

# COLLEGE MATTERS

Volume 10 // Issue 2 // August 2018



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COLLEGE OF  
**APPLIED BIOLOGY**  
Professional Accountability



## COLLEGE COUNCIL 2018 - 2019

College Council meeting in Kamloops, June 2018. Back row (L to R): Jocelyn White, Alexandra Tait, Sean Sharpe, Brian Clark, Cliff Nietvelt, Jim Bayles, Vanessa Craig, Cairine Green. Front row (L to R): Warren Warttig, Hannah Horn, Steve Henstra, Susan Pinkus (Photo by K. Barry)

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**\*Disclaimer: the opinions expressed in *College Matters* do not necessarily represent those of the College, its Council, or other members.**

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*Co-Chair*

Mariah Arnold, RPBio

Meghan Goertzen, RPBio

## ABOUT US

The College of Applied Biology was established by the Provincial Legislature in 2002 as the licensing and self-regulating organization for the practice of applied biology in British Columbia. The *College of Applied Biology Act* is the only self-regulating legislation for the practice of biology in North America.

## OUR VISION

The College is a leading voice to promote and uphold scientific principles and methods in applied biology, and the principles of stewardship. We provide assurance to the public of professionalism in the practice of applied biology by our members.

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# Presidential Ponderings



By Brian Clark, RPBio  
President


Adapt, Migrate or Die! Dramatic words from Bill Paleck, Superintendent of US Federal Parks, spoken to members of the Skagit Environmental Endowment Commission a few years back. The Commission was beginning the first round of another Strategic Planning session and Bill and I were gently (or not so gently) suggesting that the plan needed to adapt to the environmental, economic and social changes affecting the management of the Ross Reservoir/Skagit River ecosystem.

As the College begins developing its third Strategic Plan, Bill's mantra still rings true. We need to adapt to the increasing diversity of what applied biologists do, the changing expectations of governments, Indigenous Peoples, industry, academic institutions, the public, our partner associations, while considering the College's capacity associated with these expectations.

Thirty years ago, Applied Biology was often described as "fin, fur, and feathers" and quite often one biologist did all three. Applied Biology today spans a much more diverse set of skills ranging from soil microbiology, to plant communities with an increasing number of endangered species, and a growing human population in a province that still relies heavily on resource extraction. Today, we also work much closer with our partner associations – foresters, agrologists, engineers, and technologists. Which begs the question – who does what? The College is currently identifying the scope of practice for biology professionals through a Task Force committee that aims to identify overlaps with the other professionals and the gaps – those new fields of study that don't fit into one of the current professional groupings. Other associations are doing similar reviews that will be shared. The ultimate goal is not to argue about who does what, but to ensure gaps are filled so that anyone working in resource management in BC fits into a professional designation and is accountable so that the public interest is served.

The College of Applied Biology is the child of professional reliance. It was created through legislation as the province moved from hands-on management of its resources to relying on resource professionals working with industry, as well as professionals working within government. Today, the professional reliance model is being challenged by some who feel the professional associations are not fulfilling their responsibility in ensuring their members are held accountable and the public interest is served. College Council and staff have been working closely with government and our partner associations as part of the Professional Reliance Review. The government audit of the College was successful and our ability to self-regulate through our Credentials, Audit, and Discipline processes was confirmed. Still, there is always room for improvement and the College will continue to work with government throughout the summer to ensure we remain a critical player in a healthy professional reliance system.

To this end, one of the College priorities is to develop a Practice Review process to fill the gap between the proactive audit process and the reactive disciplinary process. In April, the College initiated a Task Force to develop the goals and triggers for Practice Review and we expect that our accountability toolkit will be complete in early 2019. This is an ambitious timeline and could be influenced by what direction the Professional Reliance Review takes in the coming months.

On top of our statutory obligations, staff and Council will continue to work on maintaining and building the College's important role in the responsible management of BC's natural resources. The new strategic plan will need to prioritize what we do for 2019-2021. Do we just do enough, do we just adapt enough, do we GO BIG OR GO HOME? I say GO BIG. 



# Professional Reliance Review

By Christine Houghton,  
Executive Director

Over the past several months, College staff and Executive have been intensely involved in the Professional Reliance Review. Working closely with our partners in professional regulation for the resource management sector, we have been diligent in promoting the importance of applied biology professionals as key to the success of the model, by providing recommendations for action by the College, government and other partners, and working to keep members and the public informed.

On June 28, 2018 the government released the independent report that contained 123 recommendations for consideration. Two major recommendations concern professional governance:

1. That government establish an Office of Professional Regulation and Oversight that would have authority similar to that found in the *Health Professions Act*, and
2. That government standardize 10 elements of professional governance through umbrella legislation.


To move forward on these recommendations, government scheduled seven (7) meetings over the course of July with the five (5) regulators (CAB, ABCFP, ASSTBC, EGBC and BCIA) to identify what recommendations might

require immediate actions and what those actions might involve. Given the potential implications for regulators, it is a significant amount of work over a relatively brief period of time.

As previously articulated throughout the Professional Reliance Review, the College continues to support the key objectives of the review - accountability, transparency, consistency, adequate resourcing, and collaboration between all partners - with improved focus on working partnerships between professional associations and government. To achieve these objectives will take time, effort and a willingness to find the right solution to address underlying problems in the model.

In order to accomplish these goals, the College supports a principled-based process that actively engages the five (5) associations in on-going meaningful dialogue to find solutions that address clearly articulated issues. Proposed solutions must be evidence-based, consider all implications (including costs), and in all cases demonstrate how the proposed solution is designed to rectify a clearly defined problem. Only through ongoing efforts of all partners in looking for ways to improve the model - with the ultimate objective of protecting the public interest - will we see real and sustainable remedies.

Self-regulation is a privilege. The reason why professions are accorded this privilege is that the public, through their governments, trust professionals to be objective to protect the public interest. This follows from the philosophy that professionalism is a key principle of commitment to public service. The College as the regulator will continue to uphold this principle as will its members.

Please contact me with any thoughts you have on this or other issues at [executivedirector@cab-bc.org](mailto:executivedirector@cab-bc.org). 






By Derek Marcoux, RPBio Registrar

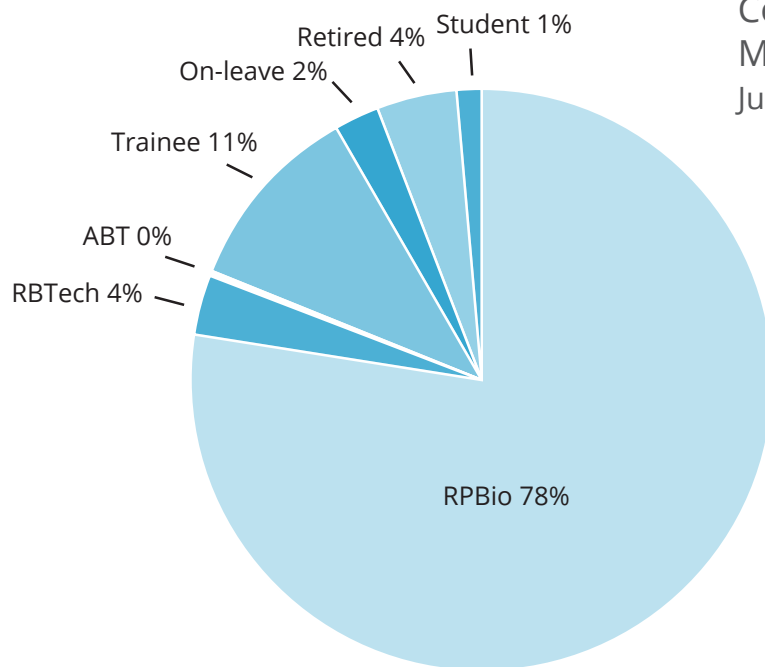
Reviewing membership applications, discipline files, audits, and accreditation agreements have been my key priorities over the past several months. As well, I have been working closely with the Executive Director and Council Executive to respond to the **Professional Reliance Review report** that was released in late June.

Staff recently signed an agreement with Minasu Information System to procure a new membership database. This is an urgent need for the College so that we can provide modernized access for the wide variety of records that we keep on member information. As well, the new database will provide greatly enhanced access for members to easily update personal information, make payments for dues and fees, and access billing history for tax purposes and the like. As part of modernizing our records management systems, the College hired a University of Victoria (UVIC) co-op student, Victoria Modi, who is diligently scanning critical documents (over 2300 paper

records!) to include in the new database. The database will be configured over the next 12 months by Minasu and we hope to have the system deployed by mid-2019.

As far as membership, numbers remain largely unchanged from earlier in 2018 at approximately 2350 members. A little over three-quarters of the membership are RPBios. RBTech and ABT members are just shy of 5% in total, and our trainee members (BITs, RBTechs, and ABTs) make up a little over 10%. We currently have 2 ABT members in the College.

Applications in the office have been steady and Jillian Stewart, BIT has been processing application files for review by the Registrar and Credentials Committee. The application rates are roughly the same as past years with the exception of 2015 where we had a spike in membership. June applications are trending similar to other years and we expect the application numbers to decrease slightly as field season gets fully underway. 



**College of Applied Biology  
Membership Snapshot  
June 2018**

RPBio	1779
RBTech	81
ABT	2
Trainee	244
On-leave	56
Retired	102
Students	31

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## MEET NEW COUNCIL MEMBERS

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### Hannah Horn, RPBio

I am a relative newcomer to the College, and to the profession of applied biology, although I have worked in the area of conservation biology for most of my career in natural resources management. I have been an RPBio since 2014, after completing a MSc in Biological Sciences from the University of Alberta. Prior to that time, I spent 20 years working in strategic conservation planning, providing technical and process support to government land use planning processes, and in strategic planning for non- governmental organizations, such as Nature Conservancy Canada, the coastal EBM working group, and the Marine Planning Partnership of the North Pacific.

Since 2015, I have worked for the BC Forest Practices Board as Manager of Special Investigations. Overall, with this work I've been lucky enough to spend time in many parts of this

wonderful province and meet some very interesting and knowledgeable people from all walks of life. I've also spent many an hour sitting around with a bunch of field bios, being regaled with tales of being out there in the wilds of BC. Biologists tell the best stories!

I strongly believe in the importance of applied biology being recognized as a profession. The work of the College is so important, not just to uphold the accountability and credibility of applied biologists, but to reinforce the important place of biologists and biology in resource management decisions. The work of applied biologists has to be a fundamental part of the considerations and decisions about land-based developments and other activities that affect our ecological systems.

I look forward to working with the dedicated people on the College Council, College staff, and the larger group of amazing volunteers. Thanks for this opportunity! 

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### Cliff Nietvelt, RPBio

Cliff Nietvelt has been a wildlife biologist for over 20 years. He has a BSc in Zoology and Biology from the University of Toronto, and a MSc from the University of Alberta in Ecology and Environmental Biology (Department of Biological Sciences). His current position is that of a wildlife biologist for the Ministry of Forests, Lands, Natural Resource Operations and Rural Development in the South Coast, and he has worked for the Ministry as a biologist since 2007. He is the lead researcher for the South Coast Wolverine Study, and has completed extensive population inventories, and he is now examining movements and habitat use relative to human disturbances. Cliff has also conducted and led research on black-tailed deer and mountain goats, and assists on the South Coast Grizzly Bear Study.

Over his career, Cliff has worked on a variety of species and issues in Canada and the United States. He was a contract biologist for Parks Canada in Banff from 1996 to 2002 where he studied willow-elk-beaver interactions and aspen ecology, monitored wildlife corridors, inventoried small-to medium-sized carnivores,



worked as project leader for the Banff Elk Study, and served as an advisor on the Banff Elk Advisory Committee and the Elk Science Workshops. He was the lead researcher for the US Highway 26/287 Wildlife Linkage Zone Study for the US Forest Service in Jackson, Wyoming, where he examined key crossing locations of various wildlife species and mortality hotspots. Cliff has also worked on and led studies in Canada on eastern Coyotes, small mammal ecology, songbirds, wetland restoration, vegetation inventories, and he has served on numerous committees and review panels. Cliff is an accomplished photographer and enjoys all forms of outdoor activities when he is not doing field work. He currently resides in Vancouver with his partner, Canadian Playwright Trina Davies, and their dog Sadie. 

# Meet New College Staff

## Helen Taraskin

Helen joined the College in November 2017 as the Finance Officer. She is originally from Vladivostok, a busy city on the far-east of Russia, and she moved to Canada in 2014.




Helen has a Bachelor of Science Degree in Social Psychology. But numbers are her real passion. Being introduced to the accounting profession through her part-time employment during University, she was captivated by the exciting

area of finance. After completing University with an Honour's Degree, Helen proceeded with further training in Business Administration and Accounting.

Helen's combination of work experience and education contributed to her professional competencies as a specialist with in-depth knowledge and hands-on experience. Helen has experience in various industries including manufacturing, financial services, the private investing sector, education, and hospitality.

Currently, she is working towards her Chartered Professional Accountant designation. She looks forward to implementing her enhanced knowledge, new ideas, and advanced skills to improve the College financial operations and accountability.


Outside of work, Helen enjoys spending as much time as possible with her family. In her spare time, she also enjoys cycling, hiking, travelling, and practicing figure skating. 

## Victoria Modi

Victoria joined the College's team this summer as a Records Management Coordinator. She is a third-year student at the University of Victoria, studying Health Information Science. As a records management coordinator, Victoria will aid in the digitization and archiving of member records from their current paper format. She is excited to apply her studies and gain some first-hand experience in data and project management.



Outside of the work environment, Victoria enjoys volunteering, biking, attending creative showcases, and playing volleyball with her two younger sisters.

Raised in Surrey, British Columbia, Victoria aspires to utilize her Canadian education to reform the healthcare system of her home country, Sudan. She knows that her experience with the College will be a stepping stone to a long and fulfilling career and is grateful for the opportunity to work on this project. 



# 2018 Conference and AGM Summary

By Christine Houghton, Executive Director

The 2018 College of Applied Biology Conference was both a look back to celebrate the first 15 years of self-regulation and a look forward to what is in store for biology professionals. This year's theme "***Professional Reliance: Shaping the Future***" was extremely relevant with the back drop of the Professional Reliance Review that (at that time) was underway.


After the AGM and Welcome by Musqueam First Nation Councillor Morgan Guerin, the Honourable George Heyman, Minister of Environment and Climate Change Strategy, delivered the Opening Remarks focusing on the Professional Reliance Review—and we were off.

Panels and concurrent sessions covered topics that touched on a range of issues: from practical advice for professionals (Science Based Communications, Climate Change Adaptation) to legislative updates (*Water Sustainability Act* and the soon to come Species at Risk legislation), and other topical (if sometimes uncomfortable) subjects such as "*How Biologists Get into Trouble*". The day wrapped up with a final Panel on the theme of the day— *Professional Reliance*.

Our lunch time key-note speaker, Bob Joseph, offered his insights into working with Indigenous Peoples. His presentation was informative and offered practical advice—and managed to bring a little humour into the mix!

Almost 300 delegates and guests participated either in person or online, and this year we instituted a new web-based platform to encourage audience participation during the 2 plenary panel sessions. This allowed people to submit their questions and vote on questions that were of greatest interest. It also allowed for a more efficient process and increased the chance that more people would be able to pose a question.

On the whole, the conference was a positive event. But as with anything there is always room for improvement. There were some technical problems with the sound - both in the room and online - that were unfortunate and frustrating at times, and there were some issues with the venue. But overwhelmingly participants rated the conference experience as either very positive or positive (85.3%).

We are already planning for the 2019 Conference to be held on April 4 & 5 at the Delta Ocean Point Hotel in Victoria. If you have any suggestions—or would like to help out, please contact Karen at [ea-comm@cab-bc.org](mailto:ea-comm@cab-bc.org). Staff and Council look forward to seeing you next April! 

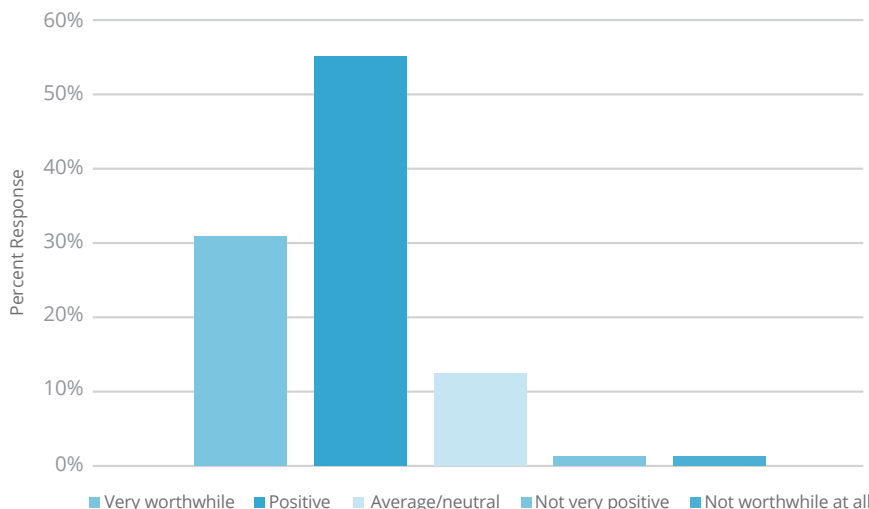


Figure 1. Participant rating of overall conference experience based on 89 feedback surveys received.

# 2018 Conference and AGM Photos



College President Dr. Vanessa Craig, RPBio, provides updates during the AGM. Photo by Jillian Stewart, BIT.



Minister George Heyman delivers the opening remarks. Photo by Judith Cullington.



Bob Joseph delivering the lunchtime keynote presentation "*Indigenous Relations for Biologists*". Photo by Judith Cullington.



Panel session "*How Biologists Get Into Trouble*" (L to R): Mel Kotyk, Mark Underhill, Jordan Fellner. Photo by Karen Barry, RPBio.

# SAR Workshop Summary

## BC Government Engagement on Species-at-Risk


By Derek Marcoux, RPBio, Registrar

In June, the College was invited to attend a stakeholder workshop held by the Ministry of Environment and Climate Change Strategy to guide the development of supportive regulations, policies, and programs for new species-at-risk legislation in BC. The College Registrar Derek Marcoux, RPBio, attended the two-day workshop on June 13th and 14th. The workshop was well attended with a cross-section of individuals that either work directly with species-at-risk conservation and management, or indirectly through programs that require species-at-risk practitioners.

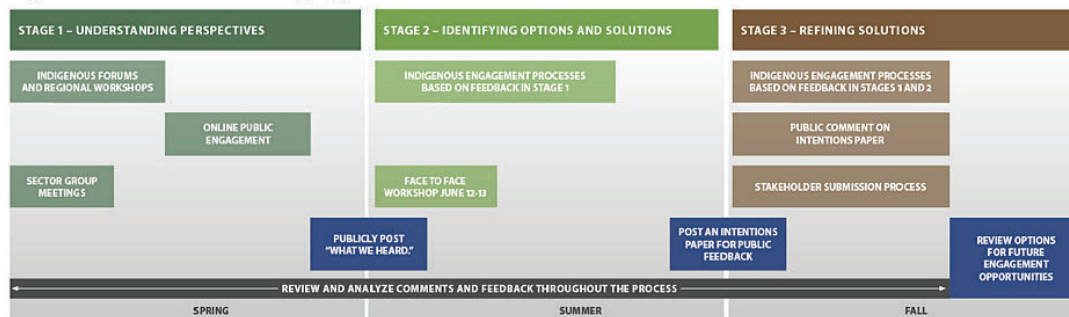
Day One of the workshop focused on exploring ideas that will assist the Ministry in developing the new legislation and Day Two focused on generating ideas that will provide direction to the ideas developed from Day One. A number of specific topics were covered in multiple break-out groups, including:

1. Sharing responsibility for protection – proactive and voluntary stewardship, barriers to success and development of implementation tools.
2. Exploring ecosystem and habitat approaches – benefits, goals, criteria for single species versus ecosystem-based approaches, and measures of success.
3. Funding the program – gaps in existing funding opportunities, how to ensure long term funding, funding innovation.

4. Identifying species-at-risk – prioritization of species that are locally abundant but globally rare and vice versa, making decisions with limited data, values and criteria to consider in assessing species.
5. Planning effective actions – providing increased confidence in scientific information, factors to consider, developing action ‘on the ground’, increasing awareness of opportunities to contribute in recovery efforts.
6. Exploring immediate protection measures – when immediate protection measures are warranted, what information is needed, government support for people affected by immediate protection.
7. Protecting habitat – objectives and approaches for habitat protection, climate change impacts, what does effective protection look like.
8. Mitigating impacts – Offsetting approaches benefits and drawbacks, types of models and payment schemes.

The Ministry is planning to develop an intentions paper based on stakeholder input and then to refine solutions for Fall 2019. The Ministry has launched an online system to facilitate public feedback with specific discussion topics listed. The deadline for input is December 1, 2018 <https://engage.gov.bc.ca/bcspeciesatrisk/> 

### Species at Risk – Engagement Timelines



Source: [Species-at-Risk stakeholder Workshop: Participant Handbook](#)

# New Committee Structure


In the 15 years since the ***College of Applied Biology Act*** was passed, the College of Applied Biology has grown from a small organization of just over 1000 members to over 2300.


During this time, the College has matured as a regulator and has evolved its policies, procedures and processes to better fulfill the mandate of protecting the public interest. To accomplish these tasks set out by Council, several committees were constituted to develop the structures and policies needed to achieve the objectives.

Some of the significant achievements over the past years include:

- > A mandatory online ethics course,

- > Regular communication platforms that allow for greater transparency with members, decision makers and the public, and
- > Development of several guidance documents to assist members in fulfilling their professional obligations.

As part of its evolution, the College has now re-evaluated and realigned its committee structure with the primary goal to ensure efficient use of the College's staff and volunteer time, and financial resources. The new structure is outlined in the Table below. 

Standing Committees (On-going and required to meet statutory and good governance obligations)	Working Groups (Dedicated to a single operational aspect of the College)	Task Forces (Constituted to deliver strategic priorities as identified in the approved annual business plan)
Executive Committee • Provides strategic leadership to the College	Editorial Board • Reviews and edits information for College publications	Scope of Practice • Describe and define scope of practice for applied biology professionals
Finance • Develops and monitors budget	Linda Michaluk Scholarship Fund • Reviews scholarship applications and awards scholarship	Practice Review • Develop a comprehensive policy framework as required in the <i>College of Applied Biology Act</i>
Credentials—Statutory • Assesses candidates for membership in the College as per criteria in <i>Rules</i>	Nominations • Conducts election for Council positions	Strategic Planning • Update and renew the Strategic Plan for a three (3) year period
Audit & Practice Review - Statutory • Conducts Audits and Practice Reviews (under development) to ensure that College members are following the <i>Act</i> , <i>Rules</i> and <b><i>Code of Ethics</i></b>	Conference Planning • Develops the conference theme, recruits speakers, and provides assistance at the event	Ethics Update • Develop and update content for the College's online ethics course and exam 
Discipline - Statutory • Reviews and adjudicates all complaints against members of the College		

# New Committee Structure List of Volunteers

We sincerely thank everyone for supporting the College by participating on College Committees, Working Groups, and Task Forces.

### Executive Committee

- > Brian Clark, RPBio - Chair
- > Dr. Vanessa Craig, RPBio
- > Alexandra Tait, RPBio
- > Jocelyn White, RPBio

### Audit and Practice Review Committee

- > Warren Warttig, RPBio - Chair
- > Dr. Marc d'Entremont, RPBio - Vice-Chair
- > Brian Clark, RPBio
- > Guy Gilron, RPBio
- > Steve Gordon, RPBio
- > Cairine Green, Lay Member
- > Jasen Nelson, RPBio
- > Rob Thomson, RPBio
- > Wayne Wall, RPBio
- > Mike Whelen, RPBio

### Auditors

- > Brian Clark, RPBio
- > Dr. Marc d'Entremont, RPBio
- > Michael Engelsjord, RPBio
- > Guy Gilron, RPBio
- > Steve Gordon, RPBio
- > Dave Lindsay, RPBio
- > Jasen Nelson, RPBio
- > John Rithaler, RPBio
- > Selena Shay, RPBio
- > Rob Thomson, RPBio
- > Wayne Wall, RPBio
- > Warren Warttig, RPBio
- > Barbara Wernick, RPBio
- > Mike Whelen, RPBio

### Discipline Committee

- > Mel Kotyk - RPBio, Chair
- > Lee Nikl, RPBio
- > David Ormond, RPF (Ret)
- > Rick Page, RPBio
- > Timothy Smith, P.Geo., Eng. L.
- > Barbara Thomson, LLB, RPBio

### Credentials Committee

- > Dr. Chris Johnson, RPBio - Chair
- > Pierre Johnstone, RPBio
- > Eric Lofroth, RPBio
- > Miriam Marshall, RPBio
- > Sandra Meidinger, RPBio
- > Gerry Naito, RPBio
- > Brent Phillips, RPBio
- > Dr. Roy Rea, RPBio
- > Sean Sharpe, RPBio
- > Leandro Torrella-Prieto, RPBio
- > Jocelyn White, RPBio
- > Brendan Wilson, RPBio

### Finance Committee

- > Jocelyn White, RPBio - Chair
- > Jim Bayles, Lay Member
- > Dr. Vanessa Craig, RPBio
- > Steve Henstra, RPBio
- > Sean Sharpe, RPBio

### Scope of Practice Task Force

- > Hannah Horn, RPBio - Chair
- > Dr. Vanessa Craig, RPBio
- > Cairine Green, Lay Member
- > Cliff Nietvelt, RPBio
- > Sean Sharpe, RPBio
- > Alexandra Tait, RPBio

### Practice Review Policy Task Force

- > Warren Warttig, RPBio - Chair
- > Brian Clark, RPBio
- > Dr. Vanessa Craig, RPBio
- > Dr. Marc d'Entremont, RPBio
- > Guy Gilron, RPBio
- > Wayne Wall, RPBio


### Ethics Update Task Force

- > Dr. Vanessa Craig, RPBio - Chair
- > Guy Gilron, RPBio
- > Steve Gordon, RPBio
- > Cairine Green, Lay Member
- > Rémi Masson, RPBio
- > Linda Michaluk, RPBio
- > Alison Peatt, RPBio
- > Susan Pinkus, RPBio
- > Linda Stordeur, RPBio
- > Wayne Wall, RPBio

### Strategic Planning Task Force

- > Brian Clark, RPBio - Chair
- > Jim Bayles, Lay Member
- > Dr. Vanessa Craig, RPBio
- > Alexandra Tait, RPBio
- > Jocelyn White, RPBio

### Editorial Board

- > Steve Henstra, RPBio - Chair
- > Raychl Lukie, RPBio - Co-Chair
- > Mariah Arnold, RPBio
- > Meghan Goertzen, RPBio 

# Professional Collaboration at the Interface of Engineering and Biology

By John J. Clague, PhD, PGeo, FRSC,  
Emeritus Professor, Department of Earth Sciences, Simon Fraser University,  
Past-President, Engineers and Geoscientists BC

**“If you move fluently across the boundaries of biology and geology, you realize that science is everywhere; science is not something you can step around or sweep under the rug”**

—Neil deGrasse Tyson

I am inclined, partly due to my early education at a liberal arts college, to seek and understand the connectivity of natural and social systems. This inclination is likely why I was attracted to geology, which is a very broad, interdisciplinary field of endeavour. My passion for interdisciplinarity puts me at risk of being a ‘jack of all trades and master of none’, especially in light of the explosion of knowledge that we are experiencing. I would strongly argue, however, that we need professionals who can see and distill generalities, which is to see the larger picture, not just the minutiae of a narrow field of specialization.

These remarks serve as a preamble for my ‘pitch’ that professional biologists, professional engineers, and professional geoscientists must work more closely through their respective professional and regulatory organizations. I am aware that there are instances of such collaboration, but at a time when social and environmental issues are pressing, we can and should do more.

I was encouraged in 2014 while serving as President of Engineers and Geoscientists of BC (EGBC), when Dr. Vanessa Craig, RPBio, then President of the College of Applied Biology (CAB), contacted me to propose that CAB work with EGBC to develop a set of guidelines on stream crossings that include environmental, as well as engineering, considerations.

Stream crossings are, of course, engineered, but they should be designed so as to not harm aquatic ecosystems. Roads and stream crossings that minimize adverse impacts to aquatic ecosystems, or even better enhance them, are in everyone’s interest.

I offer two other examples of possible professional cooperation at the interface between engineering and biology. The first relates to the issue of sea-level rise, which is one of the many damaging effects of human-induced climate change. Sea level is currently rising at an average global rate of about 3.5 mm/year. Although this increase is small, the rise is inexorable and the rate is increasing and likely will continue to do so through the remainder of the century. The two main drivers of sea-level rise are loss of ice from glaciers and ice sheets, and thermal expansion of ocean waters. If we consider future increases in temperature and its effects on glaciers and oceans, it seems likely that sea level on BC’s south coast will be somewhere between 70 cm to 1 m higher at the end of this century, a little over 80 years from now, than it is today.


This change is unprecedented in the past 10,000 years and will have many negative effects. I focus here on the potential loss of the biologically important wetlands at the mouth of the Fraser River and at the head of Boundary Bay. Fraser Delta wetlands support salmonid fry when they reach the mouth of the Fraser River prior to entering the Pacific Ocean. They also are a vital stop for migrating waterfowl and shorebirds along the Pacific Flyway. Yet these wetlands could be lost to sea-level rise because they are backstopped by hard engineered dykes. The dykes provide protection from flooding to over 250,000 residents of Richmond and Delta, and they protect vital economic infrastructure and some of Canada’s most productive farmland.

Unfortunately, the wetlands on the seaward side of the dykes may be destroyed by the rising sea, barring some human intervention. What can be done to save them? Some soft



Photo by SYLVIS Environmental

offshore engineering might reduce the erosional impact of waves and currents. Or perhaps additional supplies of silty suspended sediment from the Fraser River to the tidal flats might allow the marshes to build upward at the same rate as sea rises. In any case, an appropriate answer to this question requires both biologists and engineers to work together.

A second example centres on protection of riparian ecosystems on occasions when measures are taken to protect people and property from flooding by the Fraser River and its tributaries. This river system has been the lifeline of British Columbia for more than 10,000 years and it remains important today. Yet many reaches of the river have been so modified that they are no longer natural systems, with negative impacts on the myriad of organisms that depend on them. Dykes, marinas, log booms, and industry, all of which are engineered, have put tremendous stresses on the plants and animals that make the Fraser River their home. Future development along this river should not further compromise natural channel and floodplain processes that support aquatic ecosystems. As in the example I provide above, appropriate planning and decision-making will require that biologists, engineers, and earth scientists work together. 



# South Coast Wolverine Study

By Cliff Nietvelt, RPBio

Wolverines (*Gulo gulo luscus*) are a Blue Listed (special concern) species in BC, and are listed as Special Concern under Schedule 1 of the Federal Species at Risk Act, primarily due to their sensitivity to human activities. Wolverines are also listed under the Identified Wildlife Management Strategy (IWMS) as a vulnerable species. While their populations are widespread throughout the northern hemisphere, within their distribution, wolverine numbers are quite low in comparison to other carnivores such as grizzly bears (*Ursus arctos*).

The South Coast Region is unique in that it has high species diversity and is bounded by significant human populations: the US border, Metro Vancouver, Fraser Valley, and the Sea to Sky corridor. Despite the close proximity to major metropolitan centres, this area supports a high diversity of carnivore species; however, this extensive human presence may affect their persistence in the South Coast - grizzly bears and wolverines in particular.

Given these ongoing pressures, there is a need to better understand the distribution and abundance of wolverines in the South Coast. Baseline information on wolverines in the South Coast is required to help better manage major projects, recreation, and roads.

To estimate the distribution and abundance of wolverines in portions of the South Coast, remote cameras with integrated hair snaggers were established at 71 sites, covering almost 10,000 km<sup>2</sup> in the Squamish and Chilliwack Natural Resource Districts. This technique utilizes a runpole with an aircraft cable strung between two trees. Bait (beaver, deer, elk or moose plus a cattle bone) is strung directly in front of the runpole as an attractant and a trail camera is placed on the tree opposite the runpole. A lure (beaver, skunk and marten scent) is also applied to the runpole and adjacent trees as an attractant, and cattle blood is spread around the periphery of the site. This setup allows for the wolverine to be identified based on their chest and throat markings, which are unique to each animal.

Hair is also collected via hair snaggers to help identify the animal (individual and sex) when a clear photo of their chest is not available. The hair snaggers consist of square plastic posts with



Photo 1. Male wolverine "White Socks", first detected by remote camera in 2014 and collared in 2018 in the Squamish-Lillooet area. His home range size is approximately 1,200 km<sup>2</sup>.

alligator clips to grab the hair, while the support structure allows the wolverine to climb up it to get at the bait. Barbed wire loops are also added to ensure enough hair samples are collected.

Key findings to date include:

- > More wolverines were detected in the Coastal ecosystems than was predicted in a Provincial model. However, wolverine distribution is likely uneven throughout the South Coast.
- > Wolverines were detected at approximately 75% of all sites sampled.



Photo 2. Wolverines can be social and often more than 1 animal is captured on the cameras. They are frequently related, such as father-son-daughter or litter mates.

- > The highest wolverine abundance and detections appear to occur in areas isolated from human developments and activities, and adjacent to a reliable food source (mountain goats or deer).
- > One site can have as many as six different wolverines visit during the course of the sampling season, and at times two wolverines visited at the same time (during the Feb-May sampling period).
- > Wolverines are genetically isolated in the Squamish-Lillooet, Garibaldi-Pitt, and the South Chilcotin population units.

Concurrent research focuses on radio collaring wolverines to examine their movements in relation to human developments, and habitat characteristics such as food and terrain.

Using portable wooden box traps made of 4" x 4" lumber, we live-trapped and radio collared two male wolverines in April and May 2018. We used Iridium satellite GPS collars which provide high resolution locational data and can be programmed remotely to obtain greater than two locations per day. To date, the home ranges of these two males are approximately 380 km<sup>2</sup> and 1,200 km<sup>2</sup> respectively. We plan to continue our live-trapping efforts over the next two winters in the hopes of collaring female wolverines to help identify denning areas.

All of this work was funded by grants obtained by the Habitat Conservation Trust Foundation (HCTF) FLNRORD Research, FLNRORD South Coast (District, LBI), and the Fish and Wildlife Compensation Program (FWCP). These projects provide a unique opportunity to examine the ecology of a highly sensitive carnivore in the most populous region of BC and will result in extremely valuable information that will help landscape level planning by understanding the movement patterns, denning and habitat use of wolverines. **CMF**

*Cliff Nietvelt, MSc, RPBio, works as a wildlife biologist for the Ministry of Forests, Lands, Natural Resource Operations and Rural Development in the South Coast. In March, Cliff was elected as a Regional Council member for the College.*



# Conflict of Interest Practice Guidance for Members

Adapted from: <https://www.cab-bc.org/file-download/conflict-interest-guidance-members> (April 20th, 2018)

## What is Conflict of Interest?

Conflict of interest is commonly defined as a situation in which a person has a private or personal interest sufficient to appear to influence the objective exercise of his or her official duties.

We have all heard that “if you think you have a conflict, you probably do”. If this is the case, does it stand to reason that “if you think you don’t have a conflict, you probably don’t”? It’s not that simple.

The awarding of self-governing status to a profession is a privilege and can be removed if the profession’s regulator or the professionals lose the trust of the public. To help ensure members conduct themselves in an ethical manner and to maintain the public’s trust, the College has established *Rules* of conduct under the *College of Applied Biology Act*, as well as a *Code of Ethics*. The College has also developed various types of guidance documents to help members understand and meet their obligations as professionals (*Principles of Stewardship*, *Practice Guidance for members*, *Code of Ethics Q & A*, and *Guidance for Members Employed in Formal Decision-Making Roles*). This Conflict of Interest Guidance document provides additional information to inform members about conflict of interest.

While concerns around conflict of interest have been around for a long time, it did not make its appearance in the courts until the mid 1900’s. Since then, legislation and the development of codified rules around conflict of interest have been developed by all levels of government in Canada, professional organizations, and businesses. Whether real, perceived, or potential, a conflict of interest can compromise a professional’s reputation, the public’s confidence in the members of an organization, and potentially the profession itself. Consequently, conflict of interest concerns should be dealt with quickly in an open and transparent manner.

## How is Conflict of Interest Interpreted by the College?

Principle 4 of the *College Code of Ethics* states that members must “provide a professional standard of service to clients and employers by conducting business practices fairly, avoiding conflict of interest and respecting client/employer confidentiality”. It provides further direction that the member must avoid situations and circumstances where there is a conflict of interest, real or perceived. These circumstances or situations not only include decision-making situations but also discussions prior to finalizing the decision.

Members should:

- > Have a good understanding of conflict of interest. It’s not only about financial gain but can include any factors that a reasonable person might think are likely to bias a member’s decisions, judgements, or recommendations.
- > Understand that conflict of interest is a situation where trust and confidence in the member’s ability to act in an objective way may be questioned, not an accusation of wrongdoing. It is how you deal with the situation that is important.
- > Be prepared to act if such a situation arises by disclosing a potential conflict and, if required, remove yourself from discussions and the decision-making process.
- > The legal threshold for the perception of conflict of interest is met when a reasonably well-informed third party, in possession of all the facts, would consider that a conflict exists.

### What are Some Examples of Conflict of Interest?

Conflict of interest can appear in a wide range of circumstances that, at first, may not seem to be areas of conflict. Would you recognize whether you were in a situation that could be perceived as a conflict of interest?

#### 1) Perception of self-dealing or self-interest:

You might find yourself being asked by a family member to do a Riparian Area Regulation (RAR) assessment on land they want to develop. There is perception of benefiting since there is a close family connection. It is not enough to cite personal assurance of your objectivity in conducting the assessment. Therefore, the recommendation in such circumstances is to remove yourself from these types of situations, whether you directly benefit or not, since your objectivity may be impaired.

Situations of self-interest may not always be so clear. Consider the situation where you are appointed to a committee tasked with determining a financial and/or merit award for a company employee. Your niece is one of those nominated. While it is clear that you must remove yourself from decision-making, you must also remove yourself from any group or individual discussions so as to not influence the outcome.

In situations where, upon completion of a project, you recommend further investigation or the use of a specific technique in which you are the expert, it may appear that your independence is fettered by the desire for future work. It is recommended that clear, detailed rationales be provided to support the recommendations to ensure that clients understand that your recommendations are science-based and intellectually honest.

#### 2) Accepting benefits:

Accepting gifts can be viewed as influencing the outcome of one's professional recommendations. The Conflict Code\* developed by the federal government has placed an upper limit on such benefits.

For example, accepting a fishing trip from a client in addition to the agreed financial remuneration in the contract may create distrust from third parties who may be impacted by the recommendations you make on behalf of your client. It is recommended that all transactions be clearly documented in a contract or legal agreement between the professional and client.

#### 3) Using confidential information:

Confidential information is intellectual property that is acquired while liaising with an organization or individual with which you are permitted access to privileged information that is not in the public domain.

A member should exercise care to not disclose confidential information acquired in connection with a client as a result of a volunteer activity or in carrying out paid work. This situation can occur when you have a client that is doing work on a project in which you had a previous relationship.

Consider the situation where an environmental organization has developed an action plan for an issue and is looking for someone to organize and initiate it. One of their volunteers, who works for a consulting company, bids on the work using the knowledge gained through their volunteer work with the organization. The transfer of proprietary information across projects is a breach of the *College Rules*, and care must be taken to ensure that this type of information does not inform your work for a new client.

#### 4) Outside employment:

If you are considering conducting business outside of your regular employment, you need to ensure there is no conflict with your primary employer. Consider that you work for a large government department which issues development permits. Because of your expertise, you are offered an opportunity to work in your off-hours for a proponent who wants to develop a ski hill or you are asked to volunteer for an organization that is trying to stop the development.

\*Policy on Conflict of Interest and Post-Employment offers direction and measures to assist organizations and public servants in effectively dealing with real, potential and apparent conflicts of interest that may arise during and after employment in the public service <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=25178>



Although you would not be directly involved in issuing this specific permit, the perception may be that that you are acting simultaneously for two clients who have competing or conflicting interests. Unless your employer has approved this outside employment, it is recommended that you not accept the contract.

### **5) Post-employment:**

In today's job market, it is uncommon for someone to remain with the same employer throughout their career. Often, individuals will move from one organization to another for various reasons. It is important that the member, when moving to a new employer or volunteer position, not take improper advantage of their knowledge regarding confidential information which might benefit a new employer. All information received during employment, including data gathered in the course of one's work, is owned by that employer unless it is in the public domain. Expertise gained by an individual through work with an employer, however, may be used freely in subsequent employments. Often, there are agreements in place which set limits related to dealings with future clients. Members are encouraged to obtain legal advice prior to working with clients with whom they have an existing relationship with a former employer.

### **6) Advocacy activities:**

As individuals with specialized knowledge, professionals may wish to volunteer with organizations or causes which promote their personal beliefs but also overlap with their professional practice. To avoid a conflict of interest situation (or a perceived conflict), the member must make a full disclosure regarding their relationship to the client or employer and the member's professional status or remove themselves from one of the roles. Members should take care to ensure information provided is science-based with an intent to inform as opposed to taking adversarial positions.

### **What Happens if I Receive A Complaint from the College for Being in a Conflict of Interest?**

If a conflict of interest complaint is brought forward against a member for investigation by the Discipline Committee, all circumstances are considered and failure by the member to take steps to remedy any real or perceived conflict will be given particular weight.

Development of precise rules regarding conflict of interest to cover all potential situations is not possible. Members should be guided by their conscience and common sense. The standard advice in any potential conflict of interest situation is to recognize it, disclose it, and remove oneself from the situation. **CM**



# Know Your Ethics: FAQ

Adapted from <https://www.cab-bc.org/file-download/code-ethics-q>

See also “Professionalism and Personal Conduct: Charting a Course for a new Profession By Murray Rankin” from June 2012: [https://www.cab-bc.org/sites/default/files/node\\_uploads/publications/articles/professionalism\\_and\\_personal\\_conduct.pdf](https://www.cab-bc.org/sites/default/files/node_uploads/publications/articles/professionalism_and_personal_conduct.pdf)

### **The company I work for has its own Code of Ethics that I must follow as a condition of my employment. Why would I need to adhere to the *College Code*?**

The *College Code of Ethics* is a rule that all members must respect and adhere to. The Code defines the standards that all members must work to and should be the filter through which all activities are viewed. It is highly unlikely that a corporate Code of Ethics would contravene the standards set out in the *College Code*. If you believe this to be the case, please contact the College office immediately.

### **Why is the responsibility of the member to educate the public not included in the *Code of Ethics*?**

The *Code of Ethics* is a document that sets out standards of conduct that every member is expected to meet. While the College encourages its members to engage with and educate the public about science and applied biology, doing so is not required to belong to the College. Therefore, the role of the professional biologist as a public educator is not included in the *College Code of Ethics*.


### **Shouldn't the responsibility of members to influence public policy be included in the *Code of Ethics*?**

The *Code of Ethics* is a document that sets out standards of conduct that every member is expected to meet. While individual members may choose to advocate for changes to public policy from an unbiased science-based perspective, doing so is not required to belong to the College. Therefore,

the role of the professional biologist as an advocate for policy change is not included in the *College Code of Ethics*.

### **What is my responsibility when a client/employer ignores my advice?**

Where a client/employer ignores or does not follow the advice or recommendations of a member, the member must ensure that the employer/client is aware of the potentially adverse consequences that may result (Principle 3). The member must also ensure that any implications of their recommendations or alternatives are stated in a clear and understandable manner (Principle 3). Discussing these issues with the employer/client should occur in written form so that the member can document their due diligence in this matter.

When a member's professional recommendations are not followed, the recourses available to the member will depend on the situation. Where the member simply disagrees with the actions of the client/employer, the member is bound by any contractual agreements as to data confidentiality, etc. (Principle 4). Where the actions of the client/employer are unlawful, the member is obliged to report the activity to the appropriate authority (Principle 4). 



**New Registered Professional Biologists (RPBio)**

Jodi Armstrong	3064
Keith Bell	3043
Seana Buchanan	3050
Emily Cameron	3055
David Carter	3054
Mathew Coady	3048
Matthew Coombs	3070
Jeremy Corbin	3031
Meara Crawford	3052
Cassandra Cummings	3074
Justine Densmore-McCulloch	3067
Jean-Michel DeVink	3073
Michael Dunn	3046
Mark Dunnigan	3056
Elizabeth Fairhurst	3057
Kathryn Fisher	3033
Natalie Gerritsen	3045
Samantha Gidora	3066
Michelle Gilders	3030
Caitlin Good	3072
Amy Goodbrand	3032
Laura Grant	3034
Christopher Hegele	3051
David Hogarth	3047
Marek Holin	3060
Brian Issler	3068
Barry James	3061
Brian Koval	3069
Amber Lapshinoff	3041
Jason Leathem	3071
Portia Lloyd	3065
Brett Mackinnon	3037
Danielle Marcotte	3059
Brendan McGinitie	3042
Burke McKone	3058
James Meldrum	3053
Eric Nijboer	3044
Heather Polan	3062
Ilya Povalyaev	3035
Joel Primeau	3040
James Smithson	3049
Jenna Tabata	3063
David Vardy	3036
Joseph Walker	3039
Bonnie Williams	3038

**New Enrolled Biologists In Training (BIT)**

Landon Benson	1079
Jennifer Cook	1084
Siobhan Darlington	1070
Stephanie Ellis	1085
Jennifer Glover	1077
Cassandra Harper	1071
Javier Heredia	1082
Oliver Holt	1088
Dean Hunchuk	1076
Samantha Jung	1087
Joanna Lee	1078
Tim Li	1086
Emily Mason	1073
Mandy McDougall	1083
Peter Merth	1081
Orla Osborne	1075
Andrew Otto-Artavia	1080
Jennifer Peterson	1074
Nina Piggott	1069
Tyne Roberts	1072
Maria Samuels	1066
Stephanie Whyte	1089

**New Registered Biology Technologists (RBTech)**

Amy Hendel	107
Chelsea Nerpio	108
Chantel Quock	109

**New Enrolled Technologists In Training (Trainee(RBTech))**

Michael Mandula	64
Montana Paton	62
Chelsea Sinitsin	63
Crystal Wallace	61

**New Student Biologists**

Lisa Bland	246
Anupinder Hura	241
Laurelie Menelon	243
Michael Minard	245
Jennifer Sprecher	244
Grant Usick	242

**Recently Returned (Re-instated) Members**

<i>BIT</i>	
Bianca Evans	826
<i>RPBio</i>	
Kori Archer	2871
Amy Duncan	2903
Lucinda Eykamp	2142
Chandni Kher	2470
Danny Lee	2691
Kate Logan	2477
Alexandra Taylor	2794
Christina White	2661
Melanie Wilson	2427

**New On Leave Members**

<i>RPBio</i>	
Christine Belliveau	2869
Tracy Henderson	2617
Lilia Kotzeva	2951
Amber Lapshinoff	3041
Kirsten McNeill	2555
Mandeep Purewal	2423
Sandra Warren	2837

**Recently Resigned Members**

<i>BIT</i>	
Dominique Melançon	912
<i>RPBio</i>	
Graham Suther	768
<i>RPBio (Ret)</i>	
Bryan Gates	92
Sean Puchalski	1392

**Recently Removed Members (since March 2018)**

<i>BIT</i>	
Justin Barbati	1017
Katrina Black	668
Hannah Britton-Foster	935
Stacy Bruce	860
Duncan Campbell	878
Natasha Dudley	989
Jamie Gordon	1029
Teana Imbeau	812

## MEMBERSHIP UPDATE

Yunah Ko	999	Andrea Gielens	2451		
Jennifer McIntyre	787	David Gordon	1290	<i>RPBio (Ret)</i>	
Michelle Phillips	896	Crispin Guppy	1526	Fred Bunnell	49
Edyta Piascik	902	Donna Hargreaves	2984	Marlene Caskey	345
Serina Swanson	927	Matthias Herborg	2270	Brent Moore	1505
Aleesha Switzer	952	Cameron Irvine	1197	Bruce Pendergast	162
Ian Tom	994	Peter Jalkotzy	2599	Edward Quilty	1132
Taylor White	963	Camden Jerney	2945		
		Nayeemul Karim	2829	<i>Student</i>	
<i>RBTech</i>		Deirdre Kelly	1339	Kellyn Hanson	229
Eric Cleveland	97	Elaine Leung	2566	Courtenay Heetebrij230	
Jenna Gaul	43	Courtney Miller	2699	Andrew Lindsay	225
		Scott Moffatt	2621	Megan Osmond-Jones	226
<i>RPBio</i>		Fred Otchere	1939	Jillian Packham	223
Garry Alexander	78	Chris Picard	1611	Stewart Pearce	205
Katie Beach	2597	Ly-Shu Ramos	1693	Ashley Pinter	210
Philip Belliveau	581	Clifford Robinson	2454	Karle Zelmer	214
Tasha Casper-Krause	2179	Michael Simpson	2074		
Kristie Derkson	2840	Cameron Sinclair	2462	<i>Trainee (RBTech)</i>	
Katherine Dunster	674	Mark Townsend	2156	Christopher Mackenzie	43
Benn Edwards	2711	Jennifer Trowell	2517		
Mark Furneaux	976	Melanie Wilson	2427		
Allan Gartner	1348	Margaret Wright	944		

## Regional Outreach in Kamloops

As a provincial organization, one of the College's goals is to engage with members across the province. On June 21st the College hosted an evening information session in Kamloops and provided various updates including news about the Professional Reliance Review. After a welcome from College President Brian Clark, the College Registrar Derek Marcoux, and Christine Houghton, Executive Director delivered presentations on College activities. A lively Q&A session and discussion followed. We had a great turnout and it was nice to meet members from the Kamloops area.

On June 23rd, over 15 people attended a guided field trip/CPD event to Lac du Bois grasslands. It was a very informative session and we thank Thompson Rivers University faculty who guided the trip, explaining grassland ecology and showing us their research projects. 



Lac du Bois grasslands CPD field trip.  
Photo by Karen Barry, RPBio.

## David Winarksi, ABT #002



One of the College's goals is to raise awareness of the new Applied Biology Technician (ABT) category. In February 2018, David became ABT member #002. David works for Triton Environmental Consultants Ltd as an Environmental Technician in Prince George.

### How did you become interested in pursuing biology as a career?

“ I have always had a life-long interest in fish, ecology, and playing in streams. ”

### What is your academic background?

I have an incomplete university degree, but I have completed various field technician certificates. The ABT designation seemed like an appropriate designation for me, as I don't have a degree, but I have two decades of fisheries and other biology work experience.

### Recognizing you recently became one of the College's first ABT members, what advice do you have for other biologists wishing to do the same?

It's important to be willing to volunteer to target the work that you want to be doing, and to work with co-workers that you can learn from. Don't wait for work experience to accumulate, go out and pursue it.

### What does your job entail, and what are your favourite aspects of the work you do?

My work varies a lot, project to project, but mostly involves supporting the process of mitigating effects from development, usually associated with fish and aquatic habitats. I often lead the field components of projects that involve fish habitat assessment and inventory, environmental planning, inspection and management, fish and amphibian salvage, water quality protection, and aquatic habitat restoration and offsets. My favourite aspects of my job are being able to work outside and exploring unique environments.

For more information on the ABT category and College requirements, contact Derek Marcoux, RPBio, the College Registrar at [registrar@cab-bc.org](mailto:registrar@cab-bc.org) or see <https://www.cab-bc.org/membership-categories/applied-biology-technician>. <sup>CM&</sup>

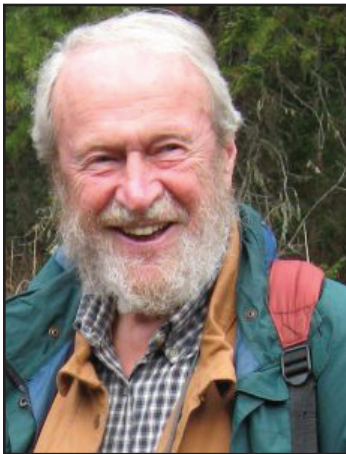


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# COLLEGE MATTERS

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Photo by Tj Gooliaff, BIT,  
Hoary Marmot in Cathedral Provincial Park

Graphic design template by Rocketday Arts



## In Memoriam Dr. John Bindernagel, RPBio 712

Dr. John Bindernagel, a wildlife biologist, passed away in January 2018 after losing his battle with cancer. Dr. Bindernagel received a BSc in 1964 from the University of Guelph, and a PhD in Zoology from the University of Wisconsin-Madison. Based in the Comox Valley, he was known as a researcher and author on Sasquatch. Dr. Bindernagel also worked in East Africa, the Caribbean and the Middle East. 



## Save the Date

The 2019 College of Applied Biology  
Annual Conference  
will be held April 4–5, 2019 at the  
Delta Ocean Pointe Hotel in Victoria.  
[www.cab-bc.org](http://www.cab-bc.org)

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