

ICORD Annual Report

2013-2014



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA

ICORD at a glance, 2013-14



Researchers: 55

- Principal Investigators: 38
- Investigators: 8
- Associate members: 9

Trainees: 233

- Undergraduates: 64
- Graduate students: 141
- Masters: 69
- PhD: 72
- Postdoctoral fellows: 21
- Residents: 7

Staff: 85

- Admin + clerical: 17
- Research + technical: 68

Volunteers: 100

Funding: \$18,402,008

- SCI-related competitive research grants: \$10,252,786
- Other competitive research grants: \$7,949,222
- Operating: \$200,000

Publications: 324*

- Peer reviewed: 241
- Other: 83

*see icord.org for a list of selected publications

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Introduction

When you hear the word “cure” in relation to spinal cord injury, do you think about getting out of a wheelchair and walking again? Or do you think about regaining bladder and bowel function or being able to use your hands effectively? At ICORD, we take a very broad view, and say that a cure is any intervention to return a person to greater functionality after a spinal cord injury. This could mean treatments to protect the injured spinal cord tissue from secondary degeneration. It could mean research to help existing nerve cells create new pathways or helping injured nerve cells to regenerate, and developing rehabilitation strategies that could enhance these regenerative efforts or build on what is spared or rescued. It could also mean research into strategies that prevent or improve the wide range of complications that can occur after spinal cord injuries. Thus “cure” research

applies to people with new injuries and people who’ve been living with SCI for many years. We think that a cure for SCI will lie in several, incremental and combinatorial treatments.

And while many of our researchers are working on a better understanding of spinal cord injury including adaptations, maladaptions and effective treatments, some ICORD researchers are looking at ways to make SCI preventable. Prevention is so important: each SCI that does not happen thanks to devices like specialized helmets means a huge savings in healthcare dollars and a life not drastically changed.

However, accidents—and spinal cord injuries—will still happen and presently, aside from first class acute care, stabilization surgery and rehabilitation, there is no treatment for the injured spinal cord itself. And so some of our researchers investigate ways to improve quality of life for people with SCI including assistive devices, new opportunities to exercise and keep fit—these are things that help make SCI more livable and aging with SCI more successful.

So at ICORD, our researchers, trainees and staff share the goal of making SCI preventable, livable and curable. Our Principal Investigators and Investigators continue to contribute extensively to a growing body of knowledge and understanding, and so many of our trainees are truly up-and-coming stars in the research world. Adding the support of some dedicated and exceptionally bright technical and research staffers, and I have tremendous optimism for the future.

As you can imagine, this is a difficult and complicated task we have set ourselves, and it’s not something we can do alone. We are so fortunate to have the stalwart support of the UBC Faculty of Medicine and the Rick Hansen Foundation. We enjoy fruitful collaborations with research organizations like the Rick Hansen Institute, our partners in the Blusson Integrated Cures Partnership with whom we share a \$20 million grant from the Rick Hansen Foundation over the next decade (please see page 6 to read more about this funding). In addition ICORD enjoys collaborations with more than 300 individual researchers at universities and institutions across the country and around the world. Community partners like Spinal Cord Injury BC continue to support ICORD research and provide our researchers with different perspectives on their work. And our fundraising partners, the Vancouver Cantata Singers, work with us to host our annual *Spinal Chord Galas*, with the sponsorship of some very generous donors.

As Director of such a talented and productive team and with such a foundation of secure and solid support, I am delighted to share this Annual Report with you. I hope you will enjoy reading about our activities this past year. If you would like to know more about any of the stories or information presented here, please do get in touch with me or a member of my staff.

W. Peter Tetlow

Community research partnership

A Physical Activity Research Centre (PARC) for people with SCI opened at the Blusson Spinal Cord Centre in April 2013. PARC is a unique initiative of researchers at ICORD.

“Our vision for PARC was not only to provide an accessible fitness facility for the SCI community, but to provide a platform to bring ICORD researchers and members of the SCI community together as partners in the research process,” said Dr. Tania Lam, ICORD researcher and an Associate Professor at the UBC School of Kinesiology. Dr. Lam and her ICORD colleagues are working with PARC participants to study the effects of physical activity and fitness on people with spinal cord injuries. They hope that the results of this work will help to create improved strategies to increase physical activity participation and to raise awareness about the critical role of exercise in the life-long management of people living with SCI.

Equipment at PARC includes adaptive strength-training machines that can be used directly from a wheelchair, wheelchair-accessible upper and lower body bikes, and GameCycle ergometers that incorporate popular video games for cardiovascular training. Participants use Smart Cards which track their progress and provide raw data for researchers to analyze.

Over the past year, the number of participants at PARC has grown to 76, and more participants are joining every week. In addition to being a state-of-the-art centre for people with spinal cord injuries to work out, PARC also provides valuable hands-on experience for UBC students considering careers in rehabilitation, physio- and occupational therapy, and other SCI-related areas. 68 students have volunteered at PARC since it opened. See icord.org/parc for more information.

Grants from the Canada Foundation for Innovation, BC Knowledge Development Fund and Rick Hansen Institute enabled the purchase of all the equipment at PARC, while funding for three part-time paid staff and operations comes from Spinal Cord Injury BC, HAL Industries, and proceeds from the ICORD-Vancouver Cantata Singers annual Spinal Chord Gala.

2014 Paralympic Clinic

From March 6th to 16th, Dr. Andrei Krassioukov and a team of ICORD researchers were in Sochi, Russia, running a cardiovascular health educational clinic at the Winter Paralympic Games. The team provided important information to athletes and collected data for a study on the cardiovascular and autonomic dysfunctions that put some athletes at a disadvantage during competition.



Katharine Currie, Michele Hubli, Chris West, Peggy Assinck, Andrei Krassioukov

“We tested a total of 22 athletes from 13 different countries,” reports Dr. Katharine Currie, a postdoctoral fellow in Dr. Krassioukov’s lab and part of the clinic team. “There were athletes from alpine and cross-country skiing, curling, and sledge hockey. Of the athletes we tested, one received a silver medal and another won a bronze medal. We saw athletes from Andorra, Argentina, Austria, Belarus, Canada, Czech Republic, Denmark, Finland, Greece, Italy, Poland, Russia, and the USA. We were also fortunate to be able to attend the gold medal sledge hockey game between the USA and Russia, as well as watch some of participants compete in the Men’s Giant Slalom (sitting division).”

The team is working in collaboration with the International Paralympic Committee (IPC) to design a cardiovascular/autonomic classification for paralympic athletes to complement existing IPC classifications that primarily account only for motor dysfunctions. The IPC classification of athletes is a complex and frequently challenging process, but the main goal of the classification is to allow all athletes to compete according to the paralympic values of fair play and honourable sports competition.

A new tool for rehab research

Mustafa Hasan says it was like his “dream coming true” when he put on ICORD’s new Ekso™ Suit in early January and walked. The Ekso is a wearable bionic suit that enables people with limited strength in their legs to stand and walk with a natural gait.

Mustafa suffered a spinal cord injury in 2003 when a bomb exploded near his home in Baghdad. When he moved to Canada, he started rehab at GF Strong Rehabilitation Centre, and learned about the research going on at ICORD from one of his therapists. Since then, he has participated in many research studies. “Each study gives me more knowledge about my body and how to be more fit living with my disability,” he said.

A few years ago, Mustafa was flipping through a magazine and saw some photos of futuristic Japanese bionic suits. “This is when my dream started,” he said. Unfortunately, the suits were prohibitively expensive. Then, in the fall of 2012, he went to a demonstration of an Ekso suit at ICORD, and was excited at the possibility that this new technology might one day be accessible to him. “Even during the demonstration, I was imagining myself already using that suit.”

Fast forward to January of 2014: a brand new Variable Assist Ekso Suit has arrived at ICORD, and Mustafa is asked by ICORD PI Dr. Tania Lam and postdoctoral research fellow Dr. Amanda Chisholm if he would be willing to help them learn to use it.

“I was a bit nervous, but so happy when I first tried the suit,” said Mustafa. Initially he found it hard to balance. “I had to stand the way Ekso wanted me to,” he explained. “It was hard at first, but then I started to understand what I could do with it. My dream is to one day use the Ekso in my daily living, until there is a cure for paralysis.”

Dr. Lam and her research team will be conducting research with the Ekso suit in both variable-assist mode (where the suit helps you walk if you can walk a bit) and full-assist mode (where the suit makes the steps for you), to investigate functions like gait and postural control and other indicators of health outcomes, as well as whether using the suit can affect the quality of someone’s gait pattern, and whether the benefits of using of the suit can translate into other activities of daily living. She expects to start recruiting study participants within the next year.

ICORD is grateful for the support of the Canada Foundation for Innovation, BC Knowledge Development Fund and Rick Hansen Foundation, which enabled the purchase of the Ekso suit.



Tania Lam, Mustafa Hasan and Amanda Chisholm with the Ekso Suit.

Blusson Integrated Cures Partnership: sustainable funding for research

ICORD's cutting edge spinal cord injury research will be accelerated by a 10-year, \$20 million grant from the **Rick Hansen Foundation**, fueling efforts to pursue treatments in the laboratory and to launch clinical trials. The funding, announced in April, 2013, launched the **Blusson Integrated Cures Partnership**, bringing together ICORD and the Rick Hansen Institute to leverage the strengths of each organization to identify new treatments for SCI, and apply existing treatments for other neurological disorders, injuries and diseases to SCI. One of the goals for the partnership will be creating an international network of SCI researchers for pursuing laboratory research and clinical trials, and facilitating participation of people with SCI in clinical trials related to their condition.

"We look forward to increasing collaboration by engaging with people with SCI, research leaders and clinicians so that the most promising discoveries with the best chance of achieving cures will make it out of the labs and into clinical trials," noted ICORD's Director, Dr. Wolfram Tetzlaff. "Then, these results will be applied to people with SCI who can benefit the most from them."

"ICORD's scientists and clinicians have been working on many fronts in the quest to treat spinal cord injury, such as stimulating the re-growth of nerve fibres in the damaged cord, or re-training spared or re-grown nerve fibres through rehabilitation," said Dr. Gavin Stuart, Dean of the UBC Faculty of Medicine and Vice Provost, Health. "We are grateful for this new infusion of support from the Rick Hansen Foundation, and look forward to working closely with the Rick Hansen Foundation and the Rick Hansen Institute on the most effective allocation of funds, and the most promising strategies for bringing our discoveries to patients."

At ICORD, funds will be used to support seed grant programs, international trainee and scholar exchanges, core technical staff and the recruitment of new faculty into ICORD, as well as a translational platform to bring treatments out of the laboratories into clinical trials.

The partnership is named for the Blusson Spinal Cord Centre, home to both ICORD and RHI.

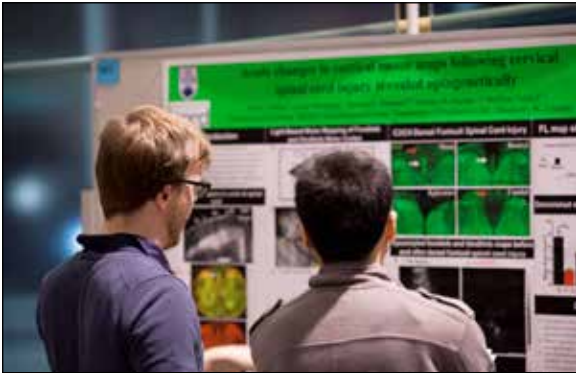


Top: Brian Kwon, Rick Hansen and Wolfram Tetzlaff; Centre: Rick Hansen chats with Resource Centre Volunteer Arnold Cheng; Bottom: the audience at the announcement.

Annual research meeting



ICORD's 11th Annual Research Meeting took place on March 3rd and 4th, 2014, with more than a hundred ICORD and Rick Hansen Institute faculty, students and staff participating. We heard plenary talks by visiting experts, saw more than 30 research posters by ICORD trainees and staff, and learned about the work being done by six ICORD Principal Investigators, two RHI researchers, and two ICORD trainees. We ended the day with an entertaining debate on the topic of the best use of research funding (acute vs. chronic SCI). Plenary talks were presented by Dr. Jerry Silver, Professor, Department of Neurosciences, Case Western Reserve University (Functional regeneration beyond the glial scar) and Dr. Monica Perez, Assistant Professor, Physical Medicine & Rehabilitation, University of Miami School of Medicine (Corticospinal reorganization after SCI). ICORD Research talks were presented by Drs. Piotr Kozlowski, Marcel Dvorak, Cheryl Wellington, Carolyn Sparrey, Corree Laule and David Whitehurst. RHI Research talks were



presented by Christiana Cheng and Lise Belanger, and ICORD Trainee talks were presented by Eli York and Ryan Hartwell (for Malihe Pourmasjedi).

Our 2014 Annual Research Meeting was supported by funding from the Rick Hansen Foundation.



Top: Dr. Silver's plenary lecture; Centre: poster session; Bottom: trainee and staff poster award winners (L-R) Tim Bhatnagar, Neda Manouchehri, Jacqueline Cragg, Femke Streijger, Jackie Soicher, Kitty So, Jordan Squair, Amanda Chisholm, Raza Malik, Yunyuan Li, Domink Zbogor

Community research meeting

There was a full house at the first ever Community Research Meeting on March 2nd, presented by the Rick Hansen Institute in partnership with ICORD and SCI-BC. This free public event, webcast by SCI-BC, featured Dr. Jerry Silver, Professor of Neuroscience at Case Western Reserve University in Cleveland, OH (who was in town to give a plenary lecture at ICORD's Annual Research Meeting). Dr. Silver spoke about his interest in studying chronic SCI. During his hour-long talk, Dr. Silver discussed research that has shown that nerve fibres don't actually die after SCI, but that they are prevented from growing back across the glial scar at the injury

site due to a number of possible reasons: the presence of molecules that inhibit growth, or, in particular, the presence of proteoglycans (discovered by his research team). Dr. Silver spoke about potential solutions, including his new pharmacological treatment to overcome inhibition by proteoglycans that he is currently testing with promising results in chronically injured rats in his laboratory. His talk was followed by a lively discussion.





A few of our awesome PARC volunteers

One hundred thanks

Over the past year, 68 people have volunteered their time to help at our Physical Activity Research Centre (PARC) and 32 people have volunteered at our Community Resource Centre. PARC volunteers are generally undergraduate students in Kinesiology; Resource Centre volunteers are current and former UBC students, retired people and other members of the community. Volunteers typically worked one 2-hour shift per week, which means that ICORD was the very fortunate recipient of more than 10,000 hours of friendly, enthusiastic help. A huge and heartfelt thank you to:

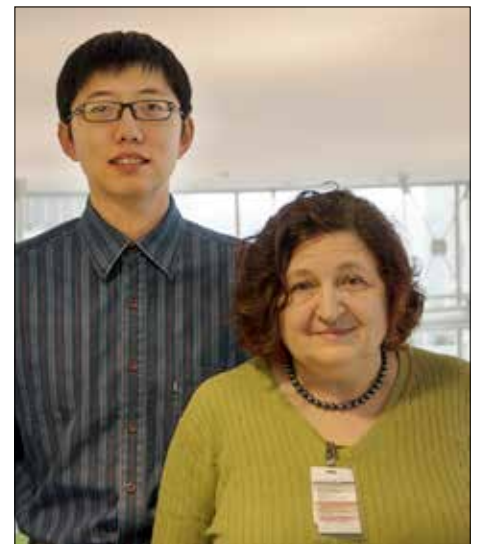
Sebastian Akl	Zoe Fettig-Winn	Reanne Li	Stephanie Shea
Amy Baatz*	Olivia Fisher	Ruth Lin	Sylvie Sherrin
Emma Beatie	Melissa Garcia	Sean Ling	Clara Shih
Emily Brewer	Amanda Giacomazza	Lisa Liu	Takami Shirai
Eric Busto	Jasdeep Grewal	Jerome Louie	Kristina Smith
Florence Chan	Allan Guan	Scott Lum-Tong	Marney Smithies
Vito Chan	Sycene Hakobyan	Sobhan Marden	Christine Thomas
Jinelle Chang	Mustafa Hasan	Nataliya Minenok	Stephan Veasey
Bauerjit Kaur Cheema	Nejat Hassen	Saba Mohebpour	Alison Williams
Anthony Chen	Brian Hayes	Arvinder More	Jessica Wong
Joshua Chen	Natalie Hirayama	Jazz Morgan	Rokin Wong
Abhiram Cherukupalli	Ashley Hultman	Mariah Moti	Wesley Wong
Walden Cheung	Jeremiah Humphries	Aliyah Muniff	Maggie Woodward
Ivan Chiu	Peter Isherwood	Mae Murray	Shevi Wosk
Tyler Chong	Sara Jalali	Sarah Najafabadi	Daphne Xuan
Arnold Chung	Sharon Jang	Gwyn Narayan	Ting-Huan Yeh
Rachel Cote	Anthony Janolino	Ashley Oh	Ethan Yeung
Jack Cubbon	Nadine Kallas	Maddy Paterson	Catherine Yip
Kirstina Cukic	Leila Karimi	Carly Peterson	Kayleigh Youngman
Gurpreet Dhanda	Jessica Kaylan	Jennifer Pisarek	Donald Yu
Nikhita Dogra	Naima Kotadia	Holly Potozny	Cindy Yu
Emily Evans-Galeski	Laura Kwun	Shaolin Rahman	Ethan Yueng
Parsa Farah Josteh	Noel Lai	Cynthia Ruan	Christine Zawadzki
Ali Farrokhi	Jennifer Li	Lisa Ruggles	Ian Zhu.
Damian Feldman-Kiss	Mackenzie Li	Patrick Rushton	*volunteered for both

Star staff

Congratulations to Yuan Jiang and Elena Okon, who won the *Spinal Chord Awards for Staff Excellence* for 2014. Supported with funds raised at the annual *Spinal Chord* gala, these awards celebrate the work done by ICORD staff. Two awards, one for Service Excellence and one for Research Excellence, are presented annually.

Dr. Elena Okon of the Kwon Lab won the award for research. "Elena is a wonderful resource in our lab," said one of her colleagues. "She loves to engage students in conversations of science and research, and this greatly enriches their learning experience. Her extensive science background also means she can provide our data interpretation with fresh perspectives and insights, linking together different areas of research and creating a richer scientific conversation."

Discovery Science research assistant **Yuan Jiang** won the award for service. "Yuan is famous for having the best cryostat technique at ICORD, and finds innovative solutions to problems in both histology and data analysis," said his manager. "Everyone who works with him has been impressed with his dedication. He has taken on many jobs and projects on his own time just because he sees a need."



BSCC turned 5!

On November 19th, 2013, we celebrated five years of operation in the state-of-the-art Blusson Spinal Cord Centre. Members of the community joined ICORDians, RHI staff, and clinicians from the

Brenda & David McLean Integrated Spine Clinic for presentations, displays and guided tours of the building. It's hard to believe we've been here for five years; the building still feels like our "new" home.

Photos (clockwise from top right): visitors listen to talks; PARC participant John Chernesky talks about the positive impact ICORD has had on his life; Dr. Katharine Currie explains her ICORD research to visitors; Derek Lunden demonstrates PARC equipment to a visitor.



Trainee symposium

The ICORD Trainee Committee organized and hosted their third successful Trainee Symposium in May, 2013 with plenary lectures by Dr. Samuel David of McGill University and Dr. Chet Moritz of the University of Washington. The visiting speakers and other invited guests also presented workshops on topics important to trainees, including how to obtain the perfect post-doc or faculty position, the art of publication, and tricks to finding sustainable funding. 73 trainees and 6 faculty members participated in the meeting. Organizing committee members for the 2013 symposium were Dr. Chris West (Krassioukov Lab), Simon Bedard (Ramer Lab), and Brett Hilton (Tetzlaff Lab).

The 2013 ICORD Trainee Symposium was supported by funding from the Rick Hansen Foundation.

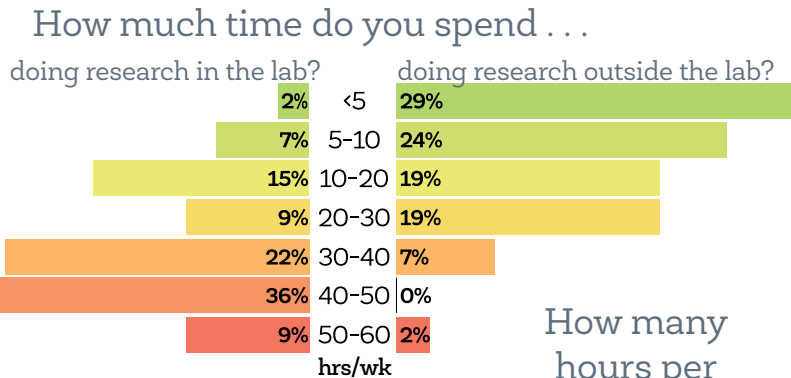
Seminar series

ICORD was pleased to present seminars by the following guest speakers in 2013-14: Dr. Yong Hu, University of Hong Kong; Dr. Binhai Zheng UC San Diego; Dr. Scott Whittemore, University of Louisville; Dr. Brian MacVicar, UBC; Dr. Mats Svensson, Chalmers University of Technology, Goteborg, Sweden; Dr. Stephen Sprigle, Georgia Institute of Technology; Dr. Ajmal Zemmer, Brain Research Institute, Zurich, Switzerland; Dr. Babak Shadgan, UBC; Drs. Piotr Kozlowski & Andrew Yung, UBC.

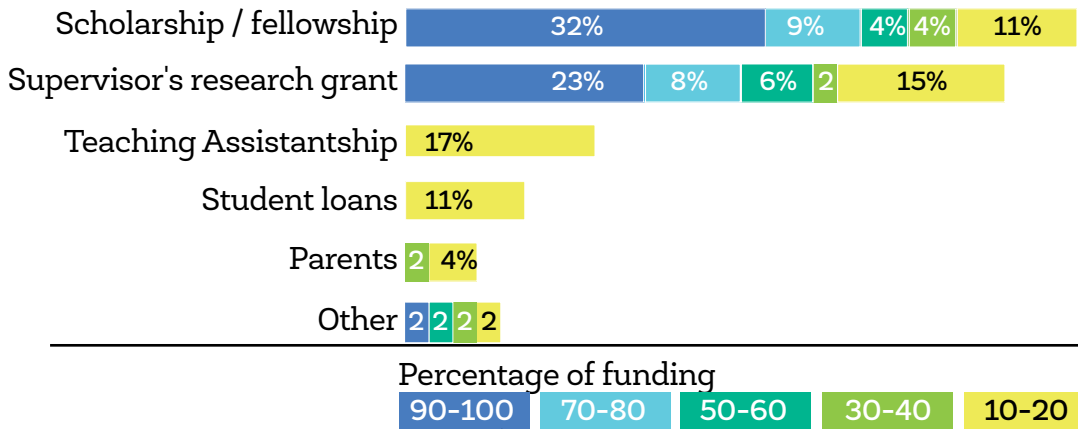
The 2013-14 ICORD Seminar Series was supported by funding from the Rick Hansen Foundation.

What's it like to be an ICORD Trainee?

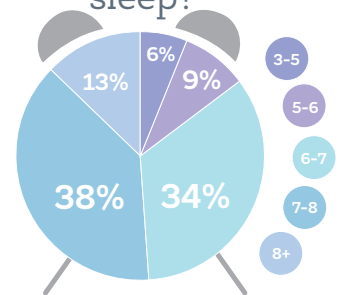
Trainees do a lot around ICORD: mostly they do their own research and work on projects with their supervisors, but they also find time for many other responsibilities. A dedicated group of trainees forms the ICORD Trainee Committee which organizes a variety of research-related and social activities throughout the year. We asked trainees to tell us all about themselves, and their answers are pretty interesting! For complete survey results, visit icord.org.



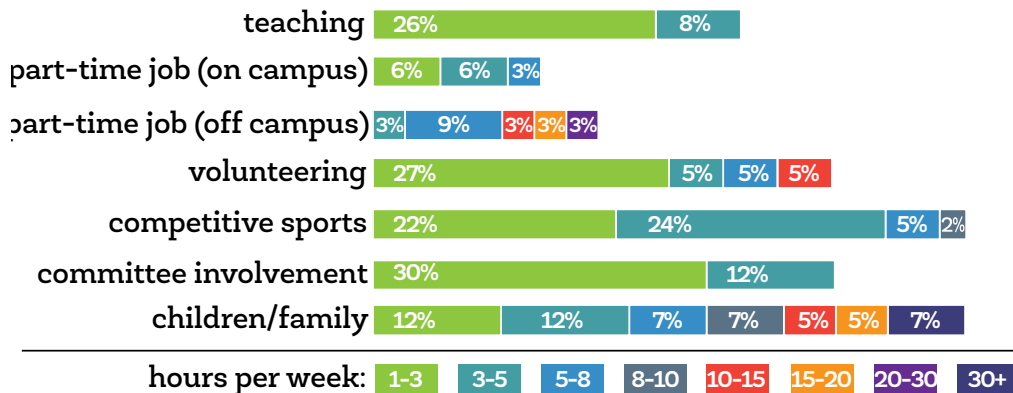
How are you funded?



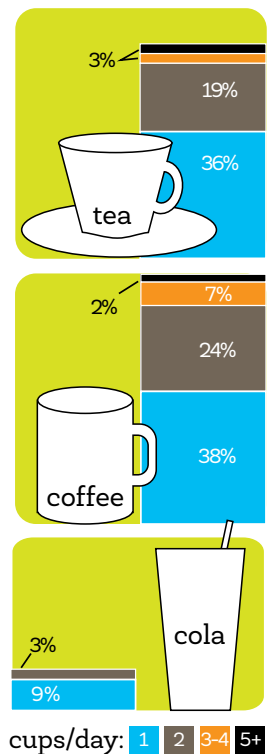
How many hours per night do you sleep?



What are your other commitments & responsibilities?



What keeps you awake?



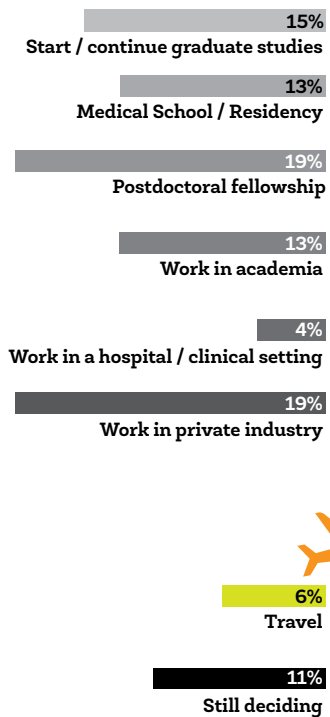
What are you studying?

Biology; Biomedical Engineering; Chemical Engineering; Exercise Science, Physical and Health Education; Experimental Medicine; Kinesiology; Mechanical Engineering; Medical Physics; Medicine; Neuroscience; Pediatrics; Psychology; Rehabilitation Sciences; Population and Public Health; Zoology

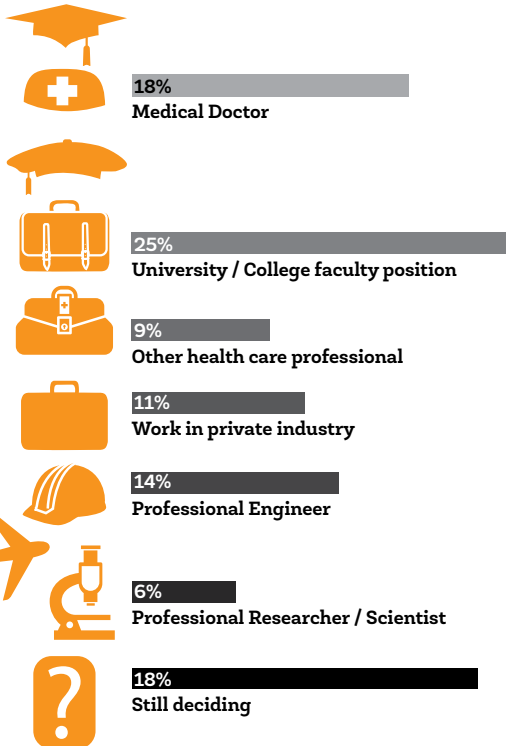


What do you want to do . . .

as soon as you finish your current program?



for your career?



What do you like best about being an ICORD trainee?

This is a great atmosphere for us, with a great group of trainees, and really supportive staff and faculty.

Lots of opportunity for community, collaboration and continued education.

What's your greatest challenge as an ICORD trainee?

Finding enough research participants

Getting in the research mindset (finding the problems as well as the solutions)

Catching up on all the biochemistry that we didn't learn in our mechanical engineering undergrad degrees.

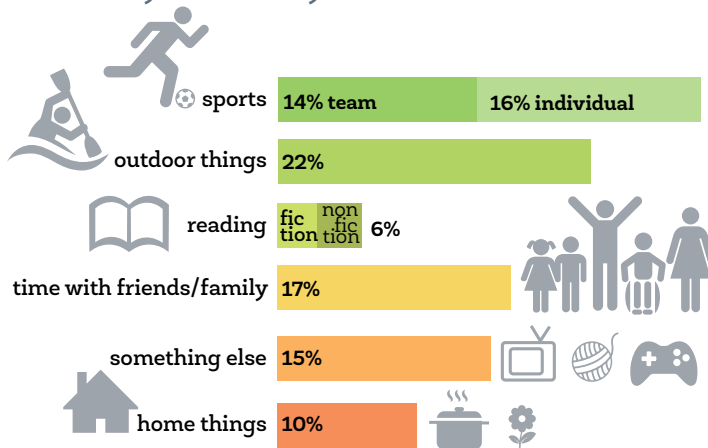
What is one piece of advice you wish you had received before starting graduate studies?

Grad school is not like 'getting paid to go to school'!

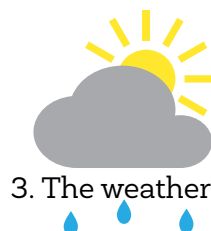
Make a plan right from the beginning.

Take ownership over your degree. It's yours, not your supervisor's.

What do you do in your free time?



What's the best thing about working in BC?



New Researchers

ICORD welcomed four new Principal Investigators in the past year:

“It’s only been a short while since we moved but we are already enjoying the wonderful research environment within this modern facility.”
- Ipec Oruc

“I love being a member of ICORD. I was able to attract one of my current Masters students solely through being an ICORD member.”
- Miriam Spering

“The diversity of ICORD is the foundation of its strength and excellent reputation as a world class clinical and research spinal cord centre. In addition to the excellent research activities and opportunities associated with ICORD, I am also attracted by the strong sense of community that is present within the building and among its members.”
- Cornelia Laule

“I am a new member of ICORD, which reflects the growing productivity of my research on TBI, made possible through my collaborative work with Peter Cripton. Although TBI and SCI have long been considered separate entities, the model that we have established may well be able to produce a unique model of combined TBI/SCI.”
- Cheryl Wellington

Dr. Ipec Oruc and **Dr. Miriam Spering** and their Neuroscience of Vision and Action (NOVA) lab moved into to the Blusson Spinal Cord Centre in the summer of 2013. Drs. Oruc and Spering are both faculty members in Ophthalmology and Visual Sciences at UBC. Dr. Oruc’s research focuses on understanding the brain mechanisms behind higher-level vision, with an emphasis on face and word-form recognition, and aims to bridge the gap between basic science and clinical applications. Dr. Spering investigates how the brain uses visual information to control movements in humans, as well as various disease models and their impact on vision and the related motor responses ranging from schizophrenia to Parkinson’s disease, and most recently, SCI.

Drs. Spering and Oruc were among eighteen UBC researchers to receive more than \$1.8 million in combined funding from the Canada Foundation for Innovation’s John R. Evans Leaders Fund.

Dr. Cornelia Laule is a physicist interested in how tissue structure and changes that happen during damage from injury or disease influence MRI contrast in the brain and spinal cord. She was appointed as an Assistant Professor in the UBC Department of Radiology and joined ICORD as a PI in 2013. Before becoming a UBC faculty member, she was a postdoctoral fellow with ICORD PI Dr. Wayne Moore.

Dr. Cheryl Wellington is a Professor in the UBC Department of Pathology and Laboratory Medicine. She studies genetics and health, as well as developmental neuroscience and traumatic brain injury (TBI). Her work in studying genes that are involved in regulating cholesterol metabolism (which has been shown to play a major role in Alzheimer’s disease) is of high significance to people suffering from dementia. Her work on cholesterol metabolism may be applied to therapeutic applications for individuals suffering from neurological diseases. She collaborated with Dr. Peter Cripton to develop a novel model for TBI that mimics mild to severe concussions such as those that occur in sports. The relationship between TBI and Alzheimers disease has become particularly relevant to aging professional athletes.

ICORD's Researchers

ICORD Principal Investigator	Position	Research Interests
Dr. Gary Birch	Executive Director, Neil Squire Society; Adjunct Professor, Electrical & Computer Engineering, UBC	Robotic control systems, EEG signal processing, digital signal processing, human-machine & brain-computer interface, biological signals, biological systems, assistive technology, accessible wireless technology, real-world application design for persons with disabilities
Dr. Paul Bishop	Clinical Associate Professor Orthopaedics, UBC/VCHRI	Clinical trials; nerve root injury; outcome measures; pain; quality of life
Dr. Jaimie Borisoff	Canada Research Chair in Rehabilitation Engineering Design Applied Research, BCIT	Accessibility; mobility; rehabilitation; sensory substitution; wheelchair design
Dr. Victoria Claydon	Assistant Professor, Biomedical Physiology & Kinesiology, SFU	Cardiovascular health; fainting; high altitude
Dr. Peter Cripton	Associate Professor & Patrick Campbell Chair in Design Mechanical Engineering, UBC/VCHRI	Concussion; helmet performance; hip injury; injury biomechanics; injury prevention; orthopaedic biomechanics; pre-clinical trials; spine trauma
Dr. Marcel Dvorak	Professor & Head, Div. Spine, Orthopaedics, UBC/VCHRI/VCH	Arthritis; outcome measures; traumatic SCI; translational research; clinical outcomes; surgical spine techniques; health systems research
Dr. Stacy Elliott	Clinical Professor, Psychiatry & Urologic Sciences, UBC/VCHRI; Medical Director, BC Ctr for Sexual Medicine; Medical Consultant, Sexual Health Rehabilitation Services, VCH	Autonomic dysreflexia; fertility; sensory substitution; sexual rehabilitation; brain neuroplasticity post SCI
Dr. Janice Eng	Professor, Physical Therapy, UBC/VCHRI, GF Strong	Clinical trials; knowledge translation; occupational therapy; physical therapy; stroke; rehabilitation;
Dr. Sue Forwell	Associate Professor, Occupational Science & Occupational Therapy, UBC / VCHRI / VCH	Chronic disease; fatigue; occupational therapy; pain; rehabilitation
Dr. Aziz Ghahary	Professor, Surgery / BC Professional Fire Fighters' Burn and Wound Healing Lab; Associate Member, Dermatology and Skin Science, UBC / VCHRI	Cell transplantation; diabetes; scaffolds; skin substitute; wound healing
Dr. Tom Grigliatti	Professor, Life Sciences Institute, Zoology; Assoc. Member, Medical Genetics; Member, Pharmaceutical Sciences, UBC	epigenetics and chromatin remodeling; genomic position effects; functional genomics; pharmacogenetics & pharmacogenomics of adverse drug responses and drug efficacy; proteomics and SCI; pain receptors and signaling
Dr. Andy Hoffer	Professor, Biomedical Physiology & Kinesiology, SFU	diaphragm pacing
Dr. Sandra Hundza	Associate Professor, Exercise Science, UVic	Aging; ambulation; balance; locomotor training; neural control of human movement, neural plasticity

Dr. Piotr Kozlowski	Associate Professor Radiology; Urologic Sciences UBC/VCHRI	Diagnosis; MRI; myelin; plasticity; prostate cancer
Dr. Andrei Krassioukov	Professor, Physical Medicine & Rehab, UBC/VCHRI/VCH	Autonomic dysreflexia; cardiovascular health; knowledge translation; locomotor training; sexual rehabilitation
Dr. Brian Kwon	Professor, Div. Spine, Orthopaedics, UBC/VCHRI/VCH	Biomarkers; clinical trials; neuroprotection; spine surgery; translational research
Dr. Tania Lam	Associate Professor, Kinesiology UBC / VCHRI	Ambulation; locomotor training; outcome measures; plasticity; robotics; walking/locomotor control; locomotor adaptability & plasticity
Dr. Corree Laule	Assistant Professor, Radiology, Pathology & Laboratory Medicine, UBC	MRI; myelin; neurodegeneration; pathology
Dr. Bill Miller	Professor, Occupational Science & Occupational Therapy, UBC/VCHRI	Aging; fatigue; mobility; self-efficacy; wheelchair
Dr. Patricia Mills	Clinical Assistant Professor, Medicine UBC / VCHRI / VCH	Autonomic dysreflexia; cardiovascular health; clinical trials; non-traumatic SCI; traumatic SCI
Dr. Wayne Moore	Clinical Professor, Pathology and Laboratory Medicine, UBC/VCHRI	MRI-pathology, high-resolution MRI of human spinal cord
Dr. Ben Mortenson	Assistant Professor, Occupational Science & Occupational Therapy, UBC / VCHRI	Accessibility; aging; assistive technology; mobility; outcome measures; quality of life
Dr. Mark Nigro	Clinical Professor, Urology, UBC / VCHRI; staff physician, VCH	Infertility; organ transplantation
Dr. Ipek Oruc	Assistant Professor, Ophthalmology, UBC / VCHRI	Facial recognition; psychophysics; visual perception
Dr. Tom Oxland	Professor, Orthopaedics & Mechanical Engineering, UBC	Aging; mechanical testing; orthopaedic biomechanics; rehabilitation; surgical implants
Dr. Scott Paquette	Clinical Assistant Professor, Div. Spine, Orthopaedics, UBC/VCHRI; Neurosurgeon, VCH	Pain
Dr. Matt Ramer	Associate Professor, Zoology & Neurosurgery, UBC / VCHRI	Pain; plasticity; regeneration; sensory neurons; sympathetic neurons; SCI
Dr. Bonita Sawatzky	Associate Professor, Orthopaedics UBC / VCHRI	Fatigue; mobility; segway; tire pressure; wheelchair propulsion biomechanics; wheelchair skills, spasticity, crutch gait
Dr. Carolyn Sparrey	Assistant Professor, Mechatronic Systems Engineering, Engineering Science, SFU	Patient specific technologies, SCI mechanics, SCI models, finite element methods, cost effective healthcare technologies
Dr. Miriam Spering	Assistant Professor, Ophthalmology, UBC / VCHRI	Eye movements; eye-hand coordination; perceptual- motor; visual perception
Dr. John Steeves	Professor, ICORD UBC / VCHRI	Arm and hand rehabilitation; clinical trials; myelin; outcome measures; plasticity
Dr. Lynn Stothers	Professor, Urologic Sciences UBC / VCHRI / VCH	Neurogenic bladder; urodynamics, urinary tract infection, near infrared spectrography (NIRS)
Dr. John Street	Assistant Professor, Div. Spine, Orthopaedics, UBC/VCH / VCHRI	Helmet performance; injury prevention
Dr. Wolfram Tetzlaff	Professor and Director ICORD, Zoology & Surgery, UBC/VCHRI	Cell transplantation; diet; myelin; neuroprotection; regeneration

Dr. Darren Warburton	Professor, Kinesiology & Experimental Medicine, UBC	Cardiovascular health; Chronic disease; Clinical exercise rehabilitation; Rehabilitation; Sport cardiology, High Performance Physiology, SCI
Dr. Cheryl Wellington	Professor, Pathology and Laboratory Medicine, UBC	Traumatic brain injury (TBI), injury models
Dr. David Whitehurst	Asst. Professor, Health Sciences, SFU	Health economics
Dr. Stephanie Willerth	Assistant Professor & Canada Research Chair in Biomechanical Engineering, Mechanical Engineering & Medical Science, UVic	Biomaterials; regeneration; scaffolds; stem cells; tissue engineering; neuroscience; SCI
Dr. Paul Zehr	Professor & Director, Rehabilitation Neuroscience Laboratory & Centre for Biomedical Research, UVic	Neural control of locomotion, neural plasticity, neurorehabilitation

ICORD Investigator

Position

Research Interests

Dr. Hugh Anton	Clinical Professor, Physical Medicine & Rehab, UBC/VCHRI/GF Strong	Community involvement; fatigue; outcome measures; quality of life; rehabilitation
Dr. Mark Carpenter	Associate Professor & Tier II CRC, Kinesiology, UBC	Balance; EEG; falling; fear; postural control
Dr. Anita Delongis	Associate Professor, Psychology, UBC	Chronic disease; coping; mental health; social support; stress
Dr. Tal Jarus	Professor & Head, Occupational Science & Occupational Therapy, UBC/VCHRI	Locomotor training; mental health; occupational performance
Dr. Tim O'Connor	Professor, Cellular and Physiological Sciences, UBC	Developmental neuroscience, plasticity, neurodegeneration
Dr. Jane Roskams	Professor, Zoology & Neuroscience, UBC/VCHRI	Neural development; olfaction; regeneration
Dr. Bill Sheel	Professor, Kinesiology, UBC	Cardiovascular health; rehabilitation; respiration; sport cardiology; exercise
Dr. Andrea Townson	Clinical Associate Professor & Head, Physical Medicine and Rehabilitation, UBC/VCHRI; Medical Site Lead, GF Strong	Community involvement; fatigue; high tetraplegia; non-traumatic SCI; outcome measures; high lesion injuries and ventilator dependency; medical education

How to keep in touch:

In the fall of 2013, ICORD launched a new community-focussed quarterly newsletter. The *ICORDian* includes stories about ICORD research, people and events, and also shares news from other organizations like the Rick Hansen Institute and SCI-BC. The newsletter is sent to subscribers and is also available on the ICORD web site.

Read past issues here: icord.org/about/newsletters/ and subscribe to have future issues delivered to your email inbox.

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COMMUNITY NEWSLETTER

Spinal Chord Gala: our 5th successful year



The 2013 Spinal Chord Gala on November 2nd, 2013, was great fun, with about 240 sparkling guests enjoying wonderful music from the Vancouver Cantata Singers and the Capilano College Jazz Quartet in the spectacular and beautifully-decorated atrium of the Blusson Spinal Cord Centre. The event raised almost \$40,000 in support of ICORD and the Vancouver Cantata Singers. Presented by Medtronic and supported by a long list of very generous sponsors, this annual interdisciplinary event celebrates the achievements and objectives of our two internationally recognized organizations, and gives us the opportunity to come together and identify common ground and shared perspectives in our varied pursuits. As far as we know, no other partnerships between arts and research organizations like this exist in the province. With the exception of specific cash donations, all funds generated by this event are split equally between both organizations.

The 6th Spinal Chord Gala will take place on Saturday, November 1st. Tickets available online or in person at the ICORD Admin Office. See spinalchordgala.com.

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Thank you for reading our 2013-14 Annual Report.

Contributors: Cheryl Niamath, Lowell McPhail, Matt Sahl, Clarice Kwok, J. Evan Kreider, Martin Dee.

Printing: EastVan Graphics.

For additional copies of this report or any other ICORD publication, please call 604-675-8844 or email admin@icord.org.

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