

A. Sponsor

1. The Division of Dermatology,
University of Ottawa, Ottawa, Ontario
2. Laserderm, an Independent Health Facility, (Ontario MOH), Ottawa, Ontario

B. Site of Educational Activity

1. Laserderm
650-1600 Carling Avenue
Ottawa, Ontario
K1Z 1G3
2. University of Ottawa,
Ottawa Hospital, Civic Campus

C. Faculty

1. Program Director and Proctor: Sharyn A. Laughlin, M.D., FRCP(C)
2. Other Faculty: Denis K. Dudley, M.D., FRCS(C)
Melanie Pratt, M.D., FRCP(C)

Notes: Denis Dudley is the supervisor for the research component and quality assessment protocols in laser medicine. He is responsible for educational activities related to:

- > *Written and oral evaluations of the fellow*
- > *Teaching exam techniques to assist the candidate who elects to sit the sub-specialty board exam in laser medicine.*
- > *Specific research studies and practice assessment or patient care audits.*

D. Objectives

To provide a program of education and training in which a resident trainee or fellow acquires experience and proficiency in cutaneous laser medicine:

1. To perform unsupervised laser surgery and provide safe and effective patient care.
2. To carry out patient selection and provide the standard of care required for appropriate peri-operative management in laser medicine and surgery.
3. To act as a consultant in cutaneous laser surgery and medicine, and to supervise medical and non-medical personnel in the operation of a laser facility which meets the required provincial or national standards.

E. Entry Requirements

1. Current educational or general license.
2. Completed residency training in dermatology and has postgraduate certification from Royal College (Canada) or the American Board of Dermatology.
3. Enrolled in dermatology residency program at R3 or R4 level.

F. Program Outline

The curriculum is designed to allow the trainee to meet defined standards for the provision of optimal patient care in the clinical practice of laser medicine and surgery.

1. Standards of Care:

- Assessment
- Diagnosis
- Outcome identification
- Planning
- Implementation
- Evaluation

2. Standards of Professional Performance:

- Quality of Care
- Ethics
- Performance approval
- Collaboration
- Education
- Research
- Collegiality
- Resource Utilization
- Practice management, ethical marketing and business models

G. Methods

1. Clinical preceptorship
2. Formal courses: (a) Basic (within 1st 6 months)
 (b) Advanced (within 2nd 6 months)

The trainee is required to attend basic and advanced laser courses sanctioned by the ASLMS and the AAD at specified times.

3. The trainee is required to attend all teaching rounds and postgraduate activities at the Division of Dermatology, including the Journal Club held once per month.
4. A review of relevant literature and compulsory reading of the following journals available to the staff at Laserderm.
 - a. The Archives of Dermatology
 - b. The Journal of the American Academy of Dermatology
 - c. The Journal of the ASLMS
 - d. The Journal of Cutaneous Laser Surgery
5. Compulsory reading of standard textbooks provided to the trainee.
6. Elective period of 4-6 weeks with recognized expert in CLS (optional), arranged by Dr. Laughlin.

7. Research project in an appropriate area. Study subject, design and implementation is the responsibility of the fellow under Dr. Dudley's supervision. The first objective is to educate the fellow in the proper approach to clinical research. The second objective is for the fellow to present or publish the study in a peer-reviewed forum.

H. The Curriculum

1. Basic Science

- a. Laser physics
 - Electromagnetic spectrum
 - Methods of production of laser light
 - Special qualities of laser light
 - (i) Spatial beam characteristics
 - (ii) Temporal beam characteristics
- b. Laser effects on tissue
- c. Review of all types of lasers, special characteristics, and clinical applications.
- d. Laser safety
 - Requirements: CSA, OSHA
 - Eye protection
 - Thermal damage hazard prevention
 - Special considerations for endotracheal anesthesia
 - Limited access and posting of laser rooms
 - OR laser safety principles and protocol
 - (i) Laser safety committee
 - (ii) Proper training
 - (iii) Limited access
 - (iv) Warning sensors, emergency positive action cut-off switch
 - (v) Hazard reporting
 - (vi) Laser journal documentation
 - (vii) Malpractice considerations
- e. Installations and maintenance of laser systems
 - Special requirements - electrical power, cooling (water/air)
 - Routine maintenance
 - Emergency maintenance

2. Clinical Education

A comprehensive exposure to the use of all lasers currently in clinical practice for the treatment of cutaneous disorders, including, but not limited to:

- a. Vascular Lesions
- b. Benign pigmented disorders, tattoos
- c. Miscellaneous appendageal tumors
- d. Verrucae
- e. Unwanted hair
- f. Scars
- g. Actinic disorders
- h. Rhytides, photoaging
- i. Striae distensae
- j. Miscellaneous conditions

3. Pharmacology training and education in the use of all drugs related to the use of lasers.

- a. Local anaesthetics
- b. Conscious sedation and intravenous anaesthetics
- c. Cosmeceuticals

4. Cosmetology

- a. Medications
- b. Fillers and implants
- c. Botox injections
- d. Photo-rejuvenation techniques

For all areas of clinical practice each method of treatment and the use of a specific laser will be taught within the following framework:

- Basic pathology where relevant
- Discussion of alternate methods of treatment and results
- Specific discussion of laser treatment and results
 - (i) Method of treatment
 - (ii) Specific equipment and/or space requirements
 - (iii) Long term results
 - (iv) Pathological slides
 - (v) Indications, contraindications
 - (vi) Follow-up care
 - (vii) Results of treatment
 - (viii) Side effects and complications
 - (ix) Practice organization and management
 - (x) Financial and insurance considerations
 - (xi) Malpractice considerations
 - (xii) Record keeping including hazard documentation
 - (xiii) Forms, correspondence, office administration
- Laser safety - specific to wavelength and procedure
 - (i) OSHA requirements
 - (ii) Eye protection
 - (iii) Thermal damage hazard protection
 - (iv) Personnel laser safety principles and protocol
- Complete bibliography specific to the wavelength and specialty
- Research concepts
- Future developments

Procedural Skills

For each wavelength, hands-on training to acquire:

1. Hand-eye coordination, basic surgical and special techniques.
2. Ancillary measures such as nerve block techniques and the use of topical anaesthetics.

Note: Where appropriate exposure to a skills laboratory setting which may include but is not limited to:

- Reading material
- Technical manuals (industry, manufacturer)
- Didactic sessions
- Inanimate model practice
- Equipment familiarity
- Video, CD-Rom and audio-tape instruction
- Interactive computer programs

Laser Practice Management

1. The essential principles governing the establishment of a laser practice:
 - Facility design and layout, ventilation and cooling, electrical considerations
 - The selection of optimal technology
 - Capital outlay- leasing versus loan financing
 - Staff selection and training
 - Risk management, informed consent and patient information
 - Records, documentation, photographic database and equipment
 - Ethical marketing
2. Corporate structures, financial and estate planning.
3. Insurance issues- personal and practice related.
4. Investment strategies and long term considerations for the new laser dermatologist.

I. Evaluation Criteria

1. Educational

- a. Oral examination every 3 months
- b. Written multiple choice examinations pre and post test format for selected areas of study.
- c. Written evaluation by the supervisor and associated faculty in defined areas of clinical proficiency and professional standards given every 3 months. (Standard residency ITER document).

2. Procedural Skills

- a. Log-book of all cases attended by trainee. Classified according to level of involvement.
 - Observer/assistant
 - Primary operator with supervision
 - Primary operator without supervision
- b. Assessment of technical proficiency for each laser procedure using a "proctoring" format by faculty members for each procedure in CLS.

J. Duration of training

1. 6 month period for residents in training undertaking elective period in CLS.
2. 12 month period for post-certification fellowship in CLS.

Prepared by:

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Denis K. Dudley Executive Director, Laserderm

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