Looking at this Fall semester, there is much to be proud of for the BPK Department

Congratulations to Dr. Andy Hoffer on his report regarding the significant recent announcement from Lungpacer Medical, Inc. (story on p. 4)

Congratulations to Dr. Miriam Rosin and Catherine Kang, PhD student, on their cancer research news about a groundbreaking method to identify and separate stem cells that reside in the tonsils. (p. 2)

On November 13th, 2015 BPK celebrated Dr. Josephine Anthony at a Retirement Reception in her honour. To say that Josephine will be missed is an understatement. Her contribution of 35 years of teaching anatomy in the BPK Department has had a huge impact on the programs that we deliver.

I have known Dr. Josephine Anthony for more than 30 years. Her indefatigable approach to her students and the important courses that she taught were so impressive to me. The impact that she's had on all her students, particularly those going on to professional health schools has been unparalleled. We are losing an icon of professional health schools has been the BPK Department say goodbye and best wishes in retirement. (see p. 3)

Congratulations to two Kinesiology student-athletes who were selected to the 2015 GNAC All-Academic Men’s and Women’s Soccer teams: Brandon Watson who topped the list and Olivia Aguiar, selected for the second straight year. (story on p. 4)

I am personally delighted to highlight Brent Bishop, in the Inspiring Alumni section below (p. 2). BPK is enriched by reports of such achievements by our alumni. We appreciate you keeping in touch with us about your career updates and other achievements.

Glen Tibbits, Chair

Dr. Andy Hoffer reports the following recent Lungpacer Medical, Inc. announcement.

Lungpacer Medical, Inc. Announces Start of First-in-Human Early Feasibility Trial

BURNABY, British Columbia, October 21st, 2015 /PRNewswire/ -- Lungpacer Medical, Inc., a medical device company developing an intravenous catheter-based phrenic-nerve-pacing system, announced today the enrollment of the first patients in the Phrenic Activation for Enhanced Respiration (PACER) early feasibility trial. To date, five patients have been successfully tested in the company's First in Human (FiH) feasibility trial.

The PACER feasibility study was designed to determine initial safety and early feasibility of the Lungpacer IntraVenous Electrode (LIVE) Catheter and the diaphragm pacing method. Initial results are encouraging as the Lungpacer system demonstrated good functionality including the ability to reduce the mechanical ventilator pressure required to deliver breaths to the patients, consistent with the company's pre-clinical data.

"We are excited about the initial results from the PACER early feasibility study, which supports the potential for Lungpacer's novel therapy to help critically ill patients that are susceptible to ventilator induced diaphragm dysfunction and ventilator induced lung injury," said Dr. Steven Reynolds, MD, Regional Medical Director of Critical Care - Fraser Health Authority.

"Our team is thrilled with the initial outcomes from our FiH trial. Mechanical ventilator patients can struggle with regaining the ability to breathe independently following extended illness, and we look forward to exploring the potential for the LIVE Catheter to help these individuals regain the ability to breathe independently faster," commented Doug Evans, President and CEO.

Update: In November Lungpacer enrolled 7 more patients with similar results.

About Ventilator-induced Diaphragm Atrophy and Lung Injury

Mechanical ventilation (MV) can be life-saving for many critically ill patients. However, MV can also be harmful to the patient as continued MV and sedation interrupt the normal activation of the diaphragm muscle, which then atrophies rapidly and profoundly (known as Ventilator Induced Diaphragm Dysfunction; VIDD). In addition, positive-pressure invasive ventilation can damage the lungs (Ventilator Induced Lung Injury; VILI) and is associated with Ventilator-Associated Pneumonia (VAP).

VIDD, VILI and VAP are key contributing factors to the frequent difficulty in weaning patients from the ventilator. About 31% of patients on MV are categorized as 'difficult to wean' and approximately 10% require prolonged weaning periods greater than seven days. These patients alone account for 40% of total ICU patient-days and become the most expensive in-patients in North American hospitals. When a critically ill patient becomes ventilator-dependent, the risk of dying in the ICU increases seven-fold.

About Lungpacer Medical, Inc.

Lungpacer Medical is a clinical stage medical device company pioneering the development of neurostimulation systems designed to preserve the integrity and strength of the diaphragm muscle and reduce complications in critically ill patients who require mechanical ventilation. The proprietary Lungpacer system is designed to activate the diaphragm using a temporary, minimally invasive, transvascular nerve stimulation approach that is expected to save many lives, improve patient outcomes and greatly reduce hospital care costs. The
INNOVATION was a conversation that will include thought leaders from health research & innovation, academia, industry and government as well as key individuals in the life science sector from across the country. The conversation was about therapeutic innovation improving healthcare and contributing to British Columbia’s knowledge-based economy.


New research opens door to understanding tonsil cancer

Researchers at Simon Fraser University and the BC Cancer Agency have developed a groundbreaking method to identify and separate stem cells that reside in the tonsils. Their research, which sheds new light on the fight against oral cancer, is published today in the journal Stem Cell Reports.

While stem cells in many other body tissues have been well studied, little is known about these stem cells, says researcher CATHERINE KANG, a PhD student in the Department of Biomedical Physiology and Kinesiology and lead author of the paper. Ninety per cent of human tonsil cancers show evidence of HPV (human papillomavirus) infection. But little is known about its role in causing these cancers. Researchers suspect it is a key player, as HPV is the major risk factor for cervical cancer.

Kang, who is working with BPK professor MIRIAM ROSIN, Director of the BC Oral Cancer Prevention Program, and UBC professor Connie Eaves of the Terry Fox Laboratory, was interested in finding out why the tonsil is particularly susceptible to HPV and wondered if it might have something to do with the stem cells of the tissue that coats the tonsils. When she purified these cells and made them incorporate a cancer-causing gene normally transmitted by HPV, the cells grew abnormally in a special tissue culture system, and created what one might imagine the beginning stages of human tonsil cancer would look like.

“This is a very exciting finding, as it is the first stage of human cancer development that researchers need to learn how to detect and eliminate,” says Kang. The study shows how it can now be done and then studied in a petri dish using cells isolated directly from human tonsils.

Cancer of oropharynx, or the tonsils in particular, is an important health concern with rising incidence worldwide, especially in men. The researchers, including DR. RAJ KANNAN of the BC Cancer Agency’s Terry Fox Laboratory, say this new method will now allow these next steps to go forward, not just here but around the world, to stop this global trend in its tracks.

This work was supported by grants from the Canadian Cancer Society Research Institute, the Canadian Cancer Research Society and the B.C. Foundation.

Lungpacer Diaphragm Pacing System is at this time an investigational device only and is not for sale in any country.


Welcome to DR. KIM VAN SCHOOTEN, Postdoctoral Fellow in the Injury Prevention and Mobility Lab (DR. STEPHEN ROBINOVITCH, Supervisor). From The Netherlands, Kim’s previous research focused on ambulatory assessment of gait stability and physical activity in older people to support timely identification of those at high risk for falls. At SFU and at the Centre for Hip Health and Mobility (CHHM) at VGH, she will focus on balance recovery and protective responses after imbalance to reveal targets for the prevention of (injurious) falls.

DR. DAVE CLARKE reports that the Laboratory for Quantitative Exercise Biology presented four posters in this year’s Canadian Society for Exercise Physiology conference (Hamilton, Ontario; October 14-17, 2015):


2) COLLINS, KJ, CLARKE, DC. A meta-analytic approach to estimate the effect of exercise intensity prescription method on the inter-individual variability in exercise training responses.

3) McCOLL, TJ, CLARKE, DC. Can the cardiovascular and metabolic adaptations to exercise be independently controlled? A systematic review and meta-analysis.

4) COCCIMIGLIO, IF, CLARKE, DC. Mathematical modelling of adenine-nucleotide regulation of AMP-activated protein kinase during skeletal muscle contraction.

DR. BILL ROSS, Emeritus, reports Rosscraft Demonstrators were invited to present at the American College of Sport Medicine, San Diego, CA (May 26-30, 2015). This was their 16th annual appearance since 1999.

Healthcare R & D and Medical Innovation forum to generate important conversation between R&D, academia, industry and government

DR. DIANE FINEGOOD was a guest speaker at this event. A compelling and critical conversation took place over a two-day period in Vancouver, BC, October 14 – 15, 2015. LifeSciences BC's ACCESS TO
Bishop dedicates his time and energy to inspire himself.

Why did you choose to go to SFU?
I initially wanted a career in forensics so I entered SFU based on the reputation of the Criminology program.

Who was your favorite SFU professor and why?
Glen Tibbits, cardiac physiology – he was extremely knowledgeable and I think what made it a great experience for me most of all was his ability to get the curriculum across to the students. I found his teaching style amazing.

Where did you spend the most amount of time on campus?
I spent most of my time in the sciences wing when I was studying but also spent time in the trails around campus running to de-stress and get in some exercise.

Do you have a favourite snow memory?
Getting stuck on the hill on the way up to campus. Not much to it but at the time it was stressful!

How have you used your SFU degree in your career?
I think my Kin degree from SFU has provided me with an amazing basis for what I do now as a fitness expert. The foundation it has provided me in terms of human physiology and understanding the body is amazing.

Additionally, SFU is not an easy university and some of the courses and workload were a challenge. I do believe that my degree provided an additional benefit of enhancing my work ethic, organization and determination.

If you could give advice to students today, what would you tell them?
Enjoy the process and always follow your interests. I began in Criminology for almost 2 years and was always drawn more to toward the science aspects of the program and how the human body worked. This realization led me to commit to the Kin program.

What is the one thing about SFU that must not change?
Speaking from my experience in the Kin program, the attention to detail towards the science aspect of the degree and the expectations required should remain high as the end result is worth it.

On November 13th, 2015 friends and colleagues of Dr. Josephine Anthony met in the Thompson-Fraser Room of the Diamond Alumni Centre to celebrate her recent retirement. Dr. Angie Brooks-Wilson presented the Chair’s words, and Dr. Richard Ward was the MC.

It was a time of reminiscing and words of appreciation for all that Josephine has contributed to the department over her 35 years.

We enjoyed great food, and a fun slideshow.

These events can also prove to be very enlightening! Tributes were given by several guests. One person talked about how years ago his sister had taken Josephine’s anatomy class and now his son is taking the same great class.

Another told of how a doctor at VGH who was a chemistry major said that of all the classes he took, the anatomy class taken with Josephine was the best. It was noted how Josephine was very active in several Science in Action events and also gave a lot of her time giving tours of the anatomy lab.

One guest became too emotional to continue when saying that Josephine is very caring, evidenced by her desire to have money for a gift donated to Operation Eyesight. (Total raised for Operation Eyesight was $650!) A former student and TA, said that rapport between him and Josephine continues to be very good, and that she was willing to give advice on everything, including showing concern for his family.

Twice it was noted how her jokes in class made learning anatomy easier to take!

A faculty member who had seen Josephine’s diagrams for her published book noted they were “beautiful diagrams” adding she knows how much time it takes to do these.

A faculty member said with great relief that if Josephine hadn’t been hired to teach anatomy, he would have had to do it! 😊
How well do you know Josephine? Did you know her painting below was chosen for SFU’s Faculty/Staff/Students art show in November/December 1998?

https://www.youtube.com/watch?v=NtIUozXIP5g Check out her favourite song 😊

Dr. Anthony has been a dedicated instructor at SFU for 35 years, teaching courses in gross anatomy, histology, and neuroanatomy (KIN/BPK 326, 336, 325C, and 426), plus many labs for medical, dental and physiotherapy students. She is consistently praised by for her rigour and fairness. Thank-you notes sent once in medical school show that students fully appreciate the quality and content of her teaching.

In 2011 Dr. Anthony published a book titled, Illustrated Review of Neuroanatomy 3 Dimensional Perspective, 2nd Edition, SFU. It was recognized by the Celebration of SFU authors in March 2011.

Dr. Anthony has participated in graduate and undergraduate supervision, for an MSc thesis and for undergrads completing 496 and 498 Directed Studies projects.

Dr. Anthony served on several faculty search committees, FS safety committees (HazMat and Harassment contact), and conducted lab tours for various events such as SFU Science Day and Science in Action.

The Dr. Josephine Anthony Endowment Fund was established in 2015 with a generous gift from Dr. Anthony in honour of SFU’s 50th anniversary. It provides funding to an undergraduate student in BPK who has overcome adversity in their life, in recognition of their achievements and motivating others by their example. https://www.sfu.ca/bpk/undergrad_program/funding-opportunities/Josephine-Anthony-Fund.html

A total of 121 student-athletes, including 76 women and 45 men, have earned selection to the 2015 Great Northwest Athletic Conference Soccer (GNAC) All-Academic Team.

It was Watson who topped the list with the highest grade-point average. Watson, a junior from Victoria, has a 4.11 grade-point average in Kinesiology (4.00 is considered an A and 4.33 is an A plus).

Watson, who led the GNAC with 10 shutouts and did not concede a goal at home all season, was named to the All-Conference Second Team.

Olivia Aguiar was also selected to the Women’s Soccer All-Academic team for the second straight year.

A Coquitlam native, Aguiar carries a 3.83 GPA in Kinesiology. She was fourth on the Clan scoring, and notched four goals in 15 games.

https://www.directory.ubc.ca/index.cfm?d=%403l%3E%3CR%403CR*%23J%5CB_FYUS%3ENW219%5C5QMR%5E0%3D3!TSBSD3G2P%40%20%0A

Robert Ross, PhD, FACSM, FAHA
Queen’s University
School of Physical and Health Education
Canadian Obesity Network
Thursday, November 19th, 2015

TITLE: “Exercise and Obesity Management: Does Exercise Intensity Matter?”
http://www.queensu.ca/skhs/faculty-and-staff/faculty/robert-ross

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SUCCESSFUL DEFENCE

IRIS LESSER PHD
November 20th, 2015
“The role of cardiorespiratory fitness and the effectiveness in altering visceral adipose tissue and cardio-metabolic risk factors in post-menopausal South Asian women.”

Examining Committee:
DR. MIRIAM ROSIN, Chair
DR. SCOTT LEAR, Senior Supervisor
DR. DAWN MACKEY, Supervisor
DR. PETER KATZMARZYK, Supervisor, Population Science, Pennington Biomedical Research Ctr, Baton Rouge, Louisiana, USA
DR. DAVE CLARK, Internal Examiner
DR. ROBERT ROSS, School of Kinesiology & Health Sci, Queen’s U, External Examiner

CONFERENCE ANNOUNCEMENT

Vancouver: September 11-14, 2016
The 2016 Computing in Cardiology Conference (CinC2016) will be held in Vancouver, from Sept 11th to Sept 14th. The meeting will be held at Simon Fraser University Harbour Centre and the Marriott Pinnacle Hotel.

Computing in Cardiology provides an International forum for scientists and professionals from the fields of medicine, physics, engineering and computer science, and has been held annually since 1974. Meetings are organized by local hosts with the support of Computing in Cardiology, Inc.

Invitation
As the chair and host of CinC2016, I would like to invite all Faculty members, graduate and undergraduate students involved in cardiovascular research to participate in CinC2016.

Strong local presence
We are looking for a strong local presence at CinC2016. BPK, SFU and the lower mainland hosts a diversity of world class research and this is a time to showcase our accomplishments to the world in our own back yard. As the chair I invite all suggestions for topics/sessions to highlight areas of interest in BPK. Incentives can be given for local student presenters. The standard main topics for CinC include: Cardiovascular mechanics, Cardiovascular System, Cardiovascular Imaging, Electrophysiology, Computerized ECG, Modeling & Simulation, and Medical Informatics. The scientific sessions include oral and poster presentations.

Volunteers needed
We are seeking volunteers to join the local organizing committee and help prepare the conference topics and activities. Committee meetings will start in January.

Student volunteers are also required to help with the day to day operation of the conference. As an incentive, student volunteers will have free access to the conference and the gala dinner.

For more information on the conference visit our website CinC2016.org or the society website CinC.org.

If you are interested in volunteering or participating please contact me at eblaber@sfu.ca.

I look forward to seeing you at CinC2016.

DR. ANDREW BLABER
Conference Chair

BPK CO-OP NEWS

My Industrial Revolution
By: Kate Pearsall | Kinesiology Student

Do you ever think there are limitations to what you could do with your degree? I did. SFU co-op has allowed me to experience my major in action in a non-conventional way and it has forever changed the way that I look at my kinesiology degree. Opportunity is everywhere, but we all get stuck looking in the same place.

Working at Seaspan has shown me how to think outside the box when it comes to the future career paths that I could take and this was one of the most valuable lessons that I will ever learn. The best part is that it was a lesson that could not be taught in a classroom or found in a book. The student that walked into the doors of Seaspan with only two years completed at SFU was a completely different person than the one that walked out four months later. I have been transformed through this experience gaining skills and also new perspectives that would have never crossed my mind.

Why would Seaspan, a company that provides services such as deep sea and coastal transportation, ship building, ship repair, and bunkering to Western North America, need to hire someone striving for a kinesiology degree? After beginning my first co-op at Seaspan, this was the most frequent question that I received from my friends and peers.

On my first day, I probably could not have answered these questions in enough detail to provide a sufficient answer because at first I was not quite sure myself. But now walking out the other side four months later, I think I have figured out the answer.

Stuck in the Box
When most people find out I am studying kinesiology I am typically asked if I want my career to include physical education, to be a personal trainer and many other occupations along these lines. So much of Kinesiology has been crammed into these classic stereotypical jobs. I am in no way saying that these jobs are bad, but that everyone studying kinesiology gets thrown into one pile. At first this was how I saw it as well, but going out into the shipyards of Seaspan, my views have been revolutionized.

I used to look over and see the tugboats when I rode the seabus and see the Vancouver Drydock when I drove down Lonsdale. Seaspan is a very well known company in North Vancouver where I have grown up. I think that many people, like myself, only saw the tugs and ships and thought of them as objects. I never thought about the people that were out there on those boats and on the shipyards working away in some tough environments to make sure that this company was successful.

New Perspectives
During my first week I was sent out into the Vancouver Shipyard. Here I watched welders, mechanics and many different trades men and women work on building different vessels such as the preparation for the Federal Non-Combat boats and the new Cable ferry. These people are industrial athletes. They train in all weather conditions, they lift heavy objects, and move complicated machinery. Not everything that they use is ergonomically suitable for the body and can pose safety risks. As a result of this many different musculoskeletal
injuries occur. The Kinesiologists here at Seapspan worked with these employees to help them get suitable treatment and resources for their injuries. On top of this they assisted them in their return to work by modifying shift times and duties to make sure that they weren't putting themselves in a situation where damaging their previous injury was possible.

In all of this some of my duties included making phone calls to the employees to get updates on their situations, helping format and plan the gradual returns to work, assisting with the paperwork involved in the claims, going out to the different job sites, looking at the job demands and learn to look at the workplaces from an ergonomic perspective. The next week I was fortunate enough to be able to get a tour of the tug boats and an opportunity to drive one. Let me tell you, I spun in a circle for a good few minutes, but then got the boat to go in what I thought was a perfect straight line. The wake behind the boat might tell you otherwise. Being out on the tugboat was a perfect opportunity to ask the captain and the deckhands about their job. Their job is a week on week off lifestyle, they have to sleep on the boats depending on the job and sometimes get up at the earliest hours of the morning to provide services with these boats. Not only is it a mentally exhausting job, it is a physically demanding job. There is vibration, currents, heavy objects and many more tasks that make it physically demanding.

There were many other site visits with occupational therapists and rehabilitation coordinators that I got to experience. One visit was to the Vancouver Drydock where large vessels are being repaired. These people have to climb up and down ladders, bend over in awkward angles and crawl through claustrophobic spaces. Another visit was to the top of Canada’s largest Gantry crane. Its spectacular views, its ability to lift 300 T, it’s gruelling stair climb to the top, and it’s enormous heights make it very physically and emotionally challenging - and not without risk.

Different Athletes
The human level is where the kinesiology comes into play. These injuries are a lot different from just being injured in a recreational sports league, because like professional athletes, this is not just a sport it is a career. One injury can be detrimental to the lives of the employee and their family. I got to experience a close up look at what happens behind the scenes of these injuries and see all the different processes that take place in order to look after the needs of the employer without jeopardizing the health and wellness of an employee. The kinesiologists that I worked with set up plans to help accommodate people’s injuries as best as possible. They would also schedule gradual return to work plans and where necessary helped them seek accommodation in different jobs within the company or at another company if their injury prevented them from returning to their pre-injury job. At first I got to shadow these different roles and as time went on some of the jobs I was involved with were assisting and helping with the gradual return to work plan, the job demand analysis, and the phone calls and paper work involved with keeping the claims updated. One takeaway that I got from each different job was that none of them are easy. Each has its own set of physical and mental demands that can overload the employees. One mistake from yourself or another person can be enough. Having the kinesiologist in the company is a fundamental part of the health and wellness of everyone working for Seapspan.

Thinking Outside the Box
This co-op has helped me learn the different routes my career could take. I have learned valuable skills in ability management, health, safety, wellness, ergonomics and kinesiology that I never would have learned from a textbook. This hands on experience and the chance to shadow professionals in this field is a once in a lifetime experience and I know this will shape the path that I take in the future.

Walking out the doors four months later I can now answer the question as to why kinesiology shouldn’t just be thrown into a pile of the same colour shirts. Kinesiology is the study of human movement. The body is utilized in so many different ways and there are some spectacular jobs that involve the use of the body.

This co-op has radically changed my views of where I could end up working with a kinesiology degree. My mind has been opened up to many different ideas and opportunities. There are no limits as to where myself or anyone else striving for this major can go.

Faces of Invisible Illness
CATHERINE RICHARDSON, a BPK student, is featured in a video produced for Invisible Illness week. Catherine ranked #1 in the BPK USRA competition a few years back and worked for Dr. DAWN MACKEY, Supervisor of the Aging and Population Health Laboratory in the BPK Department. Catherine is the first speaker in the video.

http://findingmymiracle.com/2015/10/02/faces-of-invisible-illness/

Happy Holidays and Happy New Year

Send submissions to
Marianne Lazaro, Newsletter Editor
lazaro@sfu.ca