OREGON STATE UNIVERSITY

Category I Proposal Transmittal Sheet

Submit proposals to: Office of Academic Programs
110 Kerr Admin -- Oregon State University

For instructions, see http://oregonstate.edu/dept/academic/cph1998/. Please attach Proposal, Library Evaluation (performed by the library), Liaison Correspondence, Faculty Curriculum Vitae, and Budget Sheets, as appropriate.

Check one:

Full Proposal

- ☑ New degree program
- ☐ New certificate program or administrative unit
- ☐ Major change in existing program
- ☐ Establishment of a new College or Department

Abbreviated Proposal

- ☐ Rename of an academic program or unit
- ☐ Reorganization – moving responsibility for an academic program from one unit to another
- ☐ Merging or splitting an academic unit
- ☐ Termination of an academic program or unit
- ☐ Suspension or reactivation an academic program or unit

For proposals to establish a new center or institute, contact the Research Office (737-3437).

For requests to offer existing certificate and degree programs at new locations, use the New Location Request Form available on the Web: http://www.ous.edu/aca/aca-forms.html

Title of Proposal: New Instr. Prog. Leading to the MHP in Radiation Health Physics

Effective Date: Sept 16, 2004

Department/Program: Nuc. Eng. & Radiation Health Physics

College: Engineering

I certify that the above proposal has been reviewed and approved by the appropriate Department and College committees:

Sign (Dept Chair/Head; Director)	*Date*	*Sign (Dean of College)*	*Date*
3-10-04		3-12-04	
Andrew C. Klein		Ronald L. Adams	
Print (Department Chair/Head; Director)		Print (Dean of College)	

OREGON UNIVERSITY SYSTEM
OFFICE OF ACADEMIC AFFAIRS

Proposal for the Initiation of a New Instructional Program Leading to the Master of Health Physics (MHP) in Radiation Health Physics

Oregon State University
College of Engineering
Department of Nuclear Engineering and Radiation Health Physics

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Description of Proposed Program

1. Program Overview

a. CIP number

CIP No. 512205

b. Provide a brief overview (approximately 1-2 paragraphs) of the proposed program, including a description of the academic area and a rationale for offering this program at the present time. Please include a description of any related degrees, certificates, or subspecialties (concentrations, areas of special emphasis, etc.) that may be offered now or in the foreseeable future.

The Department of Nuclear Engineering and Radiation Health Physics proposes establishing a Master of Health Physics (MHP) degree program in Radiation Health Physics. Currently, the Department offers the Master of Science degree in Radiation Health Physics, but a research thesis is mandatory. The MS is a traditional research-based degree and is very desirable for those in the field interested in a research-oriented career. The proposed MHP degree is designed to be a professional, advanced graduate degree that emphasizes fundamental learning and professional development, similar to the Master of Engineering (MEng) or the Master of Public Health (MPH). The proposed degree will direct students toward professional licensing in the field of radiation protection, i.e., the Certified Health Physicist license.

Health Physics is the academic field that deals with radiation protection. Health physicists are dedicated to the protection of humans and their environment from the harmful effects of radiation. Their concerns include ionizing radiation, such as X rays or gamma rays, as well as non-ionizing radiation, such as microwaves and ultraviolet light. Health physics spans a wide range of disciplines, including biology, chemistry, physics, medicine, engineering, law and sociology.

Areas of concern to health physicists include environmental monitoring, radiation and radioactive material from nuclear facilities, nuclear medicine, natural radiation, criticality safety, radioactive waste management, radioactive material transportation, radiation shielding, particle accelerators, radiation dosimetry, radiation detection instrumentation, nuclear fuel cycle, emergency planning, decommissioning, risk assessment, training, public information and more.

The proposed graduate degree program in Health Physics will provide students with a unique, professional graduate experience not offered anywhere in the world. The MHP is the first of its kind and we anticipate that many programs across the country will follow in our footsteps.

c. When will the program be operational, if approved?

The program will be offered Fall 2004.

2. Purpose and Relationship of Proposed Program to the Institution's Mission and Strategic Plan

a. What are the objectives of the program?

The Radiation Health program has been offered at Oregon State University since 1963. Initially, it was offered through the General Science Department, but in 1988 the MS program was transferred to Nuclear Engineering with the BS program following in 1991. There was a subsequent curricular change that renamed the degrees to Radiation Health Physics. In 1996, the PhD program was added, bringing a full suite of undergraduate and graduate degrees to the department in Health Physics. During the past couple of decades the program has expanded in student enrollment, research activity and in the number of departmental faculty working in the field. There has been a need in the radiation protection arena for Master's level employees in professional and managerial positions in the marketplace. These individuals have typically come to graduate programs without the need, nor desire, for the research-oriented degree.

The program's major objective, therefore, is to provide an applied, professional degree for those individuals wishing the Master's credential, but not requiring a research focus for their planned profession. Graduates should, after the required professional experience is gained, be able to achieve certification as Certified Health Physicists under the requirements of the American Board of Health Physics (ABHP). We believe that our enrollment can be increased by making this degree program available.

b. How does the proposed program support the mission and strategic plan of the institution(s)? How does the program contribute to attaining long-term goals and directions of the institution and program?

The mission of Oregon State University as a land grant institution is to serve the people of Oregon, the nation and the world through education, research and service. The University regards itself among the leading comprehensive teaching and research universities in the nation. Implementation of the MHP in Radiation Health Physics will improve the quality of educational offerings by building upon the already strong and recognized programs of this Department and the College of Engineering.

c. How does the proposed program meet the needs of Oregon and enhance the state's capacity to respond effectively to social, economic, and environmental challenges and opportunities?

Employment opportunities exist in the nuclear power industry, in medicine, in teaching, in non-nuclear industrial radiation safety, in waste management, in environmental areas, as well as in state and federal regulatory agencies. Oregon's needs are met by providing those in radiation protection the opportunity to attain a professional degree and fill private, state or federal administrative positions. The Oregon Office of Energy already works closely with the Radiation Health Physics faculty; this link would be strengthened considerably with our ability to offer the MHP degree program.

3. Course of Study

a. Briefly describe proposed curriculum. (List is fine.)
   i. Slash courses (i.e., 400/500-level) should be listed as such.
   ii. Include course numbers, titles, credit hours.

The student's study program will be developed by the student and his/her graduate committee following the requirements and policies of the Graduate School. The program will consist of a minimum of 30 hours of coursework in the major, and will culminate with a required oral examination, at a minimum. Approved courses are listed below; these lists could be amended with the approval of the Department Head.

Core (18 credits)

*Nuclear Rules & Regulations	RHP 415/515	2 credits
*Radiation Protection	RHP 481/581	4 credits
*Applied Radiation Safety	RHP 482/582	4 credits
*Radiation Biology	RHP 483/583	4 credits
*Radiation Dosimetry	RHP 490/590	4 credits

Radiation Health Physics Electives (12 credits)

Seminar in RHP	RHP 507	1 credit (max. 3)
Radiochemistry	RHP 416/516	3 credits
Nuclear Radiation Shielding	RHP 535	3 credits
Nuclear Physics for Engineers & Scientists	RHP 539	3 credits
Low Level Radioactive Waste Management	RHP 542	3 credits
High Level Radioactive Waste Management	RHP 543	3 credits
Principles of Nuclear Medicine	RHP 550	3 credits
Field Practices in Radiation Protection	RHP 580	1-3 credits
Environmental Aspects of Nuclear Systems	RHP 585	3 credits
Radioecology	RHP 588	3 credits
Radiation Risk Evaluation	RHP 592	3 credits
Non-Reactor Radiation Protection	RHP 593	3 credits

Suggested Additional Electives (15 credits)

Environmental Health Policy and Regulations	H 511	3 credits
Air Quality and Public Health	H 512	3 credits
Principles and Practice of Epidemiology	H 525	3 credits
International Health	H 529	3 credits
Environmental Health	H 540	3 credits
Environmental and Occupational Health	H 542	3 credits
Environmental Sampling and Analysis	H 543	3 credits
Health Risk Communication	H 549	3 credits
Safety and Environmental Health Management	H 583	3 credits
Environmental Perspectives and Methods	ENSC 515	3 credits
Environmental Analysis	ENSC 520	3 credits
Chemical Behavior in the Environment	TOX 530	3 credits

b. Describe new courses. Include proposed course numbers, titles, credit hours, and **course descriptions**.

No new courses will be created for this program.

c. Provide a discussion of any nontraditional learning modes to be utilized in the new courses, including, but not limited to: (1) the role of technology, and (2) the use of career development activities such as practica or internships.

Courses may be offered by utilizing distance education technology. Because of the limited number of credit hours required for the Master's degree, an internship or practical experience is not required for the proposed program.

d. What specific learning outcomes will be achieved by students who complete this course of study?

This professional program of study in health physics will provide the student with intensive classroom instruction in the fundamentals of radiation protection. If the student is planning a practical career in radiation protection, one that does not require a research component, that student can complete a Master's degree without the rigorous Master's thesis required for the Master of Science in RHP.

4. Recruitment and Admission Requirements

a. Is the proposed program intended primarily to provide another program option to students who are already being attracted to the institution, or is it anticipated that the proposed program will draw students who would not otherwise come to the institution?

It is anticipated that this new program offering will bring additional students to our master's program in Radiation Health Physics; students that would normally not consider graduate work because of the research requirement. Traditionally, a professional in health physics employed in the area of radiation protection is a manager/supervisor of nuclear-facility employees or a project manager for a consulting firm. These job positions require the knowledge base provided by the RHP program,

but do not require advanced training in the research process. Many who would not pursue the Master of Science in Radiation Health Physics with its research component, would give serious consideration to the chance of obtaining a professional master's degree in this field.

b. Are any requirements for admission to the program being proposed that are in **addition** to admission to the institution? If so, what are they?

In addition to the standard requirements of the OSU Graduate School, the proposed program would require general GRE scores and 3 letters of reference.

c. Will any enrollment limitation be imposed? If so, please indicate the specific limitation and its rationale. How will students be selected if there are enrollment limitations?

Yes, enrollment will be limited to no more than 20 students in this program. This limitation is based on the number of available positions with the current faculty. Enrollment selection will be performed by the departmental graduate committee, and based on student background and qualifications.

5. Accreditation of the Program

a. If applicable, identify any accrediting body or professional society that has established standards in the area in which the proposed program lies.

Our current BS program in RHP is accredited by the Related Programs arm of ABET, the American Board of Engineering and Technology. ABET only accredits the lowest degree program in a particular field, therefore, there will be no need to accredit the MHP program.

b. If applicable, does the proposed program meet professional accreditation standards? If it does not, in what particular area(s) does it appear to be deficient? What steps would be required to qualify the program for accreditation? By what date is it anticipated that the program will be fully accredited?

N/A

c. If the proposed program is a graduate program in which the institution offers an undergraduate program, is the undergraduate program accredited? If not, what would be required to qualify it for accreditation? If accreditation is a goal, what steps are being taken to achieve accreditation?

Yes, the BS program in Radiation Health Physics is accredited.

Need

6. Evidence of Need

a. What evidence does the institution have of need for the program? Please be explicit. (Needs assessment information may be presented in the form of survey data; summaries of focus groups

or interviews; documented requests for the program from students, faculty, external constituents, etc.)

There are presently no MHP degree programs in the country, nor the world. The Department of Nuclear Engineering and Radiation Health Physics at Oregon State University would be on the cutting edge of new offerings in the radiation protection field. Last year, OSU granted about one-third of the total Health Physics degrees awarded nationwide. With this new program, OSU would be the clear leader in the field of radiation protection.

If only the US Department of Energy is considered as a potential place of employment, this single government agency is responsible for activities at major nuclear sites in the states of Washington, California, Idaho, Navada, New Mexico and Colorado. The geographic advantage of OSU is tremendous in the areas of recruiting top quality students, employment opportunities for the program's graduates and for involvement in environmental restoration, waste management, and health and safety issues.

Student interest in the prospect of the MHP program has been very strong. The current pool of interested, qualified students exceeds the number of admissions that the department will grant should the program be instituted at OSU.

Addition of the MHP program will be one more factor in enabling the Radiation Health Physics area to qualify to receive students funded under the US Department of Energy Fellowship program administered by Oak Ridge Associated Universities.

b. Identify statewide and institutional service-area employment needs the proposed program would assist in filling. Is there evidence of regional or national need for additional qualified individuals such as the proposed program would produce? If yes, please specify.

Employment needs for the radiation protection field are continually rising. The initial employee base for this field arises out of the cold-war era in the mid- to late-1950's. Many of those original employees have recently retired and many more will retire over the next decade extending the current need for educated health physics professionals. The program will assist in filling manpower needs in Radiation Health Physics primarily in Oregon (Oregon Office of Energy) and eastern Washington (the Hanford site).

c. What are the numbers and characteristics of students to be served? What is the estimated number of graduates of the proposed program over the next five years? On what information are these projections based?

Based on specific inquiries by prospective students, we anticipate that we could serve an additional 7 to 10 students in our Master's program each year. These numbers, although small, could potentially triple the graduate enrollment in the Radiation Health Physics area. At this enrollment level, we would expect 4 to 7 graduates each year, consistent with an increasing trend in enrollment and graduation of Master's candidates in the RHP program. The faculty is unaware of any other program in the country with a comparable graduation rate in Health Physics.

d. Are there any other compelling reasons for offering the program?

If this program were approved, Oregon State University would be the first to offer a professional masters degree in a field that has long felt the need for such a degree. The faculty anticipates that, once our degree program is established, many other universities with programs in this field would follow suit.

OSU has the required facilities, courses and faculty to offer a ground breaking professional degree for the radiation protection field. In combination with the growing international reputation of the Nuclear Engineering and Radiation Health Physics department, an opportunity exists to fill a need for which there is a demand, at no added cost to the University.

e. Identify any special interest in the program on the part of local or state groups (e.g., business, industry, agriculture, professional groups).

The Department of Nuclear Engineering and Radiation Health Physics Advisory Board is made up of personnel from private utilities, private industrial firms, and government organizations. The current Board consists of 4 members from Oregon, 4 from Washington, 2 from California, 1 from Idaho, 1 from Illinois, and 1 from Mississippi; 3 of these Board members are from utilities, 5 from industrial companies, and 5 from a governmental organization.

In addition to individuals wishing to possess the professional degree, various groups have approached the faculty in an attempt to encourage the development of the MHP program. These individuals are generally made up of technician-level employees at federal and state government installations (e.g. Hanford, Idaho National Environmental Lab, Lawrence Livermore National Lab).

f. Discuss considerations given to making the complete program available for part-time, evening, weekend, and/or placebound students.

Every consideration is made to include the part-time, evening, weekend, and/or place-bound student. We anticipate this program being offered in a distance learning capacity (e.g., E-Campus) so that all these student classifications could benefit.

It is further anticipated that the proposed program would draw students who would not otherwise attend Oregon State University. It is important to note that many students attracted to the institution for health physics express a strong interest in a professional degree leading to certification by the ABHP. The proposed program also provides another option to students already attracted to OSU.

Outcomes

7. Program Evaluation

a. How will the institution determine the extent to which the academic program meets the objectives (section 2a) previously outlined? (Identify specific post-approval monitoring procedures and

outcome indicators to be used.)

The Nuclear Engineering and Radiation Health Physics Department and the department's Advisory Board will be responsible for collecting the appropriate information which will be used for evaluating the program's success in achieving it's objectives. This information will include recognition of the program outside of OSU; successful employment of students after graduation; successful certification of graduates by the ABHP; and a high degree of student satisfaction (demonstrated through student survey) with the program at graduation and again after two to five years of employment. Evaluation will include trends of enrollment, student evaluation, teaching self-evaluation, graduation success, and employer feedback on student preparation.

b. How will the collected information be used to improve teaching and programs to enhance student learning?

The Department has both its Nuclear Engineering and its Radiation Health Physics undergraduate programs accredited by ABET. This being the case, the faculty is already familiar with the information needed to improve teaching and maintain a high level of quality. Student learning is assessed through methods recommended by ABET and enhanced by the Department.

8. Assessment of Student Learning

a. What methods will be used to assess student learning? How will student learning assessment be embedded in the curriculum?

Grades, student evaluations, and learning assessments are already collected as part of the Department's ongoing self-assessment. A system is currently in place to collect the necessary assessment data, as evidenced by our recent 5-year re-accreditation of the NE and RHP undergraduate programs.

b. What specific methods or approaches will be used to assess graduate (completer) outcomes?

To ensure that the degree program meets the student's professional and educational goals there will be a program committee meeting to approve the student's program of study. Learning outcomes that meet the student's goals will be used as guides to develop the student's program. At the completion of the student's program the final oral examination will be used to determine the success of the student in meeting the learning outcomes.

The MHP students must pass a comprehensive oral examination. We will also administer a new evaluation form (at exit) to assess their level of satisfaction with the program and their recommendations for improvements.

Overall program outcomes will be assessed through retention and graduation percentages, and employer follow-up on preparation of graduates.

c. Is a licensure examination associated with this field of study?

There is an optional professional certification. Just like the students in our current program, the MHP students will be encouraged to sit for the CHP (Certified Health Physicist) exam given annually by the National Health Physics Society and the American Board of Health Physics.

Integration of Efforts

9. Similar Programs in the State

a. List all other closely related OUS programs.

There are NO closely related programs in the State of Oregon. The most closely related area that would strongly support the program is that of nuclear engineering. Some of the graduate courses would have overlapping benefit for both NE and RHP programs, including radiation instrumentation and dosimetry.

b. In what way, if any, will resources of other institutions (another OUS institution or institutions, community college, and/or private college/university) be shared in the proposed program? How will the program be complementary to, or cooperate with, an existing program or programs?

There is a radiation technologists program at Linn-Benton Community College and a Bachelors degree program at the Oregon Institute of Technology that focus on radiation technology and imaging systems. While unrelated to Health Physics, those programs may provide strong conduits for students interested in radiation protection at the baccalaureate or masters level. Historically, the Department has had several graduates from OIT, and several transfer students from LBCC, receive degrees in nuclear engineering and radiation health physics.

c. Is there any projected impact on other institutions in terms of student enrollment and/or faculty workload?

No impact on other institutions is anticipated.

Resources

10. Faculty

a. Identify program faculty, briefly describing each faculty member's expertise/specialization. Separate regular core faculty from faculty from other departments and adjuncts. Collect current vitae for all faculty, to be made available to reviewers upon request.

The MHP program will be administered by the Department of Nuclear Engineering and Radiation Health Physics, in the College of Engineering. Primary program faculty includes (short bios are at the end of the document):

Faculty Member	Specialization
Stephen E. Binney, Ph.D. Professor Emeritus	application of nuclear instrumentation and nuclear techniques, radiation shielding

David M. Hamby, Ph.D. Associate Professor	environmental health physics, environmental assessment, biokinetics, model uncertainty and sensitivity analyses, radiation detection, beta spectroscopy, radiation risk
Jack K. Higginbotham, Ph.D. Professor	health physics, nuclear instrumentation, beta particle and gamma-ray spectroscopy
Kathryn A. Higley, Ph.D. Associate Professor	environmental health physics, human and ecological risk assessment, environmental pathway analysis, environmental radiation monitoring, radionuclide and hazardous chemical transport
Andrew C. Klein, Ph.D. Professor and Head	reactor materials, fusion engineering and design, space nuclear power, nuclear fuel cycle
Todd S. Palmer, Ph.D. Associate Professor	numerical techniques for particle transport and diffusion, computation fluid dynamics, general numerical methods
Alena Paulenova, Ph.D. Assistant Research Professor	radiochemistry, separation and decontamination processes, waste treatment, radio-analytical applications
Jose N. Reyes, Jr., Ph.D. Professor	thermal hydraulics, multi-phase fluid flow, scaling analyses, reactor safety, reactor system design, probabilistic risk assessment
John C. Ringle, Ph.D. Professor Emeritus	environmental impact, nuclear waste management
Brian Woods, Ph.D. Assistant Professor	reactor thermal hydraulics, reactor safety, computational fluid dynamics, multi-phase/multi-species flow and heat transfer
Qiao Wu, Ph.D. Associate Professor	thermal hydraulics and reactor safety, reactor engineering, multi-phase flow and boiling heat transfer, uranium enrichment, rotor dynamics

b. Estimate the number, rank, and background of new faculty members who would need to be added to initiate the proposed program in each of the first four years of the proposed program's operation (assuming the program develops as anticipated). What commitment does the institution make to meeting these needs?

No new faculty are required for this program.

c. Estimate the number and type of support staff needed in each of the first four years of the

program.

No additional support staff will be needed for this program. The support staff presently available is adequate for the next several years. The addition of this MHP program will not significantly add to the administrative burden of the department, since it already administers the BS, MS, and PhD programs in Radiation Health Physics, as well as the BS, MS, and PhD programs in Nuclear Engineering.

11. Reference Sources

a. Describe the adequacy of student and faculty access to library and department resources (including, but not limited to, printed media, electronically published materials, videotapes, motion pictures, CD-ROM and online databases, and sound files) that are relevant to the proposed program (e.g., if there is a recommended list of materials issued by the American Library Association or some other responsible group, indicate to what extent access to such holdings meets the requirements of the recommended list).

Reference sources are excellent and contain all the necessary texts, reports and journals for OSU to maintain a successful MHP program. The Radiation Center has a small library dedicated to nuclear-related literature. No additional sources will be required for this program.

b. How much, if any, additional financial support will be required to bring access to such reference materials to an appropriate level? How does the institution plan to acquire these needed resources?

No additional financial support is required.

12. Facilities, Equipment, and Technology

a. What unique resources (in terms of buildings, laboratories, computer hardware/software, Internet or other online access, distributed-education capability, special equipment, and/or other materials) are necessary to the offering of a quality program in the field?

There are no additional unique resources required for the offering of this new degree program. Those facilities (all in the OSU Radiation Center) that are currently available to program faculty include:

Room No.	Purpose	Condition	Adequacy	Area (sq.ft.)
A128	Co-60 irradiator	very good	very good	400
A130	Shielded exposure lab	very good	very good	400
A132	TLD processing lab	very good	very good	200
A136	HP projects lab	excellent	very good	400
A138	HP support lab	very good	very good	400
B100	rad measurements lab	excellent	excellent	400
B106	library	very good	very good	400
B120	rad instr calibration lab	very good	very good	500
B122	radioisotopes hot lab	excellent	very good	500
B124	radioisotopes hot lab	excellent	very good	600

B130	computer lab	excellent	excellent	400
B132	neutron activation lab	very good	very good	400
B136	rad measurements lab	very good	good	400
C104	classroom	very good	very good	800
C118	radiochemistry instruction	very good	good	800
C120	nuclear instrument instr.	excellent	excellent	800
C124	classroom	very good	very good	400
C126	HP research lab	good	good	600
C128	grad offices	good	good	400
C130	HP projects lab	excellent	very good	400
C132A	darkroom	good	good	200
C134	radiation measurements	excellent	very good	400
D100	neutron radiography	good	good	200
D102	neutron activation	excellent	excellent	400
D104	research reactor	excellent	excellent	3,555
E108	grad offices	good	good	200
E110	grad offices	good	good	200
	TOTAL AREA:			14,355

b. What resources for facilities, equipment, and technology, beyond those now on hand, are necessary to offer this program? Be specific. How does the institution propose that these additional resources will be provided?

No new resources are required. The OSU Radiation Center currently provides all the required facilities.

13. If this is a graduate program, please suggest three to six potential external reviewers.

The following is a list of potential program reviewers.

Prof. John Poston
Texas A&M University
j-poston@tamu.edu
(979) 485-4175

Prof. James Martin
University of Michigan
jemartin@umich.edu
(734) 662-5383

Prof. Patrick Papin
San Diego State University
ppapin@sciences.sdsu.edu
(619) 594-6154

Prof. Kimberlee Kearfott
University of Michigan
kearfott@umich.edu
(734) 763-9117

Prof. Wesley Bolch
University of Florida
wesley-bolch@ufl.edu
(352) 392-1401 x308

14. Budgetary Impact

a. On the “Budget Outline” sheet (available on the Forms and Guidelines Web site), please indicate the estimated cost of the program for the first four years of its operation (one page for each year). The “Budget Outline Instructions” form for filling out the Budget Outline is available on the Forms and Guidelines Web site, as well.

The Department of Nuclear Engineering and Radiation Health Physics will be responsible for maintenance of the program, monitoring students enrolled in the program, and coordinating course assignments among the faculty involved.

The estimated cost of the program over the next four years is ZERO. All of the courses, faculty, facilities, and equipment are already available at OSU. The courses are already being taught. The equipment and facilities are being maintained for the Department, as well as other OSU departments. This new program is simply an efficient utilization of existing resources.

b. If federal or other grant funds are required to launch the program, describe the status of the grant application process and the likelihood of receiving such funding. What does the institution propose to do with the program upon termination of the grant(s)?

No grant funds are required.

c. If the program will be implemented in such a way as to have little or minimal budgetary impact, please provide a narrative that outlines how resources are being allocated/reallocated in order that the resource demands of the new program are being met. For example, describe what new activities will cost and whether they will be financed or staffed by shifting of assignments within the budgetary unit or reallocation of resources within the institution. Specifically state which resources will be moved and how this will affect those programs losing resources. Will the allocation of going-level budget funds in support of the program have an adverse impact on any other institutional programs? If so, which program(s) and in what ways?

Resources additional to those already on hand are only incremental dependent on an increase in enrollment and class size. These increases will not require reallocation of funds.

FACULTY BIOGRAPHICAL INFORMATION

STEPHEN E. BINNEY, PHD

Professor Emeritus

B.S. Engineering Physics (1964), Oregon State University; M.S. Nuclear Engineering (1966), Ph.D. Nuclear Engineering (1970), University of California, Berkeley.

Fields of interest: production of medical radioisotopes, applications of nuclear instrumentation and nuclear techniques, BNET, delayed neutron counting, gamma ray and neutron spectrometry, radiation shielding and dosimetry, environmental radiation monitoring.

Two years experience in shielding design and neutron spectrometry analysis at NASA-Lewis Research Center, Cleveland, OH; one year experience in environmental radiation monitoring at EG&G, Inc., Las Vegas, NV. Consultant to Westinghouse Hanford Co., Pacific Northwest National Laboratory, Teledyne Wah Chang Albany, Duke Power Co., Grolier, Inc., U.S. Bureau of Mines, Battelle Human Affairs Research Center, Portland General Electric, Science Applications, Inc., and EG&G, Inc. Member of American Nuclear Society, Health Physics Society. Chairman, ANS Professional Engineering Examination Committee (1983-86); Chairman, ANS Radiation Protection and Shielding Division (1984-85). Registered Professional Engineer. At Oregon State University since 1973.

Selected Publications

S. E. Binney, "Investigation of Bremsstrahlung Effects in Shielding Calculations," BNFL Inc., Report ES-W375-NS00001, April 24, 2000, 551 pp.

Stephen E. Binney, "General Reactor Considerations for a BNCT Facility,"Trans. American Nuclear Society 81, 118-119, 1999.

Erwin G. Schütfort and Stephen E. Binney, "Instrumental Neutron Activation Analysis of Carbonate Reference Standard Material NBS-1c (Argillaceous Limestone) and NBS-88a (Dolomite)," Trans. American Nuclear Society 80, 56-57, 1999.

Stephen E. Binney and David S. Pratt, "Audit of the McClellan Nuclear Radiation Center (January 4-8, 1999)," Report MNRC-9901, February, 1999.Stephen E. Binney and Kira L. Sykes, "Low Permeability Asphalt Concrete Shielding Properties," *Health Physics 72*, 147-151, 1997.

Stephen E. Binney, Robert Mason, Steven W. Martsolf, and John H. Detweiler, "Credibility, Public Trust and the Transport of Radioactive Waste through Local Communities," *Environment and Behavior 28*, 283-301, 1996.

DAVID M. HAMBY, PHD

Associate Professor

B.S. Physics (1984) Mercer University, M.S. Health Physics (1986) University of North Carolina, Chapel Hill, Ph.D. Health Physics (1989) University of North Carolina, Chapel Hill.

Fields of interest: radiation protection, environmental assessment, radiological instrumentation, radiation dosimetry, biokinetic modeling, uncertainty analysis.

Principal Research Scientist, Waste Management and Environmental Technology Department, Savannah

River Technology Center, Westinghouse Savannah River (1989-94). Faculty Appointee, Environmental Assessment Division, Argonne National Laboratory, Argonne, Illinois (1995-99). Assistant Professor of Radiological Health, Department of Environmental and Industrial Health, School of Public Health, University of Michigan, Ann Arbor, Michigan (1994-99). Adjunct Associate Professor of Radiological Health, Department of Environmental Health Sciences, School of Public Health, University of Michigan, Ann Arbor, Michigan (1999-present). Member, National Council on Radiation Protection and Measurement (NCRP) scientific subcommittee on "Cesium in the Environment" (SC#64-23) (1996-99). Member ATSDR Special Committee on Organically Bound Tritium (2000-2001). National Academy of Science Consultant (1996). At Oregon State University since 1999.

Selected Publications

Harvey, R.P.; Hamby, D.M. Uncertainty in particulate deposition for 1 m AMAD particles in an adult lung model. *Radiation Protection Dosimetry*. 95(3): 239-247; 2001.

Hamby, D.M.; Palmer, T.S. Analysis of an internal kinetic model for free and bound tritium. *Health Physics*. 81(4): 426-437; 2001.

Hamby, D.M.; Tynybekov, A.K. Uranium, thorium, and potassium in soils along the shore of Lake Issyk-Kyol in the Kyrghyz Republic. *Environmental Monitoring and Assessment*. accepted. November 2000.

Hamby, D.M. Uncertainty of the tritium dose conversion factor. *Health Physics*. 77(3):291-297; 1999.

Hamby, D.M.; Benke, R.R. Uncertainty of the iodine-131 ingestion dose conversion factor. *Radiation Protection Dosimetry*. 82(4):245-256; 1999.

Famiano, M.A.; Hamby, D.M. Demonstration of a time-integrating microdosimeter. *Nuclear Instruments and Methods in Physics Research - Section A*. 389(3):479-490; 1997.

JACK F. HIGGINBOTHAM

Professor

B.S. Nuclear Engineering (1981), M.S. Nuclear Engineering (1983), Ph.D. Nuclear Engineering (1987), Kansas State University.

Fields of interest: radiation protection, activation analysis, radiation detection, nuclear instrumentation.

Small break LOCA analysis at Black and Veatch Consulting Engineers; Supervisor at Kansas State University research reactor. Senior Health Physicist (1987-94), OSU Radiation Center. Consultant to U.S. Department of the Interior and Oregon Department of Energy, Hewlett-Packard, Oregon Department of Energy, Oregon Health Sciences University, Pacific Northwest Laboratories. Member of Health Physics Society, American Nuclear Society. Academic Dean, Health Physics Society Chair, Part II Panel, American Academy of Health Physics. Chair, Summer School Committee, Health Physics Society. President, Cascade Chapter, Health Physics Society (1991-93). Elda E. Anderson Award (1997). Registered Professional Engineer. Certified Health Physicist. At Oregon State University since 1987.

Selected Publications

J.F. Higginbotham, ed. *Applications of New Technology: External Dosimetry*, Medical Physics Publishing, 1996.

T.E. Moody, E.G. Torne, J. Vclakova and J.F. Higginbotham, "Bench Scale Stabilization of ^{90}Sr Desorbed from Hanford Sediments Using Phosphatic Materials" *American Geophysical Union*, San Francisco, CA, December 1995.

J.S. Bae and J.F. Higginbotham, "Application of a Relational Database to Maintaining an Inventory of Byproduct Material for the Oregon State University TRIGA Reactor," Health Physics Society Annual Meeting, San Francisco, CA, June 1994, p. S108.

D.S. Pratt, J.F. Higginbotham and W. Lei, "In-Plant Beta Spectroscopy," *Radiation Protection Management*, Vol. 10, No. 1, 51-62 1993.

KATHRYN A. HIGLEY

Associate Professor

B.A. Chemistry (1978), Reed College; M.S. Radiological Health Sciences (1992), Ph.D. Radiological Health Sciences (1994), Colorado State University.

Fields of interest: human and ecological risk assessment, environmental pathway analysis; environmental radiation monitoring; radionuclide and hazardous chemical transport; radiochemistry; neutron activation analysis; nuclear emergency response planning; and, environmental regulations.

Three years experience in environmental radiation monitoring at Trojan Nuclear Power Plant; fourteen years with Battelle Pacific Northwest Laboratories as an environmental health physicist. Consultant to U.S. Department of Energy's Office of Environment, Safety and Health., Pacific Northwest National Laboratory, and Argonne National Laboratory Member of Health Physics Society, Society of Environmental Toxicology and Chemistry; BIOMOVs II (Biospheric Model Validation Study). Health Physics Society Chair, Public Education Committee (1996-1997); NCRP Scientific Committees; Elda E. Anderson Award Winner, (1995). Certified Health Physicist. At Oregon State University since 1994.

Selected Publications

Duffy, W., Hart, K., and Higley, K. Procedures for using instrument static efficiency measurements for determination of instrument scan efficiency calibration factors for point and small area sources. *Health Physics*. 82(6). 2002.

Higley, K.A., and Povetko, O.G., "*Preparation of Soil Thin Sections for Contaminant Distribution Studies"* I. Linkov and W.R. Schell (ed's), Contaminated Forests, Kluwer Academic Publishers. 1999. Printed in the Netherlands. pps 85-93.

Higley, K.A., "*Modeling Intermittent Processes in Radionuclide Migration in Soil Systems"* I. Linkov and W.R. Schell (ed's), Contaminated Forests, Kluwer Academic Publishers. 1999. Printed in the Netherlands. pps 231-238.

Higley, K.A., Bilyard, G., Antonio, E., Kocher, D., Domotor, S., Jones, D., Sample B., "*A Screening Methodology for Evaluating Doses to Biota 0 Derivation and Application*" In *Health Phys*., Vol. 76, No. 6, Jun 1999.

Higley, K.A., Public Dose Assessment, in *Applications of New Technology: External Dosimetry*, J.F. Higginbotham, Editor, Medical Physics Publishing, Madison, WI, p. 377-402, 1996.

ANDREW C. KLEIN, PHD

Professor and Head
Director, Radiation Center

B.S. Nuclear Engineering (1977), Pennsylvania State University; M.S. Nuclear Engineering (1979), Ph.D. Nuclear Engineering (1983), University of Wisconsin.

Fields of interest: nuclear non-proliferation technology, space reactor analysis and design, fabric space radiator development, radiation shielding and health physics.

William C. Foster Fellow with the U.S. Arms Control and Disarmament Agency (1996); Director, Oregon Space Grant Program (1993-present); Visiting Assistant Professor, Department of Nuclear Engineering, University of Cincinnati (1983-85); NASA/ASEE Summer Faculty Fellow, NASA Lewis Research Center (1986-88); Nuclear Safety Engineer, Power Systems Group, Combustion Engineering (1979-80). Consultant to Battelle Pacific Northwest Laboratories, Lawrence Livermore National Laboratory and Argonne National Laboratory. Member of American Nuclear Society, Health Physics Society, American Society for Engineering Education, Alpha Nu Sigma, Tau Beta Pi.; Editorial Advisory Board, *Nuclear Technology*, 1997-present; Advisory Editor, *Annals of Nuclear Energy*, 1996-present. Registered Professional Engineer. At Oregon State University since 1985.

Selected Publications

P.M. Rapier and A.C. Klein, "Engineering Management of the Environment," in *Standard Handbook for Mechanical Engineers*, Tenth Edition, E.A. Avallone, ed., McGraw-Hill Book Company, New York, NY, 1996.

H.H. Lee, S. Abdul-Hamid, and A.C. Klein, "Systems Modeling and Reactor Design Studies of the Advanced Thermionic Initiative Space Nuclear Reactor," *Nuclear Technology*, Vol. 115, No. 1, p1-21, July 1996.

J.W. Dickinson and A.C. Klein, "Computer Modeling of Single Cell and Multicell Thermionic Fuel Elements," *Nuclear Technology*, Vol. 114, No. 2, p205-223, May 1996.

H.M. Al-Baroudi and A.C. Klein, "Experimental Simulations and Heat Transfer Parameter Measurements of Film Condensation on a Rotating Flat Plate, *Experimental Thermal and Fluid Science*, V10(3), p. 124-135, January 1995.

C.M. Betts, M.R. Galvin, J.R. Green, V.M. Guymon, S.M. Slater, and A.C. Klein, "An Analytical Model of the Swirl Vane Steam Separator for Boiling Water Reactors," *Nuclear Technology*, V105(3), p. 395-410, March 1994.

TODD S. PALMER, PHD

Associate Professor

B.S. Nuclear Engineering (1983), Oregon State University; M.S. Nuclear Engineering (1989), Ph.D. Nuclear Engineering and Scientific Computing (1993), University of Michigan.

Fields of interest: numerical techniques for particle transport and diffusion, computational fluid dynamics, reactor physics, general numerical methods, nuclear criticality safety.

Three years experience as a computer code physicist in Defense Sciences at Lawrence Livermore National Laboratory. Member of American Nuclear Society. At Oregon State University since 1995.

Selected Publications

G. G. Davidson and T. S. Palmer, "Finite Element Diffusion on Arbitrary Quadrilaterals using Rational Basis Functions", Trans. Am. Nuc. Soc., 87, (2002).

R. Nes and T.S. Palmer, "An Advanced Nodal Discretization for the Quasi-Diffusion Low-Order Equations", Proceedings of the International Conference on the New Frontiers of Nuclear Technology : Reactor Physics, Safety and High-Performance Computing, Seoul, Korea, October, (2002).

D.M. Hamby and T.S. Palmer, "Analysis of an internal kinetic model for free and bound tritium", Health Physics, 81(4), pp. 426-437, (2001).

T.S. Palmer, "Discretizing the Diffusion Equation on Unstructured Polygonal Meshes in Two Dimensions", Ann. of Nucl. Energy, 28, pp 1851-1880, (2001).

C. M. Marianno, K. A. Higley, and T. S. Palmer, "A Comparison Between Default EGS4 and EGS4 with Bound Compton Cross Sections when Scattering Occurs in Bone and Fat," Health Physics , 78, vol. 6, pp. 716-720, June 2000.

T. S. Palmer, M. R. Zika and N. K. Madsen, "Unstructured Polyhedral Mesh Radiation Diffusion", Trans. Am. Nucl. Soc., 83, 2000.

D. J. Brice and T.S. Palmer, "MCNP criticality calculations in support of the Trojan Independent Spent Fuel Storage Installation (ISFSI)," Trans. Am. Nucl. Soc., 78, 1998.

T.S. Palmer, J.M. McGhee and T.A. Wareing, "Linear Discontinuous Diffusion Accelerated SN Transport on Unstructured Tetrahedral Meshes in the ATTILA Code", Trans. Am. Nucl. Soc., 78, 1998.

ALENA PAULENOVA, PHD

Assistant Professor

B.S. Chemistry (1985), M.S. Analytical and Nuclear Chemistry (1991), Comenius University, Ukraine; Ph.D. Physical Chemistry (1997), Karkiv State University, Ukraine.

Field of interest: Thermodynamics of complexation properties of metals with synthetic and natural ligands and polyelectrics; separation and decontamination processes; high-level waste chemistry; speciation of actinides and waste treatment; radiochemical sensors and onsite measurements; radio-analytical and radio-environmental applications.

At Oregon State University since 2003.

JOSE N. REYES, JR., PHD

Professor

B.S. Nuclear Engineering (1978), University of Florida; M.S. Nuclear Engineering (1984), Ph.D. Nuclear Engineering (1986), University of Maryland.

Fields of interest: thermal hydraulics, multi-phase fluid flow studies, scaling analyses, Advanced Light Water Reactor Safety, fluid-structure interactions, reactor system design, and probabilistic risk assessment.

Ten years at the U.S. Nuclear Regulatory Commission, Research Engineer and Project Manager for Reactor and Plant Systems Research Branch. Member of American Nuclear Society, American Society of Mechanical Engineers. Member, USNRC International Code Assessment Program (since 1988); Chair Elect, ANS Thermal Hydraulic Division (since 1987). Special Achievement Awards for Outstanding Contributions to the USNRC: Revision of Emergency Core Cooling System Rule 10 CFR 50, App. K (1987) and Resolution of Pressurized Thermal Shock (1986); Austin-Paul Engineering Faculty Award (1990). Principal Investigator for the AP600 Advanced Plant Experiment Research Program, Registered Professional Engineer. At Oregon State University since 1987.

Selected Publications

Lafi, A.Y., J.N. Reyes, Jr., “Two-Inch Cold Leg Break Tests in APEX and ROSA/AP600," Proceeding of the 1999 NURETH-9 Conference, October 3-8, 1999, San Francisco, CA

Reyes, J.N., Jr., C. Rusher, “Analytical Models for Pressure Vessel Blowdowns of Saturated Fluid Mixtures,” Proceeding of the 1999 NURETH-9 Conference, October 3-8, 1999, San Francisco, CA

J.N. Reyes, Jr., A. Y. Lafi, D. Saloner, "The use of MRI to quantify multi-phase flow patterns and transitions: an application to horizontal slug flow," Nuclear Engineering and Design, 184, (1998) 213-228.

J.N. Reyes, Scaling the Depressurization Behavior of Fluids in Phase Equilibria, Proceedings of the Japan-U.S. Seminar on Two Phase Flow Dynamics, Kyushu University, Fukuoka, Japan, July 15-20, 1996.

O.L. Stevens and J.N. Reyes, "APEX Passive Residual Heat Removal System Heat Exchanger Flow Testing and Characterization," *Proceedings of the Thermal Hydraulic Division*, American Nuclear Society, 1996 National Heat Transfer Conference, Houston, Texas, August 3-6, 1996.

JOHN C. RINGLE, PHD

Professor Emeritus (still active with teaching)

B.S. Electrical Engineering (1957), M.S. Electrical Engineering (1959), Case Institute of Technology; Ph.D. Nuclear Engineering (1964), University of California, Berkeley.

Fields of interest: radioactive waste management, environmental effects of nuclear power. Five years industrial experience in nuclear and radiological engineering.

Consultant to Oregon Department of Energy (since 1989), Portland General Electric Company (1977-82), and Argonne National Lab (1976). Member of American Nuclear Society, American Physical Society, Sigma Xi, Tau Beta Pi and Eta Kappa Nu. Chairman, Oregon Section, ANS (1973-74); Member, ANS-15 Standards Committee (1971-76); Member, Hanford Repository Review Committee (1985-88). Registered Professional Engineer. At Oregon State University since 1966.

Selected Publications

J.C. Ringle, S.E. Binney, and B. Dodd, "Results of a Radioactive Waste Course for High School Teachers," *Trans. American Nuclear Society*, *65*:19, 1992.

J.C. Ringle, S.E. Binney, and B. Dodd, "The Oregon HLW Transport Public Information and Involvement Program," *Trans. American Nuclear Society, 63*:357, 1991.

BRIAN WOODS, PHD

Assistant Professor

B.S. Mechanical Engineering (1988), University of Virginia; M.S. Nuclear Engineering (1999), Ph.D. Nuclear Engineering (2001), University of Maryland.

Field of interest: Reactor thermal hydraulics, reactor safety, computational fluid dynamics, multi-phase/multi-species flow and heat transfer.

Nuclear Safety Analyst, Dominion Energy (2000-2003). At Oregon State University since 2003.

QIAO WU, PHD

Associate Professor

B.S. Engineering Physics (1983), M.S. Engineering Physics (1985), Tsinghua University; Ph.D. Nuclear Engineering (1995), Purdue University.

Field of interest: Thermal hydraulics and reactor safety, reactor engineering, multi-phase flow and boiling heat transfer, uranium enrichment, rotor dynamics.

Assistant Professor (1985-1990), Engineering Physics, Tsinghua University. Research Associate (1995-1997), Nuclear Engineering, Purdue University. Member of American Nuclear Society. At Oregon State University since1998.

Selected Publications

Q. Wu, K. Welter, D. McCreary, and J.N. Reyes, "Theoretical Studies on the Design Criteria of Double-Sensor Probe for the Measurement of Bubble Velocity," Accepted for publication in the Journal of Flow Measurement and Instrumentation (2000).

K Welter, Q. Wu, and J.N. Reyes, Jr., "Evaluation of Current Phase-Separation Models in a Vertical Branch of a Reactor Hot Leg," accepted by the 34th National Heat Transfer Conference, Pittsburgh, Pennsylvania, August 20-22 (2000).

Q. Wu, M. Ishii "Sensitivity Studies on Double-Sensor Conductivity Probe for the measurement of Interfacial Area Concentration," Int. J. Multiphase Flow, 25, pp. 155-173 (1999).

M. Ishii, Q. Wu, S.T. Revankar, S. Kim, G. Zhang, R.Y. Lee, and C.E. Tinkler, "Corium Dispersion in Direct Containment Heating Part I: Separate Effect Experiments with Water and Woods Metal Simulating Core Melt for Zion Reactor Conditions," NUREG/CR-6510 (1999).

M. Ishii, Q. Wu, G. Zhang, R.Y. Lee, and C.E. Tinkler, "Corium Dispersion in Direct Containment Heating Part II: Theoretical Analysis of the Hydrodynamic Characteristics," NUREG/CR-6510 (1999).

(OUS and OSU)

Category I Proposal Budget Outline

Estimated Costs and Sources of Funds for the Proposed Program

Total new resources required to handle the increased workload, if any. If no new resources are required, the budgetary impact should be reported as zero.

See "Budget Outline Instructions" on the OUS Forms and Guidelines Web site: www.ous.edu/aca/aca-forms.html

Institution: Oregon State University

Category I Proposal Name: A Master of Health Physics in Radiation Health Physics

Academic Year: 2004-2005 **Operating Year:** 1st

Completed by: Shirley Campbell **(indicate 1st, 2nd, 3rd, or 4th year--prepare one page for each)**

		Column A		Column B	Column C	Column D	Column E	Column F	Column G
	FTE	From Current Budgetary Unit Dept	From Current Budgetary Unit College	Institutional Reallocation from Other Budgetary Unit	From Special State Appropriation Request	From Federal Funds & Other Grants/Contracts	From Fees, Sales, & Other Income	Endowment	LINE ITEM TOTAL
Personnel									
Faculty (Include FTE)									$0
Support Staff (Include FTE)									$0
Graduate Assistants (Include FTE)									$0
Fellowships/Scholarships									$0
*OPE: Faculty									$0
Staff									$0
GTA/GRA									$0
Nonrecurring									$0
Personnel Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Other Resources									
Library/Printed									$0
Library/Electronic									$0
Supplies and Services									$0
Equipment									$0
Travel									$0
Other Expenses		2,000							$2,000
Other Resources Subtotal:		**2,000**	**0**	**0**	**0**	**0**	**0**	**0**	**$2,000**
Physical Facilities									
Construction									$0
Major Renovation									$0
Other Expenses									$0
Physical Facilities Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
GRAND TOTALS:		**2,000**	**0**	**0**	**0**	**0**	**0**	**0**	**$2,000**
Percentage of Total		**100.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	

** See current OPE tables at http://oregonstate.edu/dept/budgets/budghand/tables.htm*

(OUS and OSU)

Category I Proposal Budget Outline

Estimated Costs and Sources of Funds for the Proposed Program

Total new resources required to handle the increased workload, if any. If no new resources are required, the budgetary impact should be reported as zero.

See "Budget Outline Instructions" on the OUS Forms and Guidelines Web site: www.ous.edu/aca/aca-forms.html

Institution: Oregon State University

Category I Proposal Name: A Master of Health Physics in Radiation Health Physics

Academic Year: 2005-2006 **Operating Year:** 2nd

Completed by: Shirley Campbell **(indicate 1st, 2nd, 3rd, or 4th year--prepare one page for each)**

		Column A		Column B	Column C	Column D	Column E	Column F	Column G
	FTE	From Current Budgetary Unit: Dept	From Current Budgetary Unit: College	Institutional Reallocation from Other Budgetary Unit	From Special State Appropriation Request	From Federal Funds & Other Grants/Contracts	From Fees, Sales, & Other Income	Endowment	LINE ITEM TOTAL
Personnel									
Faculty (Include FTE)									$0
Support Staff (Include FTE)									$0
Graduate Assistants (Include FTE)									$0
Fellowships/Scholarships									$0
*OPE: Faculty									$0
Staff									$0
GTA/GRA									$0
Nonrecurring									$0
Personnel Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Other Resources									
Library/Printed									$0
Library/Electronic									$0
Supplies and Services									$0
Equipment									$0
Travel									$0
Other Expenses									$0
Other Resources Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Physical Facilities									
Construction									$0
Major Renovation									$0
Other Expenses									$0
Physical Facilities Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
GRAND TOTALS:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Percentage of Total		**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	

** See current OPE tables at http://oregonstate.edu/dept/budgets/budghand/tables.htm*

(OUS and OSU)

Category I Proposal Budget Outline

Estimated Costs and Sources of Funds for the Proposed Program

Total new resources required to handle the increased workload, if any. If no new resources are required, the budgetary impact should be reported as zero.

See "Budget Outline Instructions" on the OUS Forms and Guidelines Web site: www.ous.edu/aca/aca-forms.html

Institution: Oregon State University

Category I Proposal Name: A Master of Health Physics in Radiation Health Physics

Academic Year: 2006-2007 **Operating Year:** 3rd

Completed by: Shirley Campbell **(indicate 1st, 2nd, 3rd, or 4th year--prepare one page for each)**

		Column A		Column B	Column C	Column D	Column E	Column F	Column G
	FTE	From Current Budgetary Unit: Dept	From Current Budgetary Unit: College	Institutional Reallocation from Other Budgetary Unit	From Special State Appropriation Request	From Federal Funds & Other Grants/Contracts	From Fees, Sales, & Other Income	Endowment	LINE ITEM TOTAL
Personnel									
Faculty (Include FTE)									$0
Support Staff (Include FTE)									$0
Graduate Assistants (Include FTE)									$0
Fellowships/Scholarships									$0
*OPE: Faculty									$0
Staff									$0
GTA/GRA									$0
Nonrecurring									$0
Personnel Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Other Resources									
Library/Printed									$0
Library/Electronic									$0
Supplies and Services									$0
Equipment									$0
Travel									$0
Other Expenses									$0
Other Resources Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Physical Facilities									
Construction									$0
Major Renovation									$0
Other Expenses									$0
Physical Facilities Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
GRAND TOTALS:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Percentage of Total		**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	

** See current OPE tables at http://oregonstate.edu/dept/budgets/budghand/tables.htm*

(OUS and OSU)

Category I Proposal Budget Outline

Estimated Costs and Sources of Funds for the Proposed Program

Total new resources required to handle the increased workload, if any. If no new resources are required, the budgetary impact should be reported as zero.

See "Budget Outline Instructions" on the OUS Forms and Guidelines Web site: www.ous.edu/aca/aca-forms.html

Institution: Oregon State University

Category I Proposal Name: A Master of Health Physics in Radiation Health Physics

Academic Year: 2007-2008 **Operating Year:** 4th

Completed by: Shirley Campbell **(indicate 1st, 2nd, 3rd, or 4th year--prepare one page for each)**

		Column A		Column B	Column C	Column D	Column E	Column F	Column G
	FTE	From Current Budgetary Unit: Dept	From Current Budgetary Unit: College	Institutional Reallocation from Other Budgetary Unit	From Special State Appropriation Request	From Federal Funds & Other Grants/Contracts	From Fees, Sales, & Other Income	Endowment	LINE ITEM TOTAL
Personnel									
Faculty (Include FTE)									$0
Support Staff (Include FTE)									$0
Graduate Assistants (Include FTE)									$0
Fellowships/Scholarships									$0
*OPE: Faculty									$0
Staff									$0
GTA/GRA									$0
Nonrecurring									$0
Personnel Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Other Resources									
Library/Printed									$0
Library/Electronic									$0
Supplies and Services									$0
Equipment									$0
Travel									$0
Other Expenses									$0
Other Resources Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Physical Facilities									
Construction									$0
Major Renovation									$0
Other Expenses									$0
Physical Facilities Subtotal:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
GRAND TOTALS:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$0**
Percentage of Total		**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	

** See current OPE tables at http://oregonstate.edu/dept/budgets/budghand/tables.htm*

OSU Libraries
Collection Development

Library Evaluation for Category I Proposal

New Instructional Program Leading to the Master of Health Physics (MHP)
Title of Proposal

Radiation Health Physics
Department

College of Engineering
College

The subject librarian responsible for collection development in the pertinent curricular area has assessed whether the existing library collections and services can support the proposal. Based on this review, the subject librarian concludes that present collections and services are:

[ ] inadequate to support the proposal (see budget needs below)
[ ] marginally adequate to support the proposal
[x] adequate to support the proposal

Estimated funding needed to upgrade collections or services to support the proposal (details are attached)

Year 1: $0 Ongoing (annual): $0

Comments and Recommendations:

See attached

Date Received: 12/17/03 Date Completed: 1/16/04

Laurel Kristick _____
Subject Librarian Signature

Cheryl Middleton _____
Subject Librarian Signature

Richard Brumley _____ _____
Head of Collection Development Signature Date

Karyle Butcher _____ _____
University Librarian Signature Date

Oregon State University Libraries Evaluation of the Collection supporting:
Proposal for the Initiation of a New Instructional Program Leading to the Master of Health Physics (MHP) in Radiation Health Physics

In response to this request for an evaluation, we reviewed the library collection assessment for nuclear engineering, completed in March 2000. This assessment reviewed the monographic and serials collections in nuclear engineering and radiation health physics. The new program as proposed is limited to 20 students. Since this proposed degree program does not introduce any new courses, the 2000 assessment gives a good overview of the libraries ability to cover the existing courses in Radiation Health Physics. Support for the elective courses in Health, Environmental Science, and Toxicology was also considered in this evaluation.

Monographs:

The OSU Libraries monograph collection in nuclear engineering is between WLN Level 3c, adequate to support master level research and Level 4, adequate to support doctoral level research. Our current monograph acquisitions in this subject are at WLN Level 4. The assessment included a recommendation to strengthen the collection in the areas of medical isotopes, radiopharmaceuticals and radioecology; new monographs in those fields are being acquired. 32% of the monograph collection in this area has been published within the last 10-12 years.

The Public Health and Medicine monograph collections currently support the PhD program in Health Physics. The proposed Master's program does not have a required research component. The existing collections are adequate for supporting the proposed Master's program.

The Orbis Cascades Summit Alliance gives students access to the monographs/books available in library collections of Pacific Northwest libraries, including Oregon Health & Sciences University and University of Washington.

Government Documents:

Government documents are a key part of the nuclear engineering collection; of particular interest for this proposal is the material funded by the Nuclear Regulatory Commission. The library's government document depository profile includes these materials, and they are available in paper, microfiche or web-based access and are cataloged in the OSU Libraries Online Catalog.

Serials/Journals:

The 2000 assessment for nuclear engineering placed the serials collection at WLN Level 3C, adequate to support master's level research. For this assessment, library holdings were compared to the 1999 ISI Journal Citation Report. The library subscribes to 12 of the 19 titles in the subject area of Nuclear Physics and 13 of the 33 titles in Nuclear Science and Technology. The Libraries subsidized Interlibrary Loan allows students to obtain journal articles not available at Oregon State University.

The Public Health and Medicine journal collections currently support the PhD program in Health Physics. The proposed program does not have a required research component. The existing collections are adequate for supporting the proposed Master's program.

Subject-Specific Indexes and Abstracts

The library subscribes to a number databases that provide access to the literature in this field. These include the following:

- Applied Science and Technology Abstracts, 1983-present
- BIOSIS (Biological Abstracts), 1990-present
- Compendex (Engineering Index), 1970-present
- Environmental Science and Pollution Management, 1967-present
- GPO Monthly Catalog, 1976-present
- Inspec (Physics Abstracts), 1969-present
- Medline, 1966-present
- NTIS (index to government technical reports), 1964-present
- Web of Science (Science Citation Index). 1985-present

Summary

The Library can support this program as described in the proposal, especially with its strong collections in monographs and government documents in this subject area. The serials collection, while not as strong, is adequate for this program.

Submitted by Laurel Kristick and Cheryl Middleton
January 16, 2004

From: Andy Klein [mailto:kleina@engr.orst.edu]
Sent: Friday, May 07, 2004 10:44 AM
To: 'kaurind@ohsu.edu'
Cc: 'David M. Hamby'; Kathy Higley (Kathryn.Higley@oregonstate.edu); Robin Keen (keenr@engr.orst.edu)
Subject: Master of Health Physics proposal review request
Importance: High

Dear Darryl:

I want to thank you again for coming down to Corvallis last month. I hope we can move ahead with some of the collaborations we talked about. We have a unique set of skills now in Oregon with your program at OHSU that should connect very well with our RHP program down here.

Attached is a Category I proposal that we have submitted for review for a new Master in Health Physics degree program that would very nicely complement our current BS, MS, and PhD programs in Radiation Health Physics by giving us a non-thesis masters degree program. We currently have a non-thesis MS option, but the faculty believe that we should replace that option with the new course-work based masters program.

Our Curriculum Council yesterday asked us to ask you for a liaison letter/email concerning the possible interactions with your program at OHSU. Would you please give our proposal a review and send me your comments? We're trying to maintain the momentum on this proposal, so would it be possible for you to look over our proposal and comment within the next week to 10 days?

Thanks for your help. I look forward to hearing from you soon!

Andy

*_
Andrew C. Klein
Professor and Head,
Department of Nuclear Engineering and Radiation Health Physics
Director, Radiation Center

102 Radiation Center
Oregon State University
Corvallis, OR 97331-5902

Phone: 541-737-2344
Fax: 541-737-0480
email: kleina@engr.orst.edu
*_

From: Andy Klein [mailto:kleina@engr.orst.edu]
Sent: Friday, May 07, 2004 10:18 AM
To: 'woodalld@oit.edu'
Cc: 'David M. Hamby'; Robin Keen (keenr@engr.orst.edu)
Subject:
Importance: High

Dear Dave:

I hope all is going well down for you in K-Falls. One of these days we really should get together and see how things are going. If you're passing by Corvallis on the way to Salem, please let me know. I should even swing down your way sometime too.

Attached is a Category I proposal that we have submitted for review for a new Master in Health Physics degree program that would very nicely complement our current BS, MS, and PhD programs in Radiation Health Physics by giving us a non-thesis masters degree program. We currently have a non-thesis MS program, but the faculty believe that we should replace that option with the new course-work based masters program. The College of Engineering here has a parallel effort to set up a similar Masters of Engineering degree program that you may have already seen.

Our Curriculum Council yesterday asked us to ask you for a liaison letter/email concerning the possible interactions with your programs. Would you please give our proposal a review and send me your comments? We're trying to maintain the momentum on this proposal, so would it be possible for you to look over our proposal and comment within the next week to 10 days?

Thanks for your help - we really need to get together sometime soon to look at closer collaboration between our Department and your programs. I look forward to hearing from you soon!

Andy

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Andrew C. Klein
Professor and Head,
Department of Nuclear Engineering and Radiation Health Physics
Director, Radiation Center

102 Radiation Center
Oregon State University
Corvallis, OR 97331-5902

Phone: 541-737-2344
Fax: 541-737-0480
email: kleina@engr.orst.edu
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From: Darryl Kaurin [mailto:kaurind@ohsu.edu]
Sent: Tuesday, June 01, 2004 11:51 AM
To: kleina@engr.orst.edu
Subject: RE: Review of non-thesis MS degree in health physics

Dear Dr. Klein,

It was a pleasure to review your Category I proposal for a non-thesis MHP degree in health physics. Such a program is needed in the northwest, and your institution is the only one with the facilities to carry it out. The curriculum is comprehensive, with many unique qualities that make it attractive. Please let me know if I can be of assistance with bringing it about.

Sincerely,

Darryl Kaurin, PhD, CHP, ABR
Assistant Professor
Medical Physicist
Oregon Health & Science Univ.
Dept of Radiation Oncology
Mail Code:L-337
3181 SW Sam Jackson Park RD
Portland, OR 97201-3098
Office:(503)494-6934
Dept:(503)494-8756
fax:(503)494-6967
kaurind@ohsu.edu