

July 8-9, 2004

ITEM 124-304-R0704

Authorization to Establish an Associate of Applied Science Degree in Radiologic Technology; Flathead Valley Community College

THAT:

The Board of Regents of Higher Education authorizes Flathead Valley Community College to establish an AAS Degree in Radiologic Technology

EXPLANATION:

Flathead Valley Community College seeks approval from the Montana Board of Regents to convert the currently approved Level I Associate of Applied Science Radiologic Technology program to an approved Level II program. Students in this program will be trained to use special equipment to create images of internal organs, tissues, and bones. Radiologic technologists are trained to provide information that is used to diagnose medical problems by creating images of the inside of the body using x-ray, fluoroscopy and sonogram procedures. This two-year program prepares individuals for employment in hospitals, physician offices, and diagnostic imaging centers. The program will enable individuals living in Montana to acquire the credentials to work in a field that is in demand and has the potential to lead to other job opportunities in healthcare. The program was established at the request of local healthcare organizations. Kalispell Regional Medical Center reports that salaries for new graduates will average \$34,000 per year, contributing to the economic well being of the local region and statewide. A grant from the U.S. Department of Labor assisted with the start-up funds for this program. Funding for on-going costs will come from state appropriations and tuition revenue as well as student fees.

MONTANA BOARD OF REGENTS

LEVEL II REQUEST FORM

Item No.: ITEM 124-304-R0704 Date of Meeting: July 8- 9, 2004
Institution: Flathead Valley Community College (FVCC)
Program Title: Radiologic Technology Program (AAS)

Level II proposals require approval by the Board of Regents.

Level II action requested (check all that apply): Level II proposals entail substantive additions to, alterations in, or termination of programs, structures, or administrative or academic entities typically characterized by the (a) addition, reassignment, or elimination of personnel, facilities, or courses of instruction; (b) rearrangement of budgets, cost centers, funding sources; and (c) changes which by implication could impact other campuses within the Montana University System and community colleges. Board policy 303.1 indicates the curricular proposals in this category:

- 1. Change names of degrees (e.g. from B.A. to B.F.A.)
- 2. Implement a new minor where there is no major;
- 3. Establish new degrees and add majors to existing degrees;
- 4. Expand/extend approved mission; and
- 5. Any other changes in governance and organization as described in Board of Regents' Policy 218, such as formation, elimination or consolidation of a college, division, school, department, institute, bureau, center, station, laboratory, or similar unit.

Specify Request:

Flathead Valley Community College seeks approval from the Montana Board of Regents to convert the currently approved Level I Associate of Applied Science Radiologic Technology program to an approved Level II program.

MONTANA BOARD OF REGENTS

Request to Advance from Level I to Level II Program

Institution: Flathead Valley Community College
Program: Associate of Applied Science in Radiologic Technology
Date: July 8-9, 2004

1. How does this program advance the campus' academic mission and fit priorities?

The mission of Flathead Valley Community College is to "promote excellence in lifelong learning, focused on student success and community needs." To meet this mission, FVCC has goals that include providing educational programs and courses that prepare our students for the workforce as well as responding to the community's economic and workforce needs. The critical shortage of Radiologic Technicians, both in the Flathead and in the nation, prompted the College's local healthcare partners to collaborate in the development and implementation of this program. The FVCC Radiologic Technology program promotes educational goals that provide students with the knowledge, resources, and skills to pass the American Registry of Radiologic Technologists (ARRT) exam and provide quality patient care in the radiography medical care field.

2. How does this program fit the Board of Regents' goals and objectives?

This program provides accessible, affordable, efficient and practical learning opportunities for individuals in FVCC's service region. It also reflects the educational and employment needs of Montana; it expands community involvement as it partners with area hospitals, and it addresses the most recent Board of Regents' goal to provide educational programs that advance Montana's economic development.

3. How does this program support or advance Montana's needs and interests?

The 2003-2004 U.S. Bureau of Labor Statistics' Occupational Outlook Quarterly lists Radiologic Technologists in the top ten for large growth occupations requiring an associate degree. The projected growth rate for this occupation in Montana is 19.9 percent (MT Department of Labor & Industry, Research & Analysis Bureau, 2000-2010 data). This program will enable individuals living in Montana to acquire the credentials to work in a field that is in demand and has the potential to lead to other job opportunities in healthcare. There is a shortage nationwide of instructors and directors for Radiologic Technology Educational Programs. Graduates of this program can continue their education and pursue careers in radiologic education.

Radiologic technologists and technicians held about 174,000 jobs in 2002; approximately 20 percent worked part time. About half of all jobs were in hospitals. Most of the rest were in offices of physicians; medical and diagnostic laboratories, including diagnostic imaging centers; and outpatient care centers (U.S. Department of Labor).

Job opportunities are expected to be favorable. Some employers report difficulty hiring sufficient numbers of radiologic technologists and technicians. Imbalances between the demand for, and supply of, qualified workers should spur efforts to attract and retain qualified radiologic technologists and technicians.

Hospitals will remain the principal employer of radiologic technologists and technicians. However, a greater number of new jobs will be found in offices of physicians and diagnostic imaging centers. Health facilities such as these are expected to grow rapidly through 2012, due to the strong shift toward outpatient care, encouraged by third-party payers and made possible by technological advances that permit more procedures to be performed outside the hospital. Some job openings also will arise from the need to replace technologists and technicians who leave the occupation (U.S. Department of Labor)

4. How will this program contribute to economic development in Montana? (Note projected annual economic impact both regionally and statewide.)

FVCC's 2004 graduating class included four Radiologic Technology students. All four students have jobs -- three in the Flathead Valley and one out-of-state. Kalispell Regional Medical Center reports that salaries for new graduates will average \$34,000 per year. This contributes to the economy of the state and region.

In Montana, the U.S. Department of Labor reported 2003 average wages of \$35,510 for Radiologic Technicians. Nationwide, median annual earnings of radiologic technologists and technicians were \$38,970 in 2002. The middle 50 percent earned between \$32,370 and \$46,510. The lowest 10 percent earned less than \$27,190, and the highest 10 percent earned more than \$55,430. Median annual earnings in the industries employing the largest numbers of radiologic technologists and technicians in 2002 were as follows:

Medical and diagnostic laboratories	\$42,470
General medical and surgical hospitals	\$39,580
Offices of physicians	\$36,490

Source: U.S. Department of Labor

5. What is the program's planned capacity?

Break-even point?	10 FTE students
Enrollments / year?	6 students
Graduates / year?	5 students
MT jobs / year?	28*

***Source:** MT Dept. of Labor & Industry, Research & Analysis Bureau, 20002010 data)

6. Resource Allocation:

Total program budget?	\$40,005
Faculty FTE?	1
Staff FTE?	None

7. Does this program require new resources? Yes No

A grant from the the U.S. Department of Labor assisted with the start-up funds for this program.

If yes, what is the amount? \$ 40,005

Faculty Salary & Benefits	\$ 28,000
Support Budget	1,975
Professional Development	2,075
Facilities Rental	8,000
Total	\$ 40,005

8. How will the campus fund the program?

Funding for on-going costs will come from state appropriations, tuition revenue as well as student fees.

9. If internal reallocation is necessary, name the sources.

No reallocation necessary.

Program Description

Radiologic technologists use special equipment to create images of internal organs, tissues, and bones. Radiologic technologists provide information that is used to diagnose medical problems by creating images of the inside of the body. Technologists receive instructions from doctors about the specific body images needed. The main types of procedures are x-ray, fluoroscopy, and sonogram. Both fluoroscopy and sonograms show the soft tissues of the body. These last two procedures use sound, magnetic, and radio waves to create images of the inside of the body. Radiologic technologists also administer nonradioactive materials into patients' bloodstreams for diagnostic purposes. Some specialize in diagnostic imaging technologies, such as computerized tomography (CT) and magnetic resonance imaging (MRI).

Radiologic technologists and technicians, also referred to as *radiographers*, produce x-ray films (radiographs) of parts of the human body for use in diagnosing medical problems. They prepare patients for radiologic examinations by explaining the procedure, ensuring articles such as jewelry, through which x-rays cannot pass, are removed, and position patients so that the parts of the body can be appropriately radiographed. To prevent unnecessary radiation exposure, these workers surround the exposed area with radiation protection devices, such as lead shields, or

limit the size of the x-ray beam. Radiographers position radiographic equipment at the correct angle and height over the appropriate area of a patient's body. Using instruments similar to a measuring tape, they may measure the thickness of the section to be radiographed and set controls on the x-ray machine to produce radiographs of the appropriate density, detail, and contrast. They place the x-ray film under the part of the patient's body to be examined and make the exposure. They then remove the film and develop it. When conducting fluoroscopes and sonograms, they monitor images on video screens.

In addition to preparing patients and operating equipment, radiologic technologists and technicians keep patient records and adjust and maintain equipment. They also may prepare work schedules, oversee and train other radiologic staff members, evaluate equipment purchases, or manage a radiology department.

FVCC's Radiologic Technology program spans five semesters (four regular semesters plus one summer semester). Students average 40 hours per week in classroom, lab, and clinical work in fulfilling the 68 credits leading to an Associate of Applied Science degree. After graduation, students are eligible to take the American Registry examination for credentialing as a Registered Radologic Technologist. The program is housed at Kalispell Regional Medical Center (KRMC).

To be considered for admission into the program, applicants are required to submit documentation showing completion of the following courses with a grade of C or better:

- English Composition
- Human Anatomy & Physiology 261 or equivalent
- Human Anatomy & Physiology 262 or equivalent
- Medical Terminology
- Intermediate Algebra

Students in the Radiologic Technology Program must earn a "C" or better in ALL classes in the two-year program. Any grade less than a "C" in any class will result in the student having to retake that class.

1. Curriculum

First Year

Fall			
Course	No.	Title	Credits
XRT	105*	Introduction to Radiography	2
XRT	110*	Basic Radiographic Procedures	2
XRT	115	Principles of Radiographic Imaging I	4
XRT	140*	Clinical I	<u>6</u>
TOTAL CREDITS			14

Spring

Course	No.	Title	Credits
PHYS	106*	Radiation Physics	3
XRT	111*	Intermediate Radiographic Procedures	2
XRT	116*	Principles of Radiographic Imaging II	2
XRT	120*	Radiographic Imaging Equipment	2
XRT	130*	Patient Care I	2
XRT	141*	Clinical II	<u>6</u>
TOTAL CREDITS			17

Summer

Course	No.	Title	Credits
XRT	240*	Clinical III	<u>9</u>
TOTAL CREDITS			9

Second Year**Fall**

Course	No.	Title	Credits
XRT	210*	Advanced Radiographic Procedures	2
XRT	220*	Advanced Imaging Equipment	2
XRT	235*	Radiation Biology and Protection	4
XRT	241*	Clinical IV	<u>6</u>
TOTAL CREDITS			14

Spring

Course	No.	Title	Credits
XRT	215*	Principles of Radiographic Imaging III	2
XRT	230*	Patient Care II	2
XRT	242*	Clinical V	8
XRT	270*	Registry Review	<u>2</u>
TOTAL CREDITS			14

* Indicates prerequisite and/or co-requisite needed.

Accreditation

The American Registry of Radiologic Technologists (ARRT) accepts accreditation from the Northwest Commission on Colleges and Universities for its program accreditation, which enables students to sit for their certification exam. This spring, the four graduates sat for their certification exam from ARRT. These students performed very well on the exam with scores of 85, 90, 95 and 96 percent. The Joint Review Committee on Education in Radiologic Technology (JRCERT) routinely accredits programs at the hospital level and College and University based programs, but it is not mandatory. The College will be working with its Advisory Committee to determine whether obtaining JRCERT accreditation would be in the best interest of its students.

Impact on Facilities

1. Library

Students are fortunate to have access to the libraries of FVCC and Kalispell Regional Medical Center (KRMC). FVCC's library also participates in an interlibrary loan and document delivery program which greatly enhances student library options. A grant from the U.S. Department of Labor provided start-up funds for the purchase of \$3500 in educational materials.

2. Computer Services

Students have access to computers and the Internet in the many labs located on the FVCC campus and at the Kalispell Regional Medical Center library. Computer access is adequate.

3. Equipment

All equipment required for this program is provided through a partnership agreement with Kalispell Regional Medical Center.

4. Space/Capital Requirements

FVCC leases space from Kalispell Regional Medical Center to house this program. This space is adequate for program needs.

Faculty

Currently, the following individuals are employed in the program:

- Tom McFarlane, RRT, Full time Clinical Director and FVCC Adjunct Instructor
- Richard Schaus, MS, Full time Physics/Geophysics/Mathematics Instructor
- Diane Lundgren, MS, Adjunct Faculty in Biology and Physical Science

Assessment

The success of the program will be measured in several ways. First, the program will receive review on a regular basis from its Advisory Committee members. The next meeting of the Radiologic Technology Advisory Committee is scheduled for June 29, 2004.

Students completing the program will be taking certification exams, and the results of these exams will provide a quantitative measure of the success of the program. A goal for the program calls for 80 percent of the students passing the exam. Students will also complete a job survey qualitatively asking questions regarding how well their education at FVCC prepared them for their first job.

In addition, FVCC has implemented an internal process to review all occupational and academic programs on a rotational basis. Programs are reviewed minimally every five years; the Radiologic Technology program is scheduled for review in AY 05. Program reviews are submitted to the Curriculum Committee; a broad-based committee consisting of the Vice-President of Educational Services, Director of Enrollment Planning and Research, Director of Admissions and Records, the five Division Chairs, and staff from Student Services. The process provides an opportunity to showcase exemplary programs and student successes as well as identification of strengths and weaknesses of the program. Action plans are designed to address any identified weakness or concern.

Finally, this program and all others at the College are reviewed by the Northwest Commission on Colleges and Universities every ten years. An institutional self-study is conducted as part of this re-accreditation process whereby all areas of the institution undergo a comprehensive examination to identify areas of strengths and weaknesses. Action plans are designed to address any identified weaknesses.