



K-4 MS-16

August 21, 2006

37-02451-04

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John J. Volpe  
Radiation Safety Officer  
Duquesne University  
600 Forbes Ave.  
Pittsburgh, Pa. 15282  
412-396-6382 (office)  
412-396-5275 (fax)

RE: Documentation of Formal Training and Work Experience - Flaherty

Dear Mr. Volpe:

Let me document the formal training and work experience for Patrick Flaherty. Dr. Flaherty did complete the required training for radiation sources and was authorized to use radioactive materials at the University of Kansas under the University of Kansas' Type A Specific License of Broad Scope granted by the State of Kansas.

The required training was achieved (1) by formal classroom instruction, (2) by formal laboratory practice, and (3) by laboratory specific training with the laboratory supervisor. Certification at this level showed that Patrick acquired knowledge of the procedures and skills needed to work with beta emitters and select gamma emitters at activity levels encountered in research laboratories at the University of Kansas.

The classroom instruction consisted of a formal graduate level course (Biology 703) entitled, "Radioisotopes and Radiation Safety in Research." This course included thirty (30) lecture hours plus a comprehensive written exam, and addressed the use of Ca-45, C-14, Cr-51, H-3, I-125, I-131, P-32, Na-22, and S-35 in the research laboratory. The exam for the course consisted of essay questions and calculation problems and required two hours. The course covered units of activity, decay, activity calculations, beta and gamma dosimetry, radiation measurements and instrumentation, regulations, radiation effects, and the specifics of a radiation protection program - administration, ordering, dosimetry, recordkeeping, surveys and monitoring (GM and smears), ALARA and the ALARA Program, waste, security, and enforcement.

Department of Environment, Health & Safety  
140 Burt Hall, 1540 W. 15<sup>th</sup> St. | Lawrence, KS 66045-7610 | Ph: (785)864-4089, Fx: (785)864-2852 | [www.ehs.ku.edu](http://www.ehs.ku.edu)

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NMSS/RGNI MATERIALS-C02

Patrick was also directed in laboratory skills for eight hours in a formal laboratory setting taught by the Radiation Safety Officer and the Assistant Radiation Safety Officer. The goals of this laboratory were to demonstrate and to begin to gain the proper safety procedures for a) the use of protective clothing (gloves, laboratory coats, safety glasses), b) the use of syringes, pipettes, shields, hoods, (glove boxes), and absorbent paper, c) avoiding contact of potentially contaminated areas with the body, d) marking and labeling of work areas, containers and equipment, e) storage of stocks and wastes, f) conducting surveys of work areas and of themselves, g) keeping written records of usage, disposals, surveys, and bioassays, if applicable, h) responding to emergencies in the lab and in decontaminating after minor spills, and i) planning for ALARA in the approved experiments. The laboratory included handling P-32 for pipetting, stock preparation, surveying and monitoring, shielding evaluation, ALARA considerations, decontamination, and waste calculations.

In addition, an approved supervisor provided eight hours of protocol specific and laboratory specific training.

Dr. Flaherty received approval in the fall of 1996 and was authorized to use radioactive materials in research at the University of Kansas in subsequent years. Dr. Flaherty was a post doc in Dr. Gunda Georg's laboratory, but performed the needed radiolabel work for Dr. Georg under Dr. Robert Hanzlik's authorized permit. Dr. Hanzlik was approved to use more than 100 mCi of C-14, multiple Ci's of tritium, and ten millicuries of sulfur-35. Most of Patrick's tracer work involved the use of one to ten mCi amounts. As such, with this certification, he would have been authorized to handle materials up to the limits specified by the permit.

I have included a copy of the certificates that were originally issued upon completion of the formal course and laboratory. I would be glad to provide additional documentation.

Sincerely,

*Michael Lemon*

Michael Lemon  
Radiation Safety Officer  
University of Kansas  
Radiation Safety  
1540 West 15<sup>th</sup> Street, 101 Burt Hall  
Lawrence, KS 66045-7610  
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email: mlemon@ku.edu

The University of Kansas

**PATRICK FLAHERTY**

*has successfully completed a course  
entitled*

**Radioisotopes and Radiation Safety in Research**



University of Kansas  
Radiation Safety Service  
Burt Hall  
Lawrence, KS 66045  
913-864-4089

December 18, 1996

Date

*Benjamin J. Turner*  
Radiation Safety Officer

TR-TD7.892

## CERTIFICATION OF LABORATORY SKILLS IN RADIATION SAFETY

This is to certify that PATRICK F. HARTY (name)  
has satisfactorily completed the required practicum at the Category A (A, B, or C)  
level by demonstrating and following the proper procedures in:

- ☒ 1. The use of protective clothing including gloves, laboratory coats, safety glasses, (respirators and shoe covers, if needed) etc.
- ☒ 2. The use of syringes, pipets, shields, hoods, (glove boxes), and absorbent paper.
- ☒ 3. Avoiding contact of potentially contaminated areas with the body or potentially contaminated protective clothing or liners with "cold" areas.
- ☒ 4. Marking and labeling of work areas, containers and equipment.
- ☒ 5. Storage of stocks and wastes.
- ☒ 6. Conducting surveys of work areas and of themselves (bioassays, if applicable).
- ☒ 7. Keeping written records of usage, disposals, surveys, and bioassays, if applicable.
- ☒ 8. Responding to emergencies in the lab and in decontaminating after minor spills.
- ☒ 9. Planning for alara in the approved experiments.  
(alara = "as low as reasonably achievable")

I feel that I have acquired the skills needed to work safely with the levels for which I have been authorized.

Patrick F. Hart

(Signature of trainee)

10-24-96

(Date)

I have trained the above named individual in the laboratory skills appropriate to the level of use and have observed his performance with respect to these and believe them to be satisfactory.

Michael Lemon

(Signature of the supervisor of the practicum)

October 24, 1996

(Date)