



UNIVERSITY OF NORTHERN BRITISH COLUMBIA

MEMORANDUM

To: Dr. Geoff Payne, Vice President Research
Dr. Dan Ryan, Chair, Senate Committee on Academic Affairs

From: Dr. Darwyn Coxson

Date: June 12, 2018

Re: NRESi's 2017-2018 Annual Report

Dear Drs. Payne and Ryan,

As per UNBC's Policy and Procedures for Centres and Research Institutes, please find attached the 2017-2018 Annual Report for the Natural Resources and Environmental Studies Institute (NRESi) covering the 2017-2018 fiscal year and NRESi's workplan of activities for 2018-2019. Both have been reviewed and discussed by its members at their 2018 Annual General Meeting.

On behalf of NRESi, I would like to thank you for your ongoing support. NRESi was focused on continuing the activities and initiatives that its members and the community have come to expect, as well as exploring and expanding possible research and project opportunities for NRESi and its members. Work has been focused on providing value to members, to UNBC, and the broader community, in a number of different ways. This will be explained in detail in the accompanying 2017-2018 Annual Report. NRESi continues to work towards the goals and objectives described in its five-year Strategic Plan, while also being flexible to new opportunities and ideas as they arise, as described in the 2018-2019 workplan of activities.

NRESi had another productive year, resulting in a positive financial report and is exploring opportunities for long-term financial planning and sustainability, the continuance of ongoing activities, as well as the addition of new projects and initiatives to further support the work of NRESi's members, UNBC, and its community partners.

Enclosures: NRESi Annual Report 2017-2018

cc: NRESi Steering Committee Members



Natural Resources & Environmental Studies Institute

2017-2018 Annual Report

Overview of NRESi

The Natural Resources & Environmental Studies Institute (NRESi) works to promote and implement integrative research to address natural resource systems and human uses of the environment, with a particular focus on northern regions and creating solutions-based approaches.

NRESi is an association of researchers from the UNBC faculty and external community that work and have interest in themes related to natural resources and the environment. This association of members have committed to learning from each other and seeing the value in collaborative initiatives that take an interdisciplinary approach. It is recognized that many, if not most themes related to this broad research area cannot be viewed or understood in isolation. Every research theme takes place in a complex world that surrounds and interacts with it, factoring into planning, management, monitoring, and policy. NRESi provides a venue and network to link together otherwise distinct research themes and topics for a broader understanding.

NRESi works towards its objectives of knowledge sharing and identification of collaborative research opportunities in a number of different ways. The most recognizable and well-known is through lectures, both in terms of its weekly colloquium series, as well as other special lectures and events that NRESi hosts. These events also provide networking opportunities between participating NRESi members and the community. In addition, through the guidance of NRESi's Steering Committee and the activities of its staff, NRESi works to support its members by identifying and pursuing possible project opportunities on behalf of its members. NRESi also has an important communications role to a range of audiences, including: within its membership, UNBC, the broader the natural resource and environment community, and the general public.

Our Mission

The focus of NRESi is to bring together members of the university and research community to promote and facilitate integrative research on natural resource and environment issues. From here, it is recognized that issues arise in northern BC and beyond that NRESi members, together with the community and partners, have the ability through expertise and experience to address and look for solutions. NRESi has an important role in helping to coordinate and be a venue for important dialogues and research projects that address natural and anthropogenic changes. NRESi can also assist in sharing research results that can be integrated into policy and management approaches and decisions.

NRESi has important role in creating linkages between researchers. This includes communication and the opportunity for interaction among UNBC and other university faculty, graduate students, and other associated researchers and research centers. It also recognizes the importance of making knowledge sharing and project participation open to the public, creating dialogues, and building linkages across a wide range of perspectives and expertise.

As a result of this integration across expertise, information can be developed in local communities to address local issues. Research findings can also be disseminated through NRESi's channels to allow for information to be shared to other areas facing similar issues or management and planning concerns. This has taken the form of presentations and extension, through NRESi's publication series and/or sharing current events and activities through the newsletter that others may find useful in their own work. NRESi continues to engage its members in discussions about how they would like NRESi to support their work, as well as the research needs of the broader community for mutual benefit that NRESi could help address.

Governance

The NRESi is overseen by a Director, selected for a 3-year term. Dr. Darwyn Coxson is the current director, serving in the 3rd year of his appointment. In addition to a Director, NRESi is supported by a Research Manager who moves forward the day-to-day activities and needs of NRESi and its members, NRESi's initiatives, project development and communications. Alan Wiensczyk continued his role as NRESi Research Manager on a part-time basis for the 2017-2018 fiscal year.

The Director and Research Manager work closely with an internal Steering Committee. This group includes: three individuals elected to 2-year terms by the membership of the Institute, one member representing the Pacific Institute for Climate Solutions, and another representing the NRES Graduate Program. See Table 1. The intent of this group is to reflect the perspectives of NRESi's members, provide guidance to support the work and activities of NRESi, and ensure that the Institute functions in accordance with its vision statement and purpose.

Table 1. Steering Committee membership during 2017-2018 fiscal year.

Name	Role	Term
Darwyn Coxson	Director	1 July 2014 – 30 June 2018
Che Elkin	Elected Member	1 May 2016 – 30 April 2018
Steve Helle	Elected Member	1 July 2016 – 30 June 2018
Paul Sanborn	Elected Member	1 July 2016 – 30 June 2018
Stephen Dery	NRES Grad Program Rep	Began 1 Sept 2016 with No Fixed Term
Michelle Connolly	PICS Representative	No Fixed Term
Alan Wiensczyk	Research Manager	1 November, 2015 - 31 March 2019

During the 2013-2014 fiscal year, a framework was developed to consolidate the previous Management Committee and Advisory Committee into one group, the NRESi Advisory Panel. This new committee was presented and discussed at the 2014 Annual General Meeting and

approved by the membership as an appropriate way to gather external insight and advice to NRESi's Steering Committee and membership. During the 2016/17 fiscal year the four of the five representatives plus an alternate attended the inaugural meeting of the committee held in June 2016. Efforts continued in 2017/18 to develop a clear list of discussion points and items where advice would be valuable as NRESi moves forward. Members of the Advisory Panel will include the following individuals and representatives:

- Ex Officio members – Vice-President (Research) as Advisory Panel Chair, NRESi Director, Vice-President (External Relations), NRESi Research Manager
- Appointed members – One Steering Committee representative, five members external to the university community

Table 2. Appointed Advisory Committee members

Name	Affiliation
Melanie Karjala	BC Oil and Gas Commission
Shannon Carson	BC Ministry of Forests Lands and Natural Resource Operations
Trevor McConkey	SNC Lavalin
Hardy Griesbauer	College of New Caledonia
Luke Gleeson	Tsay Keh Dene Nation
Mike Tillson (alternate)	Tsay Keh Dene Nation (Chu Cho Environmental)

- Advice, support, and/or involvement from other UNBC representatives – Dean of CSAM, Dean of CASHS, Dean of Graduate Programs, Chair of NRES Graduate Committee, Directors of other Research Institutes

Membership

NRESi has three types of memberships. They are: (a) Full Members for UNBC tenured faculty, (b) Associate Members for other types of UNBC faculty and researchers external to the UNBC community, and, (c) Lifetime Members who have received recognition through NRESi's Lifetime Achievement or Community Advancement awards for lifetime membership spanning beyond their active research careers. It was decided at NRESi's 2014 Annual General Meeting to adjust the existing membership process. Any new applications for Associate Members, which have 3-year terms, will have their renewal extended from their membership anniversary to the date of the NRESi's next Annual General Meeting plus three years. Existing Associate Members will have renewals reviewed prior to NRESi's Annual General Meeting and those that have expired during the previous 12-month period will be notified and given the opportunity to renew for another 3-year term.

The below (Table 2) provides an overview of NRESi's current membership, the membership category that each belongs to, and the most recent date of renewal (if applicable). This table shows that there are currently 70 NRESi members (Table 2). Membership activity during the reporting period included the renewal of 3 Associate members and the addition of 4 new Associate members. Information about NRESi's members can be found on its website, such as their: research interests (<http://www.unbc.ca/nres-institute/institute-members>) and contact details (<http://www.unbc.ca/nres-institute/members>).

Table 3: Summary of NRESi's current membership, membership type, and the most recent membership expiry dates for Associate Members

Beckett, Douglas	Associate Member: March 2021	Lindgren, Staffan	Lifetime Member
Burton, Philip	Full	Maher, Patrick	Associate Member – April 2018
Child, Kenneth	Associate Member: March 2021	Massicotte, Hugues	Full
Connell, David	Full	McGill, Bill	Full
Connolly, Michelle	Associate Member: November 2018	Meletis, Zoe	Full
Costello, Allan	Associate Member: March 2020	Menounos, Brian	Full
Coxson, Darwyn	Full	Mullins, Philip	Full
Curry, John	Full	Murray, Brent	Full
Dawson, Russ	Full	Nolin, Catherine	Full
Déry, Stephen	Full	Opio, Chris	Full
Egger, Keith	Full	Otter, Ken	Full
Elkin, Che	Full	Owens, Philip	Full
Erasmus, Daniel	Full	Parker, Katherine	Full
Fondahl, Gail	Full	Petticrew, Ellen	Full
Fredeen, Art	Full	Poirier, Lisa	Full
French, Todd	Associate Member: June 2021	Procter, Dennis	Full
Gantner, Nikolaus	Associate Member: April 2021	Rea, Roy	Full
Gaudreau, Kyrke	Full	Rutherford, Mike	Full
Gerwing, Travis	Associate Member: June 2020	Ryan, Dan	Full
Gillingham, Mike	Lifetime Member	Sanborn, Paul	Full
Green, Scott	Full	Shrimpton, Mark	Full
Haeussler, Sybille	Associate Member: April 2019	Shultis, John	Full
Halseth, Greg	Full	Sui, Jueyi	Full
Hanlon, Neil	Full	Summerville, Tracy	Full
Hartley, Ian	Full	Tang, Youmin	Full
Hawley, Alex	Lifetime Member	Thielman, Aynsley	Associate Member: Oct 2019
Heard, Doug	Associate Member: April 2019	Thring, Ron	Full
Helle, Steve	Full	Ul Islam, Siraj	Associate Member: April 2021
Huber, Dezene	Full	Venter, Oscar	Full
Jackson, Peter	Full	Wheate, Roger	Full
Johnson, Chris	Full	Whitcombe, Todd	Full
Lautensach, Alex	Full	Wilkening, Ken	Full
Lavallee, Loraine	Full	Wilkerson, Orland	Full
Lewis, Kathy	Full	Wright, Pam	Full
Li, Jianbing (Jason)	Full	Young, Jane	Full

Report on Activities for 2017-2018

Background: In 2011-2012, NRESi's Steering Committee undertook a Strategic Planning process in order to identify the longer-term requirements and a sustainable model for the resourcing of NRESi. At the same time, increased overhead contributions from the NRESi project on Biodiversity Monitoring and Assessment Program (BMAP), under the leadership of Dr. Mike Gillingham, has provided for a period of financial stability. This has allowed NRESi to hire a part-time (21 hours per week) dedicated Research Manager and work towards growth in activities and operations.

The below is a summary of NRESi's 2017-2018 initiatives, projects, and activities:

General Activities

- The Institute hosted 23 colloquia as part of the weekly NRESi Colloquium Series and which were organized by NRESi Research manager Al Wiensczyk. Most of the colloquium presentations have been posted to the NRESi UNBC Video archive (<https://video.unbc.ca/channel/NRESI/>). Colloquium presentations previously posted on the NRESi Youtube channel (https://www.youtube.com/channel/UC6WIRhriAQ2Yf3_Yu-3fy6A) have been migrated over to the UNBC video channel. A listing of past presentations and their abstracts can be found on NRESi's website (<http://www.unbc.ca/nres-institute/colloquium-series>).

Table 4. List of Colloquium Presentations including special presentations

Date	Name	Co-sponsor(s)
Sept 14, 2017	Dr. Dominic DellaSala (GEOS Institute)	NRESi Annual Lecture
Sept 15, 2017	Dr. Dominic DellaSala (GEOS Institute)	Pacific Institute for Climate Solutions
Sept 22, 2017	Dr. Ning Chen (Canadian Light Source)	Department of Physics
Sept 29, 2017	Dr. Chelsea Armstrong (National Museum of Natural History)	
Oct 6, 2017	Dr. Anja Dufresne (Aachen University, Germany)	
Oct 13, 2017	The Honorable Elizabeth May (Green Party)	
Oct 20, 2016	Dr. Nobi Suzuki (UNBC)	
Oct 27, 2017	Alexandre Bevington (FLNRORD)	
Nov 3, 2017	Dr. Ken Otter (UNBC)	
Nov 10, 2017	Dr. Nathan Furey (UBC)	
Nov 17, 2017	Dr. Jamie McEvoy (Montana State University)	Inspiring Women Among Us/Pacific Institute for Climate Solutions
Nov 20, 2017	Dr. Maydianne Andrade (University of Toronto)	Inspiring Women Among Us
Nov 21, 2017 Mackenzie, BC	Mark Thompson (DWB Consulting)	Fish and Wildlife Compensation Program – Peace Region
Nov 24, 2017	Dr. Andy Mackinnon	Doug Little Memorial Lecture
Jan 11, 2018	Dr. Charles Krebs (UBC)	Fish and Wildlife Compensation Program – Peace Region evening lecture
Jan 12, 2018	Dr. Charles Krebs (UBC)	Fish and Wildlife Compensation Program – Peace Region
Jan 19, 2018	Cumulative Impacts Research Consortium (CIRC) panel - Dr. Dominic DellaSala (GEOS Institute),	Cumulative Impacts Research Consortium

	Madeline Maley, BC Wildfire Service, Dr. Raina Fumerton (Northern Health Authority), Dr. Sonja Leverkus (Shifting Mosaics Consulting)	
Jan 26, 2018	Dr. Mark Groulx, Dr. Zoe Meletis, Carleen Paltzat, UNBC	
Feb 2, 2018	Dr. Matt Mumma (UNBC)	
Feb 9, 2018	Seth Wynne (UBC)	
Feb 23, 2018	Dr. Rudy Reimer	First Nations Studies/Department of Anthropology
Mar 2, 2018	Shannon Crowley, John Prince Research Forest	
Mar 9, 2017	Dr. Mark Shrimpton (UNBC) and NRESi Annual Awards presentation	
Mar 15, 2018	Dr. Gilbert Brunet (Environment Canada)	Canadian Meteorological and Oceanographic Society
Mar 16, 2018	Dr. Bernard Laval (UBC)	
Mar 23, 2018	Dr. Adam Ford (UBCO)	UNBC Student Chapter of the Wildlife Society
Mar 23, 2018	Jim Munroe (Maiyoo Keyoh Society)	First Nations Studies
Apr 10, 2018	Dr. Richard Hamelin (UBC)	
Apr 12, 2018 Fort St John	Mark Phinney (Encana Corp.)	Fish and Wildlife Compensation Program – Peace Region

- Of the 29 colloquium presentations that took place, many were special events and/or co-hosted with NRESi together with other groups on campus:
 - NRESi hosted the NRES Graduate Student Icebreaker event, which included a NRES grad student poster session and reception.
 - NRESi partnered with the “Inspiring Women Among Us” initiative to host three speakers in support of this year’s theme “Women, Work and Allies”.
 - Each year, in partnership with the Peace Fish & Wildlife Compensation Program (PFWCP), NRESi organizes a special lecture during the colloquium that includes a presentation by a guest lecturer on a theme related to the PFWCP preceded by a reception/dinner to provide further networking opportunities. This year we had three events, one in Mackenzie, one in Fort St John, and one in Prince George (more details below).
 - Other groups partnering on NRESi colloquium presentations this past year included the Pacific Institute for Climate Solutions (PICS), the Doug Little Memorial Lecture, the Cumulative Impacts Research Consortium (CIRC), the UNBC Fish and Wildlife Student Chapter of The Wildlife Society, the Canadian Meteorological and Oceanographic Society (CMOS), UNBC First Nations Studies, and the Anthropology Department.
- Work is continuing with UNBC’s Communications Department to refine a new video archive webpage for past NRESi lectures that will provide a more user-friendly interface that will be searchable by lecture topic, presenter, date, and keywords. The archive (<https://video.unbc.ca/channel/NRESI/>) has been launched and is populated with the most recent (2017/18) NRESi colloquium presentations and other special lectures. In

addition, the videos of previous year's presentations have successfully been migrated over from the NRESi Youtube channel.

- In the past, those interested in NRESi presentations and not able attend in person were able to participate via Livestream (video and slides) and Elluminate/Blackboard (slides and audio). It was decided in January 2018 to discontinue the Elluminate/Collaborate broadcast of the colloquium presentations. LiveStream provides a higher quality feed accessible to most. The provision of using two methods of access will continue to be evaluated on an on-going basis and reinstated if required. The advantage of the Blue Jeans system is that it does not require the 2 hour pre-talk set up time and 1 hour post-talk take-down time that is required with LiveStream.
- NRESi once again organized the annual Undergraduate Thesis Presentation Day for NRES and associated program students. Students completing a fourth-year thesis project are required to present their project and results. This year's event was held on April 9th.

Communications

NRESi continues to provide a means of internal communication between its members, as well as providing linkages where possible with external researchers and members of the community. This takes a number of different forms:

- NRESi event announcements and updates are distributed through a managed NRESi distribution list and to UNBC college mailing lists. NRESi also has a members-only list, where communications relevant specifically to the membership can be distributed. Event announcements are also posted to UNBC's public events listings, the NRESi website and the NRESi Facebook page.
- NRESi maintains a website, to provide information to the public about NRESi and its members, as well as an information platform for the public. The process to update NRESi's website began in the 2015-16 year, by revising text to reflect the work and focus of NRESi. This work continued in the 2017-2018 fiscal year, by adding website features, making revisions, and refining its structure to make it more user-friendly and visually appealing.
- In previous years, all NRESi lectures are recorded and posted to the NRESi Youtube channel (https://www.youtube.com/channel/UC6WIRhriAQ2Yf3_Yu-3fy6A). This year the University Communications department has created a UNBC video archive with an NRESi channel (<https://video.unbc.ca/channel/NRESI/>). All 2016-18 presentations have been uploaded to this new video archive and the work has been completed migrating the older presentations from the NRESi Youtube channel to the new archive.
- NRESi has created two social media accounts to share information and updates. They are: (a) Twitter (https://twitter.com/UNBC_NRESi) and (b) Facebook (<https://www.facebook.com/unbcnresi?ref=hl>).
- NRESi's weekly newsletter continued in 2017-2018, being posted to NRESi's broad network distribution list every second Friday. Each edition includes: 'NRESi Notes' which provides updates or special announcements for members and the community, event announcements and information, recent NRESi member publications, sharing of travel

or conferences details attended by members, links to NRESi members in the media and other UNBC media releases of relevance to the NRESi audience, NRES graduate student defense details and events of interest, as well as other UNBC or community events and news items of interest to the network. NRESi members are invited to contribute information, announcements, and news, as well as stories and photos that might be of interest to others in the NRESi community.

Research

The NRESi links a community of researchers, with varied backgrounds and research interests, empowering them to pursue their disciplinary research in an interdisciplinary context. Consequently, many of the research initiatives undertaken by Institute members are collaborative efforts with other Institute members. Individual members of the Institute have strong disciplinary expertise in the natural, physical, environmental and social sciences; NRESi works to capitalize on this, by providing project and networking opportunities for knowledge sharing and finding new linkages. Work began, through scoping NRESi members and exploring opportunities, for building new NRESi projects that further connects multiple researchers and their interests. This will be expanded and a focus of activities for the 2018-2019 fiscal year, as well as identifying possible funders and project partners.

In 2015-16, several NRESi members partnered on a project proposal submission to the Peace-Williston Fish and Wildlife Compensation Program to study and assess the nutrient dynamics and complex web of interactions between Kokanee, stream-living macro-invertebrates (Aquatic insects), and the surrounding riparian zone (lichen communities) as a result of the introduction of Kokanee into the Williston Reservoir. The second year of this project was funded and successfully delivered in 2017-18. Conditional approval has been received for the 3rd and final year of this 3-year project. This project blends social and natural sciences and involves working with three First Nations partners (Tsay Keh Dene First Nation, Kwadacha First Nation, and McLeod Lake Indian Band). The project funding will additionally help with cost recovery of core salary expenditures by NRESi.

Cumulative Effects

The NRESi continued to participate in the tri-institute partnership-created Cumulative Impacts Research Consortium (CIRC) which was established in 2015 as a platform for research and community dialogue on the cumulative impacts of resource development. The CIRC is a formal expression of collaboration between UNBC's three research institutes: The Community Development Institute (CDI), the Health Research Institute (HRI) and the Natural Resources and Environmental Studies Institute. The CIRC is a research and community outreach initiative based at UNBC dedicated to enhancing an understanding of the positive and negative cumulative impacts of resource development across northern BC. Our research aims to integrate environment, community, and health values and perspectives, and account for diverse forms of knowledge and information. Informed by our community outreach and engagement, the CIRC seeks to enhance on the ground capacity to respond to issues related to cumulative impacts.

Over the last year, CIRC has continued to reach out to communities in northern British Columbia to expand our understanding of the cumulative impacts of resource development across northern BC, respond to knowledge and capacity gaps with original research, and build our capacity to act as a regional hub of cumulative impacts information and resources. As we move forward, we will also continue to seek feedback and take leadership from the communities we work with to better understand the ways in which our research and outreach activities can best support local capacity to address the cumulative impacts of resource development. We wish to thank everyone who contributed to this initiative over the past year and look forward to continuing to build a solutions-oriented research and community dialogue for the benefit of northern British Columbia and beyond.

Key highlights from the past year include:

1. Travelling to various communities in northern BC to convene community workshops around the topic of cumulative impacts, including events in Chetwynd, Dawson Creek, Fort Nelson, Fort St. John, Hudson's Hope, Tumbler Ridge and Vanderhoof (<http://www.unbc.ca/cumulative-impacts/events>).
2. Hosting the *2018 CIRC Forum* at UNBC on January 18-19, 2018, with support from the ECHO (Environment, Community, Health Observatory) Network and the Pacific Institute for Climate Solutions (PICS). With over 100 participants in attendance, including policy- and decision-makers, practitioners, researchers, and community members, the CIRC Forum brought attention to key opportunities and challenges related to cumulative impacts and climate change in northern BC.
3. Continuing to advance a suite of research projects that have emerged in response to concerns and issues voiced by communities in northern BC. More information about these projects, including relevant updates and project descriptions, can be found on the CIRC website (<http://www.unbc.ca/cumulative-impacts/research>).

Peace Fish and Wildlife Compensation Program Lectures

For the past number of years, NRESi has partnered with the Peace Fish and Wildlife Compensation Program to put on a lecture that has themes related to the natural resources around the Peace region and Williston Reservoir. Three presentations were delivered this year, one in Prince George, and one each in two other communities in the Northeastern region of the Province. Mark Thompson (DWB Consulting Ltd.) presented information on his Fish and Wildlife Compensation Program-funded project on Amphibian Landscapes in northern BC; Research Techniques and Conservation Management to an audience of 20 at the Royal Canadian Legion in Mackenzie BC on November 21, 2017. On January 11, 2018, Dr. Charles Krebs (Professor Emeritus, University of British Columbia), spoke on Wildlife Management to over 100 attendees at the UNBC Prince George campus. The final speaker of the FWCP-sponsored series was Mark Phinney (Encana Corporation). He spoke on April 12, 2018 to approximately 47 people on management of Migratory birds at the LIDO theatre in Fort St John.

NRESi Awards

In past years, NRESi has recognized members who have made valuable research contributions over their career with the Distinguished Fellow award.

1. Distinguished Scholar - a NRESi member who has achieved any or a combination of the described criteria over the past 12 months (it is possible to receive this award more than once over a career).
2. Lifetime Achievement – a NRESi member who has achieved a combination criteria over the course of their career (both as NRESi members and, if appropriate, in previous positions/activities) and recipients are given a lifetime membership to NRESi.
3. Community Advancement Award – an individual or organization from the broader community who has demonstrated achievement of any or a combination of the described criteria through their research and/or service and recipients or an identified representative from the recipient organization is given a lifetime membership to NRESi

Further information, nomination guidelines, and criteria can be found on NRESi's website (<http://www.unbc.ca/nres-institute/special-events-activities>).

This year, NRESi presented one award in each of the three categories. Dr. Annie Booth was awarded the Lifetime Achievement Award for her work on a number of initiatives, including Inspiring Women Among Us; Indigenous/non-Indigenous relations in resource management; dog parks and sense of place and community; access to greenspace and quality landscaping as necessary and therapeutic; alternative pest management; environmental justice in the Canadian context; bear awareness; food insecurity; and challenges regarding the co-existence of humans and wildlife in northern BC.

Dr. Brian Menounos was awarded the Distinguished Scholar Award for his collaboration with 14 co-authors from five countries and a number of disciplines to produce the paper titled "Cordilleran Ice Sheet mass loss preceded climate reversals near the Pleistocene Termination," which was recently published in *Science*. Brian is the first UNBC researcher to be the lead author in this journal, which is published by the American Association for the Advancement of Science and is one of the world's top peer-reviewed journals. *Science* has a weekly readership of more than 400,000 readers, and more than five million monthly visits to its website.

The Community Advancement Award was awarded to Dave King for his work on the conservation of our region's natural resources. He is a member of a multitude of community groups including the Canfor Public Advisory Group, the provincial Spruce Beetle Advisory Group, the Federation of Mountain Clubs of BC (director), and the Prince George Backcountry Recreation Society (director) to name a few. He was also a signatory to the letter to the Premier that proposed protected status for the ancient cedars which resulted in the establishment of the new Ancient Forest/Chun T'oh Whudajut Provincial Park. During the multi-year process,

Dave attended almost every meeting, whether that was with the government, First Nations, or forestry companies. He was a true champion.

Scholarship Funds

NRESi members continue to support two scholarship funds, respectively in memory of the contributions by the late Susan Stevenson and Dr. Joselito (Lito) Arocena. The 2017-18 recipient for the Susan Stevenson scholarship was Ms. Ilsa Griebel, who is conducting research on parasite susceptibility of nestling tree swallows. The recipient of the Dr. Joselito Arocena Memorial Undergraduate Thesis Prize for 2016-17 was Paul Koch, and the recipient of the Dr. Joselito (Lito) Arocena Memorial Graduate Prize for 2016-17 was Alexander Koiter. Recipients for 2017-18 for these awards are still to be determined.

Publication Series

Dr. Art Fredeen has been the Editor for the NRESi publications series since their inception. In the past, NRESi had two publication series that NRESi members and NRES graduate students could contribute to:

1. **NRESi Occasional Papers** are peer-reviewed publications of papers and symposia sponsored or produced by members of the Institute. They provide an outlet for position, idea, concept, and opinion oriented papers.
2. **NRESi Research Extension Notes** are peer-reviewed publications of the research findings of NRESi members and of graduate students in the NRES Graduate Program. This series is intended to provide an outlet through which Institute members can make their research findings available to a non-technical audience.

In 2014-2015, it was identified that there are times where reports are not broadly available, but have useful information and results. To provide a venue for to make this data accessible, NRESi created the Technical Report Series:

3. **NRESi Technical Reports** are comprehensive, but not peer-reviewed final reports of research projects. They contain results relevant to the region and the broader research community. This publication series creates an opportunity for NRESi members to make their research project results that would otherwise not be published or available either in part or in whole.

More information about the awards and the guidelines are found on NRESi's website (<http://www.unbc.ca/nres-institute/publication-series>). In addition, NRESi worked with UNBC's library to make the articles available to a wider network, by posting all publications to UNBC's online databases. Past and future reports will now available and more readily searchable.

Two publications were submitted and published in 2017-18.

- 1) Jackson, P.L., Albino, J., Birch, C., Nilson, B, Pawluk, J. & Tereshchak, T. 2017. Trends in fine particulate matter (PM2.5) concentrations in Prince George, British Columbia, Canada. Natural Resources and Environmental Studies Institute. Research Extension Note No. 11, University of Northern British Columbia, Prince George, B.C., Canada.

- 2) Denryter, K.A., Cook, R.C., Cook, J.G., Parker, K.L. and Gillingham, M.P. 2018. Nutritional values of habitats for woodland caribou during summer. Natural Resources and Environmental Studies Institute. Research Extension Note No. 12, University of Northern British Columbia, Prince George, B.C., Canada.

Each year, NRESi also presents an award for a Research Extension Note written by a NRES graduate student. The 2017-18 award has not yet been presented.

Budget Report

Revenues for the 2017-2018 fiscal year were derived from redirection of overhead from NRESi members, and from cost recovery of research manager salary from project grants, including Peace Fish and Wildlife Compensation Fund projects.

NRESi provided financial contributions to a number of events and activities throughout the year that it organized or help to organize:

- Annual Lecture, NRESi member and special invitation dinner and poster session, travel for a special lecturer, reception, and compensation for webcasting
- Undergraduate thesis presentation day and refreshment costs
- Graduate Icebreaker presentation, poster session, and travel for a special lecturer
- Special guest lecture presentations
- Colloquium series – assistance for travel for a presenter who participated in NRESi’s colloquium series, advertising costs, compensation for allowing Livestreaming and Blackboard Collaborate

Table 5. NRESi operating budget: Summary for FY 2017-2018 and Projected Expenses for FY 2018/2019.

Fiscal Year		2017-2018	2018-2019 (estimated)
Opening Fund Balance:		\$273,989	\$238,699
Expenses:	Labour	\$50,730	\$50,000
	Course buyout	\$0	\$0
	Meeting/Event/Supplies	\$2,933	\$3,000
	total:	\$53,663	\$53,000
Revenues:	Research grant overhead from members	\$7,373	\$10,000

Salary recovery from Projects	\$11,000	\$11,000
total:	\$18,373	\$21,000
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Closing Fund Balance:	\$238,699	\$206,699
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Fiscal Year change:	-\$35,290	-32,000
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Our 2017/2018 year-end operating fund closing balance was \$238,699. Operating fund expenditures in 2017-18 exceeded revenues by \$35,290 (Table 5), while overall funds at year end were \$238,699. Proposed expenditures for 2018/2019 will be similar, drawing down the operating fund reserve by ca. \$32,000.

Revenue for the institute derives mainly from the reallocation of research overhead by members, which totaled \$ 7,373 in 2017/2018. NRESi continues to work towards new funding opportunities, such as our participation in the Fish and Wildlife Compensation Program projects, to reduce the drawdown of our operating fund.

NRESi has three endowment funds: (a) NRESi Endowment, (b) Northwood Endowment, and, (c) Linnea Fund. The largest endowment fund is the NRESi endowment. A one-time contribution of \$200,000 from BMAP overhead income in 2016 enables use of the NRESi endowment fund as a source of future support for NRESi activities. Given the substantial funds held in the NRESi operating account in 2017/2018, no contribution was taken from the NRESi endowment fund in the past year, allowing this fund to grow. This year, the NRESi endowment fund earned \$7,834 in interest (Table 6).

Our second largest endowment fund is the Northwood endowment, which is used to fund the NRESi Annual Lecture series and other special events consistent with the original intent of the endowment. In years when the return on the endowment has been low (or even negative), NRESi's operating budget has been used to fund such activities in order to maintain an adequate balance in the endowment. This year, the Northwood endowment earned \$5,870 in interest (Table 7).

The Linnea fund is presently inactive. It should be noted that the Linnaea Fund permits the spending of the principle to fund activities, while the Northwood and NRESi Endowments funds are traditional endowments, in which only a portion of the earnings can be used.

Table 6. NRESi Endowment (46055): year-end budget statement for FY 2017-2018.

Opening Balance (April 2017)	\$226,901
Revenue: Interest	\$7,834
Donation	\$260
Total Revenues (FY 17-18)	\$8,094
Total Expenditures (overhead)	\$ 947
Year End Balance (March 2018)	\$234,048

Table 7. Northwood/Canfor endowment: year-end budget statement for FY 2017-2018.

Opening Balance (April 2017)	\$125,692
Revenue: Interest	\$5,870
Total Revenues (FY 17-18)	\$ 5,870
Expenditure:	\$1,351
Total Expenditures	\$1,351
Year End Balance (March 2018)	\$130,211

Table 8. Linnaea Fund (34164): year-end budget statement for FY 2017-2018.

Opening Balance (April 2017)	\$350
Revenue: Interest	\$3
Total Revenues (FY 17-18)	\$3
Expenditure (overhead)	\$3
Total Expenditures	\$3
Year End Balance (March 2018)	\$ 350

Table 9. Summary of NRESi Fund totals and change during FY 2017-2018.

NRESi Funds	2017-2018 FY End	Change during FY
Operating	\$238,699	-\$35,290
Northwood	\$130,211	\$4,520
NRESi Fund	\$234,048	\$7,147
Linnaea Fund	\$350	\$0
Total:	\$603,308	-\$ 23,623



Natural Resources & Environmental Studies Institute

2018-2019 Workplan

This workplan describes how NRESi's 2018-2019 activities will build on the momentum of the previous fiscal year and further the objectives of NRESi through engagement, identification of new project opportunities, funders and partners, as well as providing networking across members and the community. Further to this, it will also describe how NRESi will work with other research institutes and organizations at UNBC and its partners on some key initiatives.

The focus of activities for the new year are described under five broad headings, which includes a purpose, description, and desired outcomes for each. A proposed 2018-2019 budget is shown in Table 5 above.

Project Descriptions

A. Partnerships & Project Development

Purpose: To develop partnerships and project opportunities to support the research goals of NRESi members and address the issues of UNBC's community through solutions-based approaches and projects.

Description of Activities:

NRESi will continue working to identify project and funding opportunities on behalf of its members and NRESi more broadly, working together with the Development Office and the Office of Research. Planned area of investigation in 2018/2019 include working to explore further opportunities for research collaboration with the B.C. Hydro Fish and Wildlife Compensation Program.

Information and suggestions collected from NRESi members through the membership survey will assist in developing additional project themes. Opportunities to engage with the other UNBC research institutes, in addition to the cumulative impacts work currently underway, will be considered.

B. Service to NRESi Members and UNBC

Purpose: To maintain service delivery and networking between NRESi members and other UNBC departments for knowledge sharing, celebrating successes, building on each other's strengths, and reducing duplication of efforts where possible.

Description of Activities:

NRESi will continue to celebrate the achievements of its members and those in the natural resources research community. This will continue to be achieved in a number of ways. One example is providing NRESi's weekly newsletter as a venue for sharing new publications, awards NRESi members have received, conference presentations and other announcements.

NRESi also has its awards program that is presented each fall. The awards include: (a) Lifetime Achievement for career accomplishments, (b) Distinguished Scholar for project related accomplishments, and, (c) Community Advancement for individuals and organizations outside of NRESi's membership, but part of its network and making valuable contributions to natural resource research.

NRESi will continue to build opportunities for supporting its members' research and expertise. This includes investigating how to best make the expertise of NRESi members readily available to other members, potential partners and the broader community. It could also mean further accessibility of NRESi member data and information, such as continuing to explore tools for data sharing.

C. NRESi Special Projects & Events

Purpose: To engage NRESi members, UNBC, and the broader community in events and activities on relevant topics of interest, providing the opportunity for sharing knowledge and a forum for discussion.

Description of Activities:

One of the main roles and functions of NRESi is to create opportunities for sharing knowledge, as well as networking across its membership and the broader research and natural resource community. A number of NRESi venues exist for this, including the weekly colloquium lecture series, the NRES Graduate Student Icebreaker, Annual Lecture and poster session, as well as others events and activities that include NRESi members and NRES graduate students. It also actively works to identify opportunities for relevant topics of discussion and projects that NRESi members can engage in, to feed their expertise into dialogues where experience and knowledge are valuable contributions. NRESi will continue to identify areas where it can support knowledge sharing, organize events for dialogue and discussion, and provide promotion within its membership and broader network of activities to create an ongoing culture of learning from each other.

NRESi received conditional approval of its proposal to extend its ongoing relationship with the Peace Fish and Wildlife Compensation Program for a lecture series in 2018-2019. This year

NRESi will be organizing three lectures, one in Prince George during the usual spring timeslot, plus two additional presentations in the fall and winter in a northeastern BC community.

NRESi received conditional approval for year three of a three-year proposal to the Peace Fish and Wildlife Compensation Program to study and assess the nutrient dynamics and complex web of interactions between Kokanee, stream-living macro-invertebrates (Aquatic insects), and the surrounding riparian zone (lichen communities) as a result of the introduction of Kokanee into the Williston Reservoir. First year results included identification of sample streams as well as preliminary field sampling. The second year of this project involved continued field assessments of Kokanee, aquatic invertebrates, and riparian lichens in identified streams, while the third year of the project will focus on data analysis of collected samples, preparation of journal articles and summaries, and delivery of extension activities.

D. Communications

Purpose: To facilitate communication within the membership, to UNBC and external stakeholders, governments, communities, and other partners.

Description of Activities:

NRESi uses a number of different venues to share information across its network. This includes external communications efforts, such as through the bi-weekly newsletter, social media feeds, posters in UNBC hallways about upcoming events, as well as through email announcements. NRESi also works to provide information about opportunities to its membership list and engaging researchers where possible to do so.

NRESi is in the process of updating its website; the content itself has been revised, with further plans for this year to streamline its structure and make it more user-friendly. In cooperation with the UNBC Communications and IT departments, NRESi is also creating a new video archive website for its past colloquium presentations and special lectures. This new site will have a search function where videos can be queried based on topic, keywords (in the title, abstract), date and presenter. Further to this, videos will also be uploaded to YouTube to make them easier to be searched through broad web-searches. NRESi will be continuing to post information about upcoming events to UNBC's Events webpage, to create broader distribution of activities.

Desired Outcomes:

- NRESi's weekly newsletter and current social media sites, and other communications tools used to provide a venue to share information to wide audiences and allow for networking within the research, natural resource, and environmental studies community, as well as an opportunity to create a dialogue where possible on current issues, activities and opportunities that could be built upon
- Improvements to NRESi's web presence by making updates to allow information to be streamlined, found easier and in a more interactive fashion