

CIEE / ICEE

Canadian Institute of Ecology and Evolution /
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Thematic Working Group “Adaptation versus maladaptation in response to environmental change” met at McGill's Gault Nature Reserve on December 2015. This group, co-funded by the CIEE and the Quebec Center for Biodiversity Science (QCBS), is bringing together more than 20 researchers from 13 Canadian Universities - including McGill, UQAM, Montréal, Sherbrooke, Guelph, Concordia, Queen's, Carleton, Memorial, UBC, Dalhousie, Saskatchewan and Alberta - and 4 US universities. Photo credit: A. Hendry

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***Canadian Institute of Ecology and Evolution:
Accelerating scientific progress through programs that
synthesize current knowledge and develop future leaders.***

Peter Leavitt, Director

Greetings from the CIEE! We have a number of exciting activities to tell you about, including working group meetings that took place during the last few months and the selection of new working group proposals for funding. We take this opportunity to extend special thanks to the members of the CIEE's Scientific Advisory Group for their remarkable work in the reviewing process.

We anticipate that this year will see continued strong growth of CIEE and its activities. One of our central priorities is to build on the successes of the Thematic Working Groups, outreach and training activities to increase our Institutional membership. As you may know, the CIEE achieves its mission principally through funding from, and co-operation among, a consortium of Canadian institutions. As a result, the more members we have, the more activities we can support! If you recognize the importance of having a national centre for advancing eco-evolutionary synthesis in Canada, please contact us via our dedicated email: ciee-icee@uregina.ca.

1. Working Group Meetings and Activities

1.1. The working group “**Understanding recent biodiversity change across spatial and temporal scales**”, led by Mary O'Connor and Andrew Gonzalez, is developing new analyses of how diversity varies in space and time, and synthesizing existing diversity/abundance databases in light of these theoretical expectations. A main goal of this working group is to resolve controversy over mechanisms underlying broad spatial and temporal patterns in biodiversity by improving data and methods for detecting and attributing biodiversity change. Some of the questions that this project is addressing are: How has biodiversity changed at local spatial scales? How are local trends related to regional and global biodiversity trends? How can local biodiversity trends be reliably detected and compared? What are the implications for conservation? Thus, the group is considering not only the causes and magnitude of biodiversity change, but also its consequences for management and decision-making.

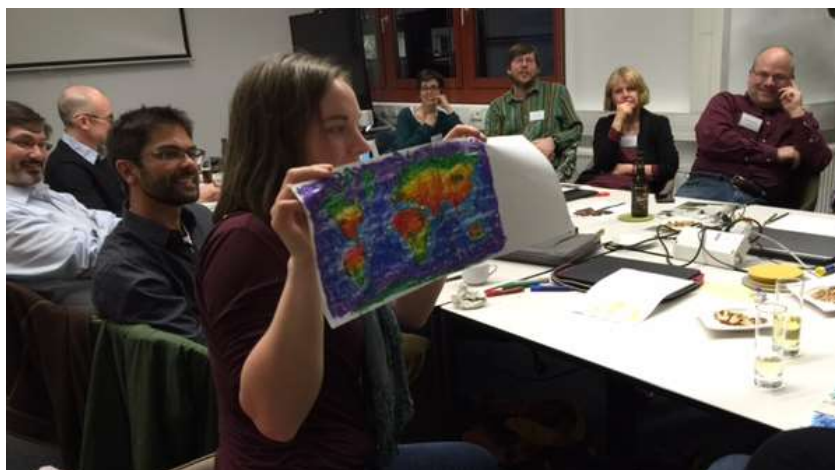
In pursuing these goals, the group met on February 22-26, 2016, at the Synthesis Centre for Biodiversity Sciences (sDiv) in Leipzig, Germany. This time the group was co-led by Maria Dornelas (U. Aberdeen), Sarah Supp (U. Wisconsin) and Mary O'Connor (UBC).



Mary O'Connor presenting, Maria Dornelas (co-leader) (left pict) and Conor Waldock, Laura Antao, Marten Winter, Brian McGill, Jarrett Byrnes and Andrew Gonzalez (right picture). Photo credit (L: Marten Winter, R: M. O'Connor).



The working group in action: artistic visualization of biodiversity futures on Day 1 of the working group.



Bottom: Isla Myers Smith shares her vision. Photo credit: M. O'Connor.

Other participants are Jon Chase, Mark Vellend, Fangliang He, Robin Elahi, Grace Murphy, Sarah Supp, Jillian Dunic, Isla Myers-Smith and Forest Isabel.

In this meeting, the group made substantial advances on: i) a framework paper for detecting and attributing biodiversity change in the Anthropocene; ii) the development of the BioTime database (<http://schangewg.weebly.com/>), and; iii) the synthesis of information on drivers of biodiversity change, and the relationships between biodiversity change and spatial scale.

This was the third meeting of the working group; the previous two took place at the UBC Biodiversity Research Centre on May 2015, and at the McGill's Gault Nature Reserve on June 2015. For details, please take a look at our Dec 2015 Newsletter: <http://www.ciee-icee.ca/newsletters>).

The broad remit and international flavor of this thematic working group reflects the joint collaboration, in-kind donations, and financial from four centres for advanced research. Participating centres included the Synthesis Centre for Biodiversity Sciences of Germany (sDiv) and the Canadian Institute of Ecology and Evolution (CIEE), the UBC Biodiversity Research Centre and the Quebec Centre for Biodiversity Science (QCBS). This group includes researchers from five Canadian Universities (UBC, McGill, Alberta, Sherbrooke, Dalhousie), and other five institutions from Germany, UK and US.

1.2. The thematic working group “Adaptation versus maladaptation in response to environmental change”, led by Andrew Hendry, Rowan Barrett, Alison Derry and Gregor Fussmann, is bringing together 26 researchers from 13 Canadian Universities - including McGill, UQAM, Montréal, Sherbrooke, Guelph, Concordia, Queen's, Carleton, Memorial, UBC, Dalhousie, Saskatchewan and Alberta - and 4 US universities.

The three basic evolutionary outcomes in response to environmental change are adaptation, maladaptation, or non-adaptation (neither response). Among these outcomes, by far the most commonly invoked is adaptation. However, closer examination of the data reveals a substantial number of instances of apparent non-adaptation and even maladaptation. The overarching goal of our group is to develop an understanding of different evolutionary responses to contemporary environmental change.

This working group, co-funded by the CIEE and the Quebec Center for Biodiversity Science (QCBS), first met on 7-10 December 2015 at the McGill's Gault Nature Reserve in Mont St Hilaire, Quebec.



The working group presenting their ideas. From left to right: Andrew Hendry and Rowan Barrett, Alison Derry, Daniel Bolnick, Stan Boutin, Denis Reale, Mark Vellend, Andrew Simons, Jeff Lane and Andrew McAdam. Photos: @ecoevoeco via #stressadapt on twitter. Other participants are Gregor Fussmann, Steven Brady, Lauren Chapman, Erika Crispo, Frédéric Guichard, Dylan Fraser, Andrew Gonzalez, Thomas Lamy, Antoine Paccard, Bruce Robertson, Mary Rogalski, Gregor Rolshausen, Christopher Eckert, Jeffrey Hutchings, Amy Newman, and Patricia Schulte.

During the meeting, the group developed a conceptual framework for studying maladaptation, with particular consideration to maladaptation in stressful environments. Although originally intended as one theme in the working group, this focused topic emerged organically in the lightning talk session. Participant after participant had shown unique and compelling evidence in which populations in their study systems failed to adapt to environmental change. The group arrived at a unifying view of maladaptation that accounts for both trait and fitness based approaches, noting the imperative to consider adaptation in the context of absolute fitness. The group also began updating a data set on patterns of local divergence and is analyzing those patterns in the context of maladaptation. The group is currently working on the publication of the outcomes, and a second meeting is planned for August 2016 (details below).



The working group in breakout sessions discussing patterns of mal-non-adaptation in response to environmental changes.

Photo credit:

@ecoevoevoeco via #stressadapt on twitter.



2. New Thematic Working Groups

We are pleased to announce that three new Working Groups have been selected for funding by CIEE, including:

- i. **Canadian protected areas in a changing climate: A cross-ecosystem approach to designing effective networks of protected areas**, proposed by Dr. Cassidy C. D'Aloia (University of Toronto), Dr. Ilona R. Naujokaitis-Lewis (Environment Canada, National Wildlife Research Centre, Carleton University) and Prof. Marie-Josée Fortin (University of Toronto). This working group is bringing together 11 professionals from five Canadian universities (McGill University, Memorial University, University of British Columbia, Université du Québec en Outaouais, University of Toronto) and three government agencies (Environment Canada, Fisheries & Oceans Canada, Ontario Ministry of Natural Resources and Forestry).

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- ii. **Genomic data in ecology, evolution and conservation: the impacts of missing data in genotyping-by-sequencing datasets**, led by Jean-Sébastien Moore, Louis Bernatchez, Anne-Laure Ferchaud, Laura Benestan of the Université Laval and Thierry Gosselin (independent consultant). This working group will meet 19 participants from 14 institutions including Université Laval, McGill University, University of British Columbia, University of Calgary, University of Regina, University of Manitoba, Queen's University, University of New Brunswick, Dalhousie University, Fisheries and Oceans Canada (St. John's, NF), Aarhus University (Denmark), University of Washington (Seattle, US), NOAA Northwest Fisheries Science Center (Seattle, US), and the NOAA Southwest Fisheries Science Center (Santa Cruz, US).

 - iii. **Diversity and structure of coastal eelgrass communities along environmental and human disturbance gradients**, presented by Dr. Julia K. Baum and Dr. Josephine C. Iacarella (University of Victoria). This working group is bringing together 19 researchers from 11 Canadian Institutions including Univ. of Victoria, UBC, Department of Fisheries and Oceans (DFO), Hakai Institute, Seagrass Conservation Working Group, Precision Identification Biological Consultants, Project Watershed Society, Skeena Fisheries Commission, Gwaii Haanas National Park, Gulf Islands National Park, and Pacific Rim National Park.

We had a remarkable response to this Call for Proposals and received 17 competitive applications from across the entire country. The quality of most applications was exceptional, but as is often the case, requests for funding exceeded available resources, so several well-regarded proposals could not be supported.

The selection process: Over the past three years, we have improved the grant selection process. The evaluation of applications was carried out by the members of CIEE's Scientific Advisory Group (SAG) including: Steve Perlman (U. of Victoria), Michael Russello (UBC), Edward Bork (U. of Alberta), Sean Rogers (U of Calgary), Mark Brigham (U of Regina), Eric Lamb (U. of Saskatchewan), Micheline Manseau (U. of Manitoba), Andrew MacDougall (Guelph U.), Marc Cadotte (U. of Toronto), Dennis Murray (Trent Univ.), Ira Tanya Handa (UQAM), and Amy Hurford (Memorial Univ.). We take this opportunity to thank our reviewers for their outstanding work in the evaluation process. We finally thank to past SAG members Mark Lewis (Alberta), Denis Réale (Quebec), Brad Anholt (Victoria), Sue Bertram (Carleton), Graham Bell (McGill) and Jeff Hutchings (Dalhousie) for their hard work in previous selection processes.

In general, scientific excellence and likelihood of success were the main criteria for evaluation, although consideration will be also made for the degree to which proposals helped CIEE demonstrate broader benefits to Canada, fiscal responsibility, and benefits to sustaining member organizations. Specific criteria for evaluations included: i. Project rationale - scientific significance of the questions, evidence of novel synthesis, evidence of benefit to Canadian environmental and economic well-being; ii. Project description - clarity of objectives, outcomes, work plan, meeting schedule; iii. Expertise of applicants and participants; iv. Potential for defined scientific products, including refereed publications, and v. Budget adequacy and feasibility (complete estimates and coherent justification).

Each proposal received six independent reviews. The reviewers ranked all proposals to each criterion on the same absolute scale of 1 (weak) to 5 (strong), and then relative rankings were synthesized to achieve a final recommendation for funding. In addition, we also provided to all the applicants with a written summary of the relative merits of their proposals, and asked to the selected applicants to provide written responses to reviewers' comments, as well as some critical comments from the CIEE's Director. Finally, a "Funding Agreements" between parts (CIEE and grantees) for each project were developed. These formal agreements describe rights and responsibilities of the parties, allowing a clear, organized and justified use of funding.

3. Upcoming CIEE Working Group Activities

Several CIEE working groups have planned new workshops and meetings for coming months.

3.1. The thematic working group "**Adaptation versus maladaptation in response to environmental change**" will hold their second meeting in August 2016, at the McGill's Gault Nature Reserve in Mont St Hilaire, Quebec. In this meeting, the group headed by Andrew Hendry will 1) analyze and refine the conceptual framework, 2) build predictive models, 3) conduct a synthetic analysis from the database, and 4) outline further draft manuscripts reporting the models and analysis.

The outcomes of this working group will help to develop a basic and applied understanding of the fates of species affected by contemporary environmental change. This effort will further develop the knowledgebase of expertise held by Canadian scientists and natural resource managers. By gaining insight into the various adaptive (or maladaptive or nonadaptive) trajectories of populations, managers can more effectively develop conservation targets. Many of the topics will be directly relevant to Canada's natural resources, such as responses to pollution, climate change, and invasive species. At the same time, the knowledge gained will avail framework building, database development, model construction, and synthesis with global relevance and application. Finally, the organizers will leverage the insights gained through this group to develop external proposals (e.g. NSERC Strategic Project Grants) to support database maintenance and to fund both empirical and synthetic research on conservation evolution topics relevant to Canada and its natural resources.

3.2. The thematic working group "**Canadian protected areas in a changing climate: A cross-ecosystem approach to designing effective networks of protected areas**" will hold two workshops during 2016, the first one on May 30-June 1 at the University of Toronto, and the second one during October at the McGill University. The confirmed participants are: Marie-Josée Fortin (University of Toronto), Cassidy D'Aloia (PDF, University of Toronto), Ilona Naujokaitis-Lewis (Environment Canada), Cindy Chu (Ontario Ministry of Natural Resources and Forestry), Janelle Curtis (Fisheries & Oceans Canada), Frederic Guichard (McGill University), Shawn Leroux (Memorial University), Bronwyn Rayfield (PDF, Université du Québec en Outaouais) and Jennifer Sunday (PDF, University of British Columbia), Christopher Blackford (Grad Student, University of Toronto) and Amanda Xuereb (Grad Student, University of Toronto). In addition to these workshops, the group is

conducting skype and phone meetings to organize data sets, outline work plan for analyses and organize writing of manuscripts.

Across the globe, species ranges are changing (shifting, contracting, and expanding) in response to climate change. One of the most widely-implemented conservation strategies to protect natural populations is the creation of protected areas (including parks, reserves, and no-take zones). Thus, a major question in conservation biology has become, how do we effectively design networks of protected areas that account for varied responses among species to climate change? Diverse species responses may result from direct effects of climate change, or indirect effects mediated by time lags, scale effects, or biotic interactions. One approach that has been proposed is to protect areas based on abiotic rather than biotic diversity. However, this approach may be better-suited to some ecosystems over others (e.g. terrestrial, freshwater, or marine) and has not been assessed across ecosystem types. Similarities and differences in patterns of biotic and abiotic diversity among ecosystem types can lend insight into the processes that drive diversity and inform system-specific conservation solutions.

The main goal of the group led by D'Aloia, Naujokaitis-Lewis and Fortin will be to develop a cross-ecosystem synthesis for the design of protected area networks in the context of climate change. Their specific objectives are to: (i) synthesize the merits of abiotic- versus biotic-filter approaches to protected area design with a particular emphasis on identification of thermal refugia; (ii) propose a unifying framework to optimize species persistence within protected area networks in the face of climate change; and (iii) apply the framework to regional data from terrestrial, freshwater, and marine ecosystems in Canada. Through these objectives, they will assess the extent to which tractable management strategies, such as protecting abiotic diversity, will be effective approaches to facilitate network connectivity across ecosystems and conserve biodiversity. The results of this working group will have strong policy relevance, given predicted distribution changes of native and non-native species in Canada.

3.3. The thematic working group “**Genomic data in ecology, evolution and conservation: the impacts of missing data in genotyping-by-sequencing datasets**” is organizing a workshop to be held on October 2016 at the Institut de Biologie Intégrative et des Systèmes (IBIS) at Université Laval, in Québec City. Confirmed participants are: Jean-Sébastien Moore (PDF, Université Laval), Louis Bernatchez (Université Laval), Anne-Laure Ferchaud (PDF, Université Laval), Thierry Gosselin (Independent consultant, Otterburn Park, QC), Laura Benestan (PhD student, Université Laval), Eric Anderson (NOAA, Santa Cruz, USA), Ian Bradbury (Fisheries and Oceans Canada, NF), Daniel Ruzzante (Dalhousie University), Angela Fuentes-Pardo (PhD student, Dalhousie University), Christopher Somers (University of Regina), Carly Graham (PhD student, University of Regina), Michael Møller Hansen (Aarhus University, Denmark), Jérémy Le Luyer (PDF, Université Laval), Scott Pavey (University of New Brunswick), Wesley Larson (University of Washington, US), Sean Rogers (University of Calgary), Robin Waples (NOAA, Seattle, US), Michael Whitlock (University of British Columbia), and Kim Gilbert (PhD student, UBC)

The main goals of the workshop are to: 1) evaluate the impacts of missing data in GBS datasets on their applications in ecology, evolution and conservation; 2) test a variety of existing missing data

imputation methods in the absence of a reference genome, and; 3) provide recommendations to the community on best approaches to deal with missing data.

Next-generation sequencing methods such as genotyping-by-sequencing (GBS) are gaining in popularity because they give unparalleled access to the entire genome of non-model organisms at a relatively low cost. Genome-wide data allows researchers to answer fundamental evolutionary and ecological questions that were formerly inaccessible with smaller genetic datasets, and are rapidly being integrated in the toolkit of conservation biologists and resource managers. One key drawback of these methods, however, is that each genotyped individual will have a high proportion of missing genotypes. Missing data can have important consequences on subsequent analyses, though they have not been substantially evaluated yet for GBS. Currently, researchers have access to many statistical tools to impute missing genotypes, but guidelines with contexts on how to use the different imputation methods remain unclear.

This working group, lead by Moore, Bernatchez and others, proposes to broadly assess the effects of missing data in genomics data sets on different types of analyses commonly used in molecular ecology and conservation genetics such as genome scans, population and parental assignment, demographic inferences, and NE estimations. To do so, workshop participants will use simulated data sets with varying proportions of missing genotypes artificially introduced, and publicly available GBS data sets from a broad range of organisms encompassing different life histories. Their group will address two main objectives; a) evaluate the biological contexts and statistical conditions where missing data have the biggest impact on inferences, and b) systematically evaluate the effects of the different imputation methods on common analyses. These analyses will enable workshop participants to make key recommendations about (i) analysis and programs robustness to missing data, (ii) biological contexts and thresholds of missing data that can potentially introduce bias, (iii) the best imputation methods to overcome these biases. These analyses and recommendations will be published in a peer reviewed article resulting from the workshop.

3.4. The thematic working group “**Diversity and structure of coastal eelgrass communities along environmental and human disturbance gradients**” will hold a workshop on October 2016 at the UBC’s Biodiversity Research Centre. The workshop will unite government, NGO, and academic researchers and graduate students with expertise in BC’s coastal communities. The proposed workshop will be one of two workshops held in partnership with the international Smithsonian Marine Global Earth Observatory (www.marinegeo.si.edu) branch based at the Hakai Institute in BC.

The confirmed participant are: Julia Baum (University of Victoria), Josie Iacarella (PDF, University of Victoria), Mary O’Connor (University of British Columbia), Leanna Boyer (Gulf Islands National Park), Dan Bowen (Project Watershed Society), Charmaine Carr- Harris (Skeena Fisheries Commission), Rana El-Sabaawi (University of Victoria), Laura Kennedy (Grad Student, University of Victoria), James Robinson (Grad Student, University of Victoria), Geoff Osgood (Grad Student, University of Victoria), Sibylla Helms (Gulf Islands National Park), Janelle Curtis (Department of Fisheries and Ocean, DFO), Emily Rubidge (DFO), Margot Hensing-Lewis (Hakai Institute), Brian Hunt (Hakai Institute), Cynthia Durance (Precision Identification Biological Consultants), Trevor Haynes (University of Alaska & Hakai Institute), Nikki Wright (Seagrass Conservation Working

Group), Cliff Robinson (Gwaii Haanas National Park), Jennifer Yakimishyn (Pacific Rim National Park).

Coastal ecosystems provide critical ecosystem services that are in decline globally owing to ongoing anthropogenic stressors. Seagrass ecosystems in particular are highly valued for the provision of nursery and refugia habitat for commercially-important species, but are heavily impacted by human disturbance. The loss of such habitat has fueled monitoring efforts across the coast of British Columbia, though to-date these organizations have worked independently and been restricted to local-scale inferences. This working group led by Julia Baum and Josephine Iacarella (University of Victoria) will compile existing eelgrass datasets across coastal BC, with the objective of determining changes in biodiversity and community structure of fishes in eelgrass habitats along environmental and human disturbance gradients. This collaborative effort will develop the most spatio-temporally comprehensive assessment of eelgrass biodiversity to-date, fostering a network for long-term monitoring and aiding in the prioritization of marine management. Outcomes of this working group will include a series of high-quality peer-reviewed publications, public outreach reports, open-access statistical analyses, and conference presentations. In addition, the workshops are providing important training opportunities for multiple HQP, and create a network of eelgrass research programs. The network will synthesize data collectively to determine the extent to which eelgrass communities are being impacted by anthropogenic stressors and their resilience to such change, and will maximize effective data collection going forward.

4. Other important information

4.1. CSEE Meeting 2016. St. John's Newfoundland, July 7-11.

We encourage you to participate in the 11th annual CSEE/SCEE meeting at Memorial University in St. John's Newfoundland! Contributors are invited to submit a title and keywords as part of their conference registration at www.csee2016.com. Please note the early bird registration deadline is May 13, 2016.

Newfoundland, and St. John's in particular, is a popular tourist destination, due in equal part to its rich and unique historical, cultural, and natural characteristics. Field trips and social events associated with CSEE 2016 will capture the flavour of the culture, biodiversity, and geological history of Newfoundland. Prepare yourselves to see whales, puffins, and gannets, stroll past colourful row houses, listen to fiddlers, and sample the unique, traditional foods of Newfoundland. There are regular direct flights from most Canadian hubs, e.g., Calgary, Toronto, Montreal, Halifax. Reasonably priced direct transatlantic flights from St. John's to major hubs in the EU, e.g., Dublin and London, makes CSEE 2016 an opportune meeting place for collaborators from both sides of the pond.

The meeting organizers aim a conference program to address questions in ecology and evolution that transcend systems, so they look forward contributions from a diversity of study species and systems. For details on the program, please visit http://www.csee2016.com/#program_overview

4.2. Meeting of the “International Synthesis Center Consortium”

The CIEE is an active member of “The International Synthesis Consortium” (ISC, <http://synthesis-consortium.org/>), a global network linking more than ten Synthesis Centres in Ecology, Evolution and Environment across North America, Europe and China. Accordingly, CIEE will participate in the third meeting of the International Synthesis Center Consortium, to be held on 12-14 September 2016 at the John Wesley Powell Center of Fort Collins CO, US. We take this opportunity to thank Jill Baron and Marty Goldhaber, Directors of the John Wesley Powell Center, for organizing this meeting and supporting our attendance. The purpose of this meeting is to share experiences and develop an agenda for moving synthesis activities in general, and synthesis center in particular, forward as tools for producing and applying new knowledge. The agenda will include motivating working questions including - How can we measure and study the policy impacts from our centers? How can we engage in more radical forms of synthesis by crafting groups that include policy makers, philosophers, and ethicists? What new lessons are learned for a successful synthesis working group? What can be done to improve the odds of success given our goals? How to spread the techniques/philosophy/mindset for synthesis more broadly than only among synthesis centers and their participants? Can we identify key elements of a graduate or undergraduate curriculum in open science for synthesis? In this meeting we will also move forward with concrete collaborations among our centers.

The CIEE participation in the ISC is consistent with our aspiration of being a national leader and point to a growing influence as an international synthesis centre. Scientific synthesis centres have become integral to research efforts in an era of increasingly complex societal and scientific problems, big data, and the knowledge economy. Synthesis centres foster collaborative research by bringing interdisciplinary groups of practitioners and experts together for an extended period of time in a collegial setting aimed at stimulating creative thinking, catalysing insight, and facilitating group learning. The ISC envision an expanding network that meets the growing need for synthesis research in all corners of the globe and facilitates the participation of stakeholders from the public, private and community sectors.

As a member of the ISC, the CIEE is also supporting the Future Earth initiative (www.futureearth.org) and exploring opportunities for collaboration. CIEE and Future Earth share a common goal in generating and providing knowledge to tackle the big questions of scientific and societal needs and interests. Consequently, CIEE was present, through Dr. Marten Winter as speaker of the ISC, in a symposium of the Future Earth that took place on 6-10 March 2016 in Monte Verita, Switzerland.

4.3. New Member of the CIEE Management Board

We are pleased to welcome Dr. Stephanie Hampton as a new Board Member of the CIEE. Dr. Hampton is a professor in the Washington State University (School of the Environment), and Director of the Center for Environmental Research, Education and Outreach (CEREO). Hampton served as Deputy Director (2006-2013) of the National Center for Ecological Analysis and Synthesis (NCEAS) at U.California - Santa Barbara. With research interests ranging from basic science to environmental policy, and experience leading two top synthesis centers in USA, Dr.

Hampton brings managing expertise to the CIEE Board. Dr. Hampton is replacing Dr. Kathleen Smith (Duke University) as external member of the CIEE's Management Board. We express our sincere gratitude to Dr. Smith for her volunteering and serving on the Management Board for the past three years.

4.4. Membership Drive

CIEE grows by adding partners from across Canada. Because CIEE achieves its mission principally through funding from, and co-operation among, a consortium of Canadian institutions, it is essential that we have representation from all regions and institutions. Currently, CIEE is financially supported by six Canadian universities (British Columbia, Carleton, McGill, Regina, Toronto, Simon Fraser), and the Canadian Society for Ecology and Evolution (CSEE). In this model, each member institution pays annual membership fees assessed on a sliding scale according to their NSERC Discovery Grant program funding in ecology and evolution. At present, annual membership in CIEE is very reasonable, starting in 2012, universities awarded more than \$5M in support through NSERC Discovery Grants in ecology and evolution pay \$8,000 per year, those receiving \$1-5M pay \$5,000, and all other pay \$2,000 per year. Importantly, all of the funding obtained from sustaining member organizations is used for direct support of CIEE scientific programs, whereas in-kind contributions help maintain staff and synthesis facilities. Our agreement with the University of Regina also allows us to avoid overhead charges to member organizations, thereby focusing our resources on activities (working groups, workshops, etc). As a result, the more members we have, the more activities we can support!

To increase our membership, we are seeking CIEE representatives at all Canadian universities to act liaisons to local researchers and administration. Through your institution's membership, you will be able to: 1) foster your and your colleagues access to CIEE's scientific programs along with access by their highly qualified personnel (e.g., your institution's students and PDFs), 2) gain a seat on the management board that sets the mandate and direction of the CIEE, 3) receive priority consideration for CIEE initiatives and funding, and overall 4) play a pivotal role in shaping the future of ecology and evolution research and training in Canada. We you are interesting in joining us as a contributing Member, please do not hesitate to contact us for additional information.

Your input matters

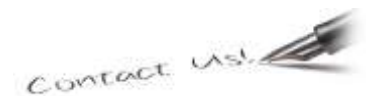
Tell us what you think. We are pleased to receive your questions, comments or concerns about the Canadian Institute of Ecology and Evolution. In particular, please let us know if you have an idea for a new member service or research activity. Thanks!

Dr. Peter R. Leavitt, CIEE Director

Dr. Diego F. Steinaker, CIEE Associate Director

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Translation: MéliSSa Lieutenant-Gosselin, U Laval.



Many thanks to our Contributing Members for the continuing support!



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If you recognize the importance of having a national centre for synthesis in ecology and evolution, and are interested in acting as the formal CIEE representative to your Institution, please let us know via our dedicated email address ciee-icee@uregina.ca.