

**NEW UNITS OF INSTRUCTION, PUBLIC SERVICE,
AND RESEARCH AT PUBLIC UNIVERSITIES**

Submitted for: Action.

Summary: This item requests approval of five degree programs and three centers at five universities.

Action Requested: That the Illinois Board of Higher Education approves the following:

Illinois State University

- Center for Renewable Energy

Northern Illinois University (Fox Valley, West Suburban, and Chicago Regions)

- Master of Science in Teaching

University of Illinois (Central and Chicago Regions)

- Center for Human Resource Management

University of Illinois at Chicago

- Software Technologies Research Center

University of Illinois at Springfield

- Bachelor of Arts in Global Studies

University of Illinois at Urbana-Champaign

- Bachelor of Science in Athletic Training
- Master of Science in Agricultural Production
- Master of Science in Bioenergy

STATE OF ILLINOIS
BOARD OF HIGHER EDUCATION

**NEW UNITS OF INSTRUCTION, PUBLIC SERVICE,
AND RESEARCH AT PUBLIC UNIVERSITIES**

By statute, the Illinois Board of Higher Education is responsible for approving new on-campus and off-campus units of instruction, organized research, and public service, and units of administration proposed by public university governing boards. The Board's approval criteria, defined in rules adopted for administering the statute, address university mission, academic control, faculty and staff, support services, financial resources, student demand, curriculum, statewide need, and congruence with Board policies and priorities. In addition to the approval criteria in rules, each new program was reviewed for its contributions to the goals of *IBHE 2011*, which sets forth new priorities to guide Illinois higher education in the first decade of the new millennium. Staff recommendations are based on analyses of application materials and responses to staff questions, and, for advanced degree programs, recommendations of external consultants.

Illinois State University

Proposed Unit Title: Center for Renewable Energy

Background.

Illinois State University (ISU) requests authority to create the Center for Renewable Energy. On October 10, 2007, the Illinois Board of Higher Education (IBHE) granted Illinois State University authority to offer the Bachelor of Science in Renewable Energy. This degree program was developed specifically to contribute to addressing the state's growing need for renewable energy by focusing on renewable energy alternatives to fossil fuels such as bioenergy and wind energy, serving businesses in the energy industry, and working with regulatory and governmental agencies. The proposed Center will strengthen the new bachelor's program and increase the University's commitment and investments in the field of renewable energy.

Mission and Objectives

1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.

The goals and objectives of the Center for Renewable Energy are to (a) assist the University's new renewable energy baccalaureate program by increasing the number of students enrolled in the major to 45 to 60 students over the next four years, (b) support the Illinois Wind Working Group by hosting an annual statewide wind conference, (c) assist the Center staff and faculty at the University in applying for external grants, (d) publish research outcomes and make presentations at state and national conferences, (e) provide research opportunities to students, particularly students in the newly established B.S. in Renewable Energy, and (f) provide public

service to various public and non-public constituencies in the state. These objectives support the overall mission of the University and are consistent with the proposed Center's title.

Facilities (space, equipment, instructional materials)

1050.30(a)(4): A) Facilities, equipment and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support the high quality academic work in the unit of instruction, research or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research and public service, are conveniently available and accessible, and can be maintained.

The primary facilities for the Center will consist of a Renewable Energy Laboratory in Turner Hall. It will house the necessary equipment and classrooms to be shared with the baccalaureate program in renewable energy. Administrative offices for the Center will be located in the Ropp Agricultural Building for two years until appropriate space is available adjacent to the laboratory in Turner Hall.

Faculty and Staff

1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.

The initial staff of the Center will be comprised of the Center's director, an assistant director, and one additional faculty member. Other faculty members or staff will be recruited contingent on their qualifications and research contributions and the availability of funds. An administrative assistant will be hired and be paid with the Center's funds. Graduate students from the Department of Agriculture, the Department of Economics, and other departments will be funded by the Center's grant funds.

Fiscal and Personnel Resources

1050.30(a)(5): A) The financial commitments to support the unit of instruction, research or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research or public service are based on supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.

No new state resources are needed to establish the proposed Center for Renewable Resources. The Center will be funded through a \$990,000 grant from the U.S. Department of Energy awarded to a group of faculty members from several disciplines. The grant will be used to fund the Center's research and also support the B.S. in Renewable Energy. The University expects, as the Center matures, there will be more external funding to strengthen the Center's mission and support the B.S. in Renewable Resources and other programs at the University.

Staff Conclusion. The staff concludes that the Center for Renewable Energy proposed by Illinois State University meets the criteria to implement the Board of Higher Education Act (110 ILCS 205/et.seq.) as set forth in 23 Illinois Administrative Code, Ch. II, Section 1050.30, and the Illinois Board of Higher Education policies pertaining to assessment and accreditation or licensure.

Northern Illinois University

Proposed Program Title: Master of Science in Teaching

Projected Enrollments. Northern Illinois University has projected that enrollments in the proposed Master of Science in Teaching with two specializations in engineering education and middle school mathematics education will vary from 40 to 60 students per year depending on the size of each cohort of students enrolled.

Background

Northern Illinois University (NIU) requests authority to grant the Masters of Science in Teaching. NIU currently offers 27 Master's degrees in education, including curriculum and instruction, business education, instructional technology, educational administration, elementary education, special education, and counseling. The proposed M.S. in Teaching, to be offered on campus and also at two other higher education regions, the West Suburban Region and the Chicago Region, will focus on two high demand disciplines of engineering education and middle school mathematics. The program will be funded by a combination of reallocated resources from the University and competitive grant funds from the U.S. Department of Education awarded through the State Board of Education in support of the No Child Left Behind Initiative. The program will contribute solutions to the growing state and national need for highly qualified teachers in fields related to science, technology, engineering, and mathematics (STEM).

IBHE 2011 Strategic Plan

The proposed Master of Science in Teaching will address the following goals of the *2011 Strategic Plan for the Illinois Board of Higher Education*:

Goal 1—Affordability: To ensure that college is affordable for all Illinoisans, particularly low-income students. The competitive grant funds awarded to the University will pay tuition of students admitted to the program and make the program affordable to students regardless of individual ability to pay. The grant funds will also pay for most of the cost of the program, including personnel and instructional equipment.

Goal 2 – Attainment: To improve educational attainment for all Illinois students through a seamless P-20 system of high-quality teaching and learning, through an increased focus and outreach to non-traditional students, and through stronger emphasis on preparing graduates in

high-demand workforce areas. The program will address the P-20 initiative by involving collaboration among the University, the State Board of Education, the Illinois Board of Higher Education, and local school districts where the program will be offered. Ultimately, graduates of the program will teach in Illinois schools.

Goal 3 – Diversity: To increase access and success in more diverse college student body and faculty ranks, including those with disabilities. The program will address the need for access and diversity by recruiting students from diverse backgrounds, including race and gender, as well as non-traditional students.

Goal 4 – Efficiency: To promote efficiency and accountability in higher education operations. To maximize efficiency, the program will, as much as possible, use appropriate existing courses offered by other graduate degree programs at the University, qualified faculty in addition to new adjunct faculty, library, and instructional resources available at the University, and reallocated resources in addition to the awarded federal grant funds.

Comparable Programs in Illinois

There is no identical Master's degree in teaching offered in the state with foci in engineering education and middle school mathematics. However, several institutions, including Chicago State University, Rockford College, University of St. Francis, Illinois Institute of Technology, DePaul University, and the University of Illinois campuses in Chicago and Urbana-Champaign offer Master's programs with a similar mission.

Mission and Objectives

1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.

The goals and objectives of the Master of Science in Teaching are to prepare certified teachers with the advanced knowledge, skills, and experiences needed to teach middle school mathematics by completing either an engineering education specialization or a middle school mathematics education specialization and also preparing these teachers to play leading roles in the teaching of mathematics in their schools. Graduates of the program will exhibit competencies in assessment, diversity and special needs, human learning and development, and pedagogy in their content areas; demonstrate attainment of the knowledge, skills, and dispositions related to the teaching endorsements sought; apply research-based findings to teaching-learning practices; and display content knowledge and leadership skills in teaching middle school mathematics.

Curriculum and Assessment

1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content to the curriculum assure that the objectives of the unit of instruction will be achieved; B) The breadth and depth of the curriculum are consistent with what the title of the unit of instruction implies; C) The admission and graduation requirements for the unit of instruction are consistent with the stated objectives of the unit of instruction; D) Provision is made for guidance and counseling of students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives and appropriate academic record keeping.

1050.30(a)(2): The design, conduct, and evaluation of the unit of instruction, research or public service are under the direct and continuous control of the sponsoring institution's established processes for academic planning and quality maintenance.

Admission Requirements

To be admitted to the Master of Science in Teaching, an applicant must meet the following requirements: a minimum of 2.75/4.00 undergraduate grade point average, submission of two letters of recommendation, an essay describing his or her career plans, and submission of satisfactory Graduate Record Exam (GRE) or the Mill Analogies Test (MAT) scores. In addition, the applicant must hold a current Illinois teacher certification. These requirements are equally applicable to students who apply for admission to the on-campus or off-campus program.

Curriculum

The curriculum of the proposed M.S. in Teaching is designed to serve certified classroom teachers seeking an endorsement in teacher leadership at the Master's degree level on a part-time basis on campus or at two off-campus higher education regions. It is also designed to meet the requirements of National Council for Accreditation of Teacher Education (NCATE) and the program leaders to work with the staff of the Illinois State Board of Education.

The curriculum consists of 33 to 36 semester hours that encompass the student's demonstrated knowledge, skills, and dispositions related to assessment, diversity and special needs of students, human development and learning, and pedagogy in either the specialization in engineering education (33 hours) or middle school mathematics education specialization (36 hours). These requirements include a successful completion of an internship or action research experiences.

The required courses for the specialization in Engineering Education include Nanotechnology and Applications, Introduction to Energy Engineering, Improvement of Instruction, Topics in Engineering and Engineering Technology, Applied Modern Manufacturing and Quality Control, Disaster Preparedness, Master Research Project, and Internship. Students will complete a required internship and a master's project. The internship involves completing a minimum of 20 hours per week at industrial sites or research laboratories to gain hands-on experience and skills working on emerging technologies such as fuel cell and nanotechnology and learning about future engineering career opportunities for graduates. These experiences will equip students in the program to engage in classroom projects and assignments that demonstrate the applications of engineering concepts to solve society's problems.

Required courses for the specialization in Middle School Mathematics Education include Methods of Instruction in Mathematics, Topics in Contemporary Mathematics, Theories and Research in Adolescent Behavior and Development, Institute for Science Teachers, Learning and Teaching Algebra and Geometry, Assessment and Evaluation in School Mathematics Education, and Topics in Calculus and Analysis. Students will complete a series of projects and assignments that focus on linking research and school based practices through five courses. Students will reflect their research experiences, link them with issues that arise in classrooms, and apply the acquired knowledge to help their students connect mathematical concepts to subjects such as science and engineering. Students in the program will also complete a culminating capstone research-based project in which they will select action research questions, design a related study, collect and analyze data, and report findings. A combination of these experiences will prepare graduates of the program to improve learning in middle school mathematics classrooms.

Assessment of Student Learning Outcomes

Student learning in the M.S. in Teaching will be assessed by the program faculty to determine the level of each student's knowledge and competence in seven critical areas: content knowledge and competencies, experiences with diversity, ability to plan teaching and learning experiences, effect on student learning, internship and clinical experiences, technology competence, and dispositions. In addition, each student will be assessed based on course performance measures including performance on tests and examinations, written documentation, and oral presentations. The culminating experience course will document the student's attainment of core competencies, content knowledge, teaching skills, and reflection on professional dispositions.

Program Assessment

Consistent with IBHE staff requirements, at the end of the third year, the program will submit through the Provost's Office a progress report about its accomplishments and challenges. The program will also participate in Northern Illinois University's well established program review process within a cycle of eight years. Typically, the program review process addresses many assessment topics, including survey of alumni and employers of graduates, retention, rates of degree completion, attainment of the teacher leadership endorsement, and whether or not the program met the requirements of the National Council for Accreditation of Teacher Education. A summary of the program review will be submitted to the IBHE staff with summaries of other programs reviewed in the same cycle. The summary will include the program's strengths and weaknesses and measures that will be taken to strengthen the program.

Facilities (space, equipment, instructional materials)

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There will be sufficient facilities (such as classrooms, offices, and instructional resources) to support the proposed program on-campus and also at the two off-campus locations. Any needed additional resources will be provided by the federal grant funds awarded for the program and internal allocations.

Library

Northern Illinois University's Founders Memorial Library provides adequate resources to support the proposed program including academic journals related to both fields of study.

Technology and Instructional Resources

Northern Illinois University maintains Internet-based instructional formats that will support the delivery of this program both on campus and at a distance.

Faculty and Staff

1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.

All faculty teaching in graduate programs must be members of the graduate faculty or approved by the Graduate School. A review of the status of a graduate faculty is conducted regularly in conjunction with the University's program review process. Northern Illinois University's Constitution and Bylaws mandate an annual evaluation of all tenured and tenure-track faculty. The evaluation is conducted through a peer-review process and an administrative review of work in pertinent areas, including teaching, scholarly and creative activities, and public service. Student evaluations of teaching effectiveness are administered at the end of each course, and the results are used as one measure of teaching effectiveness in the annual review of and the promotion and tenure decisions for regular faculty. The evaluation results are also considered in making decisions about rehiring of temporary faculty.

Fiscal and Personnel Resources

1050.30(a)(5): A) The financial commitments to support the unit of instruction, research or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research or public service are based on supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.

The M.S. in Teaching will be funded through federal grant funds awarded by the Illinois State Board of Education and from internal reallocations.

Accreditation and Licensure

1050.30(b)(3) [applicable only to units of instruction]: Appropriate steps have been taken to assure that professional accreditation needed for licensure or entry into a profession as specified in the objectives of the unit of instruction is maintained or will be granted in a reasonable period of time.

Reporting Requirement (Board Policy, April 2002): Programs in which state licensure requires specialized accreditation for students to obtain professional licensure, but which have not yet achieved accreditation, will undergo full review and report to IBHE every three years until accreditation is achieved.

The University's teacher education programs are accredited by the National Council for Accreditation of Teacher Education. The proposed program is designed to meet accreditation

requirements. Northern Illinois University's accreditation by the Higher Education Learning Commission covers all degree programs offered by the University.

Need

1050.30(a)(6): A) The unit of instruction, research or public service is educationally and economically justified based on the educational priorities and needs of the citizens of Illinois; B) The unit of instruction, research or public service meets a need that is not currently met by existing institutions and units of instruction, research or public service.

According to the Bureau of Labor Statistics' *Occupational Outlook Handbook* for 2008-2009, employment of school teachers in the nation is expected to grow by 12 percent between 2006 and 2016 and create an additional 479,000 additional teacher vacancies due to job openings created by a significant number of retiring teachers. In Illinois, the number is projected to increase by 20 percent through 2014. Many school districts in the state have difficulty hiring qualified teachers in many subjects, including mathematics and science. Expected growth in minority enrollments in schools, coupled with a shortage of minority teachers, is expected to intensify efforts to recruit minority teachers. The proposed program is a part of the Illinois State Board of Education's Mathematics and Science Partnership competitive grant program. The grant program is designed to enhance the content knowledge and teaching skills of classroom teachers financed with federal funds through the No Child Left Behind Act.

Program Information

1050.30(b)(2) [applicable only to units of instruction]: The information which the institution provides for students and the public accurately describes the unit of instruction, including its objectives, length, residency requirements if any, schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, cancellation and refund policies, student rights and responsibilities, and such other material facts concerning the institution and the unit of instruction as are likely to affect the decision of the student to enroll. Such information shall be available to prospective students prior to enrollment.

Information about Northern Illinois University's Master of Science in Teaching, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information, as well as university and graduate school policies, will be published on the University's website. Comparable information about the program will be published in hard copy in the University's Graduate Catalog.

Staff Conclusion. The staff concludes that the Master of Science in Teaching proposed by Northern Illinois University meets the criteria to implement the Board of Higher Education Act (110 ILCS 205/et.seq.) as set forth in 23 Illinois Administrative Code, Ch. II, Section 1050.30, and the Illinois Board of Higher Education policies pertaining to assessment and accreditation or licensure.

University of Illinois

Proposed Unit Title: Center for Human Resource Management (CHRM)

Background

The University of Illinois is seeking permanent approval of the Center for Human Resource Management (CHRM), an educational and research center co-administered by the University of Illinois at Chicago (UIC) and the University of Illinois at Urbana-Champaign (UIUC). The foremost goal of CHRM is to support education and research on applied human resource topics that are immediately applicable in the workplace or classroom. Key activities of CHRM include providing high-quality reports based on CHRM funded research that can be read by business managers or students with immediate applications to the workplace; conducting two roundtable conferences per year for partners, faculty, and students; facilitating corporate partners access to graduate students for internships and full-time employment; providing opportunities for educators and professionals to interact via a listserv and face-to-face events; and conducting educational teleconferences for corporate partners during the academic year.

Mission and Objectives

1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.

The Center for Human Resource Management administers programs that embody the University of Illinois' mission of serving society by educating, creating knowledge, and putting knowledge to work on a large scale.

Facilities (space, equipment, instructional materials)

1050.30(a)(4): A) Facilities, equipment and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support the high quality academic work in the unit of instruction, research or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research and public service, are conveniently available and accessible, and can be maintained.

The work of the Center does not require a great deal of permanent space. The Center utilizes an office in the Institute of Labor and Industrial Relations, a desktop computer and a laptop. Roundtables and professional workshops are held in rented space.

Faculty and Staff

1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research or public service is sufficient to cover the various fields of knowledge

encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.

The Center has a faculty director from each campus (UIC and UIUC) and a corporate director. The faculty directors report to their respective dean. A 75 percent full-time-equivalency (FTE) assistant director reports to and works with the directors. The assistant director develops and implements the Center's programs, oversees all external relations, and handles the day-to-day operations of the Center. The Center's executive board consists of 4 faculty members (2 from UIC and 2 from UIUC) and six corporate board members. The UIUC Institute of Labor and Industrial Relations (ILIR) business manager assists CHRM with the University of Illinois Foundation account and research account management.

Fiscal and Personnel Resources

1050.30(a)(5): A) The financial commitments to support the unit of instruction, research or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research or public service are based on supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.

Faculty at the institutions have been successful in attracting external funding through corporate partnerships. About twenty corporate partners sponsor the Center's annual activities. CHRM annual activities include hosting two executive roundtables, funding research projects, and providing faculty/staff support. Two units, the UIC College of Business Administration and the UIUC College of Business, monetarily support the Center with \$10,000 each year and ILIR supports the Center with \$5,000 each year. The Center consistently seeks external funding to expand its program offerings and to enhance what is already provided.

Staff Conclusion. The staff concludes that the Center for Human Resource Management proposed by University of Illinois meets the criteria to implement the Board of Higher Education Act (110 ILCS 205/et.seq.) as set forth in 23 Illinois Administrative Code, Ch. II, Section 1050.30.

University of Illinois at Chicago

Proposed Unit Title: Software Technologies Research Center

Background

The University of Illinois at Chicago (UIC) is seeking permanent authority to operate the Software Technologies Research Center (STRC), a state-of-the-art hardware and software applications and training facility where clients are able to test innovative computer technologies and develop solutions for their emerging needs.

Mission and Objectives

1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.

The Software Technologies Research Center (STRC) administers programs that embody the University's mission through the development of tools and technologies that represent major advancements in computer graphics, scientific and information visualization, display environments, optical networking, and computer-based interactive systems.

Collaborative research draws upon the expertise of faculty, staff, and students in STRC-affiliated laboratories and units, including the Academic Computing and Communications Center, the Electronic Visualization Laboratory, the Laboratory for Advanced Computing, the National Center for Data Mining, the Industrial Virtual Reality Institute, and the Virtual Reality in Medicine Laboratory, among others. These laboratories and units reside in several UIC campus departments, including Computer Science, Electrical and Computer Engineering, Mechanical Engineering, Art and Design, Education, Biomedical Visualization, and Math, Statistics and Computer Science. The Center coordinates grant procurements and processing, staff and graduate student funding, and technical project management across these departments.

As an extension to the Center's UIC-centric collaborations, STRC partners with other University of Illinois units, notably the National Center for Supercomputing Applications (NCSA); the NCSA Technology Research, Education, and Commercialization Center; and the Institute of Government and Public Affairs. In addition, STRC partners with Argonne National Laboratory's Mathematics and Computer Science Division, Northwestern University's International Center for Advanced Internet Research, the California Institute for Telecommunications and Information Technology at the University of California - San Diego, the University of Michigan's School of Information, and the University of Minnesota's Geology and Geophysics Department. These partnerships support the development of teams, tools, hardware, software systems, networks, and human/computer interface models on an accelerated scale, to enable researchers to study and better understand complex systems, from the micro to the macro level, in both time and space.

Facilities (space, equipment, instructional materials)

1050.30(a)(4): A) Facilities, equipment and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support the high quality academic work in the unit of instruction, research or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research and public service, are conveniently available and accessible, and can be maintained.

STRC is co-located with the UIC Electronic Visualization Laboratory (EVL) in the Engineering Research Facility at 842 West Taylor Street, Chicago, IL. Office space for approximately five staff, presentation technologies, and laboratory space are made available to STRC as needed. Facilities include substantial computing clusters, advanced visualization displays, and optical networking fiber that runs directly from EVL to the UIC Computer Center where it connects to the State of Illinois' I-WIRE network and the StarLight optical exchange. No additional space or facilities beyond what is currently used or being developed is required.

Faculty and Staff

1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.

The Center staff report to the UIC Office of the Vice Chancellor for Research. Staff includes co-directors, an associate director, a senior research scientist, an assistant director of budgets and contracts, a manager of system services, a research programmer, a project coordinator, and several graduate student research assistants. Affiliated faculty are drawn from a variety of UIC academic departments, including Computer Science; Art and Design; Earth and Environmental Sciences; Math, Statistics and Computer Science; Communication; and Electrical and Computer Engineering.

Fiscal and Personnel Resources

1050.30(a)(5): A) The financial commitments to support the unit of instruction, research or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research or public service are based on supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.

STRC supports approximately two dozen businesses and institutions per year through technology demonstrations, consulting, and deployment. The Center targets a 4:1 ratio between external and internal funding. External funding includes a variety of grants and gifts. Internal funding includes contract income and University reallocations. No additional state funds are required.

Staff Conclusion. The staff concludes that the Software Technologies Research Center proposed by the University of Illinois at Chicago meets the criteria to implement the Board of Higher Education Act (110 ILCS 205/et.seq.) as set forth in 23 Illinois Administrative Code, Ch. II, Section 1050.30.

University of Illinois at Springfield

Proposed Program Title: Bachelor of Arts in Global Studies

Projected Enrollments: The University of Illinois at Springfield projects enrollments of ten students in the first year, rising to 40 students by the fifth year.

Background

The University of Illinois at Springfield (UIS) requests authority to grant the Bachelor of Arts in Global Studies. The proposed Global Studies major builds on fifteen years of experience with a minor in International Studies, but also reflects recent developments designed to internationalize the University's general education curriculum, expand study abroad opportunities, and increase foreign language instruction. The University's achievements in online education are also relevant in this regard. While the major is likely to be of relatively modest size, the increasing number of students who will be exposed to global perspectives in the general education curriculum will likely spur further growth. Should the proposed major be offered entirely online at some point in the future, the demand would undoubtedly increase significantly.

IBHE 2011

The B.A. in Global Studies will address the following goal of *IBHE 2011*:

Goal 2 – Attainment: To improve educational attainment for all Illinois students through a seamless P-20 system of high-quality teaching and learning, through an increased focus and outreach to non-traditional students, and through stronger emphasis on preparing graduates in high-demand workforce areas. Through the use of online technologies, UIS will be able to make the proposed program available to adult and other non-traditional students who might otherwise not have access to an affordable, quality education.

Comparable Programs in Illinois

Although both Western Illinois University and Illinois State University offer global studies concentrations within their Political Science programs, the proposed program differs from these two in developing an entire course of study that integrates several social science disciplines, foreign language, and communication. In addition, University of Illinois at Springfield students will have the opportunity to select a concentration in such areas as Women's Studies, Environmental Studies, International Relations, and Business. Northwestern University and the University of Illinois at Urbana-Champaign offer degree programs that are more closely related to the UIS program. The targeted demographic of the UIS program suggests little to no impact on the existing programs in Illinois.

Mission and Objectives

1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.

The B.A. in Global Studies will contribute to the UIS mission by providing a global setting for UIS's continuing commitment to public affairs, by providing students with a curriculum and a set of co-curricular and extra-curricular opportunities that will allow them to see the world from multiple perspectives, and by providing students with a set of experiences that will allow them to put theories into practice.

Curriculum and Assessment

1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content to the curriculum assure that the objectives of the unit of instruction will be achieved; B) The breadth and depth of the curriculum are consistent with what the title of the unit of instruction implies; C) The admission and graduation requirements for the unit of instruction are consistent with the stated objectives of the unit of instruction; D) Provision is made for guidance and counseling of students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives and appropriate academic record keeping.

1050.30(a)(2): The design, conduct, and evaluation of the unit of instruction, research or public service are under the direct and continuous control of the sponsoring institution's established processes for academic planning and quality maintenance.

Admission Requirements

There are no program-specific admission requirements for the B.A. in Global Studies. Admission to the junior year at UIS is granted to applicants who have completed 60 semester (90 quarter) hours of credit with a "C" average or better from a regionally accredited Illinois college or university. Students who graduated with an associate in arts or associate in science degree from an Illinois community college will be considered a junior and have all general education requirements met.

Curriculum

Candidates for the B.A. in Global Studies must complete a 60-semester-hour curriculum including a 28-hour Global Studies core, 16 hours in a topical concentration of their choice, 12 hours in Public Affairs and Liberal Studies Colloquia, and a four-hour Global Studies capstone course. In addition, candidates must demonstrate intermediate foreign language competency by completing four semesters of a single foreign language or through proficiency testing.

Assessment of Student Learning Outcomes

Candidates for the B.A. in Global Studies must demonstrate geographic literacy, knowledge of a foreign language, the ability to apply a variety of interdisciplinary approaches to the analysis of global problems, mastery in comparative methods of analysis, knowledge of the history of world affairs, and familiarity with methods of international relations.

The Global Studies program is organized with a required entry course, Introduction to Global Studies, as well as a concluding course, Capstone in Global Studies. These two will anchor the program's assessment process. In addition, there will be other assessment measures for the major's competence in foreign language study as well as for the completion of an engagement experience. Each course will have its own learning objectives and assessment measures.

Program Assessment

The Global Studies program will use a variety of measures to assess its graduates with a goal of improving the curriculum and, therefore, future student learning. These measures will include student performance in individual courses, percentage of graduates seeking further

education, employment and professional development of graduates, retention and graduation rates, course and faculty evaluations, and a variety of stakeholder surveys.

Facilities (space, equipment, instructional materials)

1050.30(a)(4): A) Facilities, equipment and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support the high quality academic work in the unit of instruction, research or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research and public service, are conveniently available and accessible, and can be maintained.

The B.A. in Global Studies is an interdisciplinary program that will utilize existing courses, faculty, library, and other physical resources. No additional resources are required to offer the proposed program.

Faculty and Staff

1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.

The proposed program will pull faculty from a wide variety of departments across the Springfield campus. Faculty members are evaluated yearly in accordance with their college's established policies and procedures.

Fiscal and Personnel Resources

1050.30(a)(5): A) The financial commitments to support the unit of instruction, research or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research or public service are based on supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.

The resources for the Global Studies major will come through existing University resources. No new state dollars are being requested.

Accreditation and Licensure

1050.30(b)(3) [applicable only to units of instruction]: Appropriate steps have been taken to assure that professional accreditation needed for licensure or entry into a profession as specified in the objectives of the unit of instruction is maintained or will be granted in a reasonable period of time.

Reporting Requirement (Board Policy, April 2002): Programs in which state licensure requires specialized accreditation for students to obtain professional licensure, but which have not yet achieved accreditation, will undergo full review and report to IBHE every three years until accreditation is achieved.

No programmatic accreditation is available for the proposed program. Licensure is not required for employment by graduates.

Need

1050.30(a)(6): A) The unit of instruction, research or public service is educationally and economically justified based on the educational priorities and needs of the citizens of Illinois; B) The unit of instruction, research or public service meets a need that is not currently met by existing institutions and units of instruction, research or public service.

It is commonplace today to talk about the impact of globalization and economic interdependence. In such an environment, graduates with a Global Studies degree may be expected to do well. Graduates will likely seek employment in international business, government, non-governmental organizations, and international finance, depending upon the student's individual choice in focus of study. The 2006-07 edition of the *Occupational Outlook Handbook* supports anticipated need in all of these areas.

Program Information

1050.30(b)(2) [applicable only to units of instruction]: The information which the institution provides for students and the public accurately describes the unit of instruction, including its objectives, length, residency requirements if any, schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, cancellation and refund policies, student rights and responsibilities, and such other material facts concerning the institution and the unit of instruction as are likely to affect the decision of the student to enroll. Such information shall be available to prospective students prior to enrollment.

Information about the University of Illinois at Springfield's Bachelor of Arts in Global Studies program, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information as well as University policies, will be published on the University's website. Comparable information will be published in hard copy in the University's Catalog. Similar information will be available from the University upon request.

Staff Conclusion. The staff concludes that the Bachelor of Arts in Global Studies program proposed by the University of Illinois at Springfield meets the criteria to implement the Board of Higher Education Act (110 ILCS 205/et.seq.) as set forth in 23 Illinois Administrative Code, Ch. II, Section 1050.30, and the Illinois Board of Higher Education policies pertaining to assessment and accreditation or licensure.

University of Illinois at Urbana-Champaign

Proposed Program Title: Bachelor of Science in Athletic Training

Projected Enrollments: The University of Illinois at Urbana-Champaign (UIUC) projects annual enrollments of 16 full-time students in the program. The number is limited by Commission on Accreditation of Athletic Training Education faculty/student ratio requirements.

Background

The University of Illinois at Urbana-Champaign (UIUC) seeks authority to grant the Bachelor of Science in Athletic Training. The Athletic Training Education Program (ATEP) at the University of Illinois at Urbana-Champaign has existed since 1976. Housed in the Department of Kinesiology and Community Health, the ATEP is a program accredited by the Commission on Accreditation of Athletic Training Education (CAATE). Currently, graduates of the ATEP program are qualified to sit for the Board of Certification for the Athletic Trainer (BOC-AT) entry level certification examination. Students must successfully pass the BOC-AT examination to become a Certified Athletic Trainer prior to becoming a practicing athletic trainer. However, changing accreditation guidelines mandate that all athletic training programs be recognized as a distinct academic major in order to maintain accreditation. In order to comply with this requirement, the University is proposing the Bachelor of Science in Athletic Training.

IBHE 2011

The B.S. in Athletic Training will address the following goals of *IBHE 2011*:

Goal 1—Affordability: To ensure that college is affordable for all Illinoisans, particularly low-income students. While the UIUC ATEP is unable to provide full funding (tuition and fees) to all students, a wide variety of scholarships and grants-in-aid are available to qualified students including those in financial need.

Goal 3 – Diversity: To increase access and success in more diverse college student body and faculty ranks, including those with disabilities. Currently, 66 percent of ATEP enrollment is female, 9.7 percent is African-American, and 7.3 percent is Asian-American. These values generally parallel the average for the UIUC undergraduate student population, which is comprised of 47 percent female, 6.36 percent African-American, and 12.6 percent Asian-American.

Goal 4 – Efficiency: To promote efficiency and accountability in higher education operations. The Department of Kinesiology and Community Health's strategic plan provides a blueprint and metrics by which to assess and improve productivity, cost-effectiveness, and accountability.

Comparable Programs in Illinois

The following Illinois institutions offer athletic training as an academic major: Aurora University, Illinois State University, Lewis University, McKendree College, Millikin University, North Central College, North Park University, Olivet Nazarene University, Southern Illinois University, and Western Illinois University. As mandated by CAATE, each of these programs

will be similar in that each student will be evaluated on the same 203 cognitive competencies, 55 psychomotor competencies, and 12 clinical proficiencies outlined in the 2006 Athletic Training Educational Competencies (4th edition). The proposed program at the University of Illinois at Urbana-Champaign will differ from these based on the strength of research within the department and its association with Division I athletics. The approval of the Athletic Training major at the University will not likely negatively impact other schools within the state as the UIUC athletic training program has been in place for over 30 years.

Mission and Objectives

1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.

The proposed program is based upon the UIUC ATEP, a well-established five-semester program in which the primary goal is to educate undergraduate students interested in becoming certified athletic trainers. The mission statement of the UIUC ATEP is “to develop competent, independent Athletic Training Students (ATS) who are capable of passing the Board of Certification Examination for Athletic Trainers.” This mission and the objectives of the proposed program are consistent with the mission of the University and the title of the program.

Curriculum and Assessment

1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content to the curriculum assure that the objectives of the unit of instruction will be achieved; B) The breadth and depth of the curriculum are consistent with what the title of the unit of instruction implies; C) The admission and graduation requirements for the unit of instruction are consistent with the stated objectives of the unit of instruction; D) Provision is made for guidance and counseling of students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives and appropriate academic record keeping.

1050.30(a)(2): The design, conduct, and evaluation of the unit of instruction, research or public service are under the direct and continuous control of the sponsoring institution’s established processes for academic planning and quality maintenance.

Admission Requirements

Admission to the B.S. in Athletic Training will follow the current ATEP model and will be a competitive process. Admission is contingent upon completion of a physical examination by a licensed physician, demonstration of meeting the technical standards for admission, and completion or in the process of completing a Hepatitis B Virus vaccination series. All students must provide evidence of current CPR PRO and AED certification. CPR certification can be obtained outside of the University, but it is offered as a course objective in KIN 120 Injuries in Sport. Sophomore status and completion of Anatomy (MCB 334), Physiology (MCB 103/104), Injuries in Sport (KIN 120), and Athletic Training Observation (KIN 181) are required prerequisite courses for the proposed program. Students must be currently enrolled or have completed these courses at the time of the admission interview. Grades of “B” or better are required in all prerequisite courses. Applicants must have a minimum cumulative grade point average of 2.75.

Curriculum

Candidates for the B.S. in Athletic Training must complete all core courses with a grade of “B” or better, 200 hours of supervised clinical experience, and all University requirements for the B.S. degree. Candidates must complete a 54-hour general education and supporting coursework curriculum, a 25-hour kinesiology core, 43 hours in required allied courses, and 6-19 hours in electives for a minimum degree requirement of 128 hours.

Assessment of Student Learning Outcomes

Upon graduation from the proposed program, students are expected to have learned and successfully mastered each of the 203 cognitive competencies, 55 psychomotor competencies, and 12 clinical proficiencies outlined in the 2006 *Athletic Training Educational Competencies* (4th edition). Educational competencies are first introduced to the students during the didactic lecture portion of the curriculum. Students are tested on the items through traditional means, such as tests, essays, and projects. Psychomotor competencies are the hands-on skills necessary for the clinical aspect of the athletic training profession. These skills are initially introduced to the students in the didactic lecture, with practice opportunities integrated into the laboratory portion of those classes. Students are tested on this material on two separate occasions. The first instance is in an oral/practical examination associated with the didactic course. The second assessment is during the Clinical Progression course taken the following semester. During this class each student must demonstrate mastery of the psychomotor skills learned in the previous semester’s courses. Finally, assessment of the clinical proficiencies is completed during the student’s clinical assignment. While under the supervision of an ATEP Approved Clinical Instructor, the student must demonstrate the ability to integrate the cognitive and psychomotor competencies and make clinical decisions without the direct input of the supervisor.

Program Assessment

The University has an established regimen providing program assessment and feedback relative to the proposed program. This regimen includes clinical evaluations, student exit surveys, teaching and course evaluations, pass rates on certification examinations, percentages of graduates entering employment or subsequent education, retention and graduation rates, volume of research and publications by students, and employer surveys.

Facilities (space, equipment, instructional materials)

1050.30(a)(4): A) Facilities, equipment and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support the high quality academic work in the unit of instruction, research or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research and public service, are conveniently available and accessible, and can be maintained.

The University facilities, including laboratory and office space, instructional space, library resources, and technology currently utilized by the ATEP are adequate to offer the B.S. in Athletic Training.

Faculty and Staff

1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.

The ATEP administrative structure is currently in place with two full-time, tenure-track professors and one part-time lecturer dedicated to the delivery of the didactic component. As is common at many institutions, delivery of the didactic curriculum is supplemented with a number of clinical athletic training staff. The clinical component of the Athletic Training Program is supervised by the athletic training staff. Each of these individuals has been trained by the ATEP to ensure proper course delivery and clinical supervision. The College of Applied Health Sciences and the Department of Kinesiology and Community Health have established policies and procedures that require that faculty be evaluated at least annually.

Fiscal and Personnel Resources

1050.30(a)(5): A) The financial commitments to support the unit of instruction, research or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research or public service are based on supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.

The fiscal and personnel resource requirements of the proposed B.S. in Athletic Training are a continuation of the requirements of the ATEP. No new state funding is required to implement the proposed degree program.

Accreditation and Licensure

1050.30(b)(3) [applicable only to units of instruction]: Appropriate steps have been taken to assure that professional accreditation needed for licensure or entry into a profession as specified in the objectives of the unit of instruction is maintained or will be granted in a reasonable period of time.

Reporting Requirement (Board Policy, April 2002): Programs in which state licensure requires specialized accreditation for students to obtain professional licensure, but which have not yet achieved accreditation, will undergo full review and report to IBHE every three years until accreditation is achieved.

The UIUC ATEP is presently accredited by the Commission on Accreditation of Athletic Training Education with accreditation expiring in May of 2010. To prepare for this deadline, the ATEP will undergo a self-study during the 2008-2009 academic year and an on-campus visit

from CAATE-approved inspectors during the 2009-2010 academic year. The proposed program reflects efforts on the part of the University to meet the current standards for accreditation set forth by CAATE.

Need

1050.30(a)(6): A) The unit of instruction, research or public service is educationally and economically justified based on the educational priorities and needs of the citizens of Illinois; B) The unit of instruction, research or public service meets a need that is not currently met by existing institutions and units of instruction, research or public service.

According to the U.S. Department of Labor the opportunities for athletic trainer employment is expected to increase by 24 percent from 2006 to 2016. Much growth will be in the health care industry, including hospitals and offices of health practitioners. Fitness and recreation sports centers also will provide many new jobs.

Program Information

1050.30(b)(2) [applicable only to units of instruction]: The information which the institution provides for students and the public accurately describes the unit of instruction, including its objectives, length, residency requirements if any, schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, cancellation and refund policies, student rights and responsibilities, and such other material facts concerning the institution and the unit of instruction as are likely to affect the decision of the student to enroll. Such information shall be available to prospective students prior to enrollment.

Information about the University of Illinois at Urbana-Champaign's Bachelor of Science in Athletic Training program, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information as well as University policies, will be published on the University's website. Comparable information will be published in hard copy in the University's Catalog. Similar information will be available from the University upon request.

Staff Conclusion. The staff concludes that the Bachelor of Science in Athletic Training program proposed by the University of Illinois at Urbana-Champaign meets the criteria to implement the Board of Higher Education Act (110 ILCS 205/et.seq.) as set forth in 23 Illinois Administrative Code, Ch. II, Section 1050.30, and the Illinois Board of Higher Education policies pertaining to assessment and accreditation or licensure.

Proposed Program Title: Master of Science in Agricultural Production

Projected Enrollments: The University projects enrollments of five full time students in the first year, rising to ten full time students by the fifth year.

Background

The University of Illinois at Urbana-Champaign (UIUC) requests authority to grant the Master of Science in Agricultural Production. The proposed program will provide graduates with essential skills and knowledge of the agricultural industry in the production of food, feed, fiber, and other goods by the systematic growing of animals, crops, and other life forms. The College of Agricultural, Consumer, and Environmental Sciences (ACES) will administer this

interdisciplinary program's core instructional content across the participating departments of Animal Sciences, Crop Sciences, Natural Resources, and Environmental Sciences. The proposed program will be paired with a Professional Science Master's (PSM) concentration, making it the only program of its kind in Illinois. PSM programs, developed with the aid of an Alfred P. Sloan Foundation grant, combine training in science, technology, engineering, or mathematics with business-related knowledge and skills. The program will thus provide more business training than research-based M.S. programs and substantially more science training than M.B.A. programs. There is workplace demand for this combination of knowledge, training, and skills

IBHE 2011

The Master of Science in Agricultural Production will address the following goals of *IBHE 2011*:

Goal 1—Affordability: To ensure that college is affordable for all Illinoisans, particularly low-income students. The proposed tuition for this program is about the median tuition charged across all UIUC graduate programs. Tuition will be considerably less than other professional degree programs.

Goal 3 – Diversity: To increase access and success in more diverse college student body and faculty ranks, including those with disabilities. Recruiting for this program will rely on existing recruitment strategies to increase participation of underrepresented groups.

Goal 4 – Efficiency: To promote efficiency and accountability in higher education operations. The central administration of all PSM programs will accomplish what would be difficult, prohibitively expensive, or impossible for individual degree programs to accomplish operating independently.

Comparable Programs in Illinois

This will be the first agricultural professional science master's program in the nation.

Mission and Objectives

1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.

The principal objective of the M.S. in Agricultural Production is to prepare students for managerial and leadership roles in the agricultural industry in the production of food, feed, fiber, and other goods by the systematic growing of animals, crops, and other life forms. The objectives of the proposed program are consistent with the land grant mission of the University.

Curriculum and Assessment

1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content to the curriculum assure that the objectives of the unit of instruction will be achieved; B) The breadth and depth of the curriculum are consistent with what the title of the unit of instruction implies; C) The admission and graduation requirements for the unit of instruction are consistent with the stated objectives of the unit of instruction; D) Provision is made for guidance and counseling of

students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives and appropriate academic record keeping.

1050.30(a)(2): The design, conduct, and evaluation of the unit of instruction, research or public service are under the direct and continuous control of the sponsoring institution's established processes for academic planning and quality maintenance.

Admission Requirements

Candidates for admission must have a bachelor's degree from an accredited institution. A minimum grade point average of 3.0/4.0 for the last 60 hours of undergraduate work and for any graduate study is required. Graduate Record Examination scores are required of all applicants and the minimum acceptable Test of English as a Foreign Language score is 590 on the paper-based test or 243 on the computer-based test. Transfer credit is not accepted.

Curriculum

Candidates for the M.S. in Agricultural Production must complete a 4-hour interdisciplinary core, 28 hours in disciplinary electives, and a 10-hour PSM concentration for a total of 42 hours. A full-time industry internship is required after the first year of study. An interdisciplinary seminar series is also required for each semester of enrollment.

Assessment of Student Learning Outcomes

The most direct strategy to support student learning is the individualized instruction, feedback, and counseling from the program's teaching faculty. The program will be relatively small, enabling students to develop mentoring relationships with faculty and other academic professionals.

Program Assessment

The University will implement an established regimen of program assessment tools, including pass rates on end-of-program examinations, enrollments of graduates in subsequent education, employment rates, employer satisfaction surveys, student surveys, retention and graduation rates, and percentage of students involved in research and in presenting the results of their research.

Facilities (space, equipment, instructional materials)

1050.30(a)(4): A) Facilities, equipment and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support the high quality academic work in the unit of instruction, research or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research and public service, are conveniently available and accessible, and can be maintained.

Science instruction will be provided in existing courses. Therefore, no additional classroom demands are expected. Additional courses will be delivered in available classroom space in Wohler's Hall and the Institute of Labor and Industrial Relations Building. No

additional laboratory space or equipment is required. Office space for the PSM director is provided in the Graduate College offices in Coble Hall.

Library

As an interdisciplinary program drawing from existing departments and programs on campus, the M.S. in Agricultural Production program will be served by existing library resources.

Faculty and Staff

1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.

The proposed program will pull faculty from a wide variety of departments across the Urbana-Champaign campus. Faculty members are evaluated yearly in accordance with their college's established policies and procedures.

Fiscal and Personnel Resources

1050.30(a)(5): A) The financial commitments to support the unit of instruction, research or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research or public service are based on supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.

This program is designed as a revenue-generating, self-supporting program. Tuition and fees will support the program's instructional delivery and centralized PSM administrative costs. Net tuition will be returned to units in approximate proportion to the amount of instruction delivered. With the modest size of the program, existing instructional capacity is sufficient.

The principal administrative costs are for a full-time program director and for recruiting and promotion. A grant from the Alfred P. Sloan Foundation is funding the three-year start-up period until sufficient enrollment and resultant revenues provide sufficient operating funds. No new state funds are needed to offer the proposed program.

Accreditation and Licensure

1050.30(b)(3) [applicable only to units of instruction]: Appropriate steps have been taken to assure that professional accreditation needed for licensure or entry into a profession as specified in the objectives of the unit of instruction is maintained or will be granted in a reasonable period of time.

Reporting Requirement (Board Policy, April 2002): Programs in which state licensure requires specialized accreditation for students to obtain professional licensure, but which have not yet achieved accreditation, will undergo full review and report to IBHE every three years until accreditation is achieved.

Program-specific accreditation is not available. Licensure is not required for employment in this field.

Need

1050.30(a)(6): A) The unit of instruction, research or public service is educationally and economically justified based on the educational priorities and needs of the citizens of Illinois; B) The unit of instruction, research or public service meets a need that is not currently met by existing institutions and units of instruction, research or public service.

Agricultural production is a significant part of the state and regional economy. As the leading soybean producer and second leading corn producer, the state of Illinois generates more than \$8.3 billion in annual agricultural commodity sales. The state's 73,000 farms and 1,300 food companies hire thousands of people annually to help meet their growth and development needs. The University of Illinois has a long history of engagement with the agriculture industry and the proposed M.S. degree continues that tradition.

To assess demand for the degree among prospective students, the Graduate College surveyed a large group of ACES undergraduates in the summer of 2007. After learning about the proposed program, 90 percent of the respondents said they were "highly interested" in an agricultural production PSM degree. Prospective business and non-profit partners were also asked about their interest in the proposed program. Eighty-eight percent said they were interested "in working with students in a program such as...agricultural production."

Program Information

1050.30(b)(2) [applicable only to units of instruction]: The information which the institution provides for students and the public accurately describes the unit of instruction, including its objectives, length, residency requirements if any, schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, cancellation and refund policies, student rights and responsibilities, and such other material facts concerning the institution and the unit of instruction as are likely to affect the decision of the student to enroll. Such information shall be available to prospective students prior to enrollment.

Information about the University of Illinois at Urbana-Champaign's Master of Science in Agricultural Production program, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information as well as University policies, will be published on the University's website. Comparable information will be published in hard copy in the University's Graduate Catalog. Similar information will be available from the University upon request.

Staff Conclusion. The staff concludes that the Master of Science in Agricultural Production program proposed by University of Illinois at Urbana-Champaign meets the criteria to implement the Board of Higher Education Act (110 ILCS 205/et.seq.) as set forth in 23 Illinois Administrative Code, Ch. II, Section 1050.30, and the Illinois Board of Higher Education policies pertaining to assessment and accreditation or licensure.

Proposed Program Title: Master of Science in Bioenergy

Projected Enrollments: The University projects initial enrollment of five full-time students, rising to ten full-time students by the fifth year.

Background

The University of Illinois at Urbana-Champaign (UIUC) requests authority to grant the Master of Science (M.S.) in Bioenergy. The proposed program brings together multi-disciplinary teaching and training resources with creative educational tools to prepare graduates for challenges and job opportunities in bioenergy. Demand is growing for a well-educated scientific/technical workforce in bioenergy and related biosciences. A pool of skilled scientists, managers, engineers, socio-economists, and technicians is needed to develop advanced and innovative methods of energy production. Engaging students in practical activities and in internships aids the successful implementation of new bioenergy technologies and strengthens links to agriculture.

The College of Agricultural, Consumer, and Environmental Sciences (ACES)—and its Center for Advanced BioEnergy Research (CABER)—will administer this interdisciplinary program’s core instructional content. The core curriculum will be paired with a professional science master’s (PSM) concentration, making it the only program of its kind in the nation. PSM programs combine training in science, technology, engineering, or mathematics with business-related knowledge and skills. The program will thus provide more business training than research-based M.S. programs and substantially more science training than M.B.A. programs. There is workplace demand for this combination of knowledge, training, and skills for which the PSM is well positioned to provide.

The University of Illinois has an extensive bioenergy education platform already in place. The proposed M.S. degree program will leverage these resources to further integrate the educational and intellectual resources of the University.

IBHE 2011

The M.S. in Bioenergy will address the following goals of *IBHE 2011*:

Goal 1—Affordability: To ensure that college is affordable for all Illinoisans, particularly low-income students. The proposed tuition for this program is about the median tuition charged across all University of Illinois graduate programs. Tuition will be considerably less than that of other professional degree programs.

Goal 2 – Attainment: To improve educational attainment for all Illinois students through a seamless P-20 system of high-quality teaching and learning, through an increased focus and outreach to non-traditional students, and through stronger emphasis on preparing graduates in high-demand workforce areas. A principal motivation stated by the University for developing this program is to answer a call from employers that science graduates be better trained for the practical realities of science-related business. Also, the University plans to gradually expand the program to reach traditionally under-served populations, such as mid-career adults who may not have the option to attend a full-time, residential graduate degree program.

Goal 4 – Efficiency: To promote efficiency and accountability in higher education operations. The M.S. in Bioenergy is one of several professional science master’s degrees being developed as part of an Alfred P. Sloan Foundation grant program. By pooling resources, these programs will be able to provide educational opportunities that otherwise would be cost-prohibitive.

Comparable Programs in Illinois

Illinois State University was recently granted authority to offer a baccalaureate degree in renewable energies. In addition, Illinois’ colleges and universities provide a variety of programs in the sciences that underlie the bioenergy inter-discipline, but none offer a graduate program specifically addressing the interdisciplinary nature of bioenergy.

Mission and Objectives

1050.30(a)(1): A) The objectives of the unit of instruction, research or public service are consistent with the mission of the college or university; B) The objectives of the unit of instruction, research or public service are consistent with what the unit title implies.

The principal objective of the M.S. program in bioenergy is to prepare students for managerial and leadership roles as engineers, scientists, socio-economists, and technicians in advancing the bioenergy industry. This objective is consistent with the mission of the University and is consistent with the implications of the degree title.

Curriculum and Assessment

1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content to the curriculum assure that the objectives of the unit of instruction will be achieved; B) The breadth and depth of the curriculum are consistent with what the title of the unit of instruction implies; C) The admission and graduation requirements for the unit of instruction are consistent with the stated objectives of the unit of instruction; D) Provision is made for guidance and counseling of students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives and appropriate academic record keeping.

1050.30(a)(2): The design, conduct, and evaluation of the unit of instruction, research or public service are under the direct and continuous control of the sponsoring institution’s established processes for academic planning and quality maintenance.

Admission Requirements

In addition to meeting the Graduate College admission requirements, applicants should have a baccalaureate degree in a recognized field of biological, physical, agricultural, socio-economic, or engineering science. Graduate Record Examination scores are required of all applicants, and the minimum recommended Test of English as a Foreign Language score is 580 on the paper-based test or 237 on the computer-based test. Applications are only accepted for the fall semester. Transfer credit is not accepted.

Curriculum

The curriculum requires 42 graduate hours, consisting of a bioenergy core, an elective program, and a PSM concentration. The core consists of Bioenergy Systems ACES 409 and

Advanced Bioenergy Topics ACES 498. Students choose 7-9 elective courses from their area of specialty from a designated list and in consultation with their director of graduate study for a total of 27 elective hours. The areas of specialty are Plants, Soils, and Feedstocks; Production, Processing and Use; Environment, Economics and Policy & Law; and Tools and Methods. In addition, students must complete the 10 hours required for the PSM concentration, including a summer internship.

Assessment of Student Learning Outcomes

Upon successful completion of the program, graduates are expected to demonstrate proficiency in the science of bioenergy production in the area of specialization selected; advance professional, organizational, and personal goals through effective and ethical leadership and communication; understand the complex economic, social, and political forces affecting the bioenergy industry; know the issues and proper protocols for the responsible conduct of research; and effectively compete regionally, nationally, and globally in commercial ventures and with other bioenergy industry professionals.

The most direct strategy to support student learning is the individualized instruction, feedback, and counseling from the program's teaching faculty. The program will be relatively small, enabling students to develop mentoring relationships with faculty and other academic professionals.

Students will engage in an industry seminar series that allows students to interact with those outside of their field. Industry speakers will engage students in presentations and discussions of issues currently facing their companies and industries. Students will have the opportunity to apply the knowledge and skills of the PSM component of the curriculum to current problems. The industry seminar also provides experiential exercises in applied business skills, such as oral presentations and negotiations, in which student peers provide critiques and developmental feedback. A key feature of the seminar is the pairing of third-semester students with first-semester students to develop mentoring relationships, principally centered on the summer internship experience.

Program Assessment

The success of the program will be assessed through employing course and faculty evaluations, graduate and employer surveys, graduation and retention rates, the percentage of students involved in research and the dissemination of their research results, and the employment and professional development of graduates.

Facilities (space, equipment, instructional materials)

1050.30(a)(4): A) Facilities, equipment and instructional resources (e.g., laboratory supplies and equipment, instructional materials, computational equipment) necessary to support the high quality academic work in the unit of instruction, research or public service are available and maintained; B) Clinical sites necessary to meet the objectives of the unit of instruction, research or public service; C) Library holdings and acquisitions, owned or contracted for by the institution, that are necessary to support high quality instruction and scholarship in the unit of instruction, research and public service, are conveniently available and accessible, and can be maintained.

Science instruction will be provided with existing courses and therefore no additional classroom demands are expected. Additional courses will be delivered in available classroom space in Wohler's Hall and the Institute of Labor and Industrial Relations Building. No additional laboratory space or equipment is required. Office space for the PSM director is provided in the Graduate College offices in Coble Hall.

Library

As an interdisciplinary program drawing from existing departments and programs on campus, the M.S. in Bioenergy program will be served by existing library resources.

Faculty and Staff

1050.30(a)(3): A) The academic preparation and experience of faculty and staff ensure that the objectives of the unit of instruction, research or public service are met; B) The academic preparation and experience of faculty and staff, as evidenced by level of degrees held, professional experience in the field of study and demonstrated knowledge of the field, ensure that they are able to fulfill their academic responsibilities; C) The involvement of faculty in the unit of instruction, research or public service is sufficient to cover the various fields of knowledge encompassed by the unit, to sustain scholarship appropriate to the unit, and to assure curricular continuity and consistency in student evaluation; D) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, which are directly assigned to the unit of instruction, research or public service, have the educational background and experience necessary to carry out their assigned responsibilities.

The proposed program will pull faculty from a wide variety of departments across the Urbana-Champaign campus. Faculty members are evaluated yearly in accordance with their College's established policies and procedures.

Fiscal and Personnel Resources

1050.30(a)(5): A) The financial commitments to support the unit of instruction, research or public service are sufficient to ensure that the faculty and staff and support services necessary to offer the unit of instruction, research or public service can be acquired and maintained; B) Projections of revenues necessary to support the unit of instruction, research or public service are based on supportable estimates of state appropriations, local tax support, student tuition and fees, private gifts, and/or governmental grants and contracts.

This program is designed as a revenue-generating, self-supporting program. Tuition and fees will support the program's instructional delivery and centralized PSM administrative costs. Net tuition will be returned to units in approximate proportion to the amount of instruction delivered. With the modest size of the program, existing instructional capacity is sufficient.

The principal administrative costs are for a full-time program director and for recruiting and promotion. A grant from the Alfred P. Sloan Foundation is funding the three-year start-up period until sufficient enrollment and resultant revenues provide sufficient operating funds. No new state funds are required for the start-up of this program.

Accreditation and Licensure

1050.30(b)(3) [applicable only to units of instruction]: Appropriate steps have been taken to assure that professional accreditation needed for licensure or entry into a profession as specified in the objectives of the unit of instruction is maintained or will be granted in a reasonable period of time.

Reporting Requirement (Board Policy, April 2002): Programs in which state licensure requires specialized accreditation for students to obtain professional licensure, but which have not yet achieved accreditation, will undergo full review and report to IBHE every three years until accreditation is achieved.

Program-specific accreditation is not available. Licensing is not required for employment in this field.

Need

1050.30(a)(6): A) The unit of instruction, research or public service is educationally and economically justified based on the educational priorities and needs of the citizens of Illinois; B) The unit of instruction, research or public service meets a need that is not currently met by existing institutions and units of instruction, research or public service.

Biofuel's agriculture component is a significant part of the State's and the region's economy. As the leading soybean producer and second leading corn producer, the state of Illinois generates more than \$8.3 billion in annual agricultural commodity sales. The state's 73,000 farms hire thousands of people annually to help meet their growth and development needs. The University of Illinois has a long history of engagement with the agriculture industry and the proposed M.S. degree program builds on that tradition.

Given its prevalence, growing importance, and already significant role in the world's biofuels market, Illinois' higher education community has an obligation to prepare knowledgeable employees for scientific, managerial, and leadership roles in the bioenergy industry.

Program Information

1050.30(b)(2) [applicable only to units of instruction]: The information which the institution provides for students and the public accurately describes the unit of instruction, including its objectives, length, residency requirements if any, schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, cancellation and refund policies, student rights and responsibilities, and such other material facts concerning the institution and the unit of instruction as are likely to affect the decision of the student to enroll. Such information shall be available to prospective students prior to enrollment.

Information about the University of Illinois at Urbana-Champaign's Master of Science in Bioenergy program, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information as well as University policies, will be published on the University's website. Comparable information will be published in hard copy in the University's Graduate Catalog. Similar information will be available from the University upon request.

Staff Conclusion. The staff concludes that the Master of Science in Bioenergy program proposed by University of Illinois at Urbana-Champaign meets the criteria to implement the Board of Higher Education Act (110 ILCS 205/et.seq.) as set forth in 23 Illinois Administrative Code, Ch. II, Section 1050.30, and the Illinois Board of Higher Education policies pertaining to assessment and accreditation or licensure.

The staff recommends adoption of the following resolutions:

The Illinois Board of Higher Education hereby grants to Illinois State University Authorization to Create the Center for Renewable Energy subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.

The Illinois Board of Higher Education hereby grants to Northern Illinois University Authorization to Grant the Master of Science in Teaching degree in the Fox Valley, West Suburban, and Chicago Regions subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.

The Illinois Board of Higher Education hereby grants to the University of Illinois Authorization to Create the Center for Human Resource Management subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.

The Illinois Board of Higher Education hereby grants to the University of Illinois at Chicago Authorization to Create the Software Technologies Research Center subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.

The Illinois Board of Higher Education hereby grants to the University of Illinois at Springfield Authorization to Grant the Bachelor of Arts in Global Studies subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.

The Illinois Board of Higher Education hereby grants to the University of Illinois at Urbana-Champaign Authorization to Grant the Bachelor of Science in Athletic Training, Master of Science in Agricultural Production, and Master of Science in Bioenergy subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.

