

**APPROVED**

**March 13, 2024**

*Melissa Bealon*

Board Secretary Melissa Bealon

Item #E-2  
March 13, 2024

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

**Submitted for:** Action.

**Summary:** This item requests approval of one degree program at one public university.

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

Illinois State University

- Master of Science in Physics in the Central Region

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

**Executive Summary – Public Institutions**

Illinois State University

- Master of Science in Physics in the Central Region

Illinois State University (ISU or the University) is seeking authorization to offer a Master of Science in Physics in the Central Region. The proposed program will be housed in the College of Arts and Sciences within the Department of Physics. As Illinois State University becomes a more comprehensive university that includes engineering and other science disciplines, the proposed program will expand ISU's interdisciplinary offerings and contribute to the growth of the physics department. The Master of Science in Physics program will require a minimum of 30 credit hours and prepare students to apply concepts of nanotechnology, optics and photonics, biology, and material science to create devices and systems that address societal challenges. The proposed program will produce physics graduates who will meet the needs of Illinois employers seeking well-trained STEM professionals thereby diversifying the STEM workforce and contributing to the state and regional tax base. Furthermore, a key aspiration of the proposed program is to become a leader and an exemplar in equity, diversity, and inclusion by recruiting and retaining a diverse pool of student, faculty, and administrator candidates which will mitigate opportunity gaps in underserved communities and promote workforce development and investments in infrastructure in urban and rural settings.

Approval request summary, including staff conclusion, follows in Attachment A.

The staff recommends adoption of the following resolutions:

*The Illinois Board of Higher Education hereby grants to Illinois State University authorization to grant the Master of Science in Physics in the Central Region, subject to the institution's implementation and maintenance of the conditions that were presented in its application and that form the basis upon which this authorization is granted.*

## Illinois State University

**Proposed Degree Title in the Region of Authorization:** Master of Science in Physics in the Central Region

### *Projected Enrollments and Degrees:*

First Year Enrollment	Fifth Year Enrollment	Degrees Awarded Fifth Year
10	20	10

## Background

Illinois State University (ISU or the University) is seeking authorization to offer a Master of Science in Physics in the Central Region. The proposed program will be housed in the College of Arts and Sciences within the Department of Physics. The 30-credit hour program will provide students with essential knowledge in core areas of mathematical physics, electricity and magnetism, statistical mechanics, and quantum mechanics. The program will also offer a strong interdisciplinary foundation including the melding of fundamental physics and nanotechnology, optics and photonics, biology, and material science with an integration of information literacy throughout the curriculum resulting in students who think and evaluate information critically within and beyond the physics discipline. The structure of the program allows students the flexibility to customize elective courses and research concentrations along with an accelerated path for a 4+1 B.S./M.S. dual degree. With the current staffing level, the physics department projects an enrollment of 20 students by the fifth year of the program, corresponding to about two graduate students per faculty member for research theses. The program's research and elective opportunities will prepare graduates for multiple pathways including immediate employment in STEM-related private sectors and admission to physics doctoral programs.

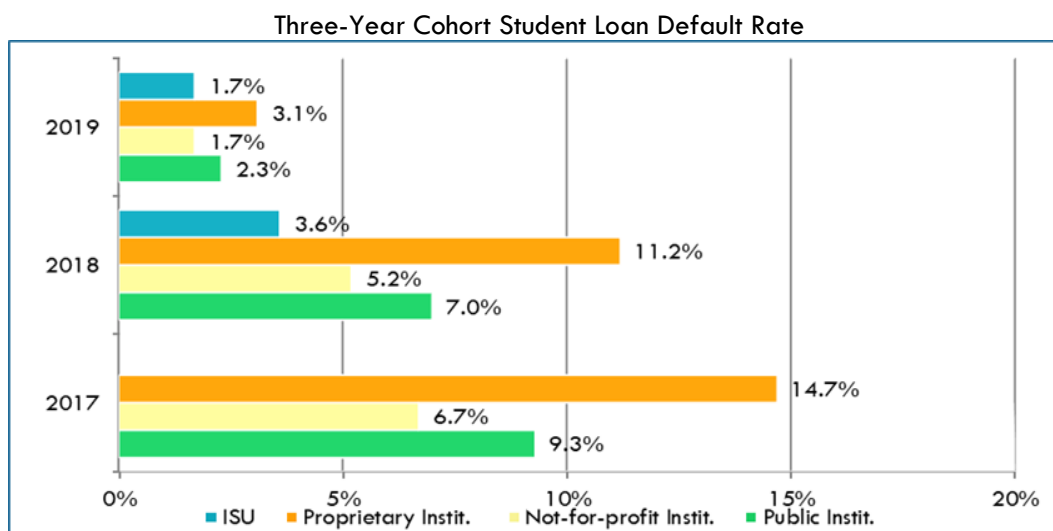
The proposed program stems from the long-term success of ISU's physics department in its ability to attract and retain external funding and its nationally recognized mentorship of undergraduates in research. Established in 1966, the physics department at Illinois State University offers a Bachelor of Science in Physics, Engineering Physics, Computational Physics, Physics Teacher Education, and Biophysics, providing students with choices for specialization or generalization within the major. Despite the physics department being one of the smaller departments at the University, the undergraduate physics program is ranked one of the largest bachelor's-only physics departments nationwide, according to the three-year average for classes of 2016 through 2018 from the American Institute of Physics. The undergraduate program has been near the top of these ratings since the 1990s and is nationally recognized as a model program.

Illinois State University's physics department has a history of involving undergraduates in research. In the last five years, the department's faculty members and students have published more than 70 peer-reviewed articles in reputable journals and made more than 100 presentations. Physics undergraduate students have enrolled in graduate programs at prestigious public and private universities such as Harvard, Princeton, Cornell, Stanford, and Norte Dame as well as secured jobs in private sectors including State Farm, Rivian, Epic Systems, and Matlab. Moreover, the undergraduate physics program has an exceptional track record of securing external funding. About 50 percent of physics faculty have active external grants, both federal and private, with a total amount of about \$2 million secured in the last five years.

## Institutional Data

*1050.30(b)(1)(H): Success in student progression and graduation rates across all existing approved programs, and success rates in programs preparing students for certification and licensure, shall be consistent with expectations in higher education and the appropriate related field of study. At a minimum, the Board shall consider these factors based on results for similar institutions. (i) Graduation rates, certificate and degree completion rates, retention rates, and pass rates for licensure and certification aligned with thresholds set by State nor national regulatory bodies. (ii) The success rate shall be, at a minimum, higher than those of the lowest quartile of these measures for similar Illinois institutions defined as open versus competitive enrollment institutions and primarily associate versus primarily baccalaureate granting institutions. Exceptions may be made to the lowest quartile if an institution is above the national average for these measures using the same comparison categories of institutions.*

This section includes information about institutional and student success measures for Illinois State University. The institution's rates will be compared to Illinois institutions from within a select comparison group and against the national standards or averages. For a proposed undergraduate program, this section will include undergraduate graduation rates, first to second year retention rates, student loan default rates, and any applicable licensure passage rates. For a proposed graduate program, this section will primarily focus on student loan default data since this measure also includes graduate students in the calculation.



Source: National Center for Education Statistics (NCES), US Department of Education

Note: Due to the pause on federal student loan payment that began in March 2020, the cohort default rate for fiscal year 2020 is zero percent for the institution and all institution types. The national cohort default rate for fiscal year 2019 was 2.3 percent and zero percent for fiscal year 2020.

A lower number is a positive indicator.

The three-year cohort student loan default rate is the percentage of a school's borrowers who enter repayment on certain Federal Loan Programs during a particular federal fiscal year, October 1 to September 30, and default or meet other specified conditions prior to the end of the second following fiscal year.

## Need

*1050.30(a)(6): A) The unit of instruction, research or public service is educationally and economically consistent with the educational priorities and needs of the State 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 University contracted EAB: Education Technology, Services, and Research, a higher education consultancy and advisory group, to conduct market research to identify areas of student demand and employer needs. Based on market analytics, EAB projected an increasing demand for master's-level physics professionals in Illinois and six surrounding states. Specifically, three of the common master's-level physics occupations project significant employment growth including software developers and programmers, computer and information research scientists, and market research analysts. The analysis also predicted a high demand for programming language skills from master's-level physics graduates. However, the EAB analysis did not include related fields where many physics graduates are employed such as optics and photonics, nanotechnology, and materials. The proposed program will meet employer demand by providing an ideal platform for students to be trained in optics and photonics skills, nanotechnology, and material science to broaden the STEM workforce.

According to the Bureau of U.S. Labor Statistics, the job outlook is promising for physics graduates. The overall employment of physicists is projected to grow five percent from 2022 to 2032 and about 1,500 openings for physicists are projected each year, on average, over the next decade. The median annual wage for physicists was \$142,850 in May 2022. Additionally, physics-related occupations such as computer information research scientists, biophysicists, software developers and quality assurance analysts, materials scientists, and physics teachers have a median annual salary range of \$80,840 to \$136,620 with growth projections from 7 to 25 percent by 2032. Moreover, data from the American Institute of Physics revealed that most master's-level physics students are either employed or enrolled in PhD programs within one year after graduation. This trend indicates a healthy market demand for Master of Science in Physics degree recipients. Upon completion of the proposed program, students are expected to advance to doctoral programs and work in various STEM-related areas including battery materials, information technology, and data analytics.

## **A Thriving Illinois: Higher Education Paths to Equity, Sustainability, and Growth**

The proposed Master of Science in Physics will contribute to *A Thriving Illinois: Goal 1, Equity, to close equity gaps for students who have historically been left behind*. The existing gender and ethnic inequities within STEM disciplines are widely known. Nationally, White, and Asian American students consistently combine to represent the majority of STEM graduates while the number of Hispanic and African American students remains proportionately small. Moreover, women are underrepresented in STEM majors, including physics. Through the Master of Science in Physics program, Illinois State University seeks to prepare a more diverse set of STEM students entering the workplace which will benefit both graduates and employers in Illinois. The proposed program will also contribute to IBHE's strategic plan, *A Thriving Illinois*, by creating equitable educational opportunities for all, especially those facing the greatest barriers including underserved and underrepresented communities, thereby providing higher education paths to equity, sustainability, and growth.

Upon establishment of the proposed program, the physics department will create a graduate student diversity committee to implement equity, diversity, and inclusion (EDI) initiatives by recruiting and retaining a diverse group of graduate students. EDI is a significant issue in the physics community nationwide. In the latest data from the American Physical Society (APS), only 22 percent of physics students are women and less than four percent are Hispanic or African American. In fact, approximately 20 master's degrees in physics are awarded to African American and Hispanic students per year nationally. To increase the number of underrepresented graduate students in physics, the graduate student diversity committee will actively recruit students from underrepresented groups by working with the American Institute of Physics (and its subgroups) such as the American Physical Society Bridge Program (APS-BP), the American Physical Society Minorities in Physics Program, and the American Physical Society Women in Physics Program.

Additionally, ISU will recruit students from its undergraduate program since several students have expressed interest in continuing their studies. Notably, the undergraduate physics program at the University has significantly increased the number of underrepresented students in its program. In Fall 2023, the ISU's introductory course of freshman physics majors (PHY 107) had 25 registered students. Of these, 12 students were from underrepresented groups, which is far above national averages. Additionally, as is common in STEM disciplines, the physics department will expand recruitment efforts internationally. This has the advantage of bringing intercultural experiences to other students at ISU and diversifying the student body.

The physics department will also connect students in the proposed program with professional development organizations that support underserved and underrepresented groups. These include the National Society of Black Physicists, Women in Physics Group of the Institute of Physics, and the National Society of Hispanic Physicists. The University currently has a chapter of Women in Physics and supports students in attending conferences such as the Council of Undergraduate Women in Physics. In addition to mentorship opportunities, many of these organizations offer scholarship opportunities that can supplement funds provided by the physics department. This fall, ISU plans to send 17 undergraduate and four graduate students (who are visiting students or chemistry students working on grants in the physics department) to the American Physics Society Prairie Section annual meeting. Of these attendees, eight are women. This will be an industry networking opportunity for students to meet senior professionals in physics.

Illinois State University has continually worked to enhance its support infrastructure for equity, diversity, and inclusion initiatives. As part of that commitment, the physics department will intentionally hire diverse and culturally competent faculty capable of providing a state-of-the-art academic and research learning environment for a diverse student body. The goal is to develop a diverse instructional faculty with gender and underrepresented minority representation. The physics department will also intentionally recruit, select, develop, and retain talented and diverse staff capable of supporting a diverse student and faculty population. The department will develop Appointment, Salary, Promotion and Tenure policies and procedures that reward equity, diversity, and inclusion within the program.

The University will support *A Thriving Illinois: Goal 2, Sustainability, to build a stronger financial future for individuals and institutions by finding ways to reduce the financial burden of education on students and their families*, by continuing its efforts toward affordability for all students, especially those from under-resourced families. ISU has recently made changes to its financial block threshold and allocated funds to assist students in resolving financial issues for smaller registration holds. Additionally, to support student persistence, the University has a centrally managed persistence fund along with smaller funds managed by colleges and departments/schools that

provide students with short-term financial assistance. For example, in Fiscal Year 2023, the University Persistence Committee awarded over \$238,000 to 105 students for microgrants that met a variety of financial needs. Over the last five years, the fund has provided over \$936,000 to support urgent student needs. Meeting the financial needs of underrepresented and underserved students is a critical variable in addressing issues of attrition in STEM disciplines; therefore, at the department level, external grants will be used to support graduate students in physics and ten graduate teaching assistantships (five per year) have been approved as part of the Financial Impact Form for the proposed program.

The proposed program will address *A Thriving Illinois: Goal 3, Growth, to increase talent and innovation to drive economic growth*, by increasing diversity in physics-related occupations and meeting regional and state workforce needs. Illinois State University is uniquely located geographically to be an important contributor to training STEM graduates for various sectors. With the establishment of the electric car company, Rivian, and its expected growth, demand for well-qualified physics graduates in relevant areas will remain strong for many years to come. Other potential regional employers are State Farm, Caterpillar, and COUNTRY. The proposed program will attract and train skilled workers for high-paying jobs in the STEM industry. The physics department will collaborate with the new College of Engineering to leverage its partnerships with local companies to provide career opportunities for students in the proposed program at Exelon Corporation, Ameren, and Farnsworth Group, Inc.

### **Comparable Programs in Illinois**

Presently, five public and five independent Illinois institutions offer a master's degree in physics. Notably, none of these programs are in the Central region; thus, the proposed program at Illinois State University will fill a growing need for graduate physics programs in Central Illinois and surrounding areas. With the current demand, ISU projects an enrollment of 15-20 students within the first few years.

The program is distinctive in offering various pathways for students. Students can select courses based on their interests and conduct thesis research in a variety of areas including Atomic Collisions, Astrophysics, Biophysics, Chaos, Intense Laser Physics, Nano-photonics, Particle Physics, Physics Education, Quantum Materials, Solid State Physics, and Space Physics. ISU also plans to offer a 4+1 B.S./M.S. dual degree option for students. This is an accelerated master's degree program in which undergraduate students take both graduate and undergraduate courses during their senior year and seamlessly transition into the Master of Science in Physics program for one additional year.

The proposed program will be complementary to existing programs in Illinois. The current and projected need for physics professionals will increase both the number of Illinois residents attaining a degree and the number of high-quality postsecondary credentials available to meet demand. The U.S. Bureau of Labor Statistics predicts an 8.3 percent increase of physics related occupations over the next decade. Providing additional educational opportunities in physics at ISU will assist with meeting the growing needs of local industries including technology, manufacturing, telecommunications, healthcare, government, academia, and business.



Comparable Programs Degrees Granted, Master's in Physics					
Institution	2019	2020	2021	2022	Region
<b>Public</b>					
Northern Illinois University	4	9	5	4	Fox Valley
Southern Illinois University Carbondale	5	4	2	3	Southern
University of Illinois at Chicago	4	4	5	9	Chicago
University of Illinois Urbana-Champaign	15	14	11	12	Prairie
Western Illinois University	11	7	7	4	Western
<b>Independent</b>					
DePaul University	5	3	1	3	Chicago
Illinois Institute of Technology	6	4	2	1	Chicago
Lewis University	3	1	1	-	South Metro
Northwestern University	4	10	23	3	North Suburban
University of Chicago	26	17	18	33	Chicago

Source: IBHE Program Inventory

## 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 Master of Science in Physics program will support the University's mission, focus, and current priorities by expanding its STEM disciplinary offerings. The physics department provides a high-quality educational experience for students ranging from the fundamentals of physics to engineering with the goal of becoming a first-choice school in physics for Illinois students. To realize this vision, the physics department fosters a supportive learning environment where students are active participants in forefront scientific research. Graduate teaching assistants will be hired through the proposed program and their primary teaching responsibilities will include a combination of one-hour discussion sections and three-hour lab sections for the calculus-based introductory physics courses (PHY 110 and PHY 111) associated with the newly approved engineering programs. Additionally, the graduate teaching assistants will hold office hours for students.

Moreover, with the proposed program, ISU expects a significant increase in associated indirect cost earnings from the National Science Foundation (NSF). The University currently has 26 active research NSF grants and among these grants, six are from the physics department. Despite being one of the smallest departments, the physics unit accounts for approximately 23 percent of all NSF grants at the University. The total amount associated with the physics NSF grants is approximately \$1.2 million, which is without the participation of graduate students. With the addition of the proposed program, NSF funding would increase to \$2 million which includes two graduate students for each of the physics grants.



## Curriculum and Assessment

*1050.30(b)(1) [applicable only to units of instruction]: A) The caliber and content of the curriculum must assure that the objectives of the unit of instruction will be achieved. B) The breadth and depth of the curriculum must be consistent with what the title of the unit of instruction implies. C) The admission and graduation requirements for the unit of instruction must be consistent with the stated objectives of the unit of instruction. D) Institutions must show the capacity to develop, deliver and support academic programs. Procedures and policies that will assure the effective design, conduct and evaluation of the degree programs under the academic control of the institution must be developed. Assessment plans must demonstrate that the institution has identified clear and appropriate program and student learning goals and has defined appropriate outcomes. Appropriate data must be collected and may be requested by the Board to show the level of student learning that has occurred as a result of participation in the institution's programs of study.*

*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

Applicants must meet the following general admission requirements for the Graduate School and program-specific requirements for admission to the Master of Science in Physics program:

### General Admission Requirements

Graduate School applicants must have a bachelor's degree from a four-year college or university or its equivalent that is accredited by the appropriate regional accrediting association, or its equivalent, as determined by the Graduate School. Applicants are considered on the basis of their academic record and other performance requirements stipulated by the individual department or school. These may include examinations or standardized tests, interviews, auditions, examples of work, and letters of recommendation. To be admitted to a degree program, a student must have at least a 2.8 grade point average (on a scale in which an A is a 4.0) for the last 60 hours of undergraduate work and the approval of an academic department or school. In specific cases, a department or school may petition the Graduate School for permission to use undergraduate courses taken while the student is classified as a graduate student (either as a visiting student or a degree student in another graduate program) in calculating the grade point average for the last 60 undergraduate hours. A student who has completed work for a bachelor's degree or its equivalent, or who will do so within one academic year at a college or university that is accredited by the appropriate regional accrediting association, may apply for admission to the University as a graduate student.

### Program-Specific Requirements

Admission to the Master of Science in Physics degree program requires a four-year bachelor's degree or its equivalent from a college or university that is accredited by the appropriate regional accrediting association or do so within one academic year. Students must have a minimum 2.8 GPA (on a scale in which an A is a 4.0) for the last 60 hours of undergraduate work. Additionally, students must submit a personal statement (not more than 500 words) explaining their accomplishments, reasons for pursuing graduate work in physics, and career objectives.

International students applying to the Master of Science in Physics program must have a TOEFL score of at least 90 iBT, IELTS score of 6.5 band, or Duolingo score of 120.

## Curriculum

After researching several Master of Science in Physics programs across the nation, ISU has adopted many aspects of these successful programs into the curriculum. Faculty created fourteen new courses for the proposed program covering content in mathematical methods, classical mechanics, statistical mechanics, advanced electricity and magnetism, solid state physics, general relativity, astrophysics, advanced experimental physics, space and plasma physics, advanced quantum mechanics, and advanced computational physics. The program was developed by the physics department curriculum committee using a robust feedback process involving peer review; external review by academic and industrial experts; internal review by an ad hoc committee of senior University faculty and academic planning professionals; and review by the University Curriculum Committee, the University's Academic Senate, and the Illinois State University Board of Trustees.

The proposed program will require a minimum of 30 credit hours consisting of four core physics courses (14 semester hours), two elective courses (six semester hours), a research development and a seminar course (four semester hours), and a thesis (six semester hours). The Master of Science in Physics program also embeds research into the curriculum. Students must complete two hours of research development in the first year and six hours of thesis work in their final year. Whether specializing in experimental or computational physics, students will complete a thesis to demonstrate their ability to conduct research. By offering a variety of electives, students will have the opportunity to tailor their degree sequence to their research interests. The technical, modeling, and computational skills developed in the program can be applied in many different industries or serve as a basis for a doctoral program in physics or engineering.

The proposed program will support student access, retention, and completion across all demographic groups with a particular focus on underserved and underrepresented communities which will aid in diversifying the STEM workforce. Student progress will be monitored by the graduate program coordinator and the faculty mentor. Incoming students will meet with the graduate program coordinator for initial advisement on their plan of study and course selection, after which they are assigned a faculty mentor that will advise them through the duration of the program. To further support student retention, the graduate student diversity committee will create a Grad-Influencers program aimed at fostering graduate connections within the department by pairing incoming students with upper year students who are experienced in navigating academic and personal issues. Under this program, incoming students will be paired with a compatible upper-year student mentor (via a short survey). Each mentor will receive training from the Health Promotion and Wellness office at the University to learn best practices for helping their mentees with any personal issues they may face. The graduate student committee will also conduct an annual graduate student climate survey to ensure the program is meeting the needs of students. The survey results will be used to make program changes where appropriate.

## Assessment of Student Learning

The physics department has systematically administered course assessments for its undergraduate programs since 2018. Likewise, the physics graduate program will be assessed annually using methods and tools described in the student learning outcomes assessment plan. These tools or artifacts include exams, computer assignments, lab reports, homework assignments, and

other written assignments. Additionally, during the final semester, students will complete an exit survey and exit interview with the department chairperson. The written survey along with additional notes taken during the exit interview will be an important indirect measure of student learning and program evaluation. The department will also contact alumni for feedback on program effectiveness and essential skills needed in their careers.

### Program Assessment

Each fall, program faculty will receive a statistical report of program inputs, productivity, and outputs from the Office of Planning, Research, and Policy Analysis at the University for use by faculty in evaluating the program and identifying areas for improvement. The report is intended to provide a broader set of metrics than those compiled through implementation of the student learning outcomes assessment plan. Academic program profile metrics relate to admissions, enrollment, student and faculty demographics, and degrees conferred. Disaggregated data are available at the College and departmental levels. Academic program profiles will be reviewed annually.

The graduate and curriculum department committees will regularly monitor the program and will make program improvements as needed. The physics department graduate committee will submit a progress report to the Office of the Provost after the third year of program operation (tentatively in Fall 2027, assuming a Fall 2024 program start). The report will be reviewed by the Office of the Provost, the office will assign an overall rating to the program in accordance with state administrative code, and the office will submit the progress report and a brief rationale for the rating to IBHE staff for review. In the progress report, program faculty will assess the program against goals and projections articulated in this proposal to IBHE for authorization of the proposed program. Aspects of the program that will be addressed in the progress report include, but are not limited to, enrollment, curriculum, demand for the program and its graduates, student learning outcomes assessment, program sustainability, faculty and staff support, and facilities.

### 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.*

Existing facilities are sufficient for implementing the proposed program. Graduate physics courses will be primarily taught in Moulton Hall with occasional usage of rooms and facilities in other buildings. The Department of Physics has one medium-sized lecture room, one small lecture room, one computer lab, and three general laboratory rooms mostly utilized for lower-level courses. The department also has one large laboratory room and three smaller lab rooms for upper-level courses. These lab rooms contain more advanced laboratory tools for teaching such as a Faraday rotation, determination of the electron charge-to-mass ratio, Angstrom method for thermal transport, and the Millikan oil drop experiment. There are lecture rooms in Moulton Hall shared with other departments on campus. The department also has access to shared classrooms in other buildings and utilizes several research laboratories for physics faculty and students.

The University possesses appropriate library resources with access to online databases, books, journal holdings, and other electronic resources to support research, teaching, and scholarly work. The Milner Library collection includes over 1,610,000 catalogued items, over 400,000 U.S. Government publications, over 38,000 electronic periodical subscriptions, over 2,500 print periodical titles, and other titles in microform. There is also a map collection and a Media Resource Center which provides videos for classroom and library use.

## **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. At a minimum, faculty shall have a degree from an institution accredited by a U.S. Department of Education and/or Council for Higher Education Accreditation recognized accrediting body or a degree from another country evaluated for U.S. equivalency in the discipline they will teach or for which they will develop curricula at least one level above that of the courses being taught or developed. 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. E) Support personnel, including but not limited to counselors, administrators, clinical supervisors, and technical staff, that 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 institutional policies that ensure faculty and staff hired possess the training, credentials, and other related qualifications to provide instruction at the institution. Faculty teaching in the proposed program will have the appropriate qualifications. Existing personnel in the physics department will support the Master of Science in Physics program including twelve full-time tenured and tenure-track faculty (including the chairperson), four full-time administrative staff, one half-time administrative staff member, and two full-time and one half-time civil service staff members. The faculty evaluation and reward structure for the proposed program will mirror the current structure of the physics department. Faculty will be evaluated and rewarded based on scholarship, pedagogy, and service. Evaluation will be conducted annually through the department faculty status committee.

The administrative structure for the proposed program will include a new graduate program coordinator position. The graduate program coordinator (along with the departmental graduate committee) will be responsible for recruiting and retaining graduate students in the proposed program by preparing and distributing advertising materials (both nationally and internationally), recommending the graduate elective courses that should be offered each year, and advising first year students on course selection. The graduate coordinator/committee will monitor the progress of students to ensure they graduate in a timely manner, nominally two years. The coordinator will report to the department chair. The department chair will work with the coordinator to manage program quality and secure funding to ensure underrepresented groups have increased access and support throughout the program. The department chair will also represent the program at the leadership level and coordinate collaborative communication between the physics department and the College of Arts and Sciences. Administrative staff will support both the coordinator and the department chair. Student support services provided by faculty and staff include office hours to meet one-on-one with students. Faculty will use such meetings to provide program-specific guidance and academic support to students as needed.

## **Fiscal and Personnel Resources**

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

The University has adequate resources to launch the proposed program. The physics department has self-funded over \$50,000 in facility upgrades to create office space for incoming graduate students. Additionally, the department has purchased several lab experiments that are appropriate for advanced undergraduate students or can be modified for graduate students. If needed, central funds will supplement the initial startup of labs.

Existing tenured and tenure-track faculty will teach courses in the proposed program although once the program reaches ten students, the physics department will request a new tenure track faculty hire. The physics department will create a new graduate program coordinator position. The University has agreed to provide funding for ten graduate teaching assistants for the Master of Science in Physics program. The graduate teaching assistants will be responsible for discussion sections, labs, office hours, and grading to support the calculus-based physics sequence of classes. During their appointment term, all University graduate assistants will receive a competitive compensation package comparable to peer schools (similar size, programs offered, and grant-funded dollars obtained annually).

## **Accreditation and Licensure**

*1050.30(b)(3)[applicable only to units of instruction]: Appropriate steps shall be 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.*

There is no specialized accreditation or licensure for the proposed program.

## **Program Information**

*1050.30(b)(2)[applicable only to units of instruction]: A) The information which the institution provides for students and the public shall include the following: i) An accurate description of the unit of instruction, including its objectives, length, and residency requirements if any; ii) Schedule of tuition, fees, and all other charges and expenses necessary for completion of the unit of instruction, cancellation and refund policies; iii) Student rights and responsibilities; iv) A statement regarding the transferability of college credits, including the fact that the decision to accept transfer credits is determined by the receiving institutions; v) A statement as to how the institution will advise students on the nature of the transfer process, including the importance of consulting with institutions to which the student may seek to transfer; vi) Evidence of arrangements for the transfer of courses or credits or both to institutional counterparts, when these arrangements exist; these arrangements are also known as articulation agreements; vii) A statement of the institution's most recent graduation rates and the number of graduates and enrollments as provided by the institution to the Integrated Postsecondary Education Data System (IPEDS) and any submission of data to satisfy Board reporting requirements; and viii) Other material facts concerning the institution and the unit of instruction as are likely to affect the*

*decision of the student to enroll. B) The information listed in subsection (b)(2)(A) shall be available to prospective students prior to enrollment and shall be included in the institution's catalog of programs.*

Detailed information about the proposed program, including a description of the admission policies, university policies, tuition, fees, and curriculum will be published on the University's website.

### **Staff Conclusion**

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