rural and Agricultural Ecology	\$2000
Illinois Math and Science Academy	Alternative Fuels	\$3000
Illinois Wesleyan University	Neurobiology	\$3000
Northern Illinois University	Nanotechnology	\$3000
North Central College	Molecular microbiology	\$4000
TOTAL:		\$27,500

Plan of Operation:

Award participants will identify appropriate titles with an emphasis on supplementing, rather than duplicating, existing titles within the state. All attempts will be made to acquire the newest publications possible. For materials deemed essential, high-use, or of particular interest, accidental or selective duplication of titles already held within the state may occur. Materials purchased with award funds will be given priority status for processing and cataloging in OCLC. Before withdrawing award materials, each participating institution will verify that other copies exist within the state. If no other copies exist in statewide holdings, that institution will either retain the copy or transfer it to the appropriate last copy depository for that subject area.

As the coordinating institution, DePaul University Libraries will facilitate communication among the collection partnership libraries, and prepare a list of materials acquired using award funds.

Expandability and Adaptability:

New research and scientific knowledge grows from a solid knowledge base. As our curricula change and adapt with the needs of the future, this award will allow participating libraries to supplement their existing core science materials with titles that build a new foundation for the future. Titles will be marketed to faculty, staff and students at participating institutions via library newsletters and direct emails to relevant departments. It is anticipated that award participants will work closely with faculty to determine appropriate directions for expansion. Participating libraries will study circulation statistics to determine which titles seem to be the most valuable to their local and statewide communities. Furthermore, additional institutions may be encouraged to participate with their own core needs as the “new” core collection develops.

Plan for Evaluation and Assessment:

Participants will submit a report, including a list of materials acquired using award funds; each item’s cost, and any promotional materials to the coordinating institution, DePaul University Libraries, no later than July 15th, 2008. The coordinating institution will manage the required reporting of grant activities, including the use of grant funds by all participating libraries, and will prepare a project summation report for submission to CARLI on or before August 31st, 2008. This report will form the basis of the Final Report, which will be submitted to CARLI on or before June 30th, 2009.

In order to evaluate the use of materials purchased, participating libraries will obtain circulation statistics on the titles acquired with grant funds. Participating libraries will also seek advice from appropriate faculty members in order to determine which types of materials will be most desirable for continued collection development. Evidence of these activities will be included in the Final Report.

Explanations of Requests for Expenditures

Institution: Benedictine University

Contact Bibliographer: Kent Carrico

Collection Focus: Health Sciences: Bioinformatics (DNA micro arrays), Proteomics, Genomics (DNA sequencing genomes, gene expression, and transgenic organisms), Pharmacogenetics, Chemical sensors/biosensors

Amount requested: \$3500.00

Benedictine University, founded in 1887, is a Catholic institution with a strong focus on the sciences and a dedication to liberal arts education. The University has strong roots in the community of Lisle, Illinois and the surrounding western suburbs of DuPage County. The institution's population is diverse with more than 25% of the undergraduate population belonging to an ethnic, religious, or racial minority. With a current undergraduate and graduate population of 2657 and 1267 respectively, Benedictine enjoys a solid academic reputation in its psychology, education, and management programs, and is especially regarded in its undergraduate Biology and Health Science Programs.

Biology and Health Science have historically ranked in the top three of Benedictine's most popular majors for undergraduates, in fact; roughly 25% of all undergraduate students at Benedictine are enrolled as Biology or Health Science majors. Attributable to this success is the quality of instruction and vision of its faculty and program directors. Twenty-eight of 30 full-time science faculty members hold a doctoral degree and actively publish within their field and programs, and their professional approach to instruction actively engages undergraduate students to pursue the next level of their education.

For example, since 1993 the Biochemistry/Molecular Biology Program has had more than 75% of its majors continue their education through pursuit of a medical or doctoral degree. The Department of Pre-Professional Health Programs has also been extremely popular among undergraduates, offering focused concentrations of study in several hot fields including Pre-Med, Pre-Pharmacy, Pre-Nursing as well as Nuclear Medicine Technology, Clinical Lab Science, and Radiation Therapy. The acquisition of New Core collections would benefit both students and faculty in support in these dynamic and ever-evolving fields.

On the graduate level, students in Exercise Physiology Public Health and Nutrition and Wellness, would certainly benefit by having the latest emerging core resources at their disposal as would our newest graduate degree program, Master of Science in Content and Process (a program offering integrated content knowledge in general science to science educators). Imagine current and future middle and secondary science educators not having library resources that describe and define new emerging science fields such as Genomics (the study of genes and their function), Proteomics (the study of proteins and their functions), and Bioinformatics (the management and analysis of biological data) just to name a few of an ever-changing science core.

Because our science faculty is so proactive in resource acquisitions, a solicitation was sent to them asking everyone to identify emerging fields in the sciences that they knew were underrepresented by library collections, or what we coined as The New Core: emerging fields in the sciences.

Response to the question was very gratifying and suggestions included the following emerging sciences:

- Bioinformatics (DNA micro arrays)
- Proteomics
- Genomics
- Pharmacogenetics
- Chemical sensors/biosensors

A search of the I-Share catalog revealed that most of the preceding subjects were underrepresented in all but a few collections. For example a search of proteomics turns up titles indexed in only two or three libraries, and those

copies were often checked out or in transit. The same was true for genomics, and bioinformatics - all critical emerging scientific fields underrepresented in I-Share library collections.

To support the diverse population, curricula and research needs of its students and faculty, Benedictine University Library proposes to develop its New Core science collections by acquiring books in the English language, with requested funds split as evenly as possible among the five sub-discipline areas described. Benedictine will absorb all staff and processing costs for its portion of the grant materials, and all materials will be made available to the CARLI community through I-Share, and to the world library community through WorldCat within two-months of purchase.

Benedictine University Library will evaluate its role in the partnership through the WorldCat Collection Analysis and circulation statistics. It is anticipated that as Benedictine University Library holdings in these areas increase, there will be an exponential increase in the demand for these items both from our own students and faculty, as well as from interlibrary loan.

Institution: DePaul University
Selector: Heather Jagman
Collection Focus: Urban Ecology
Amount Requested: \$2,000

In 2006, the Environmental Protection Agency closed its Midwestern (Region 5) library, which served Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin. In addition to the Chicago closure, two other regional libraries in Dallas and Kansas City were closed, along with the Office of Prevention, Pesticides & Toxic Substances (OPPTS). The Headquarters' libraries in Washington, D.C. were also closed to the public. In her February 6, 2007, testimony before the U.S. Senate Environment and Public Works Committee, ALA President Leslie Burger stated that access to scientific and technical materials held by these libraries is of vital importance to not only to EPA employees but also to the general public, and "because there are fewer libraries and professional library staff, scientists and the public will have limited access to this information. We have a deep concern with limitations these closings would place on the public's access to EPA library holdings and the public's 'right to know.' " ²

At this time, the ultimate fate of the materials held by these libraries is unclear. However, the need for environmental information remains stronger than ever, fueled by, among other things, the latest overwhelming evidence that global warming is real. This, combined with the current popular market interests in sustainable development, organic foods and greener cars and buildings would indicate that the demand for information on environmental topics will only increase.

The interest of Chicago's Mayor Daley in greener architecture and improved landscape design is well known (in the October 2005 Chicago Tribune article, "The Jolly Green Mayor" Daley was recognized by the Smithsonian Institution for his environmental efforts, which include planting 400,000 trees during his tenure³), and the growth and expansion of the Chicago metropolitan area has also been well documented. Farming towns once considered rural have become suburban bedroom communities, impacting the landscape in new ways. Urban Ecology looks at the impact of people and the structures they build on the environment.

DePaul University is about to approve a new program in Environmental Studies. Building on the strength of its existing Environmental Science and Biology degrees, this new program adds coursework in environmental communications, politics and rhetoric; environmental elements of design, such as the environmental aspects of architecture, and other aspects of human ecology; spatial studies, landscape architecture and urban geography; and the idea of nature itself—all topics related to the field of urban ecology.

² (http://www.ala.org/ala/washoff/WOissues/governmentinfo/epalibraries/EPA_Testimony_burger_Final.doc)

³ Daniels, Mary. Chicago Tribune. Chicago, Ill.: Oct 30, 2005. p. 1

However, there is need at both DePaul, and within the State of Illinois, for access to updated resources is in these areas. A search on the Library of Congress subject heading phrase, "Urban Ecology", for example, indicates 125 titles available at DePaul. However, only 41 of these items have publication dates between 2002-2006. The table below indicates holding levels at DePaul, I-share and Worldcat libraries. Where possible, attempts were made to eliminate duplicated monographs and electronic copies, serials and juvenile literature.

Urban Ecology

	2002	2003	2004	2005	2006
DePaul	4	8	7	12	10
I-Share	22	20	25	28	17
WorldCat	132	105	124	119	75

In the past 5 years, I-share libraries have been able to collect only about 20% of monographs and DVD/Videos that are generally available (as indicated by WorldCat) in this subject area.

The \$2000 requested will increase State-wide access to much-needed current materials in Urban Ecology and other related areas, and will update this focus in existing collections in Biology and Environmental Science at DePaul University; DePaul is committed to continuing to update its collection in this area once its proposed Environmental Studies program is rolled out. According to Books in Print, 26 titles were published with the subject "Urban Ecology" in 2006. Calculating the average cost of a book in this area at \$60.00, this award will allow the purchase of approximately 33 books. Naturally, this search serves only as an example; other subject headings will also fit under the rubric of this award request.

While materials with few or no holdings in the Chicagoland area will be selected, so duplication may occur as collections build. All Illinois library users will benefit from improved access to these materials as future demands for information about our relationship with the natural world increase.

Institution: Eastern Illinois University
Contact Bibliographer: Johnson K. Kuma
Collection Focus: PATHOGENIC MICROBIOLOGY
Amount Requested: \$7,000

Disease causing microorganisms have been with us humans and other living things since time immemorial. Research has intensified over the past few years after September 11 terrorist attacks that has led to increased awareness and taking precautionary measures not to become victims of these emerging diseases. The new pathogens include the West Nile Virus, Avian Flu, Ebola and Marburg hemorrhagic fevers, Anthrax, Legionnaires disease, Mad Cow disease. Most of these pathogens have the potential of being transmitted to human populations with enormous loss of lives. There is an increased concern that terrorists could use some of the well known pathogens as agents of bioterrorism. Recent outbreaks of food poisoning in the United States have been linked to some of the familiar pathogens such as Salmonella, Escherichia Coli, and Smallpox, Botulinum toxin and Cholera.

The United States Government has increased funding to all the agencies like the FDA, CDC, HHS and the security agencies like the Homeland Security and FBI. New vaccines are being mass produced in readiness for any terrorist attacks and the security agencies are undergoing training in how to detect and prevent these attacks. These research activities have generated so much scientific literature but unfortunately, information providers have not been able to acquire much of the literature that is coming out.

A search to find out how many book titles our libraries acquired on the topic of pathogens and microbiology yielded these results; 24/130/721 (EIU Catalog/I-Share/World Cat). When the same search was narrowed down to

pathogens that could be used for bioterrorism the results were; 5/16/34 (EIU Catalog/I-Share/World Cat).This indicates that our libraries need to add more books to their collection on this important topic.

Eastern Illinois University provides comprehensive education at both graduate and undergraduate levels to students. The departments of Teacher Education, Biological Sciences, Industrial Technology and Family and Consumer Sciences provide courses that are related to these environmental pathogens. Some of the faculty have acquired grants for research in Homeland Security and science and technology of bioterrorism. Booth Library supports student learning, research and teaching initiatives of our faculty at Eastern Illinois University. As a member of the CARLI, Booth library is committed to sharing its resources with other members, including interlibrary loans. It adheres to the CARLI policy of "Last Copy Guidelines." This also means that all acquired books through this funding will be reviewed annually and evaluated by means of collection analysis as requested by the grant coordinator.

Booth Library is committed to continuous funding and augmenting the collection in this vital area of emerging science and will be able to maintain a \$7,000 level of annual funding.

Institution: Illinois College
Contact Bibliographer: Mike Westbrook
Collection Focus: Agricultural Ecology
Amount Requested: \$2,000

Illinois College, oldest college in the state of Illinois, has always had a close relationship to the land and people of Jacksonville and Morgan County. Over the course of its long history, close ties have grown between the College and the community. Many of IC's alumni have gone on to positions of leadership in the area, and they have continued to look to the College as a source of guidance and support. The College would like to continue this tradition, by developing a program in one of the most needed new fields of the new millennium: that of environmental studies.

IC now has a new interdisciplinary degree-granting program in environmental studies. Several of the College's faculty members have participated in developing this program, and they have brought the perspectives of several different academic disciplines to bear. The program has met with much enthusiasm by students and potential students. The intention of the program is to train students in several potential career paths, and many of these paths might lead to leadership positions in local land use management.

In a primarily agricultural area like Morgan County, there is a need for individuals trained to guide agriculture towards a "greener" approach. This can include anything from assessing the environmental impact of conventional agriculture, to training farmers in organic farming, to mitigating the adverse impact of agriculture through integrated pest management or bio-diversity preservation. The College hopes to prepare these individuals.

Unfortunately, Schewe Library lacks sufficient resources in this area. Not only is Schewe's collection insufficient, CARLI as a whole has insufficient holdings. I-Share shows that there are only 618 titles with the heading "Agricultural ecology" in the CARLI collection. This compares to a World Cat search showing 2686 titles with this heading. In addition, CARLI's holdings have not kept pace with this rapidly expanding field in recent years. Only 14 of the titles in I-Share date from 2004 to the present, while World Cat has 87 titles from this period. I-Share holds only 16% of the available titles, a clearly inadequate collection for a state with the agricultural resources of Illinois.

Illinois College proposes to spend \$2000 remedying this gap. We will purchase resources in agricultural ecology for the benefit of our own environmental studies students, members of CARLI, and the citizens of Illinois as a whole. In order to accomplish this goal, we will make these materials available to all members of the consortium.

Since we now have an ongoing program in this area, we will certainly continue to develop our collection in this direction.

Institution: Illinois Mathematics & Science Academy

Selector: Jean Evans

Collection Focus: Alternative Fuels

Amount Requested: \$3,000

In the twenty-first century, energy is not as it always was nor is it as it always will be. Mankind's voracious appetite for energy, and in particular for fossil fuels, continues unabated. Although we have not yet met Theodore Roosevelt's prediction that we would, early in the twentieth century, exhaust our natural resources, we have had a tendency in the past to respond only when those natural resources are nearly exhausted. Can new discovery keep ahead of our requirements for energy or will Roosevelt ultimately be proven right?

Combined with our increased per capita consumption of energy is the unremitting rise in the earth's population. These two factors have come together to create a situation of double exponential growth. This, in turn, has caused a greater demand for fossil fuels, oil in particular. However, the burning of fossil fuels has put us in the bind of creating increasing concentrations of carbon dioxide in the atmosphere, resulting in climate and pollution problems. In addition, these fossil fuels are limited and non-renewable. In other words, they are finite.

Alternative fuels are non-conventional fuels which can be used in place of conventional fuels (petroleum, coal, propane, and natural gas). Some well-known alternative fuels include biodiesel, ethanol, butanol, hydrogen, methane, chemically stored electricity, vegetable oil, biomass, and peanut oil.

The Illinois Mathematics & Science Academy (IMSA) is committed to providing students an opportunity to develop their talent and passion for mathematics and science so that they are prepared to change the world. We have great expectations of our students because society has great expectations of its scientific and technical leaders in solving many of the world's problems. Development of alternative fuels, as with much progress in society, begins in the laboratory. The Illinois Mathematics & Science Academy has, in its mission statement, a commitment to being "an exemplary laboratory environment characterized by research, innovative teaching, and service." In courses such as "Methods in Scientific Inquiry," "Science, Society and the Future," "Environmental Science," and even beyond the classroom in mentorships and independent study with leading scientists and scholars, our students are working to explore the complexities of a global society and solve real problems. Our students, and the vision they bring to help solve the world's problems, are our finest products. These students will be those leading in the discovery of alternative fuels and fuel sources in the future.

In investigating the print materials available to our students, however, and to Illinois students and citizens in general, it can be demonstrated that there is both a need for updating resources in the field of alternative fuels as well as a necessity for more materials generally. For example, IMSA's library currently owns only one title with the subject heading "Biomass Energy" published between 2005 and 2007. In contrast, WorldCat returns 127 records with this subject heading for the same range of publication dates. In addition, there are only 19 holdings throughout the entire state and only 6 holdings in I-Share. The table below indicates some of the relevant subject headings and holdings at IMSA, contrasted with Illinois Libraries (as represented by the Illinois Catalog), I-Share libraries, and WorldCat libraries. Because date of publication for this topic is so important, these holdings represent only very current (2005-2007) publication dates.

Subject Heading	IMSA	I-Share	Illinois Catalog	WorldCat
Biomass Energy	1	6	19	127
Alcohol as Fuel	0	8	16	56
Biodiesel Fuels	1	14	26	92
Fuel Switching (used For Alternative Fuels)	0	2	3	14

As demonstrated by the above chart, I-Share libraries own only 10% of existing titles that are generally available (as indicated by WorldCat) in the subjects representing alternative fuels. Illinois Libraries (as represented by the Illinois Catalog) fare slightly better at 22%. A preliminary search of Books in Print resulted in a list of 36 titles published between 2005 and 2007 which would fit within the scope of our collection and this grant request. The cost of these materials is, on average, a little higher than an average non-fiction monograph because of the specialized and technical nature of the subject. Thus, the 36 titles found listed at slightly over \$3,200, or an average per title cost of around \$89. Some representative titles include the following:

Biofuels for Fuel Cells

A Biomass Future for the North American Great Plains

Bioenergy: Realizing the Potential

Progress in Biomass and Bioenergy Research

Energy from Plants and Animals

Biodiesel Basics and Beyond

Alternative Fuels: The Future of Hydrogen

Alcoholic Fuels

Shuck the Shieks: Replacing Bloody Middle Eastern Oil with Clean Domestic Ethanol

The grant amount requested, \$3,000, will enable IMSA student researchers and faculty and researchers throughout the state to have access to much-needed current materials. IMSA is also committed to continuing to develop this area of our collection.

Institution: Illinois Wesleyan University

Contact Bibliographer: Stephanie Davis-Kahl

Subdiscipline Area: Neurobiology

Amount Requested: \$3000

Illinois Wesleyan University is a small liberal arts college emphasizing student engagement and interdisciplinary collaboration, both of which are reflected in the library's dedication to creating collections that enhance the university's curriculum and support the ideals of the mission of the university community. Neurobiology is an excellent example of a multidisciplinary area of interest to students and faculty in Biology, Chemistry and Psychology. This is evident in the increasing course offerings in areas such as cellular biology, genetics, biochemistry and neuropsychology. The curricular changes at IWU directly reflect the increasing blurring of lines and the advances made due to collaborations in the sciences.

We seek to build and support existing interest and study in neurobiology and to inspire further exploration. Currently, our holdings are sparse and the majority outdated. We have struggled to establish foundational materials for this complex area to match the progress of the curriculum. The items purchased with this grant will establish a core for current study and teaching, set a standard for future purchases, and increase the relevance of library collections in neurobiology. Materials include scholarly research such as protocol manuals, case studies and handbooks as well as popular materials such as personal narratives that would provide a holistic view of neurobiology.

At present, our collection holds 14 books with Neurobiology as the subject heading (Library of Congress and MeSH). Years of publication range from 1970 to 2001. Clearly, our collection is sorely lacking in depth and currency. Sample titles for purchase include the following (with I-Share/Central Illinois holdings):

Personality Disorders through the Lens of Attachment Theory and the Neurobiologic Development of the Self: A Clinical Integration (0 I-Share holdings)

Neurobiology Animations CD-ROM (0)

Neurobiology of Disease (1)
Neurobiology of Painting (1)
Brain and culture: neurobiology, ideology, and social change (1)
Neurobiology of mental illness (1)
Psychiatry, psychoanalysis, and the new biology of mind (0)
Behavioral neurobiology: an integrative approach (1)
Advice for a young investigator (3)
The neurobiology of criminal behavior (1)

Lastly, the library fully recognizes the importance of and is committed to contributing to the study and teaching of neurobiology not only at Illinois Wesleyan, but also students, faculty and scholars in the state with an interest in this multifaceted discipline.

Institution: North Central College
Contact Bibliographer: Carolyn Sheehy
Collection Focus: Molecular Microbiology
Amount Requested: \$4,000

Focus Description:

Molecular microbiology as a field has evolved from the incorporation of molecular biology, microbiology, and biochemistry to study microorganisms and viruses beyond the microscopic level to the cellular and molecular levels. Research and applications in this field attempt to increase the understanding of the molecular basis behind physiological and biophysical processes. The field contains many high profile and current core study areas of particular relevance to public health and environmental issues. These include virology, immunology, bioinformatics, genomics, genetically-modified organisms, as well as research involving stem cells.

The current importance of this field is evidenced by the large amount of publication in this area. Subject searches of WorldCat (as of February 9, 2007) reveal that, since 2000, 2,845 titles are available in microbiology, and 1,157 titles in molecular biology. (Searches limited to English works; encyclopedias, dictionaries, and popular works were excluded where possible.) However, only one-third or less of these works have been collected in Illinois libraries.

Subject	All WorldCat	Illinois	% in Illinois	CARLI	% in CARLI
Genetic engineering	1488	531	35.7%	420	28.2%
Genomes	227	46	20.3%	42	18.5%
Genomics	578	219	37.9%	204	35.3%
Immunology	1603	508	31.7%	465	29.0%
Microbial genetics	270	85	31.5%	83	30.7%
Microbiology	2845	508	17.9%	415	14.6%
Molecular biology	1157	415	35.9%	380	32.8%
Molecular genetics	442	61	13.8%	53	12.0%
Virology	221	65	29.4%	60	27.1%

While a number of works are held by medical school libraries, this still leaves over two-thirds of the published books on this topic not immediately available to Illinois library customers.

Rationale:

North Central College is a small, private, comprehensive liberal arts college offering degrees (B.A. and B.S.) in Biology and Biochemistry. The cellular and molecular biology track of this program has expanded considerably in the last five years, and students and faculty in this program have contributed to the College's emphasis on undergraduate research. In 2005, the Merck Company Foundation and the American Association for the Advancement of Science awarded a joint grant to the Biology and Chemistry departments to support these research efforts over a three year period. The Biology program is the second largest program (behind Psychology) in the sciences at North Central College, accounting for 3.39%⁴ of all credit hours taken in 2005-2006.

The biology collection at North Central College has benefitted from this attention and from the addition of new faculty members since 2000, and relationships with laboratories in the area, including Morton Arboretum, NALCO, and BP Amoco, have been reaffirmed. The resources selected for this partnership will establish a current collection that represents the state of research at the college and in this field, and that will stand as a core collection for future growth and expanded use by the College community and researchers in the area.

The \$4,000 requested will go toward the purchase of books, which will be fully cataloged in OCLC and I-Share, and which will be available for interlibrary loan and reciprocal borrowing. The library will cover any processing and cataloging costs. The library commits to continued development and enhancement of this area after the completion of the award.

Institution: Northern Illinois University
Contact Bibliographer: Nestor L. Osorio
Collection Focus: Nanotechnology
Amount Requested: \$3,000

Northern Illinois University is the major state institution of higher education in the northern part of the state, a region with a solid industrial base and an expanding economy. The University Libraries at Northern have the most extensive collections for the sciences, technology and engineering in the region. Northern Illinois University Libraries also has a well organized unit for document delivery which has a superior history of serving other libraries in the region and the state. Therefore, materials acquired through this grant will be cataloged and made available to other libraries.

Nanotechnology at NIU

In the last few years NIU has become an active player in the technology field.

A collaboration in nanotechnology between NIU and Argonne National Laboratory has produced a sharing of resources and staff. Several NIU researchers and students from the departments of physics, chemistry, electrical engineering and biology are involved in this collaboration.

The Laboratory for NanoScience, Engineering and Technology – funded with a federal grant - is operational. Dr. Clyde Kimbal, a very well recognized scientist, is the director of this center where faculty members and students from physics and engineering are using this lab to explore this new field.

Dr. Zhili Xiao (physics) was named in 2005 one of the worlds's top 100 scientists in the field by the R&D magazine for his work in ultra-fast hydrogen sensors.

⁴ Source of Credit Hours Taken: North Central College Library Information Resources Allocation spreadsheet, compiled data from the North Central College Registrar, July 10, 2006.

Northern Illinois Naotechnology Inc. was created by several faculty members from the College of Engineering and Engineering Technology and recently has joined in efforts with the DeKalb-based Nano Micro Solutions to develop the commercialization of nanotechnology products.

NIU Libraries Collections in Nanotechnology

NIU Libraries has been forging its way to develop a strong collection in this area. Nanotechnology or nano* produced 185 entries in the Online Catalog. This included some of the major reference sources, journals, conference proceedings books and government documents. The same search produced 742 in the I-Share Catalog. That means about 25 percent of the combined resources of the I-Share libraries are from NIU. The purpose of this request is to purchase monographs and publications in other formats of high quality that are not available in the libraries of the I-share system (CARLI).

Expandability/Adaptability. NIU Libraries is committed to supporting our faculty and students involved in this new scientific and technological field. Therefore, we will continue to enhance our collections in nanotechnology – as it relates to our programs - over the years to come.

Promotion and Evaluation of the Award

All materials purchased with funds received from this award will be cataloged and made available to all the libraries in the state. Through the NIU Libraries newsletter an announcement of the Libraries receiving this award will be made. Mention of the award will be made in our regular meetings with the teaching faculty and we will also invite them to propose titles to be purchased.

A complete list of all items obtained will be distributed to faculty members on campus who are interested in nanotechnology. At the end of the second and third years, a report of the circulating titles obtained from this award will be obtained from I-share and OCLC and provided to the grant coordinator for the preliminary and final reports.