

POST DOCTORAL TRAINING PROGRAM IN CLINICAL CHEMISTRY

DIAGNOSTIC SERVICES MANITOBA and the UNIVERSITY OF MANITOBA

1) PERSPECTIVES AND OBJECTIVES

To train individuals at the post graduate level (M.D. or Ph. D.) in the field of Clinical Chemistry leading to certification by the Canadian Academy of Clinical Biochemists or equivalent U.S. based organization. The program is intended to provide training equivalent to that required by the College of Physicians and Surgeons of Canada for the fellowship in Medical Biochemistry. It will therefore include practical, professional and didactic training in all aspects of laboratory medicine necessary to provide the resident with the skills necessary to independently direct a clinical chemistry laboratory.

2) PROGRAM ORGANIZATION

The program has operated as part of Post Graduate Medical Education in the Faculty of Medicine at the University of Manitoba since the mid 1970's and is based primarily in the Departments of Clinical Chemistry and Genetics at Health Sciences Centre and Clinical Biochemistry at St. Boniface General Hospital. Both institutions are tertiary care teaching hospitals affiliated with the University of Manitoba with a total bed number of approximately 1,500. Diagnostic Services of Manitoba (DSM) was created in 2002 as the not-for-profit corporation responsible for all of Manitoba's public laboratory services and for rural diagnostic imaging services. There are eight Clinical Biochemists that are responsible for various areas of clinical chemistry.

DSM website <http://www.dsmanitoba.ca>

PGME website http://webapps.cc.umanitoba.ca/calendar08/graduate_studies/programs/postgrad_medicine.asp

3. TRAINEE SELECTION

a) The candidate must have a Ph.D. degree in Chemistry, Biochemistry, Pharmacology, Immunology, Physiology, or other medical science, or an M.D. degree from a recognized university. Applications are reviewed by the program selection committee and candidates are short-listed for an interview and lecture presentation. Applications will be accepted from Canadian citizens or those with Landed Immigrant status.

b) The candidate should have taken courses or demonstrated experience in the following areas:

- i) General and Organic Chemistry
- ii) Analytical Chemistry
- iii) Physics
- iv) Biology/Pathology
- v) Biochemistry

vi) Statistics

Remuneration , Benefits, Entitlements

Salaries, benefits, and other entitlements are governed by a comprehensive collective agreement between PARIM and the Winnipeg Regional Health Authority (WRHA). See website for benefits not listed below.

Remuneration for residents in the Post Graduate Medical Education at the University of Manitoba is negotiated by the Professional Association of Residents and Interns of Manitoba (PARIM). Starting salaries for residents in Clinical Chemistry (PGY2 level) are equivalent to that for other residents (approximately \$51,000 in 2007).

Vacation

As per Collective Agreement one month vacation time is allocated to be taken within each 12 month term.

Date of Commencement

The trainee will normally commence the program on July 1 of the year with the program running three full years from that date. In exceptional circumstances provision may be made for a later starting date.

PARIM website <http://www.prim.org>

Collective Agreement <http://www.prim.org/cagreement>

Program Outline

YEAR I: The first year of the program is intended to provide the resident with an overview of Clinical Chemistry laboratory operations and a general understanding of human disease. Rotations include:

Sample and Data: Central laboratory processes - comparison of processes across laboratories of differing size and function and hands-on experience - sample labelling and receipt, patient registration, test accessioning, requisitions, referred-in, referred-out, laboratory information systems, test information manuals, lab reports, pre-analytical and post analytical errors, laboratory safety, phlebotomy

Automated Chemistries: Comparison of processes at hospital labs of differing size and hands-on experience: instrumentation (operation, maintenance, troubleshooting), workflow, quality

practices, test methodologies, critical results, auto-verification, method protocols, accreditation requirements, specimen archiving, urinalysis, clinical utility of tests

Toxicology: Instrumental and analytical aspects of clinical, medical, and forensic toxicology. Poisons, poisoned patients, treatment. Roles of poison-control centre, RCMP laboratory, Therapeutic drug monitoring

Molecular laboratory: molecular techniques, genetic diseases

Specialized procedures: RAST testing, Hemoglobinopathy investigation, RIA, Biogenic Amine quantitation, cholinesterase phenotyping, Porphyrias, metal analyses, gastro-intestinal investigations

YEAR 2 and 3: The second and third years of the program largely involve clinical rotations and external laboratory rotations that are intended to provide the resident with a comprehensive understanding of clinical disorders related to the field of Clinical Chemistry. Upon completion of these rotations, the resident will have covered all topics outlined in the CACB Syllabus for a postgraduate training program in Clinical Biochemistry (<http://www.csc.ca/themes/csc/uploads/CACBSYLLABUS2005.pdf>) and be prepared to direct a small-medium size clinical laboratory.

The coordinator (a clinical chemist) for each clinical rotation identifies specific objectives and arranges with clinical staff, wards or clinics to provide exposure to their particular areas. During these rotations, the resident will become familiar with clinical aspects of disease diagnosis and management along the related utilization of the laboratory.

Scheduled Clinical/External Rotations: Anatomical pathology, surgical pathology, Infectious Diseases, Microbiology laboratory, Hematology, Hemostasis, Immunology laboratory, Oncology, Emergency Medicine, Intensive Care Medicine, Pediatric Medicine, Diabetes, Renal Disease/Dialysis, Transplantation, Cancer Care, Endocrinology, Biochemical Genetics

Expectations of Resident during clinical rotations

- Attend clinical rounds appropriate to the topic area and selected medical grand rounds
- Present a seminar related to the current topic (monthly)
- Participate in medical school and technologist teaching

- Participate in on-call rotation for Clinical Chemistry
- Present at Clinical Chemistry journal club
- Present seminars on selected topics or R & D data
- Attend when possible Clinical Chemistry departmental meetings, Journal Club, R&D presentations, audiovisual conferences etc
- Interpretive reports (under the supervision of a Clinical Chemist)
- Be involved in research projects that develop an understanding for method development, method evaluations, and clinical evaluation of methods

5) TRAINEE EVALUATION

The trainee will meet with the program director on a monthly basis to assess his/her program. At the completion of various phases, the faculty responsible for the resident during that phase will be asked to submit an evaluation form. The resident will be made aware of his/her evaluations on an ongoing basis.

6) PROGRAM FACULTY

David Parry PhD, FCACB co-director
 Lorne Seargeant PhD, FCACB co-director
 Laurel Thorlacius PhD, FCACB
 James Dalton PhD, FCACB
 William Dent MSc
 Curtis Oleschuk PhD, FCACB
 Robert Meatherall PhD, FCACB, DABFT
 Thomas Dembinski PhD, FCACB
 AbdulRazaq Sokoro, PhD

7) FACILITIES AND RESOURCE PROFILE

Health Sciences Centre

The program is based at two teaching hospitals, the Health Sciences Centre and St Boniface General Hospital with a total of 1400 patient beds. Both sites provide comprehensive patient care, have full service clinical laboratories, medical research facilities, and a commitment to teaching at the University of Manitoba Medical School. The Health Sciences Centre is comprised of four hospitals under one administration: a General Hospital, a Children's Hospital, a Rehabilitation Hospital, and a Women's Hospital. St Boniface General Hospital, CancerCare Manitoba, the Health Sciences Centre, the University of Manitoba Medical School campus, the NRC Institute of Biodiagnostics, the National Virology Laboratory, and Cadham Provincial laboratory are all located in close proximity. Both

Departments of Clinical Chemistry are spacious and housed in newer facilities. Approximately 4,000 square feet of space is allocated to offices and meeting rooms. Additional space for research is available. Library and lecture room facilities are available at both hospitals and the University of Manitoba Medical School.

The Departments of Pathology and Microbiology, where the trainees will spend time during their first year, are located in the same building and have similar space allocations as the Department of Clinical Chemistry.

Diagnostic Services of Manitoba operates laboratories at 77 sites across the province. Residents have exposure to laboratories that encompass all ranges of testing.

DSM through its network laboratories including two major teaching hospital laboratories provides a comprehensive spectrum of laboratory tests, and provides referrals as needed to external reference laboratories. The laboratory information manual (LIM), www.dsmanitoba.ca/, gives a partial listing of available tests. The teaching hospital laboratories also serve as a national reference centre for selected tests.

8) STUDENT PROFILE

The program is three years in length with one student being enrolled every 3 years. University registration and orientation starts at the beginning of July. When a position is available, advertisements are sent out in September of the preceding year.

Past Trainees

<u>Year</u>	<u>Name and present position</u>
1977–1979	Dr. J. Dalton, CEO, DSM *
1980-1981	Dr. R. Yatscoff, 1596 Hector Rd, Edmonton
1982-1984	Dr. D. Parry, Clinical Biochemist, DSM*
1984-1987	Dr. C. Collier, Clinical Biochemist, Kingston General Hospital
1987-1989	Dr. T. Dembinski, Clinical Biochemist, DSM*
1990-1993	Dr. D. Blandford, Scientific Director, Public Health Agency of Canada
1993-1996	Dr. Jian Dai, Clinical Biochemist, Siemens Healthcare Diagnostics
1997-1999	Dr. E. Spriggs, Director, Molecular Diagnostics, DSM*
1999-2001	Dr. L. Thorlacius, Medical Director, Clinical Biochemistry & Genetics, DSM*
2000-2003	Dr. A. Khajuria, Clinical Biochemist, DKML, Edmonton

2003-2006 Dr. A. Lou, Clinical Biochemist, QE Hospital, Charlottetown

2007-2010 Dr. A. Sokoro, Clinical Biochemist, DSM*

2010- Dr. T. Burton, Post-doctoral trainee, Clinical Chemistry

* Diagnostic Services Manitoba