

Canadian Rivers Institute, 2014

Student Leadership Committee - Student Guide Sub-committee

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## **Welcome to the Canadian Rivers Institute!**

It is my pleasure to welcome you to the Canadian Rivers Institute!

The CRI places a significant emphasis on the education and training of undergraduate students, graduate students & postdoctoral fellows in river sciences. We provide courses and field-based training led by our Science Directors and many Associates across our partnering institutions

The CRI experience gives students and postdoctoral fellows an opportunity to receive world-class training from leading experts in the field of river science, and the potential to develop long-term professional relationships.

We encourage you to participate fully in the Canadian Rivers Institute experience: take part in CRI professional and social events (and volunteer to help with them), attend conferences and workshops. Your interaction with CRI will become an important link to the river science community.

All the Best!

Richard A. Butts, Ph.D.

Director, Canadian Rivers Institute

## **Welcome to the Canadian Rivers Institute!**

The Canadian Rivers Institute (CRI) is a dynamic, interdisciplinary network of world-class scientists, innovative researchers and creative, passionate students at all levels. We welcome you as part of our growing network!

The core of the CRI is the effective multi-disciplinary teaching and training in aquatic science to produce highly qualified water resources scientists, professionals, and policy makers across Canada and beyond its borders. CRI succeeds in this task by supporting the instruction students and researchers receive at their home institution, offering professional training, field courses and scholarships, providing forums for networking though with career-building retreats and professional platforms for developing presentation and communication skills, as well as supplying diverse leadership opportunities within and beyond the CRI community.

The CRI Student Leadership Committee (CRI SLC) is an integral part of the CRI student experience. The SLC is a primary communication link between you, other CRI students and CRI network members. The SLC organizes student engaging and educational events and provides support and resources for every stage of your program. Your campus/institution also possesses a CRI SLC member to serve as an institution-specific resource who can also present your concerns and opinions to the CRI community. The SLC gives you the chance to make a difference and demonstrate leadership by volunteering to become a member of the SLC during your degree program.

This guidebook was developed and designed by the CRI SLC to help you understand the structure of the CRI and direct you to the CRI resources that will be the most useful to you throughout your academic training.

On behalf of the CRI Student Leadership Committee, welcome to the CRI. We wish you well in your work and studies!

Sincerely,

Sean Landsman (UPEI), Chair, CRI SLC

Dr. Simon Courtenay  
Dr. David Armanini

Jesse Hitchcock (UPEI)  
Sebastien Ouellet-Proulx (INRS)  
Stephanie Connor (UNB-F)  
Stephanie Graves (UNB-F)

## 2. Introduction to the Canadian Rivers Institute

### 2.1. Description

The Canadian Rivers Institute (CRI) is a collaborative network of scientists, researchers, and students located across Canada and the world united by a common interest in aquatic science.

### 2.2. History

CRI was founded in 2000 at the University of New Brunswick's Fredericton and Saint John Campuses from a collaboration among four researchers: Dr. Rick Cunjak, Dr. Kelly Munkittrick, Dr. Deb MacLatchy and Dr. R. Allen Curry.

### 2.3. Purpose and Aims

The purpose of the CRI:

- To advance aquatic sciences research and provide education on the structure and function of fresh water and estuarine ecosystems, improving planning and management to promote sustainable use of water resources.

And to do so as:

- A multi-disciplinary centre of excellence for advancing river, estuarine and watershed sciences and promoting healthy waterways.
- The institution of choice for world-class education in aquatic sciences, creating a new generation of informed and engaged professionals.

The aims of the CRI:

- Develop and provide applicable science tools and information.
- Expand laboratory and field-based research and education opportunities for students and professionals.
- Provide leadership in the development of new standards and community of practice in environmental assessments, protection and restoration.
- Promote and improve integrated management as an effective vehicle for planning.
- Raise the profile and quality of research on rivers, estuaries and watersheds in Canada.
- Increase the participation of the Institute as well as Canada in international research on the world's rivers, estuaries and watersheds.
- Increase the effectiveness of research to address the immediacy of critical water issues.

### 2.4. Student Leadership Committee

Graduate students are important contributors to various aspects of the CRI mission and are a significant component of the CRI network. Within this network, the CRI Student Leadership

Committee (SLC) provides a vital communication link between CRI Science Directors and CRI students. The SLC is also responsible for planning CRI student activities and events.

SLC Roles and Responsibilities:

- Plan the annual CRI Student Retreat.
- Coordinate student involvement in CRI Days.
- Coordinate student interaction with the Hynes Lecturer.
- Facilitate communication between CRI Science Directors and CRI Students.
- Facilitate communication among CRI students across the CRI network.
- Participate in CRI Science Director meetings via the SLC — Chair.
- Prepare and maintain a CRI student guidebook.
- Initiate and facilitate a peer mentorship program.
- Organize a welcome/orientation session for new CRI students.

Structure:

Student Leadership Committee — Members (Campus Representatives)

- The SLC will be composed of one student representative per CRI partner institution, elected each September from among the CRI students at each campus or institution.
- Each SLC member will serve a one-year term (renewable, no term limits).
- Outgoing SLC members are responsible for coordinating the election of new SLC members (either in person or via an electronic poll) and for forwarding the names to the CRI Executive Director.
- If for any reason an SLC member cannot attend an SLC meeting or function, the SLC member must appoint another student at his or her home institution at least one week prior to the meeting or event to act in his or her place. The Acting SLC member will preside for the duration of the meeting or event and make a full report back to the SLC member within one week.
- Responsibilities and duties of each SLC member will be coordinated at the SLC level by the establishment of internal positions (sub-committees) as necessary to keep SLC activities running smoothly.

Responsibilities:

- Attend meetings, activities, and events organized by the SLC.
- Assist with planning and organizing SLC events.
- Communicate the preferences and interests of the labs/campuses they represent to the SLC.
- Communicate the plans and activities of the SLC to the home labs/campus.

Term: One year (renewable, no term limits).

Attainment: Elected by CRI students or lab members at each campus either in person or via an electronic poll in September of each year.

## Student Leadership Committee — Chair

- A student Chair of the SLC will be elected by and from the membership of the SLC for a one-year (renewable) term commencing in September of each year.
- The SLC cannot have more than one member from any individual campus unless one of them is serving as Chair.
- A delegate from the same campus as the Chair should be selected by run-off election if necessary to ensure equal representation on the SLC.
- The Chair only votes in the event of a tie.
- The terms for the Chair and Chair-elect should overlap for one to three months (depending on the availability of the out-going Chair) to provide an effective transition of leadership.
- If for any reason the Chair cannot attend an SLC meeting or function, the Chair must appoint another member of the SLC at least one week prior to the meeting or event to act in his or her place. The Acting Chair will preside for the duration of the meeting or event and make a full report back to the Chair within one week.

### Responsibilities:

- Preside over the meetings and activities of the SLC.
- Assist with planning and organizing SLC events.
- Delegate responsibilities for activities and events to SLC members and other CRI students.
- Manage any SLC relevant costs and budget items with assistance from the Science Directors on the SLC and the CRI Executive Director.
- Participate in Science Director meetings and facilitate communication between the Science Directors and the SLC.

Term: One year (renewable, no term limits).

Attainment: Elected by the SLC members via an electronic poll by September 30 of each year.

Eligibility: Previous SLC experience is desirable, but not necessary.

### Elections:

Each campus will conduct elections for SLC members in September of each year. Outgoing SLC members are responsible for coordinating the election of new SLC members (either in person or via an electronic poll) and forwarding the names to the CRI Executive Director and the current SLC Chair. The outgoing Chair will facilitate the election of the new Chair. Following the election of the Chair, a replacement delegate from the same campus will be selected either by the new Chair from their home campus or institution or a run-off election.

Once all members of the SLC have been elected for a particular year, they can begin their terms. The out-going Chair will remain on the SLC for one to three months (depending on availability) to facilitate the leadership transition.

Benefits of participating in the SLC:

- Professional training
- Communication skills
- Networking opportunities
- Leadership development
- Resume/C.V. builder

### 2.5. CRI Organizational Structure

CRI is organized hierarchically, and is divided into two primary divisions: CRI Science and CRI Corporate. CRI Research is responsible for conducting original research in basic and applied problems in aquatic science. Graduate students belong to the CRI Science branch. The research conducted by students and subsequent publications contributes directly to CRI Science. CRI Corporate is responsible for tool and resource development, laboratory sample processing, professional training, and consulting. CRI graduate students may become involved in research that may contribute to services provided by CRI Corporate, may use facilities maintained by CRI Corporate, and may take courses through CRI Corporate.

CRI Corporate is overseen by a Management Board comprised of senior members of governments, industry, and academia.

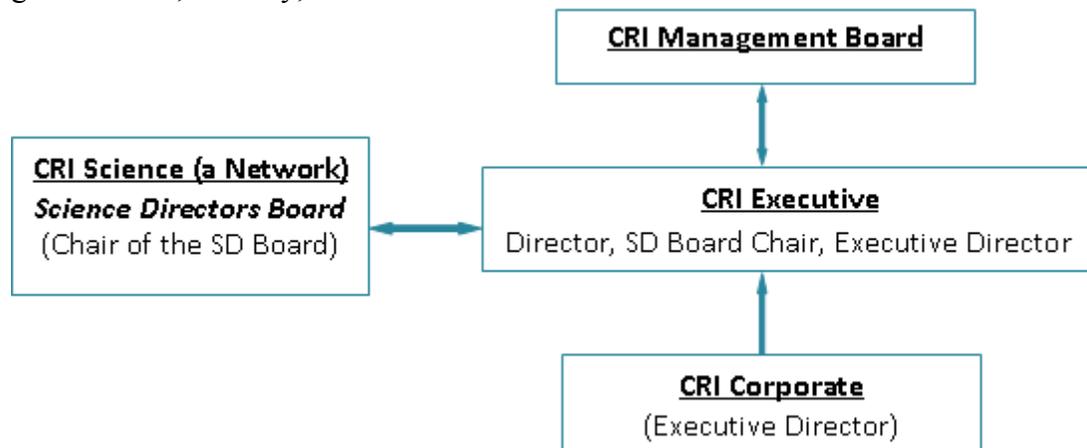


Figure 1. Diagram of CRI structure.

## *2.6. Network*

The network of CRI includes Science Directors their collaborators and associates, post-doctoral fellows and researchers, graduate and undergraduate students, laboratory and technical staff and a number of partner institutions and organizations.

### Director

The CRI Director is responsible for maintaining and expanding the CRI scientific network, as well as oversight of the various CRI facilities, partnerships with government agencies, community partners, and conservation/citizen groups/NGO's. The CRI Director also holds a voting seat on the CRI Management Board.

Dr. Richard Butts is currently serving as CRI Director. The process for appointing a director and the terms, roles and responsibilities are outlined in the CRI Constitution available at [www.unb.ca/cri](http://www.unb.ca/cri)

### Executive Director

The CRI Executive Director is responsible for the administration of day-to-day activities, programs, events, and staff. The Executive Director is also involved in communication both within CRI and to the general public.

### Science Directors

Science Directors are the primary researchers in the CRI network. Collectively they form the Science Directors Board, which meets twice annually to develop and oversee the CRI Science Plan. These individuals are often professors at universities and/or government scientists with affiliated positions at universities or natural resource professionals. This is the highest level in the research structure, with Science Directors formally stating their commitment to the purpose and aims of the CRI. An updated list of current Science Directors with their affiliations is included in the appendix and listed on the CRI website.

### Associates

Associates of the CRI are those persons named as affiliates or collaborators of a CRI Science Director and are included in CRI research. Associates may be colleagues at the same institution as the CRI Science Director or collaborators from across the country or world.

### Post — Doctoral Fellows, Researchers and Visiting Scientists

Post-doctoral Fellow and researchers also contribute to the research conducted through CRI. Persons with these positions typically work directly for a Science Director but do not directly supervise graduate students themselves. These positions are temporary and continued

participation in CRI after completing their project or work objectives depends on individual circumstances.

### Graduate Students

The original research conducted by graduate students supervised in whole or in part by a CRI Science Director contributes directly to the scientific mission of the CRI. Most of the primary research and publications of CRI come directly from graduate students in MSc or Ph.D. programs. Graduate student positions are temporary. A student has status within CRI during the period of their degree. Continued participation in CRI after a degree depends on individual circumstances. A student's program, requirements, and degree are determined based on their home institution and/or that of their supervising Science Director(s). Each partner institution may have different policies, procedures and requirements. Students are affiliated with CRI directly through their supervising Science Director(s) (see CRI Graduate Students, section 3.1).

### Staff

Individual Science Directors may hire lab and field technicians or managers to help coordinate activities or research conducted under their supervision. These individuals contribute to the research within CRI. These positions do not have permanent status in CRI.

CRI facilities offer an array of different services (see Facilities, section 2.7). CRI Staff members are responsible for managing the services provided by these facilities. In some cases these are permanent positions. Persons in these roles often do not conduct their own research, but rather provide the necessary equipment and expertise to expedite the research of others both within and outside CRI.

### Alumni

Upon completion of your degree, CRI graduate students have CRI alumni status. By keeping contact information up to date, alumni can continue to receive CRI news, announcements, as well as information on CRI program offerings, courses and also employment opportunities beyond the CRI network.

### *2.7. Social Media*

Communication throughout the CRI network may be facilitated by the use of social media.

Connect to CRI on:

Website: <http://www.unb.ca/research/institutes/cri/index.html>

Facebook: <https://www.facebook.com/CanadianRiversInstitute>

Twitter: [https://twitter.com/CRI\\_News](https://twitter.com/CRI_News)

## 2.8. Facilities

### 2.8.1. Stable Isotopes in Nature Laboratory (SINLAB)

The SINLAB is one of the few stable isotope facilities in Canada with an ecological focus. In addition to our support of a dynamic research team at the University of New Brunswick, it serves an international clientele of researchers working in terrestrial, marine and freshwater ecosystems.

The SINLAB uses Continuous Flow Isotope Mass Spectrometry (CFIRMS) technology and is able to analyze a variety of sample and tissue types for ratios of carbon ( $^{13}\text{C}/^{12}\text{C}$ ), nitrogen ( $^{15}\text{N}/^{14}\text{N}$ ), and hydrogen ( $^2\text{H}, ^1\text{H}$ ).

The lab is equipped with two mass spectrometers, three elemental analyzers, two zero-blank autosampler and one PN 150 autosampler, Conflo II and Conflo III interfaces, two high-precision balances, a ball mill grinder, a drying oven and a freeze drier.

Elemental Analyzers are interfaced to the Finnigan Delta Plus mass spectrometer via the Conflo II and to the Finnigan Delta Plus XP mass spectrometer via the Conflo III. The PN150 autosampler is utilized with the NC2500 for C&N analysis on both Mass specs. The zeroblank autosamplers are utilized with both the Costech 4010 and TC/EA. The Costech 4010 is used for C&N analysis on both mass spectrometers. Hydrogen analysis is done with the TC/EA and Delta XP.

#### Costs:

Carbon & Nitrogen = \$18 per sample (includes  $\text{d}^{13}\text{C}$ ,  $\text{d}^{15}\text{N}$ , %C, %N, C:N)

Hydrogen (solid samples only) = \$20 per sample (includes  $\text{dD}$  and %D)

#### Other Services:

Oven-drying = \$5/sample

Grinding (ball-mill or mortar and pestle) = \$5/sample

Weighing = \$4/sample

Due to the complexity of analyzing samples submitted on glass fiber filter paper, an additional \$12/sample will be charged. It is recommended that an electric pump be used to filter water in order to ensure an adequate amount of material is collected. There is no guarantee for data generated from glass fiber filter papers.

Extra Labour (e.g., sample dissection, organization of samples.) = \$50/hour/technician

Additional charges may be applied to samples not meeting required submission standards.

Discount pricing may be applied to bulk orders (5% for 200+ samples, 10% for 500+ samples and 15% for 2000+samples).

Carbon and nitrogen isotopic ratios are simultaneously derived during sample analysis. Hence, the price per sample includes both isotopes (unless the C:N dictates separate analysis).

Contracts: All stable isotope analyses requiring a legal contract will be subject to a 15% overhead charge. This overhead will cover the additional administrative costs as per the partnership agreement between the University of New Brunswick (UNB) and the Canadian Rivers Institute (CRI).

Staff:

Rick Cunjak, Director of SINLAB, PhD

David Soto, Science Manager, PhD (david.soto@unb.ca)

Anne McGeachy, Laboratory Manager, MSc (smcgeach@unb.ca)

Mireille Savoie, Laboratory Technician, BSc (msavoie@unb.ca)

Christine Paton, Laboratory Technician, BSc (cpaton@unb.ca)

Website: <http://www.unb.ca/research/institutes/cri/sinlab/index.html>

### 2.8.2. Benthic Macroinvertebrate Laboratory (BMI LAB)

Services: The BMI lab can assist with any stage of benthic macroinvertebrate sample analysis including sorting, identifications, data analysis, and report writing. The BMI lab primarily provides taxonomic services for benthic macroinvertebrate and zooplankton samples, but can also provide digital imaging and sample dry and wet weights. Additional services include the calculation of a variety of biotic index values and performance of statistical analyses. The BMI lab is also equipped to perform field sampling for invertebrates.

Programs/Initiatives: The BMI lab is involved in building Benthic Macroinvertebrate assessment models for New Brunswick's Water Classification Programme and a rapid BMI assessment tool linked to Water Classification for local community groups. In partnership with Environment Canada, the BMI lab has developed an online training programme for the Canadian Aquatic Biomonitoring Network (CABIN). CABIN is a collaborative programme developed and maintained by Environment Canada for collecting, assessing and distributing information on the biological condition and biodiversity of aquatic ecosystems in Canada.

Equipment, Expertise and Experience: The BMI lab contains the latest in equipment and a growing reference collection covering New Brunswick and other areas of Atlantic Canada. Staff member(s) have met the requirements to be recognized as certified taxonomists through the Society of Freshwater Science Taxonomic Certification program. Currently, the BMI lab has processed over 300 samples and has identified more than 150,000 organisms.

Location: University of New Brunswick — Fredericton, Bailey Hall

Staff: Current staff includes a lab manager (Dr. Michelle Gray) and two technicians.

Website: <http://www.unb.ca/research/institutes/cri/bmi/index.html>

### 2.8.3. Environmental Chemistry Laboratory

The Environmental Chemistry Lab is located at the University of New Brunswick, Saint John campus, in the Canadian Rivers Institute Building. The lab is managed by Dr. Karen Kidd and method development and analyses are done by Angella Mercer, PTech.

The Environmental Chemistry Lab encompasses:

- Total mercury analyzer (DMA-80)
- Accelerated solvent extractor (ASE 300)
- Microwave digester (MARS 5)
- ICP optical emission spectrometer (iCAP 6500 DUO)
- Gas chromatography with an ECD, FID and MSD (Agilent 6890N/5975B)
- Gel permeation chromatography system (PrepLinc GPC)
- Buchi rotary evaporators
- Nitrogen evaporator
- Analytical balances
- Freeze dryer
- Microscopes

Current analyses:

- Total mercury
- PCBs, DDT, and other organochlorines
- Polyaromatic Hydrocarbons (PAHs) (including 16 priority PAHs)
- Metals (including Cd, Pb, Fe, As, Cu, Zn, Al, Cr, Mg, Mn, Ni, P, Sr)
- % Lipids and % moisture

The lab is able to handle samples in a variety of matrices: fluids, sediments, soils or tissues. All methods include standard quality assurance procedures (certified reference materials, blanks, sample replicates, spike recoveries). The lab has the capability to conduct other chemical analyses as well after developing and testing the methods. We recommend you contact the lab to see if additional needs can be met. Methods are modified from standard analytical techniques published by the U.S. Environmental Protection Agency.

The Environmental Chemistry Lab staff are an excellent source for information pertaining to sample container preparation, sample collection and appropriate preservation techniques specific for each analysis. Feel free to discuss this aspect with staff to ensure proper methods are followed prior to sample collection.

Analyses are competitively priced and discounts may be applied on certain projects. Please contact the lab for quotes.

Staff:

Dr. Karen Kidd: [kiddk@unb.ca](mailto:kiddk@unb.ca)

Angella Mercer, PTech: [amercer1@unb.ca](mailto:amercer1@unb.ca)

Website: [http://www.unb.ca/research/institutes/cri/environmental\\_chemistry\\_lab.html](http://www.unb.ca/research/institutes/cri/environmental_chemistry_lab.html)

#### 2.8.4. Ecotoxicogenomics Laboratory

The Ecotoxicogenomics Lab is located at the University of New Brunswick, Saint John campus, in the Canadian Rivers Institute Building. The lab is managed by Dr. Chris Martyniuk.

The Ecotoxicogenomics Lab contains:

- High Resolution Microarray Scanner (Agilent)
- 2100 Bioanalyzer (Agilent)
- Nanodrop spectrophotometer
- iMark Spectrophotometer
- CFX96 Real time PCR machine
- Freezers, centrifuges, PCR machine

The lab has the capabilities of performing all bioinformatics for transcriptomics and proteomics data.

Staff: Dr. Chris Martyniuk: [martyn@unb.ca](mailto:martyn@unb.ca)

### **3. CRI Students**

#### *3.1. Graduate Students*

##### 3.1.1. Status

Status as a CRI graduate student is determined based on your supervisor's affiliation to CRI.

If your graduate supervisor is a/an...

- a) Science Director — you are automatically considered a CRI graduate student.
- b) Associate — you have the choice to opt in as a CRI graduate student. You can request that you be named a CRI student under the CRI Science Director your supervisor is affiliated with.

##### 3.1.2. Benefits

One of the greatest benefits of being a CRI graduate student is forming a direct connection with a network of other students and professionals to help you develop your research and professional skills. This can lead to collaborative projects as well as other research and career opportunities. CRI also offers professional courses and training opportunities (see Professional courses and training section) at a discount to CRI students. CRI also represents a communication hub, providing information on job opportunities, programs, events, conferences and workshops related to aquatic science. CRI also offers opportunities to practice professional skills through their own programs and events (see Programs and Events, section 5).

##### 3.1.3. Involvement

All CRI graduate students are invited and encouraged to actively participate in CRI.

In order to establish communication with CRI, a new student should provide contact information to CRI. This occurs by sending a short email to cri@unb.ca to request that your name and contact information be added to the list of current CRI students. Students should also request to have their email address added to the CRI student email list so that they can receive the most up-to-date information on CRI programs and people. Students should request a CRI student webpage and update it regularly. Students should also have their information updated to the CRI membership database through their supervisors lab contact, typically a current student under their supervision. This contact person has permission to update the public CRI membership database and CRI staff (currently, the executive director) will update their records according to this database every time edits or changes are made.

Students should always acknowledge their status in CRI by including CRI in the author affiliation section of any published work they complete as part of their degree (see CRI Branding, section 7).

CRI students are expected to attend and contribute to CRI functions and events (see Programs and Events, section 5).

#### 3.1.4. H.B.N. Hynes Scholarship

The scholarship is named in honour of Dr. H.B. Noel Hynes who is known as the "the father of running water ecology". The most renowned of freshwater biologists, Dr. Hynes wrote the first comprehensive running waters textbook, "The Ecology of Running Waters" followed by his book "The Biology of Polluted Waters". He became a Fellow of the Royal Society of Canada in 1978, he was a Fellow of the Institute of Biology and the American Society for the Advancement of Science, Distinguished Emeritus Professor (Waterloo), and he held Honourary Degrees at Universities of London, Waterloo, and New Brunswick. Among his awards are the Canadian Centenary Medal (1967), the Colonel Hilary Jolly Award of the Australian Society of Limnology (1985), the Award of Excellence from the North American Benthological Society (1988), and the Naumann-Thienemann Medal (1998), the highest award given to an aquatic biologist by the *Societas Internationalis Limnologicae*.

Value: \$1000 awarded annually during CRI Days

#### Qualifications:

CRI graduate students who have completed the first year of their academic program.

#### Application:

A cover letter (1 page maximum) — evaluated at 30%

Summary of proposed or completed research (3 pages maximum) — evaluated at 40%

A CV (2 pages maximum) — evaluated at 15%

A transcript — evaluated at 15%

Complete submissions must include all of the above.

#### Evaluation:

Applications will be evaluated by a committee composed of the CRI Management Board and Emeritus & Honorary Fellows.

#### Submission:

Submit completed applications to [cri@unb.ca](mailto:cri@unb.ca) as a PDF file.

2013-14 Submission due date: TBA

#### Award Announcement:

The successful recipient will be announced annually during CRI Days.

### 3.2. Alumni

Any former CRI graduate students are encouraged to remain a part of the CRI community as an alumnus. Upon completion of your degree, contact the CRI ([cri@unb.ca](mailto:cri@unb.ca)) or your current Science Directors/supervisor's CRI lab contact to have your status changed to alumni in the CRI network

database. Alumni can still benefit from CRI by receiving news and announcements for program offerings, courses and employment opportunities as well as other important information. CRI is also interested in staying in touch with alumni. Submit news and updated contact information via [cri@unb.ca](mailto:cri@unb.ca).

### *3.3. International Students*

CRI graduate students comprise a diverse community coming from across Canada, North America and other parts of the world. The first step in your transition into the CRI begins at your home institution. Procedures, permits and regulations for incoming international students differ among the campuses and institutions within the CRI Network. Incoming international CRI graduate students should check with their supervisor and international student office for specific details.

In general international graduate students may need to acquire:

- Study and/or work permits
- Social insurance numbers
- Medical insurance coverage
- Bank accounts
- Identification cards
- Information technology (IT) accounts and email access

General advice is to initiate these processes as early as possible to allow for processing time. Your supervisor and campus contacts can help direct you to the appropriate offices for assistance (see Campus Summaries for more information, Appendix A).

In addition, individual campus resources can assist with housing information, stipend or salary information, tuition and fee payments, and even tax preparation.

Graduation requirements are determined by each campus and university, not by CRI. Offices of graduate studies at each campus can provide more information on the program requirement and timeline of a graduate program.

### *3.4. Undergraduate Students*

Undergraduates can be included in CRI if a Science Director names them as one of their students. This is up to the individual Science Director and undergraduate student. There is no discussion at this time to include undergraduates in the Student Leadership committee, however, they are welcome to participate in CRI events and receive information about CRI by being added to the email lists.

#### **4. CRI Postdoctoral Fellows**

Post-doctoral Fellows (PDFs) and researchers contribute directly and indirectly to the research conducted through CRI. Persons with these positions typically work directly for a science director and may assist and mentor graduate students. PDFs have similar affiliation to CRI as associates, but these positions are usually shorter in duration. PDFs may attend and contribute to Science Director meetings. Continued participation in CRI after completing their project or work objectives depends upon individual circumstances.

**Procedures, permits and regulations for PDFs differ among the campuses and institutions within the CRI Network. CRI PDFs should check with the administration at their home campus for details.**

**In general domestic and/or international PDFs may need to acquire:**

- Work Permits
- Social insurance numbers
- Medical insurance coverage
- Bank accounts
- Identification cards
- Information technology (IT) accounts and email access

General advice is to initiate these processes as early as possible to allow for processing time. Your supervisor and campus contacts can help direct you to the appropriate offices for assistance (see Campus Summaries for more information).

## **5. Programs & Events**

### *5.1. Student Retreat*

The student retreat is an annual event that brings together CRI students and CRI network and board members. It is a great opportunity for students in different labs to socialize and network. It is also an occasion to learn about various topics through group discussions, guest panelists, and workshops. The student retreat coincides with the CRI Day; the retreat is meant for CRI members only while the CRI Day is a public event. The Student Retreat is organized by the Student Leadership committee, suggestions for activities or programs or feedback on the Student Retreat is encouraged. Communicate with the SLC member for your institution or better yet volunteer to become a SLC member to implement your ideas!

### *5.2. CRI Days*

The CRI Days is a public event held annually where CRI members, guests and the general public discuss a selected river ecology and management topics. Science directors select an annual theme around which students and Science Directors present their work. For example, the 2011 CRI Day focused on the State of the Environment Report for the Saint John River, a culmination of 10 years of CRI research. CRI Science Directors and Associates presented various research findings on the topic. The CRI Day extends over two to three days and coincides with the student retreat, which is for CRI student members only.

### *5.3. Hynes Lecture*

Every fall, the CRI hosts the H.B.N. Hynes Lecture series, which features an internationally renowned scientist in aquatic sciences. Previous speakers have included Dr. Robert Naiman, Dr. Joseph Rasmussen, Dr. N. Leroy Poff, Dr. Bob Newbury, Dr. Stuart Bunn and Dr. David Allan.

The event is usually made up of a lecture series: one public lecture geared towards the general public and a science lecture for a more specialized audience.

The videos of the most recent lectures are available online:

<http://www.unb.ca/research/institutes/cri/hyneslectures/videos.html>

## 6. Professional Courses and Training

### 6.1. NSERC CREATE WATER Program

The plan is to motivate and produce highly qualified researchers and environmental practitioners in aquatic and watershed sciences to meet the global demand for the evolving field of environmental research sector employees.

From 2011-2017, there are a variety of scholarships funded through an NSERC Collaborative Research and Training Experience (CREATE) grant. The full funding is worth \$1.65 million over the 6 years, and just over 80% of the funding is targeted for scholarships at all levels (from summer undergraduate through science and non-science Masters and PhD students to post-doctoral options).

The CREATE program is open to undergraduate students (summer only, ~ 16 weeks), Masters and PhD Students and Post-doctoral Fellows working under any of the WATER researchers. Stipends and training components are available to accepted participants.

An 'MBA' of aquatic environmental sciences - core and elective training in specialized technical and professional skills will make participants well-sought after in the workforce.

The four main training components of the CREATE WATER program are:

- **Field Techniques Certificate** — field safety, field equipment operation and maintenance, abiotic and biotic collection methods, and other specialized courses
- **Professional Science Certificate** — professional skills courses and workshops including topics like project and time management, effective communication, data analysis and interpretation, and report and proposal writing
- **Integrated Forum** — 'Applied Solutions to Environmental Crises' - a collaborative problem-based learning forum where participants will be challenged with a current environmental crisis, or issue, working in teams spanning the WATER institutions and formulate solutions utilizing and applying many of the technical knowledge and professional skills they will learn in the certificate programs), and
- **Research and Skills Exchange** — these will be available to WATER scholarship recipients and will involve 1-4 week exchanges amongst academic, government, and industry collaborators/partners.

For a list of WATER researchers as well as details on eligibility and the application process, visit [www.unb.ca/water](http://www.unb.ca/water).

## 6.2 *'Watersheds and Aquatics Training in Environmental Research' (WATER): Courses*

The CRI places a significant emphasis on the education and training of undergraduate and graduate students through regularly offered university courses taught by CRI Science Directors and Associates.

The CRI offer non-credit courses for students and professionals in aquatic sciences. The CRI is constantly developing new professional courses based on need/demand.

The CRI training products include online, field, and combination “blended” courses. The complete list of training products, including a short description and fees, is available online at: <http://canadianriversinstitute.com/training/cri-workshop/>

## **7. CRI Branding Information**

CRI's identity communicates the vision, mission and purpose of the organization. The logo should be incorporated into all CRI documents and members are encouraged to use the logo widely where appropriate and as it applies to other guidelines in this policy.

It is important to use the logo identity in a consistent manner. The logo (including graphics, fonts, placement, and colours) must not be altered.

If you would like access to the CRI logo or have a question about its use, the CRI Director or Executive Director should be asked to provide advice and direction.

### General Format Guidelines:

- Always use approved digital art to reproduce the logo.
- Size proportionately.
- Always position the logo or full signature on a clear area, free of other text or graphics
- No changes can be made on the color or font of the CRI logo
- The logo is available in the following formats:
  - JPG
  - GIF
  - BMP
  - PDF

## 8. Research Policies

If in the course of your research you answer “**YES**” to any of the following questions you will have to follow departmental, university, provincial and/or federal policies for conducting safe and ethical research:

<b>Research Area</b>	<b>Policy</b>
<i>Are you handling animals?</i>	Animal Care and Use Policies (see below)
<i>Are you sampling animals (vertebrates, threatened or endangered species)?</i>	Animal Care and Use Policies (see below) Provincial and Federal permits
<i>Are you electrofishing?</i>	Animal Care and Use Policies (see below) Electrofishing certification (available through CRI courses)
<i>Are you using a boat or other small vessel?</i>	Small Vessel Regulations Operator Competency Card
<i>Are you operating a motor vehicle?</i>	Valid Drivers License
<i>Are you altering a water-course?</i>	Provincial and Federal permits as applicable

### Animal Care and Use Policies

Animal care and use policies are created and overseen by the Canadian Council of Animal Care (CCAC). The CCAC is the national peer review agency responsible for setting and maintaining standards for the ethical use and care of animals used **in science** (research, teaching and testing) throughout Canada. The purpose of the CCAC is to act in the interests of the people of Canada.

- To ensure that the use of animals, where necessary, for research, teaching and testing employs optimal care according to acceptable scientific standards
- To promote an increased level of knowledge, awareness and sensitivity to relevant ethical principles

CCAC advocates a three R tenet to animal use: replacement, reduction, and refinement. Replacement recommends alternative methods to animal use. Reduction recommends finding strategies to use fewer animals. Refinement advocates procedures that will minimize pain and distress to the animals that are used.

Institutions need to be certified for animal use by CCAC. Every three years facilities are assessed by outside members of CCAC and assigned a status. Check the CCAC website for guidelines. A member of the animal care team may be able to provide advice on preparations to ensure animal holding and experimental rooms meet CCAC animal care guidelines.

New animal users will be required to undergo training in the ethical and responsible use of animals. At UNB or UNBSJ, usually this is provided through an online course at UPEI; Experimental Fish (participants or their supervisor are required to pay for their own registration) or the CCAC online modules (free UNBSJ desire2 learn course and the registration is completed

by the animal care technician). Check with the institutions animal care contact for training offered at your location.

Animal care protocols are also required to be submitted and approved prior to the collection and use of animals. Submitted protocols are reviewed by a local multidisciplinary animal care committee composed of at least one scientist, one veterinarian, one community representative, one institutional member who does not use animals, one technical staff representative and the ACC coordinator. Therefore language used in the documents should be easily understood by people outside a specific area of expertise (lay terms).

The UNBSJ Animal Care Director is Dr. Houlahan, Chair of the Animal Care Committee is Dr. Rose McCloskey, the Animal Care Coordinator is Judy Arseneau and the Animal Care Technician is Kelly Cummings-Martell. The UNBF Animal Care Director is Dr. Tillmann Benfey, Heather Burke is the Animal Care Coordinator, and Robyn O'Keefe is the technician

More information can be found at [www.ccac.ca](http://www.ccac.ca)

**Appendix A. Campus Summaries**

## Canadian Rivers Institute @ University of New Brunswick — Fredericton

### CRI Science Directors

	Office	Phone	Email
Dr. Donald Baird	105 Bailey Hall	1 506 458 7048	djbaird@unb.ca
Dr. Joseph Culp	140 Bailey Hall	1 506 458 7458	jculp@unb.ca
Dr. Rick Cunjak	107B Bailey Hall	1 506 452 6204	Rick.Cunjak@unb.ca
Dr. Allen Curry	139 Bailey Hall	1 506 452 6208	racurry@unb.ca
Dr. Kerry MacQuarrie	HB-5 Head Hall	1 506 453 5121	ktm@unb.ca

### CRI Student Leadership Committee Representatives

	Office	Phone	Email	Supervisor	Program
Stephanie Connor	Rm. 108 Enterprise Building #2 (8 Garland Ct).	506 453 4845	Stephanie.Connor@unb.ca	Donald Baird	MSc

### Affiliated Departments

#### Faculty of Science: Biology Department (<http://www.unb.ca/fredericton/science/biology/>)

	Position	Phone	Email
Dr. Gary Saunders	Chair	1 506 452 6216	gws@unb.ca
Heidi Stewart	Graduate Studies Coordinator	1 506 458 7488	heidi.stewart@unb.ca
Marni Turnbull	Accounting	1 506 451 6888	mturnbul@unb.ca
Melanie Lawson	Secretary	1 506 453 4583	melanie@unb.ca
Margaret Blacquier	Secretary	1 506 453 4582	m.blacquier@unb.ca

#### Faculty of Engineering: Civil Engineering (<http://www.unbf.ca/eng/civil/>)

	Position	Phone	Email
Dr. Allison Schriver	Chair	1 506 453 3568	abs@unb.ca
Joyce Moore	Graduate Program Assistant	1 506 452-6127	joycem@unb.ca
Melody Pollock	CE/GE Undergrad Assistant	1 506 453-4521	melody.pollock@unb.ca

## UNB — Fredericton Graduate Program Information

School of Graduate Studies <http://www.unb.ca/gradstudies/>

	Biology	Civil Engineering
<b>Directors of Graduate Studies</b>	Dr. Les Cwynar 1 506 452-6197 cwynar@unb.ca	Dr. Kerry MacQuarrie 1 506 453-5121 ktm@unb.ca

### Support Staff

	Position	Contact
Kelly Humber	Scholarship & Awards Assistant	1 506 458-7711 kelly.humber@unb.ca
Elizabeth Fry-Rahmanian	Receptionist & Program Assistant	1 506 458-7390 efryrahm@unb.ca
Jacqueline Seely	Administrative Coordinator & Assistant to the Dean of Graduate Studies	1 506 453-4672 jseely@unb.ca
Lyle Smith	Electronic Text Centre Programmer - Electronic Theses & Dissertations	1 506 453-4588 lsmith1@unb.ca

### UNB – Fredericton Campus Resources

	Location	Contact
Counseling Services (Career & Personal)	C.C. Jones Student Centre	Phone: (506) 453-4820 Fax: (506) 452-6376 E-mail: <a href="mailto:counsel@unb.ca">counsel@unb.ca</a>
Student Health Center	C.C. Jones Student Centre	Phone: (506) 453-4837 Fax:(506) 452-6087 E-mail: <a href="mailto:shc@unb.ca">shc@unb.ca</a>

**Canadian Rivers Institute @ University of New Brunswick – Saint John**

**CRI Science Directors**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>
Dr. Karen Kidd	206 CRI	1 506 648 5809	kiddk@unb.ca
Dr. Chris Martyniuk	203 CRI	1 506 648 5506	martyn@unb.ca

**CRI Student Leadership Committee Representative**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>	<b>Supervisor</b>	<b>Program</b>
Stephanie Graves	212 CRI	506-648-5944	Stephanie_Dawn.Graves@unb.ca	Karen Kidd	MSc

**Affiliated Departments**

Faculty of Science: Biology Department <http://www.unb.ca/saintjohn/sase/dept/biology/>

	<b>Position</b>	<b>Phone</b>	<b>Email</b>
Dr. Remy Rochette	Department Chair	1 506 648 5988	rochette@unb.ca
Colette Keith	Department Secretary	1 506 648 5565	keith@unb.ca
Kelly Cummings-Martell	Animal Care Technician	1 506 648 5940	Cummings@unb.ca
Don Scott	Research Support, SASE/Psychology	1 506 333 2764	scott@unb.ca

**UNB – Saint John Graduate Program Information**

School of Graduate Studies <http://www.unb.ca/gradstudies/>

	<b>Biology</b>
Director of Graduate Studies	Dr. Kate Frego 1 506 648 5566 frego@unb.ca
Associate Dean of Graduate Studies	Dr. Bruce MacDonald 1 506 648 5620 bmacdon@unb.ca
Graduate Secretary	Susan Wilson 1 506 452-6052 wilsons@unb.ca

### UNB- Saint John Campus Resources

	<b>Location</b>	<b>Contact</b>
Counselling Services (Career & Personal)	Oland Hall G11	Meredith Henry 1 506 648 2309 Meredith.henry@unb.ca
Student Health Center	The Student Health Centre is located behind the Athletic Centre, next to Saint John College.  100 Tucker Park Road	Phone (506) 648-5656 Fax (506) 648-5663

## Canadian Rivers Institute @ Institut national de la recherche scientifique - Québec

### CRI Science Director

	Office	Phone	Email
André St-Hilaire	490 de la Couronne, Rm. 4335	418 654 3113	andre.st-hilaire@ete.inrs.ca

### CRI Student Leadership Committee Representative

	Office	Phone	Email	Supervisor	Program
Sébastien Ouellet-Proulx	490 de la Couronne, Rm. 2433	418 654 2530 ext. 4478	sebastien.ouellet-proulx@ete.inrs.ca	André St-Hilaire	MSc

### Affiliated Department

Centre Eau Terre Environnement ([www.ete.inrs.ca](http://www.ete.inrs.ca))

	Position	Phone	Email
Yves Bégin	Director	418 654 2575	yves.begin@ete.inrs.ca

### INRS Graduate Program Information

<b>Director of the PhD Program in Water Sciences</b>	Alain Mailhot 418 654 3821 alain.mailhot@ete.inrs.ca
<b>Director of the MSc Program in Water Sciences</b>	Yves Secrétan 418 654 3848 yves.secretan@ete.inrs.ca
<b>Student Services</b>	Suzanne Dussault 418 543 2622 suzanne.dussault@ete.inrs.ca
<b>Student Services</b>	Johanne Desrosiers 418 654 2552 johanne.desrosiers@ete.inrs.ca

## Support Staff

Name	Position	Contact
Jean-Daniel Bourgault	Library and Documentation Services	418 654 2663 jean-daniel.bourgault@ete.inrs.ca
Guylaine Vallée	Financial Services	418 654 4677 guylaine.vallee@ete.inrs.ca
Céline Bélanger	Security Services	418 645 3807 celine.belanger@ete.inrs.ca

## Canadian Rivers Institute @ University of Prince Edward Island

### CRI Science Director

	Office	Phone	Email
Dr. Mike Van den Heuvel	429 Duffy	(902) 566-6072	MHEUVEL@upei.ca

### CRI Student Leadership Committee Representative

	Phone	Email	Supervisor	Program
Sean Landsman	217 649 4449	landsman.sean@gmail.com	Michael van den Heuvel	PhD
Jesse Hitchcock	902 213 5797	jhitchcock@upei.ca	Michael van den Heuvel	MSc

### Affiliated Departments : Biology, Environmental Science

	Position	Phone	Email
Dr. Marva Sweeney-Nixon	Department Chair	902 566 0633	msweeney@upei.ca
Pedro Quijon	Graduate Coordinator	902 566 6059	pquijon@upei.ca
Sharon Martin	Departmental Secretary	902 566 0301	samartin@upei.ca

### UPEI Campus Resources

	Location	Contact
Counselling Services (Career & Personal)	W.A. Murphy Student Centre	(902) 566-0488 studentserv@upei.ca
Student Health Center	W.A. Murphy Student Centre	(902) 566-0316 healthcentre@unpei.ca

**Canadian Rivers Institute @ University of Ontario — Institute of Technology**

**CRI Science Director**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>
Dr. Douglas Holdway	Science Building, Rm. 4023	905 721 8668 ext. 2606	douglas.holdway@uoit.ca

**CRI Student Leadership Committee Representative**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>	<b>Supervisor</b>	<b>Program</b>

**Canadian Rivers Institute @ University of Waterloo**

**CRI Science Director**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>
Dr. Simon Courtenay	Environment 2 Rm. 2036	519 888 4567 ext. 35796	simon.courtenay@uwaterloo.ca
Dr. Mark Servos	Biology 2 Rm. 158A	519 888 4567 ext. 36034	mservos@uwaterloo.ca

**CRI Student Leadership Committee Representative**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>	<b>Supervisor</b>	<b>Program</b>

**Canadian Rivers Institute @ Brock University**

**CRI Science Director**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>
Dr. Ryan Plummer	MC C-423	905 688 5550 ext. 4782	rplummer@brocku.ca

**CRI Student Leadership Committee Representative**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>	<b>Supervisor</b>	<b>Program</b>

**Canadian Rivers Institute @ Wilfrid Laurier University**

**CRI Science Director**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>
Dr. Deb MacLatchy	R241 A, 202 Regina St.	519 884 0710 ext. 2859	dmaclatchy@wlu.ca

**CRI Student Leadership Committee Representative**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>	<b>Supervisor</b>	<b>Program</b>

**Canadian Rivers Institute @ Okanagan College**

**CRI Science Director**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>
Dr. Leif Burge		250-861-9070 x 54085	lburge@okanagan.bc.ca

**CRI Student Leadership Committee Representative**

	<b>Office</b>	<b>Phone</b>	<b>Email</b>	<b>Supervisor</b>	<b>Program</b>

## **Appendix B. Index of Student Leadership Committee Members 2012-2013**

Chair

University of New Brunswick – Fredericton

University of New Brunswick – Saint John

Institut National de la Recherche Scientifique

University of Prince Edward Island

University of Ontario – Institute of Technology

University of Waterloo

Brock University

Wilfrid Laurier University

Okanagan College