Item #12
August 14, 2007

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

Submitted for: Action.

Summary: This item requests approval of nine degree programs and two centers at the following public universities:

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

University of Illinois at Chicago

- Master of Energy Engineering
- Doctor of Philosophy in Learning Sciences
- Master of Education in Youth Development
- Master of Education in Measurement, Evaluation, Statistics and Assessment
- Center for Botanical Dietary Supplements Research
- Center for Magnetic Resonance Research

University of Illinois at Urbana-Champaign

- Bachelor of Science in Liberal Arts and Sciences in Atmospheric Sciences
- Master of Science in Ecology, Evolution, and Conservation Biology
- Doctor of Philosophy in Ecology, Evolution, and Conservation Biology
- Doctorate of Education in Educational Organization and Leadership

Southern Illinois University-Carbondale

- Master of Science and Master of Engineering in Biomedical Engineering

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 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 is reviewed for its contributions to the goals of *The Illinois Commitment,* which set forth priorities to guide Illinois higher education. Staff recommendations are based on analyses of application materials and responses to staff questions, and for advanced degrees, on recommendations of external consultants.

University of Illinois at Chicago

- Master of Energy Engineering

Background. The University of Illinois at Chicago Master of Energy Engineering program is a proposed 32-hour non-thesis professional master's degree for working professionals in various industries involved in energy conversion or energy end-usage. The degree program contributes directly to the University's mission in the two crucial areas of teaching and public service. The curriculum in the program presents both fundamental and applied studies, often in partnership with the region's business, cultural, and service institutions. The eight-course program of study is the direct outgrowth of surveys of industries in the Chicago area and northern Illinois and seeks to promote both economic growth and environmental responsibility in the region.

Students will progress through the UIC Master of Energy Engineering program in cohort groups, forming a learning community that will serve as the focal point for investigation of the challenges and problems facing the area of energy in the region, the State, and society at large, both today and in the future. This program will also address the UIC mission to serve Illinois as a principal educator in this area. Energy conservation and efficiency and environmental responsibility are problems of worldwide magnitude that will only increase in coming years. The UIC Master of Energy Engineering program seeks to take a leading role in energy education in Chicago and the wider region.

The proposed Master of Energy Engineering program is designed to be administered through the UIC College of Engineering and Department of Mechanical and Industrial Engineering. This professional degree in Energy is consistent with the mission of the UIC College of Engineering.

The Illinois Commitment. The proposed program will meet several goals of *The Illinois Commitment*, as summarized below.

Goal 1: Help Illinois business and industry sustain strong economic growth. Educating more energy engineers for the crucial but increasingly costly and unpredictable energy industry will serve the economic and civic well-being of residents of the State of Illinois.

Goal 3: No Illinois citizen will be denied an opportunity for a college education because of financial need. The cost of this two-year professional master's degree program is low when compared to professional degrees in other disciplines and at other universities.

Goal 4: Increase the number and diversity of citizens completing training and education. The UIC Master of Energy Engineering program targets students from the greater Chicago area and therefore automatically draws on an ethnically, culturally, and economically diverse population. Engineering has become a common point of entry into professional life for many students from underrepresented populations. Moreover, the entrance requirements of the program allow Bachelor's degree holders from outside the engineering field to participate in the Master of Energy Engineering program with a minimum of prerequisites, generally no more than 8 semester hours.

Goal 5: Hold students to even higher expectations for learning and be accountable for the quality of academic programs and the assessment of learning. As a practical, applications-oriented degree, the program is designed to maintain high quality by constantly adapting seminar materials to the changing needs of energy industries and energy consumers.

Goal 6: Improve productivity, cost-effectiveness, and accountability. The low overhead cost of offering evening courses in otherwise unused classrooms and taught by regular faculty of the UIC Department of Mechanical and Industrial Engineering makes the program cost-effective and accountable to the University.

Need

Criterion 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.

The Master of Energy Engineering program would serve significant markets in northern Illinois that currently employ large numbers of engineers. Among the sectors demonstrating increasing demand for engineering graduates are architectural engineering, refrigeration product design and manufacture, power engineering, energy product design and manufacture, and energy management.

Comparable Programs in Illinois. No comparable program exists in Illinois.

Mission and Objectives

Criterion 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 Master of Energy Engineering degree program will:

- Target a distinct student population of working engineers, especially those who can take advantage of the downtown Chicago location and on-campus evening classes;
- Prepare energy professionals to work in all aspects of the energy industry;
- Equip graduates with marketable skills for the Chicago area and beyond;
- Serve the immediate needs of several major industries in northern Illinois and the surrounding region;
- Focus on the dual considerations of energy efficiency and environmental responsibility, thus addressing widespread public concerns over energy prices, energy security, independence from foreign oil, air pollution, and global warming; and
- Continue the thirty-year tradition of the Energy Resources Center, which plays a key role in training energy engineers at the undergraduate level and will be heavily involved in the masters program.

Curriculum and Assessment

Criterion 1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content of 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.

Criterion 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

Applicants to the Master of Energy Engineering program must possess a baccalaureate degree or its equivalent in an engineering discipline, mathematics, computer science, or a natural science such as physics or chemistry from an accredited college or university. Generally qualified candidates may be required by the department to remove specific coursework deficiencies by completing selected undergraduate courses prior to matriculation or graduation. In most cases the prerequisites for admission to the degree program would be satisfied by one course in thermodynamics and one in heat transfer since these are prerequisites for several of the required courses in the degree. Applicants must demonstrate a 3.0/4.0 GPA in the final 60 semester hours of undergraduate study and in any graduate coursework. Non-native English speakers must demonstrate a TOEFL score of 570 or better on the paper exam or 230 or better on the computer exam. The GRE general is required for any applicant whose undergraduate work was completed outside the United States.

Curriculum

The minimum degree requirement is 32 semester hours of coursework. No thesis is required. The proposed program is intended to provide graduate education to working students by specifically meeting their needs in a non-traditional educational structure. The proposed curriculum would consist of 8 four-semester-hour courses:

- ENER 420 Combined Heat and Power, Design, and Management;
- ENER 422 Building Heating, Ventilating, and Air Conditioning;
- ENER 424 Industrial Energy Management and Conservation;
- ENER 429 Internal Combustion Engines;
- ENER 451 Electric Power Generation;
- ENER 501 Engineering Project Coordination and Management;
- ENER 552 Design of Energy Efficient Buildings; and
- ENER 553 Sustainable Energy Engineering and Renewable Energy

Assessment of Student Learning Outcomes

The graduate of this program should have a functional working understanding of major issues in the production of electricity and energy consumption processes. The graduate's capability should include a complete understanding of and the ability to develop the basic designs for:

- Electric power generation processes, plant design, and control;
- Internal combustion engines and gas turbines;
- Small power generation and cogeneration systems; and
- Renewable energy systems.

The graduate should have a thorough theoretical understanding of Carnot, Rankine, and Brayton cycles and how these cycles are applied to practical power generation.

The graduate should have a thorough understanding of and the ability to perform:

- Evaluations of commercial and industrial energy consuming equipment, in particular heating, ventilating, and air conditioning equipment;
- Audits of energy consumption in industrial processes and commercial buildings; and
- Analyses of efficiency improvements for commercial and industrial processes.

The overall program is divided into two course series: energy production and energy end-use and efficiency. Each of these series culminates in a capstone course – ENER 552: Design of Energy Efficient Buildings (Consumption and Efficiency Series) and ENER 553: Sustainable Energy Engineering and Renewable Energy. Each course will include a final project that incorporates learning from the course and previous courses in the series. The purpose is to train the student to integrate multiple courses into a functional educational background, to apply that background to a real world project, and to carry out a project from initiation to completion, all critical career capabilities. In addition to these capstone experiences, each course will also include mid-term and final testing and homework assignments.

Program Assessment

The overall objective of the program is to give students the ability to work with energy issues in both production and end-use. At the end of the program the student should be prepared to enter a design or manufacturing firm in power generation, HVAC, refrigeration, or energy consulting with the ability to understand and handle many common issues and tasks.

Graduates of the program will be polled to determine whether they feel the initial advertised goals of the program were met and if they gained proficiency in the topics covered. The program will also attempt to track the progress and career paths of students beyond completion of the Master of Energy Engineering degree. In addition, periodically, the program will be presented at energy meetings for comments and suggested areas of improvement by energy professionals.

For a program appealing to working students whom, in large part, will be returning to their employers at the conclusion of the program, metrics like percent employed, percent doing faculty sponsored research, publishing, or subsequent graduate education are not highly relevant. The most important feedback statistic will be employer satisfaction with the program. Not only is this the main concern for the student, but also a goal of the program is to develop employer/sponsors that will continue to support students in future offerings of the program. Employer satisfaction will be essential for the very survival of the program in the long run. To pursue this feedback, the program will incorporate regular e-mail newsletters and surveys to active sponsor/employers and will require face-to-face meetings with major local employers on a regular basis.

Program Information

Criterion 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.

The University of Illinois at Chicago's text for its catalog and website provides accurate descriptions of degree programs offered, program objectives and requirements, schedules of tuition, fees, and other expenses necessary for a specific course of study, and procedures governing faculty and student affairs. The institution's cancellation and refund policies are reasonable and fair, and its publications include accurate statements about its accreditation and on transferability of earned credits to other institutions.

Facilities (space, equipment, instructional materials)

Criterion 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.

General Facilities

The program will need classroom space with Internet access for students. Since this is an evening program, satisfactory space is available and classroom space will be adequate to launch the program.

Library Resources

The University Library estimates that it currently spends $450,000 per year for resources that support work in the area of Energy Engineering. Department of Mechanical and Industrial Engineering faculty and Library faculty find that current resources are adequate, so no additional University Library funding will be necessary.

Faculty and Staff

Criterion 1050.30(a)(3): A) The academic preparation and experience of faculty and staff to 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 Master of Energy Engineering program will use faculty in the Mechanical and Industrial Engineering Department and the Chemical Engineering Department who are not fully engaged in research. In addition, the Energy Resources Center, which is part of the Mechanical and Industrial Engineering Department, has more than fifteen academic professionals who are experts in the energy area. This staff will be used to teach some of the courses as an additional load. The Center, which was approved by the Illinois Board of Higher Education in 1973, has a long history of working with energy professionals in the greater Chicagoland area and can tap into this talent pool for course instruction.

Fiscal Resources

Criterion 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.

Student Enrollment & Funding Sources

Student enrollment will be by cohort with an anticipated 20 students in the first year, 40 in the second, 55 in the third, and stabilizing at 60 total enrollments for each subsequent projected year.

A proposal for a tuition differential, setting tuition for this program equal to the rate charged for other professional master's degree programs, was approved by the Board of Trustees on May 17, 2007 and requires no further approval. Tuition revenue will be returned to the College with a percentage retained by the Campus for overhead. However, for the first two years of the program the Provost has agreed to augment the College's budget to meet the initial start-up funding gap.

Faculty costs are calculated at $10,000 per course. Four courses will be offered in the first year ($40,000) and eight courses will be offered each year beginning in the 2nd year ($80,000). A faculty director will be appointed to run the program. The total cost of the faculty director is $31,667, which includes a stipend ($5,000), one month summer salary at 100% time ($13,333.33) plus one course reduction ($13,333.33). One half-time staff will be hired at a starting salary of about $20,000. Marketing costs such as advertising, printing of materials, mailing, web-page updates, staff time, and travel were estimated to be about $84,000 per year based on the costs associated with marketing other programs in the College. Expenses prior to the first year are estimated at 50% of the costs in the first year for instructor salaries. This is due to an assumption that the faculty director and staff will be hired six months prior to the first semester to market the program and begin start-up operations.

Costs in the first year will be covered through reallocation within the college. For the remaining years all costs will be covered by the tuition revenue generated from the program.

Expenditures

No additional equipment or space will be needed for this program. The courses will be taught in space owned by UIC. No laboratory resources will be used in this program. No teaching assistants will be utilized. Recruitment, advising, and program development will be handled by current faculty of the College.

Accreditation and Licensure

Criterion 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.

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.

Discipline-specific accreditation exists only at the undergraduate level. No programmatic accreditation is available. The program will fall under the regional accreditation of the University.

Staff Conclusion. The staff concludes that the proposed degree program 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 for licensure.

University of Illinois at Chicago

- Doctor of Philosophy in Learning Sciences

Background. The University of Illinois at Chicago's Great Cities Commitment calls upon the institution to work on problems of critical importance to urban areas. This, along with the university's land grant status, indicates that UIC should also pay attention to serving Illinois and the region in one of its most pressing challenges: educating Illinois citizens at all levels. Questions arise repeatedly about how people learn and effective ways to foster and develop habits

of inquiry and critical thinking in learners from pre-K to post-graduate education. Typically, questions focus on such issues as the structure of knowledge, methods of inquiry, developmental phases of learning, effective instructional practices, methods and types of assessments, and roles for technology in supporting learning and making opportunities for learning more widely accessible. The field of Learning Sciences, with its interdisciplinary theoretical perspectives and methods, can address these questions and prepare future generations of researchers to make these questions the focus of their work. The University of Illinois at Chicago proposes an initiative in Learning Sciences that will generate new knowledge around these questions and work collaboratively across the many units of the university to enhance the work of faculty and staff.

As part of such an initiative, the university is proposing an interdisciplinary Ph.D. program, the primary objective of which is to prepare researchers who are equipped with the knowledge and inquiry skills necessary to address questions fundamental to how people learn in specific subject matter areas. Addressing subject-matter learning questions requires an understanding of three bodies of knowledge:

- General issues of learning, instruction, and assessment – typically the purview of cognitive and educational psychology;
- The instrumentality of technologies for enhancing and supporting learning, instruction, and assessment – typically the focus of computer scientists; and
- The structure and content of the specific disciplines that people are learning - typically the purview of faculty in individual disciplines.

The Ph.D. program in Learning Sciences at UIC is intended to create a unique program that brings together these three knowledge bases and methods of inquiry to create a community of scholarship and research that will focus on learning in the disciplines. In doing so, this effort reflects the existing interests and investments of faculty across the many colleges of the university.

The Illinois Commitment. The proposed program will meet several goals of *The Illinois Commitment*, as summarized below.

Goal 1: Help Illinois business and industry sustain strong economic growth. The private sector makes enormous efforts to develop and maintain the skills of its employees. Learning is critical to the development of companies and their workers, especially in an era of strong integration of technology throughout the economy. Efficient learning in the workplace is therefore vital to Illinois business and labor. Graduates of the Learning Sciences Ph.D. program will have the experience and research skills to participate in the design and implementation of programs to support workforce training in corporations, including the technology and health care industries.

Goal 2: Higher education will join elementary and secondary education to improve teaching and learning at all levels. The Learning Sciences program addresses the preparation of professionals who work in K-12 settings, the students and programs that operate in these settings, and the kinds of learning environments that support deep, rigorous, and meaningful learning in the disciplines.

Goal 4: Increase the number and diversity of citizens completing training and education. Graduates of the Learning Sciences program will be trained in the latest research on how Illinois' diverse learners can be accommodated in instruction and how to address learning initiatives to the particular challenges of including a broad range of learners, including special needs students, in

mainstream classrooms. In order to ensure the effectiveness of their research in addressing the needs of a diverse population, Learning Sciences graduates will often conduct their research in settings that impact the education of groups underrepresented in particular sectors of the workforce, especially the STEM (Science, Technology, Engineering, and Mathematics) workforce.

Goal 5: Hold students to even higher expectations for learning and be accountable for the quality of academic programs and the assessment of learning. Graduates of the Learning Sciences Graduate program will be able to provide leadership in colleges and universities as institutions wrestle with issues of improving the quality of undergraduate education.

Goal 6: Improve productivity, cost-effectiveness, and accountability. A key component to increasing the effectiveness and lowering the cost of instruction is the integration of technology into instructional design and practice. This is one focus of Learning Sciences research. A subset of instructional design focuses on the problem of integrating available technologies into instructional practices in schools, colleges, and the private sector. In addition, the interdisciplinary and multidisciplinary research that is the focus of the Learning Sciences Graduate program improves research productivity through alignment of multi-disciplinary researchers and economies of scale. This makes projects developed by the Learning Sciences group competitive for large grants requiring multidisciplinary teams, including NSF Centers and Training Programs.

Need

Criterion 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.

The problem of learning lies at the heart of many different needs for the nation, Illinois, the Chicago area, and for broad sectors of the economy. The role of State and local institutions in education means they are in particular need of answers about how to teach effectively, including how to teach individuals from different cultures and in challenging socioeconomic settings. Learning is also critical to the development of companies and their workers, especially in an era of strong integration of technology throughout the economy. Finally, problems of public health often require new strategies for educating patients and the community about how to prevent and treat health problems.

Comparable Programs in Illinois. The proposed UIC program would be unique among public universities in Illinois and would constitute the newest of three degree-granting Learning Sciences Ph.D. programs in the U.S. The other two are housed at Stanford and Northwestern and are the primary points of comparison for this proposed program.

Mission and Objectives

Criterion 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 objectives of the proposed program in Learning Sciences promote many different priorities of UIC as well as the missions of several of its different colleges. Primary among these

is the development of knowledge at the highest level. Scholarship in the Learning Sciences will have a profound effect on UIC's educational mission. The graduate program in Learning Sciences enhances the ability of the majority of colleges on campus to realize the learning sciences dimensions of their research, teaching, and service missions more productively.

Program Objectives

The proposed Graduate Program in Learning Sciences is intended to achieve the following objectives:

- To produce graduates with demonstrated strength in the application of learning sciences to the theoretical and practical design and analysis challenges found within and across disciplinary contexts;
- To establish a community of faculty and graduate students in pursuit of common interdisciplinary interests in learning sciences, thereby enhancing UIC's capacity to address significant interdisciplinary questions at the nexus of research and practice;
- To prepare scholar/researchers who are equipped with the unique disciplinary and methodological knowledge necessary to conduct rigorous research on fundamental issues of learning across diverse populations;
- To prepare cohorts of scholars/researchers/teachers who in their own practice can integrate deep disciplinary content learning and the assessment of that learning in environments that foster active and engaged learners; and
- To enhance the intellectual infrastructure and context at UIC for researching and improving undergraduate and graduate programs by assisting faculty in applying the learning sciences knowledge base to the design, implementation, and evaluation of learning experiences that serve a diverse student body.

Consistent with these overall objectives, the primary academic objective of the program is to produce graduates with demonstrated expertise in the application of Learning Sciences to the theoretical and practical design and analysis of challenges found within and across disciplinary and institutional contexts. These contexts include, but are not limited to, significantly improving student learning in urban school districts, institutions of higher education, families, health education professions, and other settings in which human learning is intended.

Curriculum and Assessment

Criterion 1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content of 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.
Criterion 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

For students entering the program with a bachelor degree, the doctoral program in Learning Sciences will require a minimum of 96 semester credit hours. For students who apply having earned a Master's degree at another institution or in another program, the admissions committee will consider the content, experiences, and intellectual products of that degree. In collaboration with a faculty member in the applicant's desired specialization area, the admissions committee will indicate appropriate modifications to the requirements for completing the Learning Sciences Ph.D. program. Applicants will be apprised of these modifications prior to making decisions about enrolling in the Learning Sciences Ph.D. program. These decisions will, of necessity, be made on a case by case basis.

Curriculum

Components of the program include*:*

- A multi-disciplinary course of study available to candidates from a variety of disciplinary backgrounds (e.g., mathematics, chemistry, psychology, computer science) and professional domains (e.g., teaching, research, human relations) who intend to become specialists in how human learning occurs, how it is studied, and how knowledge about human learning is applied in various learning organizations. Students share a common core of courses in which examples are drawn from multiple disciplines and specialize in a specific discipline;

- Selective admissions criteria and processes that ensure a high-quality student body representing a diverse mix of professional and disciplinary interests and reflecting the cultural diversity of the state of Illinois, the region, and the nation;

- A required sequence of eight core courses in Learning Sciences that focuses on such literatures as the multi-disciplinary nature of the learning sciences, the scientific foundations of inquiry into learning from multiple disciplinary perspectives, methods of learning sciences research, and applications of learning sciences in the design and modification of learning environments. Teaching responsibilities for these courses will be distributed over the core faculty. Planning of each course will be done by at least two faculty members from different disciplines, with a goal of having the teaching done by more than one faculty member as well. The courses will be offered so that each cohort of students can complete all coursework in their first five semesters in the program. To do so, each course will be offered at least once each academic year;

- A journal-review seminar (2 credit hours) that students will take five times during their course of study, beginning in the second semester. The seminar will create a learning community focused around recent journal publications of particular interest or importance or that report unusual findings in the Learning Sciences or related fields. Students and faculty will participate in this seminar and engage in critical review, analysis, and discussion of the articles;

- A required area of disciplinary specialization in which students take advantage of courses offered through existing doctoral programs at UIC, for example: Chemistry, Cognitive Psychology, Computer Sciences, Mathematics or

Mathematics Education, Literacy, Language, and Culture, or Urban Educational Leadership. The specialization will be selected in consultation with the student's Learning Sciences academic advisor and an advisor in the disciplinary specialization. A minimum of 12 hours of specialization course work is required;

- A minimum of 16 hours of electives in graduate courses in the disciplinary specialization, research methods, other disciplines, or special topics courses offered periodically in the Learning Sciences program. These courses will be selected in consultation with the student's advisor in the Learning Sciences program and in consultation with the course instructor to determine relevance and appropriateness of course content to the student's program goals and academic preparation for the course; and

- A required supervised research component of 30 hours, to include research apprenticeship experiences as well as thesis research.

Assessment of Student Learning Outcomes

Competencies that students would be expected to develop within the UIC Learning Sciences Graduate Program are indicated below. These are indices of the skills developed as part of course work, in the research lab or in the field, and in association with the student's mentor.

- Adopt an interdisciplinary perspective on important issues, applying relevant educational psychology, social science theory, learning sciences, and educational design theory and research;
- Establish and defend a personal research agenda that is grounded in the foundational assumptions of the learning sciences;
- Prepare a research grant proposal that responds to the research agendas of governmental agencies and foundations and advances the learning sciences;
- Apply research methods to critically inquire into claims about teaching and learning;
- Determine and conduct proper analyses for complex data sets derived from authentic contexts;
- Present research in written and oral form to effectively communicate to various publics the rigor, merit, and usefulness of the research;
- Demonstrate facility with a broad range of hardware and software technologies required to support practice and research in learning sciences;
- Design and develop learning environments to reflect and advance theory;
- Integrate the principles of the learning sciences within authentic instructional contexts;
- Effectively participate as a member of an interdisciplinary, collaborative research team;
- Effectively participate in learning sciences and specific disciplinary communities of practice; and
- Adopt an action orientation or disposition that treats service work as an important component of one's professional agenda.

Student outcomes will be manifest in a variety of artifacts, including written, tangible, and electronic artifacts produced for courses, portfolios of specific assignments and tasks, a comprehensive qualifying exam, a preliminary examination, and a thesis.

UIC will track the job placements of graduates and indicators of success in these careers. In addition to the individual course-based assessments of student learning outcomes, the program will include the annual and benchmark assessment mechanisms of attainment of the various competencies. Students will be required to submit an Annual Review to show evidence of academic and professional progress. The review will provide an opportunity for students to offer feedback to faculty about the quality and coherence of their learning experiences in the program and suggestions for improvement. In each core course, students will generate at least one written product, document, or technology artifact that contributes to a portfolio of student progress. Upon completion of the Core courses and the required portfolio items, the student will orally defend the contents of the portfolio before a committee of Learning Sciences faculty who will determine passing or failing performance on the comprehensive exam.

The preliminary exam is an oral defense of the completed dissertation proposal and is taken after successful completion of the comprehensive qualifying exam. The central purpose of the preliminary examination is review and approval of the thesis research proposal and admission of the student to the dissertation research stage of degree candidacy. The completed thesis research project must be defended orally and publicly before a thesis committee.

Program Assessment

A quality assurance process will be set in place for the program's training and instructional processes. It will include multiple components. All Learning Sciences courses will be regularly evaluated using the end-of-course evaluation forms routinely provided by the university. In addition to these forms, the institution will deploy a more focused and web-based formative and summative evaluation tool that probes several components of a course's instructional design as well as students' learning processes and outcomes. The program faculty will conduct a yearly program review that includes the solicitation of detailed feedback from all of the program's students as to their perceptions of the efficacy and quality of specific course and program requirements, the research mentorship process, and general management of the program.

Program Information

Criterion 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.

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Facilities (space, equipment, instructional materials)

Criterion 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.

General Facilities

Since the program is interdisciplinary and brings together efforts underway in existing disciplines across the university, the university has sufficient facilities and equipment needed to maintain the quality of the program on an ongoing basis. Office space and computer services for students in the program will be supplied by the cooperating departments.

Library Resources

The University Library estimates that it currently spends $64,000 per year for resources that support work in the area of Learning Sciences. These resources include 43 core journals in the field and the two major bibliographic databases. The Library also acquires over 200 books each year in this area and provides access to books from academic libraries throughout Illinois and the rest of the United States. Learning Sciences and Library faculty find that current resources are adequate, so no additional University Library funding is considered necessary.

Faculty and Staff

Criterion 1050.30(a)(3): A) The academic preparation and experience of faculty and staff to 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.

In addition to the four new faculty who will be recruited to UIC specifically to develop and staff this program, the program has a dedicated core of seven UIC faculty who constitute the Executive Committee for the Learning Sciences Initiative. In addition, 30 faculty members from a variety of UIC departments have indicated support for and interest in the Learning Sciences program.

Fiscal Resources

Criterion 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.

Student Enrollment & Funding Sources

Student enrollment projections for the new Ph.D. program are six new candidates enrolled annually. Graduate students enrolled in other Ph.D. programs may enroll in Learning Sciences core courses with the permission of the course instructor. Tuition is estimated at $4,000 per semester and stipends at $13,500 for nine months. The assumption is a normative five years to complete the program. Six students per year for each of five years form the basis for the calculations. The cost of supporting the students will be distributed as 75% to Federal funds (research and training grants) and 25% Non-State funds (Foundation grants and Indirect Cost Recovery).

Expenditures

The four new positions reflect the Provost's commitment to hire four new faculty to support the creation of a graduate program in the Learning Sciences. Recruitment for the first two positions took place during AY 2005-2006, the third position was recruited during AY 2006-2007, and the fourth will be during AY 2007-2008. Fifty percent of the funding for these positions comes from the Provost's Office and the other 50% comes from one of three colleges, Liberal Arts & Sciences (2 positions), Education (1 position), and Engineering (1 position). Commitments have been made by the Deans of each of these colleges to fund 50% of these positions. Half of the teaching load of each of these faculty positions is committed to Learning Sciences courses, with the other 50% being determined by the department to which the faculty member is appointed. Costs for the Learning Sciences positions in Year 1 (AY2007-2008) are to be met through internal reallocation as 50% of three Learning Sciences faculty. Year 2 would see the fourth Learning Sciences faculty hire as Internal Reallocation estimated at 50% of a full time position. From Year 3 onward, program costs from existing state resources are estimated at $204,000.

Accreditation and Licensure

Criterion 1050.30(b)(3): 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.

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. The program will fall under the regional accreditation of the University.

Staff Conclusion. The staff concludes that the proposed degree program 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 for licensure.

University of Illinois at Chicago

- Master of Education in Youth Development

Background. Over the past decade and a half, the field of youth development has gained increased attention due to research evidence that suggests providing youth – particularly low income, diverse, urban youth – with high quality out-of-school programs is related to significant decreases in negative behaviors and negative developmental outcomes and significant increases in positive behaviors and positive developmental outcomes. These findings have spurred a proliferation in the development of youth-serving organizations, as well as a significant increase in federal, state, and private funding for youth development programs across the country and particularly in urban areas. Evaluation research on the effectiveness of youth service organizations suggests that one of the main factors impacting the success of these programs is the quality of staff but that staff rarely have or receive adequate training for engaging in this work. Despite the importance of staff training, very few programs exist that are specifically aimed at developing high quality youth development professionals.

Further, the proliferation of youth-serving organizations has also created a need for high quality research on youth development and the effectiveness of programs aimed at reducing negative developmental outcomes and promoting positive developmental outcomes in youth. The proposed program will fill a void in both the education and development of youth development professionals and will also prepare individuals equipped to conduct research in this field.

The Master of Education in Youth Development program is an extension of the College of Education's current programs in teacher and administrator preparation for work with youth in P-12 educational institutions and will expand the College of Education's ability to fulfill its mission by preparing individuals focused on serving youth during out-of-school time through working in youth service organizations and through research in the field.

The Illinois Commitment. The proposed program will meet several goals of *The Illinois Commitment*, as summarized below.

Goal 1: Help Illinois business and industry sustain strong economic growth. The M.Ed. in Youth Development will contribute to the economic growth of Chicago and the state of Illinois by preparing individuals to work in and with youth-serving organizations throughout the city and state. Research suggests that youth who are engaged in high-quality youth development programs during out of school hours are more likely to stay in school and graduate from high school, are more likely to attend higher education, and are more likely to become productive and contributing members of society, thereby impacting the economic growth of the community.

Goal 2: Higher education will join elementary and secondary education to improve teaching and learning at all levels. Youth development programs are a natural extension of structured school activities and are often collaborative programs with schools. Research suggests that programs are most successful when they effectively partner with P-12 schools. The proposed program will be aligned with existing networks to ensure that graduates obtain the knowledge and skills necessary to form meaningful partnerships with the P-12 community.

Goal 4: Increase the number and diversity of citizens completing training and education. Within urban areas, youth development programs and youth service organizations are specifically geared toward meeting the developmental needs of low-income, diverse youth. Additionally, one of the main goals of many youth development programs is to increase access to higher education for urban youth. The M.Ed. in Youth Development will support this goal by producing staff able to foster success in meeting the developmental and educational needs of youths. The program has a specific focus and mission regarding urban youth development. Student coursework and fieldwork will be specifically geared toward issues of diversity.

Need

Criterion 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.

The proposed program will meet regional and state needs and priorities through providing trained professionals to work with Illinois youths in supervised out-of-school activities aimed at helping Illinois youths develop to their full potential and become engaged, constructive, and productive citizens who contribute to meeting local, regional, and state needs and priorities, as well as fostering local and regional economic development.

The National Collaboration for Youth recently reported nearly 5,000 vacancies annually within youth-serving organizations with over 2,000 of those vacancies being at or above the supervisory level. Within the Chicago area, a recent internet search for jobs within youth development or youth outreach produced 50 listings for vacancies. Given the proliferation of funding for out-of-school and youth service activities from local, state, and federal sources, the number of jobs in this field is likely to increase. The Illinois Department of Children and Family Services funds 220 programs for children and youth, and many other programs are funded by the 21st Century Fund and other federal and foundation youth development initiatives. Within Chicago Public Schools, the Community Schools Initiative has created a number of positions at varying levels of responsibility. In fact, one of the requirements in establishing status as a community school within CPS is the appointment of a full-time coordinator for its after-school programs.

Comparable Programs in Illinois. No comparable programs at the Master's level exist in Illinois.

Mission and Objectives

Criterion 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 M.Ed. in Youth Development is a natural extension of the College of Education's current programs in teacher and administrator preparation for work with youth in P-12 educational institutions. The program will expand the College of Education's ability to fulfill its mission by preparing individuals focused on serving youth during out-of-school time through working in youth service organizations, as well as through conducting research within the field of youth development. Further, the program will serve as a point of entry to the doctoral program in Educational Psychology for students who do not have the requisite educational background and preparation necessary to succeed in the doctoral program.

Program Objectives

The primary objectives of the proposed program are to provide students with a strong grounding in research and theory concerning the cognitive, social, emotional, moral, and physical development of youth, as well as knowledge of contextual and institutional factors that lead to positive developmental outcomes for youth. The proposed program has two primary strands: 1) an applied strand aimed at producing high quality professionals to work within the field of youth

development, and 2) a research strand aimed at providing students planning to seek doctoral degrees in Educational Psychology, as well as other fields, with preparatory training and background in developmental theory, research methods, and statistics.

The program's central academic objectives are to increase student knowledge of theory and research regarding the cognitive, social, emotional, moral, and physical development of youth; to increase student knowledge of contextual, cultural, and institutional factors related to developmental outcomes for youth; to increase student knowledge of the core components of program development, implementation, and evaluation; to prepare students to apply principles of developmental theory and research to the development and implementation of high quality programs aimed at promoting positive developmental outcomes and reducing negative developmental outcomes for youth; and to prepare students to conduct both basic and applied research on youth development.

Curriculum and Assessment

Criterion 1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content of 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.

Criterion 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

Applicants are considered on an individual basis. Transcripts for all undergraduate and any graduate work must be submitted. In addition to the Graduate College minimum requirements, applicants must demonstrate a 2.75/4.0 GPA for the final 60 semester hours of undergraduate study and a 3.0/4.0 GPA for any graduate coursework. Applicants must submit GRE General scores of 1000 or better on combined Verbal and Quantitative. Non-native English-speakers must submit TOEFL scores of 550 or better on the paper exam or 213 or better on the computer exam. Admission is restricted to the fall term.

Curriculum

The curriculum is structured to meet the stated objectives of the program in the following ways: all students will complete a developmental theory core, a research and methodology core, and a culminating experience. These three core components of the program provide students with an array of courses that will meet their specific educational objectives. Second, for the remaining credits, students will develop, in conjunction with their advisor, an area of emphasis that is comprised of courses from Educational Psychology, the College of Education, and/or relevant and approved courses from academic departments across the University.

The program must include a minimum of 32 credits beyond the baccalaureate degree with a minimum of nine credits at the 500 level excluding Educational Psychology 597 Project, Educational Psychology 598 Thesis, and independent study courses.

Assessment of Student Learning Outcomes

As part of either the College of Education's or the Department of Educational Psychology's self-monitoring programs, much of the information related to assessment of student learning outcomes is routinely collected, such as graduation rates, satisfaction with the program, time-to-degree completion, student involvement with faculty research, and number of students presenting or publishing. In conjunction with College and Educational Psychology evaluations, Youth Development faculty will conduct an annual survey of their current and past advisees. This survey will address advising effectiveness, course offerings, overall satisfaction with the program, enrollment of graduates in Ph.D. programs, place of employment, and whether the program helped them achieve their career goals. Youth Development faculty will meet annually to discuss the results of course evaluations and the annual survey of the students and identify means of improving course content delivery, advising effectiveness, and program course offerings.

Program Assessment

Program quality will also be assessed in a number of ways. The number of students who apply for admission each year will be used as a measure of program need and program visibility within the community. The number of students admitted and matriculated each year will be used to assess the program efficacy. Graduates' success in obtaining jobs or admission to doctoral programs will also be used to assess program need and efficacy. Additionally, the program director will obtain informal feedback on student qualifications and preparation from community agencies in which students are conducting fieldwork.

Program Information

Criterion 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.

The University of Illinois at Chicago's text for its catalog and website provides accurate descriptions of degree programs offered, program objectives and requirements, schedules of tuition, fees, and other expenses necessary for the proposed course of study, and procedures governing faculty and student affairs. The institution's cancellation and refund policies are reasonable and fair, and its publications include accurate statements about its accreditation and on transferability of earned credits to other institutions.

Facilities (space, equipment, instructional materials)

Criterion 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.

General Facilities

The College provides full staff support for student admissions and records through the Office of Student Services administered by an associate dean and more specific assistance from an administrative assistant. All program faculty have individual offices equipped with computers and printers and have room in their teaching loads to meet the needs of new Masters students. The College has an Educational Technology Laboratory equipped with PC, MAC, mobile units, and portable Dell systems.

Library Resources

The Universities libraries have sufficient resources to support the Ph.D. in Educational Psychology. Therefore, the College and University believe the resources are adequate for the proposed M.Ed. program. The library currently subscribes to the premiere journals in developmental psychology, as well as journals in other related fields such as sociology, criminal justice, social work, and community psychology. Additionally, the library has an extensive collection of books pertaining to youth and youth development. The College of Education and the University have established partnerships with a number of organizations and not-for-profits throughout the Chicago area that focus on youth and youth development which could serve as sites for student fieldwork.

Faculty and Staff

Criterion 1050.30(a)(3): A) The academic preparation and experience of faculty and staff to 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 have the active participation of research faculty in the College of Education. All faculty members in the UIC College of Education are required to provide evidence of their teaching effectiveness through student course evaluations of each of their courses at least once each year. In addition, faculty members are expected to invite peers to observe their teaching on a regular basis and are eligible for various teaching award programs. All faculty being considered for promotion and tenure must show evidence that they have engaged in such peer observation and consultation.

Fiscal Resources

Criterion 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.

All resources required by the new program will be provided through the reallocation or full utilization of current faculty, staff, and facilities resources. No new state funds will be required.

Accreditation and Licensure

Criterion 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.

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 accreditation for this type of program exists and there is no overarching body that monitors this type of program. Therefore, the program will fall under the umbrella accreditation of the University by the Higher Learning Commission of the North Central Association of Colleges and Schools.

Staff Conclusion. The staff concludes that the proposed degree program 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 for licensure.

University of Illinois at Chicago

- Master of Education in Measurement, Evaluation, Statistics, and Assessment

Background. The Master of Education in Measurement, Evaluation, Statistics, and Assessment will address the need for more trained professionals in critical areas and will serve students who want to upgrade their skills. This program, to be offered through the Educational Psychology Area in the UIC College of Education, will produce graduates prepared to function in a variety of different positions in research and applied settings and able to draw upon the specialized knowledge and skills they acquire in measurement, evaluation, statistics, and assessment. The program will also support other social and health science programs at UIC by allowing other interested and qualified Master's degree seeking students to take courses within the MESA curriculum.

The Illinois Commitment. The proposed program will meet several goals of *The Illinois Commitment*, as summarized below.

Goal 1: Help Illinois business and industry sustain strong economic growth. The proposed program will help address the current industry-wide shortage of individuals with training in quantitative and qualitative methodologies and who can function effectively in educational research and applied settings. Through continual monitoring of the changes and

advances in quantitative and qualitative methodologies, the proposed program will provide students with current methodological skills, positioning them to compete in the workplace.

Goal 2: Higher education will join elementary and secondary education to improve teaching and learning at all levels. Graduates of the program may be ideal candidates for district-level assessment positions. Among other duties, persons in these positions help select appropriate assessments, assist in interpreting standardized test reports, conduct surveys of district personnel and parents, and help districts and schools prepare adequate yearly progress reports required under the No Child Left Behind Act. By providing accurate interpretations of assessment results, these assessment specialists would provide administrators and teachers with information they need in order to make informed decisions regarding student progress and curriculum effectiveness.

Goal 3: No Illinois citizen will be denied an opportunity for a college education because of financial need. Tuition and fees for UIC are less than UIUC and Loyola University Chicago, both of which offer similar Master's degree programs in their respective Colleges of Education. Students enrolled in this program may apply for various scholarships or may be employed as research assistants.

Goal 4: Increase the number and diversity of citizens completing training and education. Current students in the MESA area of emphasis of the Ph.D. program in Educational Psychology represent a diverse population with respect to age, gender, and race/ethnicity. While testing and measurement has traditionally been a male-dominated industry, the Ph.D. program can currently boast of an approximate 50:50 ratio of women to men with Hispanic/Spanish, Asian, and African-American students among those enrolled. The University anticipates a similarly diverse student population will be represented in the M.Ed. in MESA.

Goal 5: Hold students to even higher expectations for learning and be accountable for the quality of academic programs and the assessment of learning. Faculty who will teach in this program specialize in measurement, evaluation, educational statistics, and assessment. The proposed curriculum was developed to mirror those of universities with established and nationally recognized programs, such as Michigan State, the University of Florida, and the University of Nebraska.

Need

Criterion 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.

The proposed program will help address the current industry-wide shortage of individuals capable of functioning effectively in educational research and applied settings by offering training in quantitative and qualitative methodologies. Surveys have continually demonstrated insufficient numbers of trained persons to fill the available educational research, evaluation, measurement, and assessment positions in government agencies, private companies, school districts, and academic institutions. Recent literature from the National Council on Measurement in Education provides support regarding the insufficient numbers of graduates in this field and high demand from employers. With the increasing accountability pressures on educational institutions to demonstrate program effectiveness through outcomes-based performance monitoring, future job growth in these fields is promising.

Comparable Programs in Illinois. The University of Illinois at Urbana-Champaign and Loyola University Chicago offer similar Master's degree programs. The curriculum at UIUC has comparable rigor in terms of the number and types of courses offered. The proposed curriculum has more course offerings and more courses covering contemporary quantitative and qualitative methods than the Loyola program. There should be no negative impact on the UIUC program, as the locations are rather distinct. There should also be no negative impact on the Loyola program given the two Ph.D. programs in MESA have co-existed since 1999 seemingly without any detrimental impact on either program.

Mission and Objectives

Criterion 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 MESA program directly addresses three of the five points of the current Scope and Mission Statement of the University of Illinois at Chicago. 1) To provide a wide range of students with the educational opportunity only a leading research university can offer: this program will produce graduates prepared to function in a variety of different positions in research and applied settings; this program will help address the current industry-wide shortage of individuals capable of functioning effectively in educational research and applied settings by offering rigorous training in quantitative and qualitative methodologies. 2) To address the challenges and opportunities facing not only Chicago but all Great Cities of the 21st century: program faculty offer a broad range of expertise to address the job market needs of the greater Chicago area. 3) To train professionals in a wide range of public service disciplines, serving Illinois as the principal educator of health science professionals, and as a major healthcare provider to underserved communities: this program will help train education professionals to demonstrate program effectiveness through outcomes-based performance monitoring. In addition, the program will support social and health science programs at UIC by allowing other interested and qualified Master's degree seeking students to take courses within the MESA curriculum.

Program Objectives

The primary objective of this program is to produce graduates prepared to draw upon the specialized knowledge and skills they have acquired in the measurement, evaluation, statistics and assessment and who can function effectively in a variety of positions in research and applied settings.

Curriculum and Assessment

Criterion 1050.30(b)(1) A) The caliber and content of 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.

Criterion 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

Applicants are considered on an individual basis through an evaluation of transcripts for all undergraduate and graduate work. In addition to the Graduate College minimum requirements, applicants must demonstrate at least a 2.75/4.0 GPA in the final 60 hours of undergraduate work and 3.00/4.0 GPA for all post baccalaureate or graduate coursework combined. Students must achieve a minimum 1000 points on the Graduate Record Examination combined Verbal and Quantitative. Non-native English speaking students must demonstrate a minimum TOEFL score of 550 on the paper-based exam or 213 on the computer-based exam. Three letters of recommendation are required, as well as a personal statement and an interview.

Curriculum

The program requires a minimum of 32 credits of post-baccalaureate coursework, including 12 credits in research methods and an optional five-hour thesis. The balance of credits may be taken in electives selected from the College of Education courses focusing on psychometrics, statistics, evaluation, assessment, qualitative inquiry, or content area specific research methodology. Additional quantitative and qualitative methodology courses from outside the College of Education may be taken to meet students' career goals. While completing three core methodology courses that provide the foundation knowledge required by the majority of the electives, in consultation with his/her advisor and taking into account the career aspirations of the student, the student will propose a plan of study detailing the electives he/she desires to take.

Assessment of Student Learning Outcomes

The following intended learning outcomes will be evaluated and assessed in the respective courses and independent studies.

- Students are expected to achieve mastery of the core content of measurement, evaluation, statistics, and assessment. This encompasses research, application, and theory on quantitative and qualitative methodologies as applied to education;
- Graduates of the program are expected to have knowledge of (depending on their area of emphasis): descriptive and inferential statistics, including parametric and non-parametric statistics; program evaluation, assessment, and psychometrics;
- Graduates will be expected to demonstrate expertise in the design of research studies;
- Graduates will be expected to demonstrate expertise in conducting educational research;
- Graduates will be expected to write and communicate at a level of proficiency as to allow them to participate in professional meetings and to publish their work in professional, scholarly journals;
- Graduates will be expected to exemplify the highest standards of ethical conduct in the treatment of human subjects and in the processes of dissemination of their research; and
- Graduates will be expected to demonstrate their preparedness for careers in research through their completion of research projects within the program, their oral presentations in student seminars, and their participation in professional meetings.

Program Assessment

As part of either the College of Education's or the Educational Psychology Area's self-monitoring programs, information regarding graduation rates, satisfaction with the program, time-to-degree completion, student involvement with faculty research, and number of students presenting/publishing is routinely collected. In addition, the program coordinator will conduct an annual survey of employer satisfaction. In conjunction with College and Area evaluations, MESA faculty will conduct an annual survey of their current and past advisees. This survey will address advising effectiveness, course offerings, overall satisfaction with the program, enrollment of graduates in Ph.D. programs, places of employment, and whether the program helped students achieve their career goals. MESA faculty will meet annually to discuss the results of the course evaluations and annual survey of the students to improve course content delivery, advising effectiveness, and program course offerings.

Program Information

Criterion 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.

The University of Illinois at Chicago's catalog and website provide accurate descriptions of degree programs offered, program objectives and requirements, schedules of tuition, fees, and other expenses necessary for the proposed course of study, and procedures governing faculty and student affairs. The institution's cancellation and refund policies are reasonable and fair, and its publications include accurate statements about its accreditation and any limitations on transferability of earned credits to other institutions.

Facilities (space, equipment, instructional materials)

Criterion 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.

General Facilities

Current physical facilities are adequate to support the proposed program, so no additional funding is considered necessary.

Library Resources

The full resources of the library of the University of Illinois at Chicago are made available to students enrolled in this program. The University Library estimates that it currently

spends $55,000 per year for resources that support work in the area of Measurement, Statistics, and Assessment. College of Education and Library faculty find that current resources are adequate; no additional University Library funding will be necessary.

Faculty and Staff

Criterion 1050.30(a)(3): A) The academic preparation and experience of faculty and staff to 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 have the active participation of the faculty in the College of Education, including faculty members currently responsible for teaching the Core Methods courses and all of the Educational Psychology elective courses.

Fiscal Resources

Criterion 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.

Funding Sources

No new State funds are needed to initiate, develop, or support the proposed program and therefore the total resource requirements are derived from an internal reallocation of State resources for the current year. No new equipment, instructional materials, courses, library requirements, or contractual services for internships, practica, or clinical placements are required for this program.

Expenditures

The total amount to be reallocated to the new program is $140,200. No new state funding is being requested.

Accreditation and Licensure

Criterion 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.

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. The program will fall under the regional accreditation of the University.

Staff Conclusion. The staff concludes that the proposed degree program 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 for licensure.

University of Illinois at Chicago

- Center for Botanical Dietary Supplements Research

Background. The University of Illinois at Chicago / National Institutes of Health Center for Botanical Dietary Supplements Research received temporary center status from the Illinois Board of Higher Education in 2001. The University is seeking permanent approval to operate the Center.

The Center for Botanical Dietary Supplements Research — supported by the National Institutes of Health — conducts basic and applied research in a continuum of activities that begins with the verification of botanicals and extends to their chemical and biological standardization and final formulation for use in clinical studies. In this process of conducting basic and applied research, the Center provides students with the knowledge and skill set they need to compete in the marketplace. The Center's students have matriculated to significant positions in government and the private sector.

The Center received at its genesis a grant from the Office of Dietary Supplements under the auspices of the National Center for Complementary and Alternative Medicine. Both organizations are entities within the National Institutes of Health. Further funding has come from other NIH entities, such as the Office of Research in Women's Health and the National Institute of General Medicine Sciences. Additionally, some support has come from industry through product contributions.

The UIC center was one of two centers initially funded in 1999. The following year, four additional botanical centers were funded around the United States. The UIC center's first grant period spanned from 1999 – 2005. The Center's grant was renewed in 2005 and continues through 2010. It was one of 22 academic institutions participating in a competitive grant submission process, and one of only two of the initial six centers to receive renewed funding. As one of six centers currently receiving NIH funding, the UIC Center for Botanical Dietary Supplements Research will be eligible for renewal in 2010.

The Illinois Commitment. The proposed program will meet several goals of *The Illinois Commitment*, as summarized below.

Goal 1: Help Illinois business and industry sustain strong economic growth. Since its temporary establishment, the Center has conducted basic science research on botanicals. This research moves from product development to final formulation for clinical studies, potentially leading to commercial use. Botanical dietary supplements are used for health-enhancement and

to self-treat chronic conditions, though relatively little clinical research exists on these products. With its studies, the UIC Center for Botanical Dietary Supplements is serving a very large practitioner and patient constituency within Illinois as well as outside the State. Further, when botanical dietary supplement manufacturers seek to refine their product development programs or, as with the anticipated new federal manufacturing regulations, supplement makers look for objective expertise and guidance they turn to experts such as those heading the Center. Center staff are currently in discussion with a botanical dietary supplement maker to develop a process patent for one of the Center's products and with an Illinois firm to jointly present findings at a professional conference.

Goal 3: No Illinois citizen will be denied an opportunity for a college education because of financial need. Through direct funding to students and by affording students the opportunity to earn honors that will help fund their education and boost academic capital after graduation, the Center contributes to access. There are currently nine graduate students directly supported by Center work and three who work with the Center in their research projects. Through their affiliation with the Center, five graduate students received National Research Service Awards from the National Institutes of Health. These awards provide promising applicants with the potential to become productive, independent investigators in their particular area of scientific research.

Goal 4: Increase the number and diversity of citizens completing training and education. The UIC Center for Botanical Dietary Supplements Research has been a center of study for a diversity of students. Students whose family origins stem from Asia, Europe, Africa, and India have been or are currently trainees with the Center. Additionally, both men and women have been well represented among Center trainees. Of the 18 University of Illinois at Chicago Ph.D. and one M.S. recipients who have been mentored by Center investigators, nine were men and nine were women.

Need

Criterion 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.

The Center will satisfy the demand for more research focused on natural products and their benefit to human health. Clinical research conducted by the Center will benefit Illinois citizens, especially women, as the Center's current clinical study focuses on women's health and well being during the time of menopause. As the population ages, ever greater numbers of Illinois women are reaching the age of menopause. With the concern many women have regarding exogenous hormone therapy to treat such symptoms as hot flashes, the Center's research in this area ─ studying alternative botanical dietary supplements to treat menopausal symptoms ─ is clearly very timely.

Comparable Programs in Illinois. The Center for Botanical Dietary Supplements Research is a unique research and educational center in Illinois. Other botanical centers include the Illinois State Museum Herbarium Collection; the Open-key Illinois – North Carolina Collaborative for Botanical Resources and the Chicago Botanical Garden, which are focused on the preservation and maintenance of botanicals. None performs the same range of basic and applied research into botanicals for human health in which the UIC Center for Botanical Dietary Supplements Research engages.

Mission and Objectives

Criterion 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.

As a unit within the College of Pharmacy and thus within the Illinois Medical District, the UIC Center for Botanical Dietary Supplements Research meets the aims of performing basic and applied research. It also educates the next generation of scientists and health care providers in the field of natural products as they apply to human health.

The UIC Center for Botanical Dietary Supplements Research continues with its mission to research botanicals for human health and to provide research experience and academic support for those seeking to make a career in natural products research. Because of the high use of botanical dietary supplements by the American public, the ultimate goal of research in the Center is to select promising botanicals and to conduct thorough research on their applicability as human dietary supplements.

Facilities (space, equipment, instructional materials)

Criterion 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.

General Facilities

Through the College of Pharmacy, Department of Medicinal Chemistry and Pharmacognosy, the Center has available sufficient laboratories, classrooms, large lecture halls, and conference rooms. Each Project Leader has an office and laboratory configured to accommodate the research goals of his/her project area, as well as the accompanying graduate students and postdoctoral researchers.

The Pharmacognosy Field Station is located in Downers Grove, Illinois. Since the 1950s the facility has been operated on a 40-acre tract of land, 10 acres of which are owned by the University and the remainder are leased from the Morton Arboretum. The site includes a medicinal plant garden as well as two large greenhouses attached to office facilities, workshops, and storage facilities.

Library Resources

Faculty, staff, and students of the Center rely on the Library of the Health Sciences on the University of Illinois at Chicago West Side Campus for access to current journal articles, both hard copy and on-line electronic versions. Located in the Illinois Medical District on the University of Illinois at Chicago campus, the LHS-Chicago also serves as the Regional Medical Library for ten Midwestern states under a contract awarded by the National Library of Medicine.

Faculty and Staff

Criterion 1050.30(a)(3): A) The academic preparation and experience of faculty and staff to 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's senior researchers have developed strong reputations in the fields of medicinal chemistry, pharmacognosy, and biostatistics as well as women's health and medicine. Additionally, the Center's junior scientists are making significant contributions to natural products research.

Fiscal Resources

Criterion 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.

Federal funding in the amount of $1,000,000 annually from the National Institutes of Health's Office of Dietary Supplements and National Center for Complementary and Alternative Medicine support the UIC Center for Botanical Dietary Supplements Research. The home base of the Center is within the College of Pharmacy's Department of Medicinal Chemistry and Pharmacognosy and as such there is some cost sharing with the College with respect to personnel costs. In the current year this amounts to approximately $75,000. Additionally, the University's Office of the Vice Chancellor for Research has provided a one-time allocation of $130,806 for equipment purchases. Finally, the Office of the Provost has awarded $60,000 annually to support the program coordinator position.

The UIC Center for Botanical Dietary Supplements Research evaluates the need for additional equipment and support staff on an ongoing basis and systematically in the process of preparing its Progress Report and detailed budget to NIH for the upcoming year.

Staff Conclusion. The staff concludes that the proposed center 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 for licensure.

University of Illinois at Chicago

- Center for Magnetic Resonance Research

Background. The Center for Magnetic Resonance Research at the University of Illinois at Chicago was granted temporary approval to operate by the Board of Higher Education in 2000. A two-year extension of the temporary approval was granted in 2005. The University is seeking permanent approval for the center. The Center for Magnetic Resonance Research was initiated as an institution-wide program to focus research efforts towards a center of excellence in imaging. Magnetic resonance research is rapidly expanding, especially in the area of ultra-high field.

The Illinois Commitment. The proposed program will meet several goals of *The Illinois Commitment*, as summarized below.

Goal 1: Help Illinois business and industry sustain strong economic growth. The Center for Magnetic Resonance Research helps Illinois sustain economic growth through teaching, service, and research activities. In addition, the Center will increase revenue for the University of Illinois at Chicago Medical Center by having Center Magnetic Resonance Imaging technologists perform clinical functional MRI scans for patients. These technologists employed by the Center are the only technologists at UIC qualified to perform functional MRI. The revenue generated from these scans will go to the University of Illinois at Chicago Hospital. The Center will increase grant revenue from the continued research of investigators utilizing the facility. The Center has attracted patients from across the Chicago area as well as from areas outside Chicago, such as Peoria.

Goal 3: No Illinois citizen will be denied an opportunity for a college education because of financial need. Accessibility to the Center is available to all researchers as well as patients. Researchers outside the Center scan on the 3T for over 50 hours per month, while clinical patients are scheduled for approximately 40 hours per month. Students attend classes sponsored by the Neuroscience Program and Bioengineering Department in the Center conference room.

Goal 5: Hold students to even higher expectations for learning and be accountable for the quality of academic programs and the assessment of learning. The Center enhances the quality of faculty, undergraduate and graduate programs, technology commercialization, and partnerships in business, as well as aiding in patient diagnosis and care.

Goal 6: Improve productivity, cost-effectiveness, and accountability. The Center constantly strives to improve productivity, cost-effectiveness, and accountability. Equipment upgrades help to improve productivity and cost-effectiveness. The 3T scanner has undergone three upgrades to improve the quality of the resulting magnetic resonance images. The 9.4T scanner will undergo an upgrade to decrease scanning time while yielding better results, thereby improving productivity.

Need

Criterion 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.

The Center is available to both funded and non-funded investigators for 25 hours per week and is currently offering Saturday service. Clinical functional MRI patients are scheduled eight hours per week with the rest of the available hours being open to the MRI clinical department of the UIC Medical Center for use of the scanner for in-house and outpatient diagnostic care.

Mission and Objectives

Criterion 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 Magnetic Resonance Research addresses priorities the University of Illinois at Chicago has outlined in its mission statement. These priorities are to create knowledge that transforms our view of the world and, through sharing and application, transforms the world; to provide a wide range of students with the educational opportunity only a leading research university can offer; and to train professionals in a wide range of public service disciplines, serving Illinois as the principal educator of health science professionals and as a major healthcare provider to underserved communities.

The Center creates knowledge by conducting research on the 3T and 9.4T scanners. Sodium imaging is being explored for its greater use as a diagnostic tool in disease. This cutting edge technology is the new frontier in MRI research. The Center also promotes researchers from the Chicago and Urbana-Champaign campuses and external faculty members in the use of the 3 Tesla MRI scanner to facilitate research in areas such as neuron-radiology, psychiatry, neurology, neurosurgery, cardiology, engineering, and basic science. In addition, the 9.4 Tesla scanner, which is the highest field human scanner in the United States, will soon be available to the research community. The Center is taking a leading role in MRI research, and by doing so, is supporting the mission statement of the University of Illinois and the Illinois Commitment.

The Center helps train professionals by preparing medical staff with the scientific understanding they need to assist patients in their fight against various neurological maladies. The Center also serves clinical patients that need pre-surgical evaluations through the use of functional and sodium imaging to determine activity areas of the brain.

Program Objectives

Expected research products include continual improvements and upgrades of the Synchronized Control System, which allows investigators to conduct functional MRI experiments using the GE 3T MRI scanner. This system has been in development over the past few years and has been used by over 30 investigators to collect data from hundreds of research subjects.

The Center will continue to provide MRI research support on the 3T scanner for investigators from UIC. In addition, the Center has hosted visiting researchers from across the country, China, Taiwan, Switzerland, and elsewhere.

Facilities

Criterion 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 original funding used for the Center startup was from the State of Illinois Venture Capital Fund. Ten million dollars were allocated for a new building and startup equipment, with $1 million in funding each year for the first five years for operating costs. With State of Illinois support, the Center has built a 9.4 Tesla human scanner and a new building to house it in close proximity to the current 1.5 and 3.0 Tesla scanners. In addition to the 9.4 Tesla scanner, equipment room, control room, and preparation/recovery area, the new building houses faculty offices, electronics laboratory, physiology laboratory, computing facilities, and a conference room. The goals for the program include fostering involvement of all departments in using these state-of-the-art imaging facilities for research generated in each.

Faculty and Staff

Criterion 1050.30(a)(3): A) The academic preparation and experience of faculty and staff to 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 more than thirty researchers who in turn have multiple student assistants using Center research facilities. There are currently twenty-five active, funded research accounts, seven current pilot accounts, and many personnel with development accounts working on advancing current technologies. There are three graduate students currently working in the center. There are fifteen physicians that refer patients to the center for diagnostic purposes on a varying basis. The Center has two MR Technologists to assist investigators and physicians with the collection of MRI data.

The Center works in conjunction with U.S. businesses to foster growth for the research and medical communities. GE Healthcare works in collaboration with the Center to advance technology in RF engineering and MRI applications.

Fiscal Resources

Criterion 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 ratio of external to internal funding for the last fiscal year was approximately 1:2. There was $120,937 from an R01 grant and $298,863 from a grant from GE while there was $902,498 funded from the State.

Income obtained through outside investigator use of the 3T MRI scanner and additional existing state resources available through the continuing commitment of the College of Medicine

currently fund the Center at approximately $1.1 million per year. Non-state funding through a grant from GE, a gift fund, honorariums paid to Center faculty, outside use of MRI imaging, and a non-state account contribute approximately $115,000 per year to funding the Center. The most recent NIH grant, received in 2005-2006, totaled over $120,000. The Center staff has applied for additional federal grants in 2007-2008 but funding has not been finalized. Through the revenue-generating activities of the Center, grants and gifts, and a permanent commitment on the part of the College of Medicine, the Center is fiscally stable.

Staff Conclusion. The staff concludes that the proposed center 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 for licensure.

University of Illinois at Urbana-Champaign

- Bachelor of Science in Liberal Arts and Sciences in Atmospheric Sciences

Background. The Department of Atmospheric Sciences was established in December 1981 as an academic unit in the Graduate College of the University of Illinois. The Department was an outgrowth of the former Laboratory of Atmospheric Research (LAR) in the Graduate College. The LAR was founded in 1969 and provided an opportunity for students majoring in engineering and physics to specialize in atmospheric research and develop theses and dissertations. The Department was transferred from the Graduate College to the College of Liberal Arts and Sciences in 1993. During its existence, the number of faculty has grown to its current 13 tenure-track faculty, 2 instructors, and 2 emeritus faculty. The Department currently enrolls 47 graduate students in Master and Doctoral programs. During the period between 1993 and 2007, students wishing to obtain a bachelor's degree in Atmospheric Science did so through the Liberal Arts and Science's Independent Plan of Study program. This procedure was cumbersome for students, and undergraduate students had to take many courses that were designed primarily for graduate students. The need for an undergraduate major was clear, based on inquiries from students, the thriving programs at peer institutions around the country and the fact that University of Illinois had no undergraduate program despite having a well-developed Department of Atmospheric Science.

The Illinois Commitment. The proposed program will meet several goals of *The Illinois Commitment*, as summarized below.

Goal 1: Help Illinois business and industry sustain strong economic growth. As weather, climate, and the environmental concerns continue to increase in importance, the atmospheric sciences major will prepare graduates for a variety of in-demand public and private sector careers that address major concerns and needs. Graduates will have potential impact on the economy through better weather, climate and environmental prediction and monitoring, direct service to the residents of Illinois in fields in which weather, climate, and air quality are factors, and through new research to better understand the atmosphere and its impacts.

Goal 4: Increase the number and diversity of citizens completing training and education. Diversity has been built in as a primary objective of the new major through active coordination with the UIUC Office of Minority Student Affairs. Atmospheric Sciences needs more minority participation, and the program directors have as a goal the recruitment of at least 10% of the program majors from underrepresented minority populations each year. In addition, the number of women entering into the study of the Atmospheric Sciences has greatly increased in recent

years, and the directors expect women to be a high percentage of the students in the new undergraduate major.

Goal 5: Hold students to even higher expectations for learning and be accountable for the quality of academic programs and the assessment of learning. The new atmospheric sciences major will be built on a foundation in the basic sciences acquired in prerequisite courses and reinforced throughout the curriculum. Students will acquire computational, analytical, and communications skills that will be sharpened through frequent application. The students will acquire strong quantitative and reasoning skills and will be held to high expectations for their personal learning and growth.

Goal 6: Improve productivity, cost-effectiveness, and accountability. The undergraduate major in atmospheric sciences is cost-effective and represents clear savings for the citizens of Illinois, who currently must cross the border and pay out-of-state tuition in order to pursue an undergraduate education in Atmospheric Sciences at a peer University.

Need

Criterion 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.

Employment opportunities for graduates of atmospheric sciences fall into three general sectors; private industry, government, and universities. At the Baccalaureate level, the employment opportunities are concentrated in the private sector, in government in the operational forecasting arena -- specifically the National Weather Service and the Department of Defense – and in the environmental arena – particularly the federal and state environmental protection agencies.

In the private sector, meteorologists are employed, most visibly, in broadcasting, but in much greater numbers as analysts and interpreters of weather and climate for industry, commerce, and defense. Agriculture, the military, fisheries, construction, transport, power companies, and related industries like financial institutions and insurance have strong dependencies on weather factors and are demanding ever more precise and specially tailored weather and ocean services. The most prolific producers of forecast products are private-sector weather service companies that provide detailed, tailored weather predictions to myriad users. In addition, due to the comprehensive basic training in the sciences provided by the proposed program, opportunities will exist for employment in fields related to, but not directly within, the Atmospheric Sciences.

Comparable Programs in Illinois. The Departments of Geography at both Northern Illinois University and Western Illinois University offer degree programs in Meteorology. Northern Illinois University and Western Illinois University each have four faculty members in the field of Meteorology. The structure of the degrees at each of these institutions is based upon satisfying National Weather Service requirements for employment as a meteorologist and includes courses in analysis and prediction of weather systems, atmospheric dynamics and thermodynamics, physical meteorology, remote sensing, physics, and mathematics through calculus and differential equations. Neither department offers advanced degrees in Meteorology or Atmospheric Sciences. Anticipated impact on the programs at NIU and WIU is small.

Mission and Objectives

Criterion 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 Atmospheric Sciences major will complement other undergraduate degree programs at the University of Illinois. Programs in Civil and Environmental Engineering, Electrical Engineering, and Physics currently cross-list courses with Atmospheric Sciences and plans are underway to cross-list courses with Geography and Geology once the major is established.

Program Objectives

The undergraduate major in Atmospheric Sciences will provide students with a thorough understanding of the processes responsible for weather, climate, and human influences on the atmosphere. This understanding will be built on a foundation in the basic sciences acquired in prerequisite courses and reinforced throughout the curriculum of major courses. Students will acquire computational, analytical, and communications skills that will be sharpened through frequent application to the atmosphere. The major will prepare students for graduate study in the atmospheric and related sciences and for careers in operational meteorology, environmental consulting, climate analysis and forecasting, computer applications in the atmospheric sciences, research, and educational careers. The quantitative and reasoning skills developed in the undergraduate major will also make students adaptable to a range of career opportunities within scientific disciplines. As a capstone experience, students will engage in undergraduate research or will participate in a professional internship. In so doing they will draw on the great diversity of faculty research in the Department of Atmospheric Sciences and on the Department's connections to the Illinois State Water Survey, the National Weather Service, the Illinois Environmental Protection Agency, the National Center for Supercomputing Applications, Broadcast meteorology operations such as WILL radio, and private sector corporations.

Curriculum and Assessment

Criterion 1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content of 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.
Criterion 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

Applicants to the Atmospheric Science program will have to meet the admission requirements of the University of Illinois at Urbana-Champaign (UIUC) and the College of Liberal Arts and Sciences (LAS).

Curriculum

The undergraduate curriculum in atmospheric science is modeled on the recently published recommendations of the American Meteorological Society. The American Meteorological Society is the professional society for atmospheric scientists and meteorologists in the United States. Their "recommended attributes" for undergraduate degree programs in the atmospheric sciences are adopted in the proposed program.

The major in Atmospheric Science will include 25 semester hours in physics, math, and chemistry requirements, 32 semester hours in upper-division Atmospheric Science courses, and 33 hours of General Education courses required by the university for a total of 90 hours. The remaining 30 hours needed to meet university graduation requirements would be satisfied by electives chosen in consultation with the student's academic advisor.

Assessment

A Committee for Undergraduate Education will be established, consisting of faculty and student representatives, to overview curriculum, student outcomes, and alumni outcomes. This committee will implement the evaluation and assessment procedures for the major, consisting primarily of annual program evaluations and critical incident feedback opportunities.

In addition to these annual programmatic reviews, Critical Incident Feedback will be sought immediately after implementation of special activities incorporated within the Atmospheric Sciences program of study. This technique is widely used to get early feedback during course instruction at the University of Illinois. Assessment questionnaires are prepared in collaboration with the University's Division of Measurement and Evaluation (Office of Instructional Resources).

Program Information

Criterion 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.

The University of Illinois at Urbana-Champaign's text for its catalog and website provides accurate descriptions of program objectives and requirements, schedules of tuition, fees, and other expenses necessary for the proposed courses of study, and procedures governing faculty and student affairs. The institution's cancellation and refund policies are reasonable and fair, and its publications include accurate statements about its accreditation and about transferability of earned credits to other institutions.

Facilities (space, equipment, instructional materials)

Criterion 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.

General Facilities

The Atmospheric Science Department has sufficient facilities and equipment needed to maintain the quality of the program on an ongoing basis. Office space and computer services for students in the program are supplied by the departments. The University has adequate classroom and computer classroom facilities to accommodate classes for the new major. Office space already exists for the faculty and staff. Computers capable of handling the class activities of the undergraduate classes exist, have appropriate software, and are already networked.

Library Resources

The University of Illinois library is the largest public academic library in the country, including over forty departmental libraries and over ten million volumes. The Geology Library houses the Atmospheric Sciences collection, which includes all significant books in atmospheric sciences, as well as all the scientific journals of significance in the field. These all are easily assessable throughout the University gateway on the World Wide Web.

Faculty and Staff

Criterion 1050.30(a)(3): A) The academic preparation and experience of faculty and staff to 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 have the active participation of faculty in the Department of Atmospheric Sciences and the College of Liberal Arts and Sciences. All faculty members in the College are required to provide evidence of their teaching effectiveness through student course evaluations of each of their courses. In addition, all faculty being considered for promotion and tenure must show evidence that they have engaged in peer observation and consultation.

Fiscal Resources

Criterion 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.

Student Enrollment & Funding Sources

The department expects to enroll 10 students in the first year, with enrollments increasing in subsequent years to level off at 30 new students each year for a total enrollment in the program of 120. No new funding is required in the first three years. Additional resources required in subsequent years reflect the hiring of an undergraduate advisor. Based on practices across the campus, the department believes an undergraduate advisor will be needed once the enrollment in the program exceeds 100 students. Prior to that time, advising will be done solely by the existing faculty. Funding for this position will be sought through reallocation of institutional funds.

Expenditures

No new expenditures will be required during the first three years of the program's implementation. The addition of an undergraduate advisor in the fourth year will require additional expenditures that will be met through institutional reallocations.

Accreditation and Licensure

Criterion 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.

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 American Meteorological Society (AMS) is the professional organization to which nearly all professionals affiliated with the atmospheric sciences belong. The AMS has a policy statement concerning undergraduate education in which it makes recommendations concerning curriculum content for an undergraduate major. However, the AMS does not give formal accreditation to programs. The Department's proposed undergraduate program meets the recommendations of the AMS.

Staff Conclusion. The staff concludes that the proposed degree program 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 for licensure.

University of Illinois at Urbana-Champaign

- Master of Science in Ecology, Evolution, and Conservation Biology
- Doctor of Philosophy in Ecology, Evolution, and Conservation Biology

Background. Increased awareness of the significance of environmental issues continues to strengthen the demand in both public and private sectors for students with advanced degrees in ecology, evolution and conservation biology. The University of Illinois at Urbana-Champaign has a long tradition in graduate training in ecology and related fields, and many notable contributors to ecological research during the twentieth century have served on the faculty or

received graduate degrees in departments of the School of Integrative Biology, the College of Agriculture and Consumer Sciences, or their ancestral units.

Currently, graduate training in ecology, evolution and conservation biology is provided as a concentration within the biology degree and within other degree programs across campus. The proposed program will maximize the advantage offered by the breadth of faculty expertise and student interest. Recognizing there is a seamless progression from ecology and evolution to contemporary issues in conservation biology and the sustainability of Illinois' environments in rural, suburban, and urban settings, the University proposes a new degree-granting program that integrates graduate education in these disciplines. The proposed program will provide a visible interdisciplinary and conceptual home for graduate training in fields where expertise is otherwise dispersed across campus. According to one consultant who reviewed this proposal for the Board, "The greatest potential of this program is the cross-training between ALL three disciplines". By means of a weekly seminar series, workshops, annual student symposia and faculty meetings, a diverse and interdisciplinary faculty will be integrated with the common objective of training graduate students in applied and basic aspects of ecology, evolution and conservation biology.

The Illinois Commitment. The proposed program will meet several goals of *The Illinois Commitment*, as summarized below.

Goal 1: Help Illinois business and industry sustain strong economic growth. The proposed program will deliver training and research on economically and socially relevant issues such as enhancing the sustainability of agricultural production systems (including biofuels) in a changing environment, the ecology of invasive species, and restoration of the economically beneficial services provided by natural ecosystems. Moreover, evidence is persuasive that the citizens of Illinois value and benefit greatly from experiencing and learning about natural environments.

Goal 4: Increase the number and diversity of citizens completing training and education. The proposed program will foster the higher educational aspirations of minority students. Women and minority students are increasingly active in the fields of ecology, evolution, and conservation biology. The proposed program will provide opportunities for independent research and comprehensive training for these students, as well as others.

Goal 5: Hold students to even higher expectations for learning and be accountable for the quality of academic programs and the assessment of learning. The university's long tradition in the fields of ecology, evolution and conservation biology will be continued and enhanced by the proposed program. Accepting only the most competitive students from a global recruiting pool and providing them the resources to succeed will ensure that UIUC remains highly regarded by its peers.

Goal 6: Improve productivity, cost-effectiveness, and accountability. The proposed program will be integrated across campus and will receive support from several units, thus deriving economies of scale and enhancing cost effectiveness by eliminating duplication of efforts by participating units.

Need

Criterion 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.

Employment opportunities for ecologists, evolutionary biologists, and conservation biologists are in all probability more diverse and numerous than at any other time in the history of these disciplines. Traditional avenues for employment in academic settings remain open. In 2006, the Public Affairs Office of the Ecological Society of America (ESA) published "*Profiles of Ecologists"*, the results of a survey of the society membership. A large proportion of respondents indicated that their department or program intended to create a position in ecology (36.3%). New opportunities, however, are associated with the tremendous growth of programs oriented toward environmental stewardship. Thus, ecologists find employment in government agencies, museums, consulting firms, non-governmental advocacy groups, and private firms that are involved with management of natural resources (including timber, wildlife, and energy). The program will seek students with such aspirations.

Comparable Programs in Illinois. Six institutions in Illinois with graduate programs offer either M.S. or Ph.D. degrees in the life sciences that include concentrations or tracks in ecology, evolution, or conservation biology: DePaul University, Illinois State University, Northern Illinois University, Southern Illinois University–Carbondale, University of Chicago, and University of Illinois at Chicago. Only three institutions offer graduate degrees specific to one or more of the disciplines included in the proposed program: Illinois State University (M.S in Conservation Biology), Northwestern University (M.S. in Plant Biology and Conservation), and University of Chicago (Ph.D. in Ecology and Evolutionary Biology). The proposed program has been active as the Program in Ecology and Evolutionary Biology (PEEB) for 6 years; prior to this period, UIUC had the Department of Ecology, Ethology, and Evolution for 14 years (offering only degrees in Biology). The institution has not observed that the PEEB has detracted from any existing program in Illinois. In fact the degree offered at Northwestern was developed subsequent to the establishment of PEEB. The proposed program will not detract from existing programs since students typically select graduate programs based on the faculty members with whom they wish to work. Importantly, nearly all of the flagship universities of surrounding states and the peer institutions of UIUC nationally have programs and offer degrees similar to those proposed here.

Mission and Objectives

Criterion 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 recently completed Strategic Plan for the Urbana Campus of the University of Illinois declared that the Mission of the University is to transform lives and serve society by educating, creating knowledge, and putting this knowledge to work on a large scale with excellence. The Vision for this Mission is that the University will be a recognized leader in teaching and scholarship, research, creative endeavors, engagement and economic development that will compete forcefully and favorably with the best universities in the world. The associated Guiding Principles declare that the University will: provide an environment that will attract and retain the best and brightest faculty, students, and staff, and enable them to achieve at the highest level; recognize that its long-term ability to contribute to human progress comes through a balance between pursuing fundamental scholarship and research and addressing the more immediate concerns of society; and ensure excellence in graduate education. The stated Strategic Initiatives of the plan included the implementation of interdisciplinary approaches to emerging opportunities and the Illinois Sustainable Energy and the Environment Initiative.

The proposed program is consistent with the mission and vision of the University and will materially contribute to the principle of excellence in graduate education and the Illinois Sustainable Energy and the Environment Initiative.

Program Objectives

The mission and objectives of the proposed program in Ecology, Evolution, and Conservation Biology are to provide graduate training leading to the Masters and Doctoral degrees and to promote research that will advance their core fields. The program will draw on faculty from the School of Integrative Biology, the College of Agriculture, Consumer and Environmental Sciences, the Illinois Natural History Survey, the Department of Civil Engineering, the College of Veterinary Medicine, and other campus units. Research in the program will address basic ecological and evolutionary processes at the genetic, physiological, population, community and ecosystem levels and will include the application of scientific principles to current environmental problems such as global change, conservation of biodiversity, and ecosystem management. Recognizing the interdisciplinary nature of issues pertinent to the core areas of the proposed program, training will be flexible and designed to promote broad interaction across sub-disciplines in the program. In preparation for careers in academia, government, or the private sector, students will achieve a thorough understanding of the concepts of ecology, evolution, and conservation biology as well as proficiency in analytical and quantitative methods.

Increased awareness of the severity of environmental issues continues to strengthen the demand by the public and private sectors of our economy for students with advanced training in ecology. The important contemporary issues of global change and conservation biology provide the opportunity to strengthen collaboration between the College of Liberal Arts and Sciences (LAS) and the College of Agriculture, Consumer and Environmental Sciences (ACES). The new program will promote this collaboration and provide a platform for new educational and research initiatives in aspects of basic and applied ecology.

Curriculum and Assessment

Criterion 1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content of 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.

Criterion 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

Prospective candidates must meet the requirements for admission set by the Graduate College of the University of Illinois at Urbana-Champaign. Only applicants who have graduated from an accredited college or university and who hold or will be granted a baccalaureate degree (or its equivalent) comparable in content and completed credit hours to that granted by the

University of Illinois will be considered. Applicants must have a minimum grade-point average of 3.0 (A = 4.0) computed from the last 60 hours of undergraduate (and any graduate) work completed. The program will give preference to candidates who hold a degree in biology or a closely related discipline and show promise of excellence in research and teaching. Typically, only students with strong letters of recommendation, high scores on the Graduate Record Examinations, and a GPA well above the minimum stated above will be admitted, although demonstration of academic excellence by other means (e.g., extensive field or laboratory research experience) will be considered. The Graduate Committee will make decisions concerning admission. For students whose native language is not English, the Program requires a minimum paper-based TOEFL score of 600 (250 on the computer-based test).

Curriculum

Master's Degree: By the end of the second year, students must complete 32 hours of acceptable graduate course work in their three core areas and maintain at least a 3.0 GPA. At least 12 hours must be at the 500-level. In addition to the requirement of three core courses, all students must register for and attend the weekly PEEC seminar series (IB 546). Graduation requires the completion of a thesis that is successfully defended. Student research will be guided and approved by an Advisory Committee of three faculty from at least two departments, including the Major Advisor who will serve as chair. The Director of the program must approve the membership of the Advisory Committee.

Doctorate Degree: Before receiving their degree, students must complete at least 96 hours of 400- or 500-level courses (64 hours in addition to the M.S. requirements) and maintain at least a 3.0 GPA. Students may be admitted into the program without having first earned a Master of Science degree. In addition to the requirement of three core courses, all students must register for and attend the weekly PEEC seminar series (IB 546). Those students entering the program with a M.S. degree may petition the Entrance Committee to consider completed graduate course work as fulfillment of one or more core course requirements.

All students must complete at least two semesters of favorably evaluated teaching before receiving their degree (or petition to have the requirement waived). No later than their second semester in the program, the student in consultation with their Major Advisor will select members of the student's Advisory Committee, which will meet annually with the student to plan course work and research and to review and facilitate progress toward the degree. Students will prepare a short written report of their activities during the previous year for consideration by the Advisory Committee. The Advisory Committee will thoroughly consider all aspects of the student's activities, after which the Major Advisor will provide a written report of progress to the program's Graduate Committee.

The faculty constituting a student's Advisory Committee must come from two or more departments, comprise a minimum of four members (including the Major Advisor), be familiar with the student's area of research interest, and be approved by the Director of the program. No later than their sixth semester in the program, and preferably in their fifth semester, doctoral students must take a Preliminary Examination. A passing grade qualifies the student as a Ph.D. candidate. A failing grade will require the student to take a second preliminary examination no later than the following semester. A second failure will result in dismissal from the program.

Upon completion of a dissertation and the other requirements of the program, the student will complete a Final Examination, which shall consist of a defense of the dissertation. Passing this exam and presentation of the dissertation by the student at a public seminar sponsored by the

program qualifies the student for the Ph.D. degree. Failure will require the student to conduct additional research and to repeat the Final Examination.

Assessment of Student Learning Outcomes

Upon receiving the M.S. Degree, graduates will be expected to:

- Have the experience and ability to conduct research in the field or laboratory using modern sampling or analytic techniques;
- Have the ability to perform basic analyses on field or laboratory data;
- Have the ability to effectively communicate results of research orally and in writing; and
- Have knowledge of the major concepts and principles of the theory and practical aspects of ecology, evolutionary biology, and conservation biology.

Upon receiving the Ph.D. degree, in addition to the abilities specified above, graduates will be expected to:

- Have the experience and ability to plan, design, and analyze research independently using advanced quantitative techniques;
- Have the experience to attract funding to support their research;
- Have the experience and judgment to evaluate critically the quality of research;
- Have the ability to communicate the significance of their research to the public and appropriate stakeholders; and
- Have the ability and experience to educate undergraduates effectively.

The general objective of the proposed program in Ecology, Evolution, and Conservation Biology is to provide graduate training leading to the Masters and Doctoral degrees and promote research that will advance their core fields. The expected outcome of this training is published research and students that are prepared to pursue another advance degree (i.e., Ph.D. for M.S. students) or gain employment in academia, a government agency, or the private sector.

The progress and performance of students in the program will be assessed by the following procedures:

Before their first semester in the program each student will be assigned a major advisor, and the student and advisor will meet with an Entrance Committee to identify an appropriate course of study. In consultation with their advisor and the committee, the student will select three areas of training emphasis: (1) the general area of ecology, evolution, or conservation biology; (2) a complementary general area (such as behavior, systematics, physiology, or genetics); and (3) a specific area related to their research (such as speciation, sexual selection, bioenergetics, population dynamics, or organismal biology of primary interest). The student's advisory committee (formed during the student's first year in residence) can modify the recommendations of the Entrance Committee. All students will be required to take at least one course for graduate credit from an approved list of choices in each of three core course areas: ecology, evolution, and conservation biology. All students will be required to develop strong quantitative skills, which may require advanced course work in statistics or other analytical methods.

In addition to coursework, passing of the comprehensive preliminary exam (for doctoral students), the completion and successful defense of an approved research project, and one year of

favorably evaluated teaching (for doctoral students), all students will be required to attend weekly seminars where they critically evaluate the science presented by outside guest speakers. Students are also required to attend and present results of their own research at an annual Student Research Symposium. During their first semester in residence all students are required to take an orientation seminar where a series of faculty from the program have in depth and interactive discussions with the student about their research program. Students are also encouraged and offered resources to attend national and international meetings. Finally, each year, a day long workshop on a specific topic is organized and outside speakers are invited.

Program Assessment

The program's Steering Committee will meet periodically throughout the year to discuss suggestions for improving the efficiency of training. The program will monitor the retention and graduation rates of students admitted to the program, publication rate of students, the success rate of students in gaining employment, and time to completion of degree. The quality and diversity of applicants will also be evaluated each year. The ancestral unit to the proposed program (PEEB) has experienced success by all these criteria. If problems arise the Director will consult with the Graduate College to discuss solutions.

Program Information

Criterion 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.

The University of Illinois at Urbana-Champaign's catalog and website provide accurate descriptions of degree programs offered, program objectives and requirements, schedules of tuition, fees, and other expenses necessary for the proposed course of study, and procedures governing faculty and student affairs. The institution's cancellation and refund policies are reasonable and fair, and its publications include accurate statements about its accreditation and any limitations on transferability of earned credits to other institutions.

Facilities (space, equipment, instructional materials)

Criterion 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 facilities and equipment needed to maintain the quality of the program are in place and will be available on an ongoing basis. Office space, mail and computer services for students in the program are supplied by the departments of the student's major professor. Research labs

and equipment are also provided by the student's advisor. Suitable space for the proposed program's seminar series and annual research symposium are readily available.

Faculty and Staff

Criterion 1050.30(a)(3): A) The academic preparation and experience of faculty and staff to 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 faculty of the program consists of those approved by the Director and the Steering Committee. Participating faculty must be a member of the Graduate College and have an appointment in an academic department. The Faculty shall meet at least once each academic year to discuss issues related to the functioning of the program. Meetings may be called by the Director, the Steering Committee, or a majority of the faculty. Membership in the Faculty of the Program is initiated by written request to the Director. The request will be evaluated by the Director and the Steering Committee in the context of the applicant's ability to serve the program's mission through graduate training, teaching, and service. As part of this evaluation, prospective members will present a seminar highlighting their research interests. Continuing membership in the program will be evaluated on a three year basis.

Fiscal Resources

Criterion 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.

All resources needed to cover the projected budget have been secured on a recurring basis as a function of the ongoing Program in Ecology and Evolutionary Biology (PEEB). No increases in staffing needs, equipment, or instructional materials, or library requirements are anticipated. With IBHE approval, PEEB will become the Program in Ecology, Evolution, and Conservation Biology; the committed resources and enrolled students will carry to the new program. The number of students enrolled in the proposed program is not expected to increase above that of current enrollments in PEEB. Therefore, no new state funds are requested.

Accreditation and Licensure

Criterion 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.

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. The program will fall under the regional accreditation of the University.

Staff Conclusion. The staff concludes that the proposed degree programs meet 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 for licensure.

University of Illinois at Urbana-Champaign

- Doctorate of Education in Educational Organization and Leadership

Background. The University of Illinois at Urbana-Champaign (UIUC) has a long-standing commitment to extending academic resources to the Chicago metropolitan area in such forms as courses, certificates, and degree programs. The Department of Educational Organization and Leadership in the College of Education has delivered its Master of Education/Certificate of Advanced Studies degree programs at the Multi-University Center-Oak Brook for many years. This includes providing individuals with the State of Illinois' General Administrative Endorsement.

Many of these graduates are now in administrative positions serving as principals, assistant principals, and department chairs in the Chicago area, and several have requested UIUC offer a doctoral degree option. An informal survey of UIUC graduates of the Oak Brook program and selected administrators in the Chicago area resulted in identification of over 40 administrators who expressed interest in applying in the Educational Administration and Leadership program to gain superintendent licensure in combination with a doctoral degree. Similar demand is projected for individuals who wish to earn a doctoral degree with an emphasis in community college leadership.

The department currently offers the Community College Executive Leadership program for aspiring community college presidents, vice presidents, and deans and the School of Executive Leadership Program for aspiring school district superintendents and district-level administrators. The department plans to offer these two options through the proposed off-campus program.

The Illinois Commitment. The proposed program will meet several goals of *The Illinois Commitment*, as summarized below.

Goal 1: Help Illinois business and industry sustain strong economic growth. There is an increasing demand for well-prepared leaders to support the economic growth of the state; offering doctoral degrees in leadership directly addresses the need for well-educated leaders.

Goal 2: Higher education will join elementary and secondary education to improve teaching and learning at all levels. Given that one strand of the proposed program is directly related to the K-12 system and the other to preparing leaders for educational institutions beyond K-12, this proposal directly responds to this goal.

Goal 3: No Illinois citizen will be denied an opportunity for a college education because of financial need. The ability to work full-time, to remain at home, and to complete a doctoral program increases student access and reduces the costs related to doctoral study.

Goal 4: Increase the number and diversity of citizens completing training and education. Offering a doctoral program in the Chicago area provides the opportunity for a more diverse cadre of students to complete this degree and then to better lead their institutions.

Goal 5: Hold students to even higher expectations for learning and be accountable for the quality of academic programs and the assessment of learning. While enrolled in a program of a college ranked in the top 25 nationally, students will be exposed to cutting edge research and pedagogy that provides high quality education and appropriate, multiple assessments of learning outcomes.

Goal 6: Improve productivity, cost-effectiveness, and accountability. The ability to offer this off-campus program generates additional funding, which in turn, increases the institution's capacity to offer additional graduate programs throughout the state in face-to-face, blended, and on-line modes. This, in turn, increases productivity, cost effectiveness, and accountability related to the University of Illinois' land grant mission

Need

Criterion 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.

An August 2006 report by the Commission on School Leaders Preparation in Illinois Colleges and Universities points to the need to recruit and admit outstanding leaders for the state's public school systems and to ensure that leadership programs provide administrators with the necessary skills to improve student achievement. The same is true with the burgeoning growth of community colleges and related leadership needs.

It is important to note that the Chicago metropolitan area is becoming increasingly diverse, both ethnically and in terms of socioeconomic status. Many communities that historically have been considered suburban are developing characteristics that are more consistent with descriptions of urban areas. As school districts and community colleges are faced with an influx of inner-city inhabitants and immigrants from other nations, the organizational leaders and those who work within these institutions must address multiple challenges, including such issues as equity and access, challenging the organizational status quo, responding to multiple and competing demands of constituents, assuring student retention and academic success, negotiating the political terrain, and successfully leading organizational reforms.

The major objective of this off-campus doctoral program is to increase the number of community college and school district administrators in the Chicago area who are innovative leaders and change agents dedicated to organizational reform. It is the intent of the University of Illinois that the program will provide aspiring leaders with the necessary skills to effect substantive changes within their organizations.

Comparable Programs in Illinois. Despite the fact that eight institutions in the Chicago area offer doctoral degrees in educational leadership, only the University of Illinois at Chicago is a

major research university, and its program is narrowly focused on urban educational leadership. No programs comparable to the Community College Executive Leadership program are offered anywhere in the state. The greater metropolitan area of Chicago contains a population of over eight million inhabitants. The potential demand for the School of Executive Leadership Program and Community College Executive Leadership Program is extensive.

Mission and Objectives

Criterion 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.

In broad terms, the doctoral program offered by the Department of Educational Organization and Leadership at the University of Illinois at Urbana-Champaign is intended to provide advanced skills in leadership, policy, and research. Further, given that the degree is a Doctorate of Education, the emphasis throughout will be the application and use of theory in practice. More specifically, the learning objectives are:

- To be conversant with current organizational theory as it applies to the individual student's organizational arrangements and to make relevant application to his or her field of practice;
- To understand current approaches to policy making and policy analysis and to acquire an appreciation of how to effect policy change;
- To understand the foundational areas of the institution, including issues related to educational finance, law, and organizational improvement;
- To acquire expertise in cognate areas such as the politics of education or organizational development, that will permit the graduate to exercise strong and excellent leadership in complex political and organizational contexts;
- To develop advanced leadership skills necessary to fulfill demanding educational leadership roles such as school superintendent, community college president, curriculum director, student services administrator, and so forth; and
- To develop expertise pertaining both to understanding and conducting research; hence a working knowledge of statistical applications and how to read quantitative research, ability in qualitative research methodologies, and advanced research qualifications that will permit the completion of a highly competent doctoral dissertation.

Curriculum and Assessment

Criterion 1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content of 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.

Criterion 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

Admission criteria for the Ed.D. in Educational Organization and Leadership off-campus are the same as those currently applied on-campus. Individuals applying for the Community College Executive Leadership option must have experience in community college settings as administrators, faculty members, or support personnel. Individuals applying for the School of Executive Leadership Program option must be practicing administrators (i.e., principals, assistant principals, department chairs, curriculum coordinators) who hold an Illinois General Administration Endorsement. Students must have an earned master's degree in order to be eligible to apply for this program.

Curriculum

College of Education policy requires that students enrolled in the Ed.D. program complete at least 64 hours of coursework beyond the master's degree. These 64 hours minimally include: 1) at least 24 hours in the area of specialization and related areas, 2) a cognate requirement of at least 16 hours, 3) two courses in research methods, and 4) a maximum of 16 hours of thesis research credit. In addition, students must satisfy residency requirements by taking courses during four consecutive semesters.

Ed.D. students completing the Community College Executive Leadership program will complete a minimum of 64 hours for their degree, which includes the following: 1) 32 hours of Educational Organization and Leadership coursework, 2) 16 hours of cognate coursework (8 hours in Human Resource Education and 8 hours in Educational Administration and Leadership), 3) 12 hours of research methods coursework, and 4) a minimum of 4 hours of thesis research. To ensure that they have on-campus experiences, students will complete courses on-campus in four semesters. This period of on-campus work, often in a weekend format, will also provide an opportunity for students to access UIUC resources (i.e., library, computer labs, professor support) during research courses.

Ed.D. students completing the School of Executive Leadership Program will complete a minimum of 72 hours for their degree, which includes the following: 1) 40 hours of Educational Organization and Leadership coursework, 2) 16 hours of cognate coursework (8 hours in Curriculum and Instruction and 8 hours in Educational Policy Studies), 3) 12 hours of research methods coursework, and 4) a minimum of 4 hours of thesis research. (Note: Because the School of Executive Leadership Program option includes superintendent endorsement, an additional 8 hours are required beyond the minimum of 64 hours, for a total of 72 hours. After reviewing students' transcripts, in some instances students may be required to complete additional coursework, to remedy any deficiencies in coursework.) To ensure that they have on-campus experiences, students will complete courses on-campus, often in a weekend format, in four semesters.

Off-Campus Programs only: Course content, coverage, and standards are consistent with the on-campus program.

Curricular and instructional quality will remain at the level consistent with on-campus programming because the program will be fully staffed by tenure-line faculty in the Educational Organization and Leadership department, with additional tenure-line College of Education faculty engaged to teach research methods and cognate courses. When appropriate, community college leaders and district superintendents will be called upon to supplement instruction and to serve as mentors during the School of Executive Leadership Program students' field experiences. In the

rare event that an adjunct instructor may need to be engaged for a specific course, this instructor would be interviewed and approved by the program faculty. In this instance, the Educational Organization and Leadership professor who typically is assigned to teach the course would work closely with the adjunct, providing information on expectations for course content and instructional methods, approving the required textbooks and readings, and approving the course syllabus and student assessment activities.

Course instructors will be evaluated by students through the UIUC end-of-course Instructor and Course Evaluation System (ICES) forms. Consistent with the oversight of on-campus course instruction, the Educational Organization and Leadership Department Head will monitor ICES scores and will discuss both areas of teaching strength and concerns with individual faculty members. If an adjunct instructor is employed to teach a course and her/his ICES scores are not at an acceptable level, that individual will be required to document to the department's satisfaction how he/she intends to remediate any areas of instructional concern. If ICES scores do not improve after this remediation period, the adjunct will not be offered subsequent assignments.

Academic control will be ensured because all students will be advised by Educational Organization and Leadership departmental faculty; academic quality will be ensured because nearly all courses will be taught by Educational Organization and Leadership and College of Education tenure-line faculty. A full-time clinical faculty member, funded through revenues generated from off-campus programming at Oak Brook, will work under the supervision of the Educational Organization and Leadership Department Head. This individual will be a point of contact for students and instructors, and he/she will work closely with Academic Outreach to ensure that the program is effectively coordinated (i.e., course scheduling, logistics, etc.). This individual also will work with the faculty advisors and program coordinators to regularly review student progress and will alert faculty to any academic concerns that may arise, either from individual students or with the cohort. Record-keeping will be maintained on the UIUC campus, in the similar format utilized with on-campus students.

Orientation for Educational Organization and Leadership faculty will occur during Educational Organization and Leadership departmental meetings. Any adjunct instructors employed will receive orientations by the Educational Organization and Leadership Department Head and by the faculty member who typically teaches the course.

Assessment of Student Learning Outcomes

To promote student learning, students will be required to attend classes on campus, in addition to the off-campus coursework, during the summer. This proposed off-campus model is consistent with the professional school model that is advocated within the field of educational leadership as an effective model to meet the needs of practitioners who maintain full-time employment. A high number of Educational Leadership departments in major research universities utilize a cohort model, with coursework delivered to doctoral students in off-campus locations and summer classes held on the university campus. For example, the University of Wisconsin-Madison, one of the nation's top-ranked educational leadership programs, uses a similar off-campus delivery model.

End- or near-end-of-program assessment of student learning will be employed in addition to course-by-course assessment such as evaluation of capstone experiences (senior projects, recitals, exhibits, portfolios, etc.) and pre- and post-testing (value-added assessment).

In addition to end-of-course assessments, the department will develop and administer an exit survey to students to acquire additional feedback. All students in the doctoral program will complete the following end-of-program assessments: qualifying exams to demonstrate expertise in core content areas and in research methods, an oral and public defense of their dissertation proposal, and a final, oral and public defense of their completed dissertation.

Multiple performance measures that reflect the uniqueness of the academic program and discipline will be employed, such as standardized or other comprehensive examinations and certification examinations.

Off-Campus Programs only: The institution has developed systems to assure the credibility of assessment and evaluation of students' learning.

Program quality will be monitored and evaluated in several ways. Overall student quality initially will be assessed through entering GPA analysis. Thereafter, student academic progress will be monitored both individually and by group (School of Executive Leadership Program, Community College Executive Leadership, and overall cohort). Students must maintain an overall 3.0/4.0 GPA in their doctoral studies; those students who are unable to maintain a 3.0 GPA will be removed from the program, consistent with Graduate College policy and procedures. Individual student academic progress also will be monitored on an annual basis, through the students' completion of departmental progress-to-degree forms and regular consultation with their advisors. The Educational Organization and Leadership Department Head will assess the overall cohort's academic progress and report the results to the departmental faculty annually, for departmental analysis and discussion. The quality of student learning will be evaluated through administration of qualifying examinations (general fields, special fields, research methodology). Individual students must pass each portion of the qualifying examinations before being approved to move to the dissertation stage of their doctoral studies. Program coordinators will assess the overall student pass rate on examinations, noting curricular areas where students excel and areas in which their knowledge is deficient. These data will be helpful for making adjustments to the overall curriculum.

Program Information

Criterion 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.

The University of Illinois at Urbana-Champaign's catalog and website provide accurate descriptions of degree programs offered, program objectives and requirements, schedules of tuition, fees, and other expenses necessary for the proposed course of study, and procedures governing faculty and student affairs. The institution's cancellation and refund policies are reasonable and fair, and its publications include accurate statements about its accreditation and any limitations on transferability of earned credits to other institutions.

Facilities (space, equipment, instructional materials)

Criterion 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.

General Facilities

The Academic Outreach unit of the University of Illinois at Urbana-Champaign will provide support for the proposed program. It will provide a coordinator and technical support person to the Educational Organization and Leadership Department for its off-campus programs. It will also provide the first year salary of a Visiting Assistant Professor. Subsequent years' salary will be paid by the Educational Organization and Leadership Department from tuition revenue. The Educational Organization and Leadership Department office will provide technical support for the program. All necessary equipment is currently available either at the Oak Brook site or on campus provided through the Office of Educational Technology.

Library Resources

The full resources of the library of the University of Illinois at Urbana-Champaign are made available through the services of Academic Outreach to students enrolled in off-campus programs. Any resources, assistance, and support needed by the students are supplied through Academic Outreach. When students enroll in off-campus programs through Academic Outreach, they receive full access to UIUC library resources, and they also have additional Academic Outreach library support services, which is included in their Academic Outreach service fees. Furthermore, to facilitate their acclimation to UIUC library resources, students will participate in a library orientation during the summer courses utilizing Ms. Nancy O'Brien, lead librarian of the Education and Social Sciences Library. Periodic updates will be held with the students as the program proceeds to ensure that students remain current with new electronic databases and other developments. The various research courses taught during the program will be utilized to provide students with the library updates.

Off-Campus Programs only: Students have appropriate training in the use of technologies for learning and are provided with the necessary training prior to the beginning of the program.

When accepting enrollment into the program, admitted students must certify that they have computer access, including internet access, software, and other technology that may be needed for web-based programming. If additional technology is needed that exceeds the current resources available at the Multi-University Center or on the UIUC campus, the Educational Organization and Leadership faculty will work with personnel in Academic Outreach and the College of Education Office of Educational Technology to ensure these resources are obtained.

Faculty and Staff

Criterion 1050.30(a)(3): A) The academic preparation and experience of faculty and staff to 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 the program are full-time tenure line faculty members with doctoral degrees. From the revenue generated by this program, the department plans to hire a Visiting Assistant Professor in Higher Education. This person will also have a doctorate but will not be tenure-line.

Fiscal Resources

Criterion 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.

Student Enrollment & Funding Sources / Expenditures

The program will charge students the established professional fee, which will net approximately $875,160.00 in the first five years of the program. The estimated program costs total approximately $869,140.00. The expenses will be higher in the first years of the program when the students are doing most of the course work. The program costs and revenues will be skewed forward during the first three years when students in the initial cohort are taking 20 credit hours per year and will be considerably less during the subsequent years when students are enrolled in 1-4 credit hours per term of thesis research.

During the subsequent years, faculty will continue to be heavily involved in advising and dissertation direction, but without specified costs to the program. The department envisions hiring one new faculty member from the program revenue if funds are available, but there will be no increased charges against state funds. All additional charges for equipment, instructional materials, and library services will also come from tuition revenue.

For full-time faculty, most teaching in this program will be “on load” and part of each faculty member’s regular teaching assignment. The visiting assistant professor will also teach one or two courses in the new program. Regular tenure-line faculty will be reimbursed for teaching off campus as part of their normal salary. Each will also be given the equivalent of an additional .25 FTE. Off-campus teaching by the visiting professor will be considered part of his/her regular load. In all cases, expenses incurred for travel will be reimbursed.

Accreditation and Licensure

Criterion 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.

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.

This program, as with all such programs of academic and professional preparation required for endorsement, will be administered by the institution in accordance with standards set forth by the Illinois State Board of Education in consultation with the State Teacher Certification Board.

Staff Conclusion. The staff concludes that the proposed degree program 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 for licensure.

Southern Illinois University Carbondale

- Master of Science and Master of Engineering in Biomedical Engineering

Background. Southern Illinois University Carbondale requests authority to offer the Master of Science and Master of Engineering in Biomedical Engineering on campus to meet the growing occupational need for graduates with a master's degree in fields related to biomedical engineering and biomedical sciences. The university currently offers 10 degree programs in engineering, including baccalaureate and master's programs in civil engineering, electrical engineering, mechanical engineering, and mining engineering. It also offers a bachelor's program in computer engineering, a Ph.D. in Engineering Science, and a Ph.D. in Electrical and Computer Engineering. Establishment of the proposed program will strengthen the much anticipated collaboration among the colleges of Engineering, Science, Agricultural Sciences, and the School of Medicine in the areas of research and graduate education. These units and others at the university submitted strong letters of support for the proposal. Letters of support were also sent by two business partners (Tyco Mallinckrodt Imaging located in the St. Louis area and the Southern Illinois Healthcare located in Carbondale). The new graduate courses in biomedical engineering will enhance the already successful Ph.D. in Engineering Science and they will enable the development of an M.D. and Ph.D. track in the Ph.D. in Engineering Science.

Biomedical engineering has been the fastest growing engineering discipline over the past twenty-five years. Undergraduate enrollments in the discipline have doubled between 1995 and 2003 and enrollments at the graduate levels have grown by twenty-five percent during the same period. Occupational projects by the U.S. Department of Labor indicate that the demand for biomedical engineers will grow even faster in the next decade. The demand is fueled by the aging of the population in Illinois and the U.S. and accelerating demand for better medical devise and equipments designed by biomedical engineers employed by many organizations and businesses, particularly the pharmaceutical manufacturing and related industries.

One of the most important contributions of the proposed master's program in biomedical engineering is that it will create a focal point for technical interaction and collaboration in interdisciplinary research among faculty from the School of Medicine and the colleges of Engineering, Science, Agricultural Sciences, and other related disciplines such as psychology. Collaboration and interdisciplinary research in this area will help the School of Medicine and the

other colleges involved, to reach their full potential for funded research consistent with the universities priorities and goals of "Southern 150".

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.

The Engineering Accreditation Commission of Accreditation Board for Engineering and Technology accredits baccalaureate programs in engineering. There is currently no specialized accreditation for graduate programs in engineering. However, the university's five baccalaureate engineering degree programs are currently accredited by the Engineering Accreditation Commission.

The Illinois Commitment. The Master of Science and Master of Engineering in Biomedical Engineering will address five goals of *The Illinois Commitment*:

Goal 1: Help Illinois business and industry sustain strong economic growth. It is anticipated that the program will contribute to a substantial increase in research and development in biomedical engineering to benefit economic development in the southern region and the state. As a result, the program will expand the university's partnership with businesses to jointly pursue research and product development and other activities in this promising area.

Goal 3: No Illinois citizen will be denied an opportunity for a college education because of financial need. As a graduate program in a research intensive area, the biomedical engineering program will generate sufficient research funds to support many of its students with assistantships during their studies while strengthening their research skills and experiences. Since tuition at the university is relatively low compared to tuition in some public universities and even much lower compared to private universities, the program will be more affordable to students from low and middle income families.

Goal 4: Increase the number and diversity of citizens completing training and education. Like the university, the College of Engineering has a relatively high number of students from diverse backgrounds enrolled in its programs. This history of success will be used to help the proposed program strive to recruit and educate a diverse student body.

Goal 5: Hold students to even higher expectations for learning and be accountable for the quality of academic programs and the assessment of learning. The College of Engineering and all its engineering departments have developed a sophisticated program review and program improvement system, based on outcomes assessment, with multiple inputs from both internal and external sources. The system will be adapted and implemented by the proposed program to ensure its effectiveness and high quality.

Goal 6: Improve productivity, cost-effectiveness, and accountability. The proposal for this program is based on expectation to use existing resources, including suitable courses already offered by the various academic units on campus, to maximize cost and productivity. Only modest incremental funding from internal reallocations is required for an additional new faculty and faculty support staff to man laboratories. The interdisciplinary thrust of the program is consistent with the expectation for resource sharing.

Comparable Programs in Illinois. Currently, only three comparable master's programs in biomedical engineering are offered in Illinois: the University of Illinois at Urbana-Champaign, the University of Illinois at Chicago, and Northwestern University. Biomedical engineering programs are more cost-effective for institutions which have both medical and engineering schools because the two disciplines are closely related and can share resources. At this time, Southern Illinois University is the only institution in Illinois with both medical and engineering schools. The proposed program will increase the productivity of Southern Illinois University by better utilizing existing resources at the collaborating units.

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 and Master of Engineering in Biomedical Engineering are consistent with the mission of the university, which includes (a) supporting the economic, social, and cultural development of southern Illinois through appropriate undergraduate, graduate, and professional education, research, and public service; (b) developing partnerships with communities, businesses, and other colleges and universities to maximize the utilization of telecommunication technologies; (c) cultivating and sustaining a commitment to research, teaching, and public service, including solving problems and policy issues related to southern Illinois and the state's natural resources and environment; and (d) meeting the health care needs of central and southern Illinois through appropriate health-related programs, services, and public health policy.

Program Objectives.

The master's program in biomedical engineering is designed to:

- Provide high quality education in the field of biomedical engineering and to prepare graduates for successful and rewarding employment as biomedical engineers or for continuing their education through the doctoral level;.
- Provide the students with the training necessary to successfully apply fundamental concepts and methods of biomedical engineering to selected areas of employment or research and development; and
- To enhance the research environment and productivity of the College of Engineering, and all other units participating in the program. This in turn will positively contribute to the efforts of the University to enhance its research ranking and its national visibility as a major research institution.

Curriculum and Assessment.

1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content of 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 and Master of Engineering in Biomedical Engineering an applicant must:

- Earn a bachelor of science degree in an engineering science field with a minimum of 3.25 GPA out of 4.00;
- Submit an application and official transcript(s) of college course work;
- Submit a statement of interest in the program;
- Submit the Graduate Record Examination (GRE) scores (and a foreign student must also submit his or her TOEFL scores and other necessary immigration documentation specifically required for international students; and
- Submit three letters of recommendation.

Admission to the program is made by the Dean of Engineering or the designee upon recommendation of the Program Committee.

Projected Student Demand.

Southern Illinois University Carbondale has projected that the proposed program will enroll approximately 80 students by the fall semester of the fifth year of operation and beyond. The university estimates that 40 students will complete the program in the fifth fiscal year of operation and annually after that.

Curriculum.

The curriculum for students with a B.S. in biomedical engineering consists of 30 semester hours. For students admitted to the program after earning a bachelor of science degree in an engineering field or computer science, the curriculum for the program consists of 33 semester hours. Students admitted to the program with other bachelor's degrees, may be required to complete more than 33 semester hours to graduate. As summarized below, the curriculum consists of three modules related to biomedical engineering foundation courses, biomedical engineering concentrations, and two options requiring the completion of a thesis or a design project.

Module 1. To complete the master's program in biomedical engineering, every student must complete 12 semester hours of Biomedical Engineering Foundation courses. These requirements include completion of two 500-level courses in Statistics for Biomedical Engineers for three credits and also Probability and Random Variables for three credits. In addition to the two courses, at least two of the following courses for six hours must be completed by each student:

PHSL 410A	Mammalian Physiology	4 hours
PHSL 410B	Mammalian Physiology	4 hours
CHEM 444	Intermediate Organic Chemistry	3 hours
CHEM 451	Biochemistry	3 hours

Module 2. The proposed program has five initial biomedical engineering concentrations from which a student is required to select one concentration:

Bioinformatics and Computation Medicine
Modeling and Simulation of Biomedical Processes
Biomedical Imaging
Biomedical Instrumentation
Biomechanics and Biomaterials

Each concentration consists of 12 semester hours of 500-level courses related to biomedical engineering offered by different academic units at the university. With the approval of an academic advisor, a student may complete nine credit hours instead of 12 hours from courses designated for a concentration. Also, with the approval of the Program Coordinator, a student may select a combination of courses, depending on his or her background or a specific interest. However, in all cases, at least six hours must be completed from the approved biomedical engineering courses.

Module 3. The Biomedical Engineering program has two options, (a) the Master of Science Option which requires completion of a thesis and two courses or (b) the Master of Engineering Option which requires completion of a capstone design project and three courses instead of a thesis.

The Master of Science or Thesis Option requires completion of nine hours from the following courses:

BME 599	Thesis	6 hours
BME 598	Biomedical Engineering Seminar	2 hours
BME 597	Biomedical Research Ethics	1 hour

All requirements and regulations regarding the thesis will be consistent with requirements of the department and with the relevant policies and procedures of the Graduate School published in the Graduate Catalog. The student selecting the thesis option will work with his or her Thesis Committee.

The Master of Engineering or Capstone Option requires the completion of nine hours from the following courses:

BME 592	Capstone Design	3 hours
BME 598	Biomedical Engineering Seminar	2 hours
BME 597	Biomedical Research Ethics	1 hour
Approved	Elective Course	3 hours

The Capstone Design Project must involve substantial design in a biomedical engineering field and must be concluded with a technical report. The report's technical content and presentation must be approved by a three member faculty committee appointed and chaired by the faculty member who directed the project.

Graduates of the Master of Science and Master of Engineering in Biomedical Engineering program will be expected to develop and demonstrate the following capabilities:

- To successfully apply analytical methods (especially probability and statistics) to biomedical engineering problems;
- To successfully apply engineering methods, including modeling, simulation, and design to biomedical problems;
- To communicate in clear and concise technical language and to effectively present their research or design results professionally; and
- To understand the basic concepts, tools, and methodology of research in biomedical engineering which are also essential preparation for doctoral study in the discipline.

Assessment of Student Learning Outcomes.

A comprehensive assessment of student learning outcomes for the Master of Science and Master of Engineering in Biomedical Engineering will be developed and implemented based on the successful model currently used by the Ph.D. in Engineering Science which is also an interdisciplinary program administered by the Dean's Office. If approved by the IBHE, the proposed program will also be administered by the Office of the Dean. Outcomes assessment tools that will be used by the program include:

- Evaluation of the thesis or capstone design report by each student's committee in terms of content, originality, and quality of design and implementation or the thesis;
- Analysis of the exit interviews of program graduates or those who exit prior to graduation to evaluate the degree of achievement of the program's goals and objectives. Specific information collected from the interview will include number of job referrals, number of job offers, strengths and weaknesses of the program and what should be done to improve the program;
- Reports from individual course assessments based on student evaluations, including evaluation of the instructor's knowledge of the fundamentals in the discipline, and the quality of teaching;
- Input from alumni survey results one and two years after graduation;
- Input from employers regarding strengths, weaknesses, and career advancement of program graduates;
- Feedback from doctoral programs that have admitted alumni regarding the successes and weaknesses of the program alumni in the doctoral programs; and
- Publications of students and alumni in peer reviewed journals.

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.

Research Facilities

SIUC's colleges of Engineering, Science, Agriculture, and the Medical School have excellent research laboratory facilities in many areas relevant to the proposed program. In some areas related to biomedical engineering, the academic units have national and international visibility. The university's outstanding central research facilities include the Materials Technology Center, the DNA Sequencing & DNA Marker Analysis Facility, the Genomics and Robotics Services, the Image-Integrated Microscopy Center, and the Nuclear Magnetic Resonance (NMR) Facility. Modest additional resources totaling $40,000 in the second and third year of operation will be provided to augment existing laboratory resources for biomedical engineering.

Library

The proposal indicates that the university's libraries and computing resources are adequate to support 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 university has indicated that the College of Engineering and the department sponsoring the new program have identified 29 faculty members expected to contribute to the initial offering of the new program. The faculty members are employed in several disciplines, including engineering, medicine, science, agriculture, and liberal arts. In addition, the university plans to hire two new assistant professors with strong backgrounds in biomedical engineering at the cost of approximately $80,000 each from internally reallocated resources.

Staff Support.

The existing support staff in the College of Engineering and the department responsible for the program will provide needed support for the proposed program. There is currently no need for additional staff to support the proposed program.

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 requested to establish the Master of Science and Master of Engineering in Biomedical Engineering. In addition to existing resources in the College of Engineering and the collaborating colleges for the sciences, agriculture, and the School of Medicine, the program will be funded with $366,000 from internal reallocation in the first, second, and third year of operation. These funds will support two new faculty members and equipment.

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.

Biomedical engineering has been the fastest growing engineering discipline over the past decade. Enrollments have doubled for undergraduates between 1995 and 2003 and grew by 25 percent at the graduate level. The 2006-2007 edition of the *Occupational Outlook Handbook* published by the US Department of Labor has projected that occupational demand for biomedical engineers will grow even faster in the next decade. The growth stems in part from the aging of the population and the focus on health issues and also need for better medical devices and equipments designed by biomedical engineers. Increasingly, a graduate degree in biomedical engineering is the entry level for jobs with the greatest occupational demand.

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 Master of Science and Master of Engineering in Biomedical Engineering, including a detailed description of the curriculum, admission requirements, tuition, fees, and other cost information as well as university and graduate school policies, are published on the university's website, www.siu.edu. Comparable information is published in hard copy in the university's Graduate School Catalog. Similar information and additional information is available from the College of Engineering upon request.

Staff Conclusion. The staff concludes proposed program 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 the University of Illinois at Chicago Authorization to Grant the following degrees in Region 10, the Chicago Region:

- Master of Energy Engineering
- Doctor of Philosophy in Learning Sciences
- Master of Education in Youth Development
- Master of Education in Measurement, Evaluation, Statistics, and Assessment

This recommendation is made subject to the institution's maintenance of the conditions that were presented in its applications and that form the basis upon which these authorizations are granted.

The Illinois Board of Higher Education hereby grants to the University of Illinois at Chicago, Authorization to create the new units identified below, subject to the institution's maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted:

- Center for Botanical Dietary Supplements Research
- Center for Magnetic Resonance Research

The Illinois Board of Higher Education hereby grants to the University of Illinois at Urbana-Champaign Authorization to Grant the following degrees in Region 7, the Prairie Region:

- Bachelor of Science in Liberal Arts and Sciences in Atmospheric Sciences
- Master of Science in Ecology, Evolution, and Conservation Biology
- Doctor of Philosophy in Ecology, Evolution and Conservation Biology

This recommendation is made subject to the institution's maintenance of the conditions that were presented in its applications and that form the basis upon which these authorizations are granted.

The Illinois Board of Higher Education hereby grants to the University of Illinois at Urbana-Champaign Authorization to Grant the following degree in Region 3, the West Suburban Region:

- Doctorate of Education in Educational Organization and Leadership

This recommendation is made subject to the institution's maintenance of the conditions that were presented in its applications and that form the basis upon which these authorizations are granted.

The Illinois Board of Higher Education hereby grants to the Southern Illinois University Carbondale Authorization to Grant the following degree in Region 9, the Southern Region:

- Master of Science and Master of Engineering in Biomedical Engineering

This recommendation is made subject to the institution's maintenance of the conditions that were presented in its applications and that form the basis upon which these authorizations are granted.