Department of Laboratory Medicine & Pathology

Division of Medical Biochemistry

POSTDOCTORAL FELLOWSHIP TRAINING PROGRAM IN CLINICAL BIOCHEMISTRY

June 2014

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Program Summary and Objectives

The Clinical Biochemistry Fellowship Program is a full-time, 2 year program consisting of analytical and clinical biochemistry training objectives and CanMEDS competencies achieved through coursework, mentor-led practical rotations and self-directed learning. The trainee will have specialized training in clinical biochemistry with basic training in medical genetics, hematology, and clinical microbiology. The training emphasis is clinical laboratory service. Fellows are encouraged to participate in research and development projects and medical education. The program is one of several competitive fellowship programs within the Department of Laboratory Medicine & Pathology and will accept candidates based on available postgraduate medical education funds, strength of the candidate, strength of the program, and workforce need in a formalized assessment and ranking process. One candidate will be accepted per year (training start date July 2015) with a maximum program size of 2 trainees. The goal is to establish a collaborative, clinical biochemistry fellowship program that integrates the University of Alberta with Alberta Health Services and DynaLIFE Dx training sites. The primary training location will be within the Edmonton zone with opportunities to visit external sites based on trainee interest and Canadian Society of Clinical Chemistry funds. Graduates of this fellowship program meet curriculum requirements for both the Canadian Academy of Clinical Biochemistry and the American Board of Clinical Chemistry and are eligible to apply for written and oral exams to obtain specialty certification in Clinical Biochemistry. This program aims to develop clinical laboratory scientist leaders with both clinical and academic excellence in Clinical Biochemistry. The acquired knowledge, practical skills and professional competencies of a Clinical Biochemist opens multiple career pathways. Clinical biochemists assume responsibility to lead clinical chemistry laboratories in hospitals affiliated with academic centers, in small community hospitals, or in large private clinical laboratories. They will be consultants to clinicians regarding test selection and interpretation, educators of trainees and staff, researchers developing methods and discovering biomarkers and leaders implementing quality patient care.

Training Sites

Training will primarily take place in Edmonton at the University of Alberta Hospital laboratories, the core laboratory at DynaLIFE Dx and Royal Alexandra Hospital lab. There will also be training rotation opportunities at the following locations depending on trainee interest, staffing, and funding:

Medical Sciences Building 8th floor U of A (Cytogenetics)
Medical Examiner’s Office Edmonton (Forensic Toxicology)
Comprehensive Tissue Centre and HLA Laboratory Edmonton
Red Deer Regional Hospital or Rural Hospital (Chemistry)
Clinical Biochemistry Fellowship Training Program Mentors

Upon program accreditation approval by the Canadian Academy of Clinical Biochemistry, a meeting will be held in the fall of 2014 to officially appoint a program director, administrative assistant and new members to the Clinical Biochemistry Fellowship Training Program Committee originally formed on December 8, 2007. The University of Alberta, Department of Laboratory Medicine & Pathology Postdoctoral Fellowship Program in Clinical Biochemistry is unique in that through collaboration with government and private laboratories, we are able to offer a multidisciplinary and innovative trainee tailored program that provides opportunities to train in both hospital and community settings. Fellows will benefit from close association with the University of Alberta General Pathology Residency Training Program and the Calgary Laboratory Services Clinical Biochemistry fellowship program. Our large medical scientific group with interest in clinical biochemistry fellowship training involvement consists of 10 clinical/medical biochemists, 3 pathologists, 3 toxicologists, 4 geneticists, and 1 microbiologist. Training sites are listed below with mentors from each clinical laboratory. Academic faculty members and administrative assistants with potential interest in program involvement are also included.

Site 1: University of Alberta Hospital and Medical Sciences Building

Dr. Fiona Bamforth, Pediatric Medical Biochemist, University of Alberta Hospital Site
Joint Head, Newborn/Prenatal Screening and Biochemical Genetics Laboratory
Professor, Department of Laboratory Medicine & Pathology
Director of Medical Laboratory Science Training Program
Clinical Biochemistry Committee Co-Chair (transitioned to 0.5FTE in July 2013)
The other Co-Chair has left the Committee and joined Saskatoon

Dr. Kareena Schnabl, Clinical Biochemist, University of Alberta Hospital Site
Joint Head, Newborn/Prenatal Screening and Biochemical Genetics Laboratory
Assistant Professor, Department of Laboratory Medicine & Pathology
Mentor Medical Genetics/Clinical Biochemistry fellows & General Pathology residents
Passion to lead the clinical biochemistry fellowship training program
Would request protected time and require an administrative assistant

Dr. George Cembrowski, General Pathologist, University of Alberta Hospital Site
Core Chemistry Laboratory and Point of Care Testing
Division Director of Medical Biochemistry, Dept. of Laboratory Medicine & Pathology
Associate Professor and Mentor of General Pathology Residents
Clinical Biochemistry Committee Member

Dr. Connie Prosser, Clinical Biochemist, University of Alberta Hospital Site
Special Chemistry Laboratory
Clinical Professor, Dept. of Laboratory Medicine & Pathology
Mentor of General Pathology, Endocrinology and Immunology residents
Dr. Donald LeGatt, Clinical Biochemist, University of Alberta Hospital Site
Therapeutic Drug Monitoring and Toxicology Laboratory
Clinical Professor, Dept. of Laboratory Medicine & Pathology
Mentor of General Pathology and Pharmacology/Toxicology Residents

Dr. Penny Colbourne, Clinical Toxicologist, University of Alberta Hospital Site
Trace Metals and Toxicology Laboratory
Clinical Professor, Dept. of Laboratory Medicine & Pathology
Mentor of General Pathology and Pharmacology/Toxicology Residents

Dr. Mireille Kattar, General Pathologist, University of Alberta Hospital and Rural Sites
Associate Clinical Professor, Department of Laboratory Medicine & Pathology
Mentor of General Pathology residents

Dr. Stacey Hume, Molecular Geneticist, Medical Sciences Building (UAH) Site
Joint Head, Molecular Diagnostics Laboratory
Assistant Professor, Department of Medical Genetics
Mentor of Medical Genetics Fellows

Dr. Sherry Taylor, Molecular Geneticist, Medical Sciences Building (UAH) Site
Joint Head, Molecular Diagnostics Laboratory
Associate Professor, Department of Medical Genetics
Mentor of Medical Genetics Fellows

Dr. Artur Szkotak, Hematopathologist, University of Alberta Hospital Site
Core Hematology Laboratory
Assistant Professor, Dept. of Laboratory Medicine & Pathology
Mentor of Hematopathology Residents

Dr. Jeffrey Fuller, Clinical Microbiologist, University of Alberta Hospital Site
Provincial Laboratory for Public Health - Microbiology
Associate Professor, Division of Diagnostic and Applied Microbiology
Program Director Clinical Microbiology Fellowship Program
Mentor of Medical Microbiology Residents

Site 1 (optional rotations)

Dr. Reena Ray-Sisk, Cytogeneticist, Medical Sciences Building (UAH) Site
Director, Cytogenetics Laboratory
Assistant Clinical Professor, Department of Medical Genetics
Mentor for Pathologists and Medical Genetics Fellows

Dr. Maisa Yoshimoto, Cytogeneticist, Medical Sciences Building (UAH) Site
Cytogenetics Laboratory
Assistant Clinical Professor, Department of Medical Genetics
Mentor for Pathologists and Medical Genetics Fellows
Dr. Iyare Izevbaye, Molecular Pathologist, University of Alberta Hospital Site  
Director, Molecular Pathology Laboratory  
Director and Assistant Professor, Division of Molecular Pathology  
Mentor for Pathologists and Medical Genetics Fellows

Dr. Patricia Campbell, Transplant Nephrologist, University of Alberta Hospital Site  
Director, Histocompatibility Laboratory  
Professor, Department of Medicine  
Mentor of Clinical Immunology residents

Dr. Luis Hidalgo, Clinical Immunologist, University of Alberta Hospital Site  
Assistant Director, Histocompatibility Laboratory  
Assistant Professor, Department of Laboratory Medicine & Pathology  
Mentor of Clinical Immunology residents

Dr. Jelena Holovati, Medical Laboratory Scientist, University of Alberta Hospital Site  
Scientific Director, Comprehensive Tissue Centre, Alberta Health Services  
Assistant Professor, Department of Laboratory Medicine & Pathology  
Clinical Biochemistry Committee Secretary

Site 2: Royal Alexandra Hospital

Dr. Anna Füzéry, Regional Clinical Biochemist, Royal Alexandra Hospital (RAH) Site  
Chemistry Laboratories at RAH, Misericordia, and Grey Nuns Hospitals  
Clinical Lecturer, Dept. of Laboratory Medicine & Pathology

Dr. Gwen Clarke, Hematopathologist, Royal Alexandra Hospital (RAH) Site  
Clinical Professor, Department of Laboratory Medicine & Pathology  
Mentor of Hematopathology residents

Dr. Rodrigo Onell, Hematopathologist, Misericordia Hospital Site  
Director of Hematological Pathology Residency Program  
Assistant Clinical Professor, Department of Laboratory Medicine & Pathology  
Mentor of Hematopathology residents

Site 3: DynaLIFE_Dx

Mr. Trefor Higgins, Clinical Chemist, DynaLIFE_Dx  
Director of Clinical Chemistry, DynaLIFE_Dx Core Laboratory  
Clinical Professor, Dept. of Laboratory Medicine & Pathology  
Mentor of Hematopathology and General Pathology Residents  
Clinical Biochemistry Committee Member
Dr. Karina Rodriguez-Capote, Clinical Chemist, DynaLIFE<sub>Dx</sub>
DynaLIFE<sub>Dx</sub> Core Laboratory
Assistant Clinical Professor, Dept. of Laboratory Medicine & Pathology
Mentor of Hematopathology and General Pathology Residents

Dr. Vilde Barakauskas, Clinical Chemist, DynaLIFE<sub>Dx</sub>
DynaLIFE<sub>Dx</sub> Core Laboratory
Assistant Clinical Professor, Dept. of Laboratory Medicine & Pathology
Mentor of Hematopathology and General Pathology Residents

Dr. Mathew Estey, Clinical Chemist, DynaLIFE<sub>Dx</sub>
DynaLIFE<sub>Dx</sub> Core Laboratory
Assistant Clinical Professor, Dept. of Laboratory Medicine & Pathology
Mentor of Hematopathology and General Pathology Residents

Dr. Robert Verity, Medical Microbiologist and Co-Medical Safety Officer, DynaLIFE<sub>Dx</sub>
Director, DynaLIFE<sub>Dx</sub> Microbiology Laboratory
Assistant Clinical Professor, Dept of Medical Microbiology & Immunology
Mentor of Medical Microbiology and General Pathology residents

Site 4 (optional rotation): Medical Examiner’s Office

Dr. Graham Jones, Chief Toxicologist, Medical Examiner’s Office
Director, Forensic Toxicology Laboratory
Clinical Professor, Dept. of Laboratory Medicine & Pathology

Dr. Craig Chatterton, Deputy Chief Toxicologist, Medical Examiner’s Office
Forensic Toxicologist, Forensic Toxicology Laboratory
Clinical Lecturer, Department of Laboratory Medicine & Pathology

Site 5 (optional rotation): Red Deer Regional Hospital

Dr. Allison Venner, Clinical Biochemist, Red Deer Regional Hospital Site
Core Chemistry Laboratory
Clinical Lecturer, Dept. of Laboratory Medicine & Pathology
Mentor of Clinical Biochemistry fellows

Dr. James Wesenberg, Clinical Biochemist, Red Deer Regional Hospital Site
Core Chemistry Laboratory
Alberta Health Services, Provincial Medical & Scientific Director of Laboratory Services
Clinical Department Head, Pathology & Laboratory Medicine, Central Zone

Dr. Simon Morris, Regional Pathologist, Red Deer Regional Hospital Site
Director of Hematology and Transfusion Medicine
Alberta Health Services, Laboratory Services, Central Zone
Site 6 (optional rotation): Alberta Centre for Toxicology

Dr. David Kinniburgh, Toxicologist, Alberta Centre for Toxicology (Calgary)
Director of Toxicology Laboratory
Director of Alberta Association of Clinical Laboratory Doctoral Scientists
President of the Canadian Society of Clinical Chemists
Associate Professor, Dept. of Laboratory Medicine & Pathology
Mentor of clinical biochemistry and toxicology fellows and graduate students

Academic Faculty Members

Dr. Monika Keelan, Associate Professor, Dept. of Laboratory Medicine & Pathology
Coordinator of Graduate Studies Program
Assists with recruitment of potential candidates

Dr. Charles Holmes, Chair, Department of Biochemistry
Dr. David Stuart, Graduate Studies Coordinator, Department of Biochemistry
Interest in facilitating preparation of biochemistry graduate students for transition into a clinical biochemistry program and assist with recruitment of candidates

Dr. David Wishart, Adjunct Professor, Department of Laboratory Medicine & Pathology
Director of Metabolomics Research Group, Department of Biological Sciences
Interest in providing mass spectrometry training and bioanalytical research projects

Administrative Support

Ms. Pauline Kotowich
Administrative Assistant to Dr. Mengel, Chair Dept. Laboratory Medicine & Pathology

Ms. Julie Damboise
Administrative Assistant to Dr. Cembrowski, Divisional Director of Medical Biochemistry

Would have to determine their workload and interest as the position would be temporary for whenever funding and a candidate were available for the program

Program Governance Structure

1. Program Director appointed by Advisory Committee for a 2 year term position. Should be a Clinical Biochemist holding a faculty position at the University of Alberta.

2. Clinical Biochemistry Fellowship Program Training Committee
   - Should contain representatives from each training site:
     University of Alberta Hospital (minimum 2)
     DynaLIFEDx (minimum 2)
     Other sites (minimum 1)
   - Should meet every 4 months to evaluate the progress of the fellow
- Responsible for candidate selection

3. Advisory Committee
Chair, Department of Laboratory Medicine & Pathology
Faculty of Medicine Postgraduate Education Representative, University of Alberta
Laboratory Leader, Alberta Health Services Representative
Medical Director, *DynaLIFE* \(Dx\) Representative

Curriculum

The Clinical Biochemistry Fellowship program curriculum will include:

- Instrumentation and principles of analysis for biochemistry, toxicology, immunology, molecular biology, hematology, and microbiology testing through hospital/private laboratory rotations and didactic/hands-on laboratory teaching.
- Human physiology and disease including fluid, electrolyte and acid-base homeostasis, renal disease, hypertension, diabetes mellitus, cardiovascular disease, lipid and lipoprotein disorders, hepatobiliary diseases, gastrointestinal and pancreatic diseases, immunology, endocrinology, bone metabolism, oncology, nutrition, pediatrics, geriatrics, pregnancy, pharmacology/toxicology, inherited metabolic disorders, musculoskeletal and rheumatic disorders, neurological and psychiatric disorders, hematologic disorders, and genetic disorders. Topics will be delivered through scheduled didactic sessions, self study, and attendance at laboratory medicine and medical genetics rounds
- Clinical practice including on-call experience, supervised decision making in the clinical laboratory setting, case-based problem solving and attendance at clinical hospital rounds.
- Laboratory management and computing topics in quality control, quality assurance, quality improvement, budgeting, laboratory design, safety, personnel management, assessment of technology, test utilization, laboratory information systems, and hospital information systems.
- Research methods and data analysis including method development, method evaluation, and laboratory statistics
- Development of teaching skills at rounds, professional development sessions, and conferences
- Development of professional competencies through interactions with laboratory personnel, clinicians, administrators, and the public.

For further information about training in Clinical Biochemistry and the profession of a Clinical Biochemist please refer to Appendix A for the 2013 postgraduate training in clinical biochemistry syllabus. Specific rotation learning objectives are outlined in Appendix B.
Course Requirements (6 credits)

LABMP 500 Introduction to Human Disease (first year, 3 credits, Sept-Dec)
Lecture sessions on the study of human disease are presented. The causes and general mechanisms of disease with selected specific examples from various organ systems are discussed. Disease related structural and functional changes at the molecular, cellular and tissue level are presented, and how these changes can be appreciated by various laboratory methods. A written review of scientific literature on a specific topic in Pathology will be required.

The second course may be on topics such as biostatistics, epidemiology, mass spectrometry, molecular diagnostics or management depending on background and interests of the candidate.

Resources and Educational Materials

The Department of Laboratory Medicine and Pathology library and the John Scott library are available on-site. Fellows have access to the Cameron library on campus should they require access to basic science journals.

Textbooks

Journals
- American Journal of Clinical Pathology
- Annals of Clinical Biochemistry
- CAP Today (provides updates on new technology)
- Clinical Biochemistry
- Clinical Chemistry
- Clinics in Laboratory Medicine
- Critical Reviews in Clinical Laboratory Sciences
- Current Clinical Chemistry
- Journal of Clinical Pathology
- The Clinical Biochemist Reviews

Websites:
- American Association for Clinical Chemistry (AACC)
- Canadian Academy of Clinical Biochemistry website (practice questions)
- Canadian Society of Clinical Chemists (CSCC)
- National Academy of Clinical Biochemistry website (guidelines)
- Westgard website (quality control, biological variation)
## Structure of Proposed Program (July 2015-July 2017)

### PGY-1

<table>
<thead>
<tr>
<th>Rotation</th>
<th>Duration</th>
<th>Training Site</th>
<th>Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation, Safety, Preanalytical</td>
<td>4 weeks</td>
<td>UAH Edmonton Clinic</td>
<td>Dr. K. Schnabl Dr. G. Cembrowski</td>
</tr>
<tr>
<td>Automation/LIS/HIS and Lab Management</td>
<td>4 weeks</td>
<td>UAH Core Lab</td>
<td>Dr. G. Cembrowski</td>
</tr>
<tr>
<td>High Volume General Clinical Biochemistry</td>
<td>8 weeks</td>
<td>UAH Core Lab, DL Core Lab</td>
<td>Dr. G. Cembrowski, Dr. M. Estey</td>
</tr>
<tr>
<td>Blood Gases/Point of Care Testing</td>
<td>4 weeks</td>
<td>UAH Core Lab, Regional Hospitals</td>
<td>Dr. G. Cembrowski, Dr. A. Fuezery</td>
</tr>
<tr>
<td>Urinalysis</td>
<td>4 weeks</td>
<td>UAH Core Lab, DL Core Lab</td>
<td>Dr. G. Cembrowski, Dr. V. Barakauskas</td>
</tr>
<tr>
<td>Protein Electrophoresis</td>
<td>4 weeks</td>
<td>DL Core Lab</td>
<td>Dr. K. Capote Dr. V. Barakauskas</td>
</tr>
<tr>
<td>Quality and Lab Statistics</td>
<td>4 weeks</td>
<td>DL Core Lab</td>
<td>Dr. K. Capote Dr. G. Cembrowski</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>8 weeks</td>
<td>UAH Special Chemistry</td>
<td>Dr. C. Prosser</td>
</tr>
<tr>
<td>Elective Rotation</td>
<td>8 weeks</td>
<td>See optional sites</td>
<td></td>
</tr>
</tbody>
</table>

### PGY-2

<table>
<thead>
<tr>
<th>Rotation</th>
<th>Duration</th>
<th>Training Site</th>
<th>Mentors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass Spectrometry Kit Development</td>
<td>4 weeks</td>
<td>Research/Development Laboratory</td>
<td>Ms. Yun Wei Dr. D. Wishart</td>
</tr>
<tr>
<td>Therapeutic Drug Monitoring/Volatiles</td>
<td>4 weeks</td>
<td>UAH TDM/TOX Lab</td>
<td>Dr. D. Legatt</td>
</tr>
<tr>
<td>Clinical and Environmental Toxicology</td>
<td>4 weeks</td>
<td>UAH TRACE/TOX Lab</td>
<td>Dr. P. Colbourne</td>
</tr>
<tr>
<td>Immunology/Special Chemistry</td>
<td>4 weeks</td>
<td>UAH Special Chemistry</td>
<td>Dr. C. Prosser</td>
</tr>
<tr>
<td>Prenatal and Newborn Screening</td>
<td>4 weeks</td>
<td>NMS/Biochemical Genetics Lab</td>
<td>Dr. K. Schnabl Dr. F. Bamforth</td>
</tr>
<tr>
<td>Pediatric Biochemistry Biochemical Genetics</td>
<td>4 weeks</td>
<td>NMS/Biochemical Genetics Lab</td>
<td>Dr. K. Schnabl Dr. F. Bamforth</td>
</tr>
<tr>
<td>High Risk Pregnancy Fertility</td>
<td>2 weeks</td>
<td>RAH Laboratory</td>
<td>Dr. A. Fuezery</td>
</tr>
<tr>
<td>Hematology</td>
<td>4 weeks</td>
<td>UAH Hematology Lab</td>
<td>Dr. A. Szkotak Dr. G. Clarke</td>
</tr>
<tr>
<td>Immunology/Special Hematology</td>
<td>2 weeks</td>
<td>DL Core Lab</td>
<td>Dr. K. Capote Mr. T. Higgins</td>
</tr>
<tr>
<td>Molecular Diagnostics</td>
<td>4 weeks</td>
<td>Molecular Diagnostics Lab</td>
<td>Dr. S. Hume Dr. S. Taylor</td>
</tr>
<tr>
<td>Microbiology/Virology</td>
<td>4 weeks</td>
<td>Public Health PROV Lab, DL Microbiology Lab</td>
<td>Dr. J. Fuller Dr. R. Verity</td>
</tr>
<tr>
<td>Elective Rotation</td>
<td>8 weeks</td>
<td>See optional sites</td>
<td></td>
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</tbody>
</table>
Elective Rotations: Histocompatibility Laboratory, Comprehensive Tissue Centre/Canadian Blood Services, Molecular Pathology Laboratory, Cytogenetics Laboratory, Forensic Toxicology Laboratory, Red Deer Regional Hospital, Alberta Centre for Toxicology

Research and Development
Each fellow is encouraged to choose a research mentor who will provide the necessary facilities for continued involvement in research. It is recommended that the fellow carry out at least 1 project in the area of diagnostic test development and evaluation. The fellow is expected to carry out a research project with an objective of a presentation at a clinical chemistry scientific meeting and a publication in a clinical biochemistry journal.

Seminars, Rounds and Teaching
Throughout the academic year, there is a bi-weekly seminar program in Medical Biochemistry and a monthly General Pathology Journal Club. Alberta Clinical Biochemistry Rounds occur the first Wednesday of each month and are teleconferenced between University of Alberta Hospital, DynaLIFE Dx, Red Deer Regional Hospital, and Calgary Laboratory Services sites. The fellow will give a variety of presentations including a literature review on a topic of interest, a research paper, a clinical practice guideline, and a clinical case study from the literature or an on-call experience. Laboratory Medicine & Pathology Rounds are held weekly and the fellow is expected to attend regularly and present Rounds at least once. Medical Grand Rounds and Medical Genetic rounds are also held weekly. CSCC Educational Roundtables and a variety of webinars for staff professional development are also available. Fellows will be expected to document their attendance at clinical rounds throughout the program (Appendix C). Attendance records will be reviewed during advisory committee meetings. In the second year, fellows are expected to write-up at least one case study with questions from an interesting experience in the laboratory or on-call. The case study will be presented by fourth year medical laboratory science students and the fellow will lead the discussion around their case during one class. Presentation of their case study at other rounds or publication of an educational clinical case study is encouraged. The fellow may also participate in teaching a clinical chemistry lecture for second year medical laboratory science students.

Clinical/On-Call Experience
The fellow will participate in on-call clinical chemistry service during the last year of clinical laboratory rotations under the supervision of a General Pathologist or Clinical Biochemist.

Quality Management
The fellow will attend quality and management meetings on a regular basis and should arrange discussions with management staff. A senior technologist and clinical biochemist/general pathologist are available during each rotation to go through review of quality control data and proficiency testing. The fellow may also choose to take a management course as their option.
**Evaluation**

The fellow is expected to achieve a grade of at least 70% in each course. Following completion of each laboratory rotation, a written evaluation will be requested from faculty mentors (Appendix D) and the fellow (Appendix E). Reports will be presented and discussed at the Clinical Biochemistry Fellowship Program Training Committee meetings. The fellow will take a practice written and oral test at the end of each year. The tests will be used to check understanding throughout the program and will help direct learning needs of the fellow in preparation for written and oral certification examinations.

**Program Budget**

- Accreditation fee: $2500, 1st year only
- Fellow salary: $55,000/yr
- Overhead costs: $10,000/yr
- Insurance, benefits, library: $25,000/yr
- Instruction costs: waived
- Textbooks, society membership fees: $500 per year
- Conference travel: $500/yr provided by DynaLIFE\textsubscript{Dx} scholarships available to apply for

Annual Budget: $93,000 (year 1) $90,500 (year 2)

**Potential Funding Sources:**

- The Canadian Society for Clinical Chemists provides $500 per year to each provincial clinical chemistry society for education. The CSCC also provides funding for fellows to travel to an external site for training.
- American Association of Clinical Chemistry (Van Slyck Foundation and Rocky Mountain Local Section Awards)
- Alberta Innovates Health Solutions
- Calgary Laboratory Services
- Mitacs Accelerate Program
- Fellow that brings funding from another province or country
Canadian Academy of Clinical Biochemistry Accreditation

The program accreditation process for the CACB occurs while the trainee is going through the program and requires the following:

1. A proposal including program objectives, need, # of trainees, and available funding is sent with a formal letter to the Chair of the CACB
2. Complete preliminary questionnaire to a site visit for accreditation
3. Pay accreditation fee
4. Advertise and recruit a fellow
5. Prepare an agenda for the CACB site visit
6. CACB representatives will go through an accreditation checklist
7. Following site visit the program will receive a final report and accreditation certificate which requires renewal after 5 years

Application Requirements

1. Applicants must have educational qualifications in biochemistry, analytical or pure chemistry, or related life sciences and earned a PhD, MD or equivalent degree from a university belonging to the Association of Universities and Colleges of Canada, from a Canadian school of medicine or from an equivalent institution in the USA. Credential assessment for a university degree outside Canada or the USA is available through consultation with the Government of Canada Foreign Credentials Referred Office (1-888-854-1805).
2. Knowledge of biochemistry, physiology, analytical chemistry, molecular biology, immunology, and genetics is required.
3. Exposure to some, or all, of the disciplines of anatomy, pharmacology, pathology, hematology, microbiology, biophysics, epidemiology, and biostatistics is helpful.
4. Canadian citizenship or landed immigrant status
5. Demonstrate ability for independent research and scholarly activity.
6. Strong leadership skills and community service are important secondary considerations

Supporting Documentation for Application

- Application form
- Curriculum vitae
- If education was obtained at an institution outside the USA and Canada, an evaluation must be submitted from the credentials evaluation agency
- TOEFL score (if the applicant’s mother tongue is not English and there are doubts about their command of English)
- Personal letter of interest including your reasons for choosing Clinical Biochemistry as a career and the University of Alberta as the location of your choice
- Official documentation of all degrees awarded and transcripts of academic records
- Letters of reference from three referees
- Application deadline is December 31, 2014
Candidate Recruitment and the Interview Process

Advertising and recruitment of potential candidates will commence in the fall of 2014. Candidate recruitment will begin with a short presentation about the program to prospective graduate students and post-doctoral fellows at the University of Alberta. The fellowship position may also be advertised on several websites including various departments within universities across Western Canada (University of Alberta, University of Calgary, University of British Columbia, and the University of Saskatchewan) as well as the CSCC website.

The Clinical Biochemistry Fellowship Training Committee will review the applications and select the top two to three candidates for interview with a panel of training committee members in Edmonton. The program administrative assistant will contact all candidates to arrange for interviews. The training start date is July 2, 2015.

Criteria for Candidate Selection
1. Grades in relevant courses and overall average during graduate studies (min B+)
2. Strong background in biochemistry, chemistry or related life science
3. Third year level course in biochemistry or equivalent
4. Third year level course in human physiology
5. Research record, productivity, and relevance of publications to clinical biochemistry
6. Relevant experience in clinical biochemistry (medical laboratory technologist, laboratory scientist, research assistant or research associate)
7. Commitment of the candidate to the field of clinical biochemistry, as assessed by education, research, experience, and interview
8. Teaching experience
9. Knowledge of the career, evidence of visits to clinical laboratories
10. Leadership qualities, time management, and interpersonal communication skills

Clinical Biochemist Certification Requirements

Certification as a Clinical Biochemistry Fellow by the Canadian Academy of Clinical Biochemistry (CACB) requires all of the following:

1. Successful completion of a 2 year accredited program in clinical biochemistry

2. Successful completion of the written and oral certification examinations in clinical biochemistry