

NOV 23 1993

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Submission Date: _____

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93-64

App 3/15/94

Sen App 3/29/94

CURRICULUM PROPOSAL COVER SHEET
University-Wide Undergraduate Curriculum Committee

I. CONTACT

Contact Person Helen C. Cunningham Phone 3090/7647

Department Nursing and Allied Health Professions

II. PROPOSAL TYPE (Check All Appropriate Lines)

____ COURSE _____
Suggested 20 character title

____ New Course* _____
Course Number and Full Title

____ Course Revision _____
Course Number and Full Title

____ Liberal Studies Approval + _____
for new or existing course Course Number and Full Title

____ Course Deletion _____
Course Number and Full Title

____ Number and/or Title Change _____
Old Number and/or Full Old Title

New Number and/or Full New Title

____ Course or Catalog Description Change _____
Course Number and Full Title

☒ PROGRAM: ☒ Major ☐ Minor ☐ Track

☒ New Program* Nuclear Medicine Technology
Program Name

____ Program Revision* _____
Program Name

____ Program Deletion* _____
Program Name

____ Title Change _____
Old Program Name

New Program Name

III. Approvals (signatures and date)

Helen C. Cunningham
Department Curriculum Committee

Harold C. Wingard
Department Chair

C. Lee Snyder
College Curriculum Committee

Harold C. Wingard
College Dean

+ Director of Liberal Studies (where applicable)

*Provost (where applicable)

RATIONALE FOR THE
DEVELOPMENT OF A NEW PROGRAM

BACHELOR OF SCIENCE IN NUCLEAR MEDICINE TECHNOLOGY

RATIONALE: Nuclear Medicine is an important technology for diagnosing and treating anomaly and pathology. The nuclear medicine technologist is a highly educated individual who has completed an approved course of study in the theory and practice of nuclear medicine technology. This Allied Health Profession utilizes radioactive materials for the diagnosis of various physical anomalies, pathophysiology and for the treatment of some specific disorders.

The Report of the Summit on Manpower in April 1989, a report which emerged from the collaborative effort of seventeen national health care organizations, concluded that the nuclear medicine technology supply of qualified personnel does not meet current demand nor will it meet future needs. Indiana University of Pennsylvania in cooperation with the University of Findlay, Findlay, Ohio has the resources in place to offer a Bachelor of Science degree program in Nuclear Medicine Technology.

The addition of this program in Nuclear Medicine Technology would support the mission of this University, Goal Area 1: "Developing and refining quality educational programs in areas to meet anticipated needs".

NEED: Data from a 1984 study indicated a 19% shortage of qualified personnel to fill the positions available in Nuclear Medicine Technology. Two nationwide surveys conducted in 1988 addressed the issue again of supply and demand. In the Nuclear Medicine Technologist Section, 57% of the respondents indicated that a shortage existed. A 1991 "Staffing Concerns Survey" was conducted as a follow-up to the 1988 study and an even more significant shortage was indicated. The Allied Health newsletter, 1988: 19:3 supported the above data, indicating that the previous year (filled 833, unfilled 1,587).

As most of the current Nuclear Medicine Technologist (NMT) professionals were born in the 50's and are nearing retirement, their exodus is likely to further impact the shortage as demand skyrockets in the "Greying America".

TARGET CLIENTELE: Traditional high school graduates and non-traditional students interested in preparing themselves for the Allied Health Profession of Nuclear Medicine Technology that offers them significant job opportunities and a starting salary ranging from \$28,000 to \$34,000 (1991 Allied Health Education Directory).

CURRENT STAGE OF DEVELOPMENT: Affiliation agreement (Appendix C) with the University of Findlay has been completed and returned to IUP for final approval. The Curriculum has been developed (Appendix B) in collaboration with Findlay University. Final drafts for all materials necessary for submission to the College and University Curriculum Committee are in progress.

ESTIMATED IMPLEMENTATION DATE: Complete process of program approval by January 1994; submit to University Curriculum Committee in January 1994; implement program in June of 1994.

INDIANA UNIVERSITY OF PENNSYLVANIA
NEW PROGRAM PROPOSAL

BACHELOR OF SCIENCE DEGREE
IN
NUCLEAR MEDICINE TECHNOLOGY

Contact Person:
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IUP
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**PROPOSED UNDERGRADUATE PROGRAM
BACHELOR OF SCIENCE IN**

NUCLEAR MEDICINE TECHNOLOGY

The program leading to a Bachelor of Science degree in Nuclear Medicine Technology consists of three years of study at Indiana University of Pennsylvania, Indiana, Pennsylvania and one year at the University of Findlay/Nuclear Medicine Institute, Findlay, Ohio.

Nuclear Medicine Technology is one of the growing and changing Allied Health specialties today; therefore, there are challenging job opportunities for both men and women who are well trained with nuclear medicine procedures and diagnostic equipment.

Nuclear Medicine is the medical specialty that utilizes the nuclear properties of radioactive and stable nuclides to make diagnostic evaluations of the anatomic or physiologic conditions of the body and to provide therapy with unsealed radioactive sources. A Nuclear Medicine Technologist's skills complement those of the nuclear medicine physician and other Allied Health professionals.

The Nuclear Medicine Technologist is a highly trained individual who has completed an approved course of study in the theory of nuclear medicine technology. This Allied Health Profession utilizes radioactive materials for the diagnosis of various pathological disease states and for the treatment of some specific disorders. The American College of Radiology, American Medical Association, American Society of Medical Technology, American Society of Technologists, Society of Nuclear Medicine and the Society of Medicine-Technologist Section cooperate to establish, maintain and promote appropriate standards of quality for educational programs in Nuclear Medicine Technology. The standards are included in Appendix A.

A. APPROPRIATENESS TO MISSION

The primary goal of the program is to help improve the delivery of health care, especially in Pennsylvania and the adjacent states, by educating students as nuclear medicine technologists for the practicing field of nuclear medicine.

Specific objectives prepare the student to perform the following Nuclear Medicine Technology tasks effectively:

1. patient care skills
2. technical skills and
3. administrative functional skills

The goals and objectives are consistent with and appropriate to the System Mission by agreement between IUP and the University of Findlay/Nuclear Medicine Institute providing an ongoing commitment to excellence in education at the lowest possible cost to students. In addition, this program provides undergraduate instruction for students in the applied field of Allied Health

which is consistent with the legislated mission of the system.

Nuclear Medicine Technology will help fulfill goal area one of the University Mission by developing and refining a quality education program that will be accredited through The Committee on Allied Health Education and Accreditation (CAHEA). This undergraduate program will have high academic standards and will support the education of students in critical need areas. Recruitment of qualified undergraduate students in this area will help meet the long-range enrollment goals. Development of the cooperative agreement with the University of Findlay helps fulfill the mission through partnership development with other educational agencies in order to refine quality educational programs in areas to meet anticipated needs.

B. NEED

The intellectual value of the program is consistent with the high standards of excellence of IUP. The program meets the liberal studies requirements and the science curriculum requirements for the clinical year as well as meeting all professional accrediting agency (The Committee on Allied Health Education and Accreditation) requirements. Each student will complete five semesters (77 credit hours) at IUP before entering the University of Findlay/Nuclear Medicine Institute. The University of Findlay will admit students on the basis of a numerical point system with the following criteria: (a) cumulative average 2.25/4.0 minimum, (b) science Q.P.A. 2.25/4.0 minimum, (c) transcript evaluation and (d) application data. Upon successful completion of thirty-two (32) credits of didactic and clinical coursework in the clinical portion of the program which is one year in length, the student will return to IUP to complete 15 credits, making the program 124 total credit hours.

The Bureau of Labor Statistics expects that overall employment of health technologists and technicians will grow faster than any other major group between now and the year 2020. Increasing demand from a growing and aging population will spur employment growth. Although the number of health care providers has been on a continual increase since 1970, there is a diminishing pool of enrollers in the Allied Health fields.

The Report to the President and Congress on the Health Personnel in U.S. (Bureau of Health Professions, DHHS Publication #NRS-P-OD-90-1), projects increased need for technologists as a result of: aging population; maternal and child health problems; AIDS; and physical and emotional treatments related to substance abuse.

The Report of the Summit on Manpower, April 1989, which is the report from collaborative effort of seventeen national health care organizations, concluded that the nuclear medicine technology supply of qualified personnel does not meet current demand nor will it meet future needs.

According to the Allied Health Education Directory, 18th Edition, 1990, the "employment outlook in nuclear medicine technology is excellent. Opportunities may be found both in major medical centers and in smaller hospitals."

Two nationwide surveys conducted in 1988 addressed the issue of supply and demand of nuclear medicine technologists. In the Nuclear Medicine Technologist section of the Summit on Manpower Report, April 1989, 57% of respondents revealed that a shortage existed. The American Health Care Radiology Administrators (AHRA) Survey, perceived a shortage of 89% in nuclear medicine technologists. Data from 1984 indicated a 19% shortage on the same surveys; therefore, later results suggest the problem is growing nationally. The largest percentage of current technologists were born in the 1950's which translates to the reality that a large percentage of the technologist population retirements will occur as the need for additional technologists is peaking. This phenomenon has the potential to make the shortage extremely severe in the near future. According to the Allied Health Newsletter, 1988, only 59% of positions available in nuclear medicine technology were filled the previous year. A 1991 "Staffing Concerns Survey" was conducted by the AHRA Statistical Resource Committee as a follow-up to the 1988 Summit on Manpower Study. Some significant findings relating to Nuclear Medicine follow:

1. The average percentage of vacancies across the nation increased to 10% from 7.7% with the Southwest region having the highest increase (13%).
2. "Too few graduates" was a reason that ranked high (84%) when comparisons of reasons for shortages by Imaging Specialty were surveyed.
3. Several respondents to the survey indicated that many of the graduates available were not qualified or adequately trained.

The conclusion reached from this data as well as the nearly 100 requests to fill positions received by the University of Findlay/Nuclear Medicine Institute last year is that opportunities exist both regionally and nationally for qualified graduates.

According to the 1991 CAHEA Annual Supplement Survey, entry level salaries averaged slightly over \$24,000 annually.

The program will enhance student breadth through the affiliation agreement between IUP and the University of Findlay/Nuclear Medicine Institute by providing a sound liberal studies program and rigorous science courses in combination with the twelve month didactic and clinical experience.

Faculty vitality may be enhanced by providing another opportunity for preparing students to perform the rigorous number of tasks required in patient care, technical skills and administration within nuclear medicine. Since nuclear properties of radioactive and stable nuclides are used to make diagnostic evaluations of the anatomic or physiologic conditions of the body, there are many opportunities for research activities in quality control techniques and quality assurance for nuclear medicine.

The program can contribute to community enhancement through fulfilling nuclear medicine technology positions that have been vacant or served by unqualified personnel. The nuclear medicine technologist is a vital part of the total

medical team in both large and small health care facilities that serve our communities.

C. ACADEMIC INTEGRITY

Elaine M. Markon M.S., RT (NM), CNMT, the Education Director at the University of Findlay/Nuclear Medicine Institute, was consulted throughout the development of the proposal.

There are no new courses offered at IUP in this program; therefore, all faculty have credentials at IUP that match the needs of the program. Faculty at the University of Findlay/Nuclear Medicine Institute likewise are credentialed to meet the needs of the program as that institution currently has CAHEA accreditation.

The Joint Review Committee on Educational Programs in Nuclear Medicine evaluates programs according to the Essentials of an Accredited Educational Program and prepares recommendations to the accrediting agency which is the Committee on Allied Health Education and Accreditation (CAHEA). The proposed program is designed to meet all standards of the program essentials and guidelines. The proposed program is attached in Appendix B.

D. COORDINATION WITH OTHER PROGRAMS

Students who transfer from other colleges may be accepted into the program as outlined in the 1994-95 Undergraduate Catalog. All transfer students will be required to complete the fifty-two week didactic and clinical education portion of the program at the University of Findlay/Nuclear Medicine Institute and meet all specific requirements mandated within the program.

Students may be accepted into the program from both branch campuses. This program would require the same branch campus advising procedures as outlined for other programs offered at main campus.

E. PERIODIC ASSESSMENT

Typical course evaluations will be administered to include content related to the objectives and competencies described in the syllabi for all didactic and clinical education components. Student academic progress will be monitored each semester and an evaluation will be conducted to determine whether or not students meet the criteria to attend the professional phase of the program.

Post graduate student outcomes evaluations will be conducted to assess the content and educational experiences in relationship to initial employment requirements. Program evaluation will also be assessed in relationship to the number of students that pass the Nuclear Medicine Technological examination at the first setting after graduation.

A Nuclear Medicine Technology advisory group will be developed consisting of students, consumers, faculty, administrators (both educational and hospital) and alumni to provide internal and external curriculum validation on a regular basis.

Following the awarding of accreditation, which requires a self-study and site visits, annual reports reflecting review of the goals and objectives of the curriculum must be filed with the Committee on Allied Health Education and Accreditation.

Criteria used in the evaluation are:

- a. documented achievement of program goals and objectives
- b. appropriateness of the learning experiences and curriculum sequencing to develop student competencies in physical science, radiopharmaceutical, In-vivo procedures, In-vitro procedures, administrative procedures and therapeutic uses of radionuclides;
- c. appropriateness of instructional materials;
- d. minimum of thirteen hundred and twenty (1320) hours of planned, supervised, clinical instruction;
- e. availability of laboratory and equipment, and;
- f. a standardized objective system that can evaluate, with documentation, student clinical progression

Student input will be obtained through the administration of faculty evaluation forms for courses within the program, as well as through the Advisory Committee.

F. RESOURCE SUFFICIENCY

Staff-faculty, learning resources, instructional equipment and facilities are all sufficient to accommodate the proposed program. All courses in the IUP portion of the program are currently being taught and the 12 month part of the program at the Nuclear Medicine Institute, owned by the University of Findlay has fully equipped laboratories that meet or exceed all standards for accreditation set forth in the "Essentials and Guidelines for an Accredited Education Program for Nuclear Medicine Technology."

The University of Findlay and the Nuclear Medicine Institute are responsible for maintaining The Committee on Allied Health Education and Accreditation (CAHEA) accreditation for their segment of this degree granting program.

The program will be administered by the Coordinator of Allied Health and the only additional expense will be for advertising and marketing which is estimated to be \$1,000 the first year and \$500 for each of the next four years.

With the proposal requiring only \$1,000 the first year and \$500 the next subsequent years, existing resources can be used from the College and Coordinator's budgets (See Appendix E).

G. IMPACT ON EDUCATIONAL OPPORTUNITY

Opportunity is good for older students. For nuclear medicine technology, the average age of graduates has increased from 25.8 in 1982 to 27.4 in 1989. (ARRT Newsletter, April 1990)

Opportunities are great for female and minority students. Over 50% of the recent Nuclear Medicine Technology graduates at the University of Findlay were female, and nearly 70% of the currently enrolled class are female. At the 1990 meeting of the National Advisory Council of Health Professions Education, Council member Ed McTeinan, Ed.D. said "there is clearly a tremendous need, as well as opportunity, for creative allied interventions designed to redress the shortage of minority or disadvantaged origin health care providers." This program will help meet both the opportunity and need.