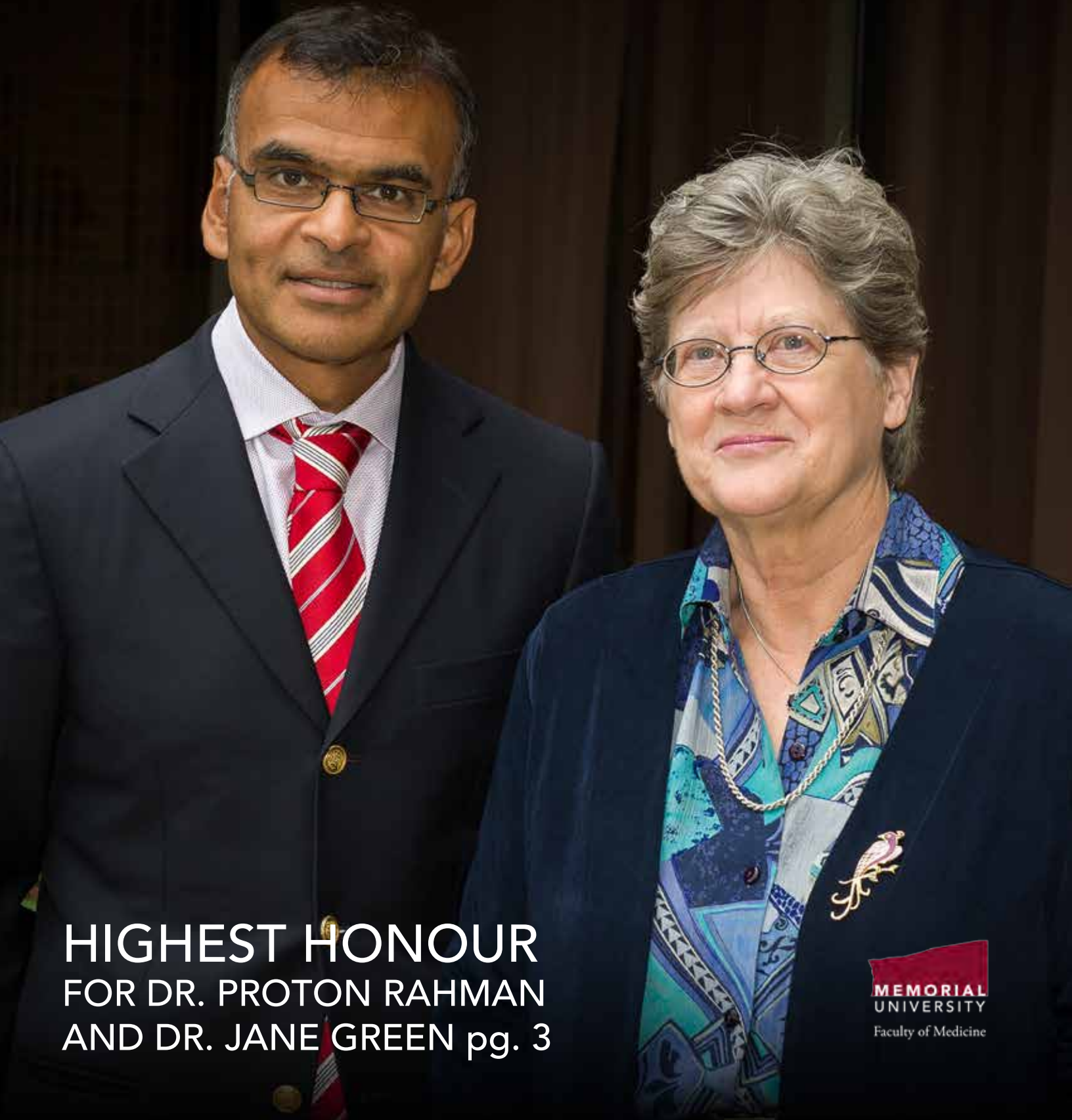


MUNNAMED

Faculty of Medicine

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**HIGHEST HONOUR
FOR DR. PROTON RAHMAN
AND DR. JANE GREEN pg. 3**

**MEMORIAL
UNIVERSITY**
Faculty of Medicine

Message from the Dean

ON OCT. 17, the Faculty of Medicine lost one of its founding fathers and an international giant in the field of telemedicine. Dr. Max House passed away at the age of 87. He was truly a model for all of us and ahead of everybody in bringing the latest technology to medical programs such as the tele-oncology program, which has been a burden of relief to so many people in the province who are so sick.

I remember when my wife Leslie and I first arrived in St. John's, Dr. House and his wife Mary were so kind to us. I'll always remember him in that personal context as someone who was kind and supportive but also full of ideas.

The Faculty of Medicine has been in the spotlight this fall, with two of our outstanding researchers being inducted as fellows of the Canadian Academy of Health Sciences. This is a very high honour, and my congratulations go to Dr. Jane Green and Dr. Proton Rahman for their achievements (see story page 3).

Dr. Green's career spans four decades and her work in compiling family pedigrees and identifying genetic illness in families helped lay the foundation for genetic research at Memorial. Dr. Rahman's pioneering work on the genetic basis of inflammatory arthritis and the development of the Newfoundland Genealogical Database is outstanding. Together these two prominent genetics researchers are dedicated contributors to the research enterprise in the Faculty of Medicine.

Another faculty member also received a prominent award this fall. Dr. Roger Butler, associate professor of family medicine, was named Family Physician of the Year by the Newfoundland and Labrador Chapter of the College of Family Physicians of Canada. (see story page 10). Dr. Butler, a graduate of the Class of 1977, specializes in geriatrics at the Ross Family Medicine Centre. This is an area of medicine that badly needs dedicated practitioners, and Dr. Butler is paving the way to ensure that more family medicine residents receive extra training in geriatrics.

I hope you enjoy this issue of *MUNMED*. Read all about activities at the 2013 Family Medicine Education Forum and activities among our graduate students. Our new curriculum is now in place for the Class of 2017, and we will soon start to move into our new building. I wish you all the best for the upcoming holiday season and a happy, healthy and successful New Year.

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Two members of the Faculty of Medicine receive highest honour

DR. JANE GREEN AND DR. PROTON RAHMAN were inducted as fellows in the Canadian Academy of Health Sciences (CAHS) on Sept. 19. Election to fellowship in the CAHS is considered one of the highest honours for individuals in the Canadian health sciences community and carries with it an agreement to serve the academy and the future well-being of the health sciences.

“Being inducted into the Canadian Academy of Health Sciences is like winning a gold medal in science,” said Dr. James Rourke, dean of medicine. “I am so proud of the work that each of our CAHS inductees have done that has earned them this significant national recognition.”

Dr. Green, professor of genetics, has been at the forefront of genetic research of hereditary cancers and hereditary eye diseases for 35 years. Her studies led to the discovery of novel genes in Newfoundland and Labrador families and a new understanding of pathways to development of cancer and blindness. She works closely with molecular geneticists and genetic counsellors, and families participating in the research have benefited from clinical and genetic screening programs developed and implemented based on the research. In 1993, her research was key to identifying a major colon cancer gene and to the provision of genetic testing.

Dr. Green pioneered the development of screening programs for earlier and more successful treatment of hereditary tumours. Her work has saved lives and profoundly improved health and quality of life for hundreds of Newfoundlanders. In 2012 she received the Founders Award for Excellence in Medical Genetics from the Canadian College of Medical Geneticists for her significant lifetime contributions to the college and to the genetics community in Newfoundland, Canada and beyond. In 2008 she received a Knowledge Translation Award from the Canadian Institutes of Health Research (CIHR), which allowed her to visit all 28 hospitals in the province during 2009 to give presentations on the implications of genetics and hereditary diseases to health care professionals and the public, and to provide in-service teaching to public health nurses.

“BEING INDUCTED INTO THE CANADIAN ACADEMY OF HEALTH SCIENCES IS LIKE WINNING A GOLD MEDAL IN SCIENCE,” SAID DR. JAMES ROURKE, DEAN OF MEDICINE. “I AM SO PROUD OF THE WORK THAT EACH OF OUR CAH’S INDUCTEES HAVE DONE THAT HAS EARNED THEM THIS SIGNIFICANT NATIONAL RECOGNITION.”

Dr. Rahman, professor of medicine (rheumatology) and associate dean for clinical research in the Faculty of Medicine, is an international leader on the genetic basis of inflammatory arthritis. His pioneering research has led to the identification of numerous novel genes that contribute to the pathogenesis of psoriatic arthritis and ankylosing spondylitis. In collaboration with an international psoriasis consortium, he has identified over half of all psoriatic arthritis genes reaching genome-wide significance.

Additionally, Dr. Rahman has pioneered the development of the Newfoundland Genealogical Database (NGD) by creatively using information collected for census data. The NGD provides clinicians and researchers with rapid access to a detailed patient pedigree and genealogy linkage with health outcome and pedigree visualization.

Dr. Rahman has published widely in top subspecialty based genetics and rheumatology journals and his contribution to rheumatology research

has been recognized with regional, national and international awards. In 2012 he was named University Research Professor, the most prestigious award Memorial gives for research. He received the President’s Award for Outstanding Research in 2003 and the Nati Biotechnology Leadership Award in 2004 from the Newfoundland and Labrador Association of Technology Industries.

A reception to honour Drs. Jane Green and Dr. Proton Rahman was held Oct. 10 at the medical school. MC for the event was Dr. James Rourke, dean of medicine. “This is a great honour for Dr. Green and Dr. Rahman, and a great honour for the Faculty of Medicine. Both Drs. have done leading work in genetic research, which has helped power the development of new facilities in the Craig L. Dobbin Genetics Research Centre, scheduled to open next year.”

Dr. Richard Marceau, vice-president (research), congratulated Drs. Green and Rahman on their achievement in becoming part of a very select group of faculty at Memorial University who are members of this prestigious academy. “Becoming a fellow of the Academy of Health Sciences is a mark of a sustained and distinguished contribution to your field, and carries with it a commitment to serve the academy, and through it the future well-being of the health sciences.”

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“There is no doubt that Dr. Green and Dr. Rahman have made important and significant contributions to the research enterprise at Memorial University,” said Dr. Marceau. “The Faculty of Medicine, and the entire Memorial community, is richer for the work of these two outstanding researchers.”

Dr. David Wardlaw, vice-president (academic), brought greetings on behalf of University President Dr. Gary Kachanoski, who was unable to attend the reception. “The Canadian Academy of Health Sciences is one of three academies that comprise the Council of Canadian Academies,” he explained. “The other two academies are the Royal Society of Canada and the Canadian Academy of Engineering. The Canadian Academy of Health Sciences has two functions – to conduct assessments on urgent health matters that affect Canadians, and to recognize individuals of outstanding achievement in the health sciences through elections to fellowship. Fellows are elected based on their demonstrated leadership, creativity, distinctive competencies and a commitment to advance academic health science. There is no doubt that Dr. Green and Dr. Rahman fulfill these requirements. We are proud of their accomplishments and proud of their new status as Fellows of the Canadian Academy of Health Sciences.”

Dr. Green said she is most proud of the fact she’s been able to help people with genetic illness in the province. “With the help of family members and physicians from around the province, we have been able to gather information that has led to identification of genes and better treatment for the people affected.”

Dr. Rahman commented that his research could only take place with the help of students and colleagues. “We work as a team.”

Dr. Rahman also noted that the reception was really to give tribute to Jane Green, whose research career has spanned four decades. “Even today, her passion continues.”

Drs. Green and Rahman join the ranks of eight other prominent members of the Memorial University community who have been inducted as Fellows of the CAHS. These include Dr. Kevin Keough, former vice-president (research and international relations); Dr. David Hawkins (deceased), third dean of the Faculty of Medicine; Dr. Ian Bowmer, professor *emeritus* and fourth dean of the Faculty of Medicine; Dr. Sean Brosnan, University Research Professor; Dr. Patrick Parfrey, University Research Professor; Dr. James Rourke, dean of medicine; Dr. Dale Corbett, former Canada Research Chair for Stroke and Neuroplasticity in the Faculty of Medicine; and Dr. Christopher Loomis, former vice-president (research).



Among those attending the reception to honour the two newest Fellows of the Canadian Academy of Health Sciences were (from left): Drs. Richard Marceau, Sean Brosnan, Christopher Loomis, Proton Rahman, Jane Green, James Rourke and David Wardlaw.



National award for First Nation medical student

JOHN JEDDORE, a first-year medical student at Memorial, has been selected to receive the Special Youth (First Nation) Award from the Indspire Institute. The Indspire Awards, formerly the National Aboriginal Achievement Awards, recognize indigenous professionals and youth who demonstrate outstanding career achievement.

At a reception on Parliament Hill in Ottawa on Oct. 29 the recipients of the 2014 Indspire Awards were announced and acknowledged in the House of Commons by the Speaker, receiving a standing ovation. The award ceremony itself will take place on March 21, 2014 in Winnipeg, during a televised event.

Mr. Jeddore, who is a member of the Miawpukek First Nation, said he was chosen for his award for a number of reasons. "Among them were my work to keep the Mi'kmaq language strong among aboriginal communities with social media and online videos, my post-secondary Aboriginal representation with the Canadian Federation of Students as provincial aboriginal student representative, my work as a curator on the largest exhibition in production this year at the Husky Energy Gallery, as well as

being the first person from my community to be accepted into medical school!"

As a guide, photographer and cultural liaison with the Mi'kmaq Discovery centre, Mr. Jeddore aims to promote and preserve Mi'kmaq culture. He was guest curator for a large Aboriginal exhibition which opened in 2013 at The Rooms Museum in St. John's and wrote a monthly column called Traditional Voices. For the past year he has participated in Memorial's Aboriginal Health Initiative program to work with elders on traditional lands and learn about ceremony and medicine.

The Indspire awards were created in 1993, in conjunction with the United Nation's International Decade of the World's Indigenous Peoples. These awards represent the highest honour the indigenous community bestows upon its own achievers, and they motivate and serve as invaluable role models for all indigenous peoples.

Each year 14 recipients are selected by a national jury for their outstanding accomplishments in various disciplines. These recipients are then honoured at a nationally televised ceremony.

"Our award recipients are the outstanding leaders in their fields, having made extraordinary contributions to their communities and to Canada," said Roberta Jamieson, president and CEO of Indspire. "We honour their accomplishments so those following in their footsteps will be inspired to fulfil their own great potential. By recognizing the early achievements of successful First Nation, Inuit and Métis youth we are inspiring their peers to reach for the stars."

John Jeddore, right, was is of three indigenous Canadian youth who will receive Indspire Awards during a televised event March 21 in Winnipeg. Mr. Jeddore's award is for Youth – First Nation; Christie Lavallée, left, a Métis from Manitoba, will receive the award for Youth – Métis; and Sarah Arngna'naaq, centre, an Inuit from the Northwest Territories, will receive the award for Youth – Inuit.



Family doctors gather for annual forum

FAMILY DOCTORS from throughout the province and beyond gathered Oct. 16-17 at the Humber Lodge for the annual Family Medicine Education Forum. This event is offered in partnership with the Discipline of Family Medicine at Memorial University and the Newfoundland and Labrador Chapter of the College of Family Physicians.

At the opening reception Oct. 15, Dean James Rourke gave an overview of upcoming changes at the Faculty of Medicine, including the opening of the new building early in 2013. Dr. Sharon Peters, vice-dean, outlined the new undergraduate medical curriculum, which came into effect this fall for the Class of 2017.

The Family Medicine Community Preceptors Meeting was held Oct. 17. Dr. Wendy Graham, associate professor of family medicine based in Port aux Basques, welcomed Dr. Peters and Dr. Don McKay, associate dean for undergraduate medical education. “This shows the growth of partnerships in our community preceptor meeting.”

Dr. Cathy MacLean, the chair of the Discipline of Family Medicine, addressed preceptors the morning of Oct. 17. “My goal is for 50 per cent of our medical graduates to choose family medicine for their residency program. Right now only 32 per cent are matched to family medicine; that is below the national average.”

In travelling throughout Newfoundland and Labrador, Dr. MacLean said she was particularly struck by the number of people on dialysis. “We have a very expensive health care system with poor outcomes. We need to plan for the right resources and act to facilitate change. And we need a shared vision to create a practice environment that will keep our resident in the province.”



Dr. Wendy Graham welcomed participants.



Dr. Katherine Rouleau

The keynote speaker Oct. 17 was Dr. Katherine Rouleau, a family physician at St. Michael’s Hospital in Toronto and director of the Global Health Program in the Department of Family and Community Medicine at the University of Toronto. Her interactive presentation, titled *Global Health: Destination or Journey*, included a discussion of social accountability and its relevance to family medicine. “Social accountability is the obligation of medical schools to direct their activities towards addressing the priority health concerns of the community, region or nation – we have a mandate to serve.”

Dr. Rouleau said social accountability has a strong impact on the primary health care system, resulting in improved outcomes, improved problem recognition, improved diagnostic accuracy, decreased hospitalization, better prevention and improved equity. “Social accountability, family medicine and primary health care are linked.”

Global health, said Dr. Rouleau, places a priority on improving health and achieving equity in health for all people worldwide. “The College of Family Physicians of Canada supports a number of programs and initiatives that address community health needs, including Aboriginal health, primary health care, urban and rural underserved areas, gender and equity, eco-health, immigrant and refugee health and global health. Our vision is to strengthen family medicine here and abroad and promote equity.”

Dr. Rouleau challenged participants at the forum to come up with ways to advance social accountability in day-to-day activities.

The rest of the day’s activities included a rural researchers’ workshop and two interactive break-out sessions – one for preceptors, faculty and administrators, and the other for students and residents.



The Discipline of Family Medicine celebrated 40 years of training family medicine residents with a cake. Conference manager Luanne Agriesti-Cleary cut the cake under the watchful eyes of Dr. John Campbell, assistant professor of family medicine, based in Grand Falls-Windsor.



Travelling all the way from Iqaluit, Nunavut to attend the forum were (from left): Drs. Sandy Macdonald, Madeline Cole and Alison McCallum.



Contingent from Labrador – among those attending the Family Medicine Forum were eight doctors from Goose Bay. From left: Drs. Robert Forsey, Karen Horwood, Gabe Woollam, Michael Jong, Judy Ophel, Jordan Karaivanov, Margo Wilson and Charlene Fitzgerald.



A Rural Researchers' Workshop was held to introduce the new 6 for 6 program (see story page 11). Among those attending the workshop were (from left): Drs. Lynette Powell, Grand Falls-Windsor; Shelley Sullivan, Grand Falls-Windsor; Margo Wilson, Goose Bay; Treena Greene, Iqaluit; Dean James Rourke; co-ordinator Shari Fitzgerald, St. John's; Drs. Tim Griffin, Corner Brook; and Dave Thomas, Port aux Basques.



And the winner is... MUN's medical school! Members of the Family Medicine Interest Group (FMIG) at Memorial raised a total of \$9,122 this year through the annual Walk for the Docs of Tomorrow, a scholarship fundraiser for the College of Family Physicians of Canada (CFPC). This is an unprecedented amount that any FMIG has ever raised. In total, the walk raised over \$33,000 this year with everyone's effort. On Oct. 26, during the 25th Annual Scientific Assembly of the NL College of Family Physicians of Canada, students and faculty members braved the rain for the Walk for the Docs.

Awards ceremony honours doctors

DR. ROGER BUTLER, associate professor of family medicine, has been selected as the Family Physician of the Year for Newfoundland and Labrador (see story page 9). The award was presented during the 2013 Family Medicine Education Forum, held at the Humber Lodge Oct. 16-20. The Family Physician of the Year awards recognize outstanding College of Family Physician of Canada (CFPC) members who exemplify the best of what being a family doctor is all about.

An Award of Excellence from the NL College of Family Physicians was presented to Dr. Jared Butler of Grand Falls-Windsor. These awards recognize CFPC members who have made an outstanding contribution in a specific area including patient care, community service, college activities, teaching, research or other elements of the academic discipline of family medicine. Dr. Butler has a special interest in sports medicine and allergy medicine and is currently chief of emergency at the Central Newfoundland Regional Health Centre.

Three awards from the Discipline of Family Medicine were presented during the Awards Dinner. Dr. Steve Darcy (Class of 1991) received the 2013 Dr. Gus Rowe Award. This is the second consecutive year that Dr. Darcy has received this award, which is presented each year by the family medicine residents to physician teachers in the program who are exemplary physicians, laudable teachers and have an interest in sharing those aspects of their skills and ideals which are particularly pertinent to good family practitioners.

The 2013 Dr. Craig Loveys Awards was presented to Dr. Steve Parsons, assistant professor of obstetrics and gynecology, based in Grand Falls-Windsor. This award is presented annually by the Discipline of Family Medicine to a specialist in recognition of excellence in teaching family medicine residents.

The 2013 Dr. Yong Kee Jeon Award was presented to Dr. Sonny Collis, a family physician in Torbay. This award is presented annually to a family physician for excellence in teaching family medicine residents.

A number of student awards from CFPC were also acknowledged. Gordon Stockwell will receive the Medical Student Scholarship, and the Medical Student Leadership Award will go to Dr. Robin Clouston.



Dr. Cathy MacLean presented 2013 Yong Kee Jeon Award to Dr. Sonny Collis.



Dr. Mohamed Ravalia presented the 2013 Dr. Craig Loveys Award to Dr. Steve Parsons, right.



Dr. Roger Butler, right, received the NL Family Physician of the Year Award, presented by Dr. Gary Tarrant.



Dr. Steve Darcy, right, received the 2013 Dr. Gus Rowe Teaching Award, presented by family medicine resident Dr. Raie Lene Kirby.



A CFPC Award of Excellence was presented to Dr. Jared Butler of Grand Falls-Windsor. From left: Dr. Charlene Fitzgerald, a past president of the NL College of Family Physicians; Dr. Shelley Sullivan, a family physician in Grand Falls-Windsor; Dr. Butler; and Dr. Marie-Dominique Beaulieu, president of the College of Family Physicians of Canada.

Visionary in the field of geriatrics

A WELL-KNOWN and highly respected member of the Discipline of Family Medicine, Dr. Roger Butler, has been named the 2013 Family Physician of the Year award for Newfoundland and Labrador.

In presenting him with this award on behalf of the NL College of Family Physicians, colleague Dr. Gary Tarrant, described him as being like a country doctor of old with compassion for patients and a dedication to house calls. “He is one of the most knowledgeable physicians in the field of geriatrics with great clinical skills and a dedication to teaching. He is a visionary in the field of geriatrics.”

To a standing ovation, Dr. Butler thanked all the people who have helped him, especially his wife Christine. “It was a golden age when I came to medical school. I’ve had the good fortune to work with excellent people and I go to work having fun every day.”

Born on Bell Island, Dr. Butler completed most of his schooling in Bay d’Espoir when his family moved there. He describes himself as a self-directed learner who did chemistry and physics in high school largely through self-study with the help of the school’s only science teacher. He remembers wanting to be a doctor from Grade 4 on, and fulfilled that ambition when he entered medical school at age 19 after three years of university.

Family medicine was a natural choice, and Dr. Butler remembers that it was Dr. John Ross who interviewed him for the residency program. The next step was moving to Brookfield to begin his medical career with Dr. Yong Kee Jeon, chief medical officer, as his mentor. “He taught me the essential skills of clinical decision making and how to care for the patient.”

In the early 1980s Dr. Butler’s father was seriously ill and in 1985 the university offered a position in family medicine for which he successfully applied. “This enabled my two young sons to have time with their grandfather who died in 1990. I spent the first seven years in the Family Practice Unit



Presentation at the Awards Dinner (from left): Dr. Charlene Fitzgerald, a past president of the NL College of Family Physicians; Dr. Gary Tarrant, associate professor located at the Ross Family Medicine Centre; Dr. Roger Butler and Dr. Marie-Dominique Beaulieu, president of the College of Family Physicians of Canada.

doing the full scope of family medicine including emergency and obstetrics.”

In the early 1990s an opportunity arose to work with Dr. Bill Eaton at the Miller Centre, as the Discipline of Family Medicine needed to expand its presence in that institution. This clinic expanded to three when Dr. Gary Tarrant joined the group in the late 1990s. Dr. Butler was clinical chief at that time of the Rehabilitation Program/Continuing Care Program and Geriatric Program, as well as Bell Island site for the Health Care Corporation of St. John’s (which later became Eastern Health).

In December of 1999, Dr. Butler’s academic mentor Dr. John Ross died; with other colleagues he wanted to do something of significance in his memory. “The opportunity came in 2005 when the stars lined up between the university and the Health Care Corporation of St. John’s to develop a family medicine clinic on the 6th floor of Southcott Hall. The vision was to have a co-operative environment which would enable the physicians who worked in the academic clinic to continue to provide ward coverage as well as teaching residents, interns, nursing and allied health students at the Miller Centre. This synergy blossomed and today we also train nurse practitioners and pharmacy students at our site.”

Dr. Butler said he has had a lifelong interest in geriatrics. “I went to England as a family medicine resident to do a three-month elective in geriatrics in 1977 before the first geriatric training program began in Canada. When I went to

Brookfield I was in charge of the new nursing home which opened there in the early 1980s. I did a six-month sabbatical in 1997 with some time in Halifax with Dr. Ken Rockwood, and basically put the core elements together for a geriatric rotation in family medicine at Memorial. Most recently I did a one-year sabbatical during 2009-2010, focussing on how to improve the care of our seniors in acute care hospitals.”

During the remainder of that sabbatical, Dr. Butler reorganized the geriatric experience at Memorial, expanding it to include more core rural sites which now include Port aux Basques, Corner Brook, Baie Verte, Botwood, Twillingate, Gander, the Waterford Hospital Site and the Leonard A. Miller Centre site in St. John’s. Dr. Butler and his colleagues are now starting the process of developing a core six-month rotation from the initial one month that is now offered as additional skill set training.

Dr. Butler has strong opinions on the care of the frail elderly. “In the emergency room we’re not screening people for cognitive impairment – we need a nurse or physician to do geriatric screening and this saves dollars in the long run.”

He strongly believes that doctors need to do home visits to elderly patients. “You can find out a lot by looking in their fridge to see if they are eating properly or if there are signs of cognitive impairment if items are stored in the fridge that do not belong there.”

Another change Dr. Butler advocates is development of good management skills to find non-drug solutions for seniors. “If a senior is on 10 medications a day, it’s likely that by adding an eleventh medication there will be problems.

Delirium is a lethal condition and one cause of it is over-medication. In my unit since we started cutting back on medications for this population we are seeing improved outcomes. There’s an epidemic of polypharmacy.”

Research needs to be done on the frail elderly population. Dr. Butler is currently recruiting patients for a study on telemedicine to support the elderly living at home. “Our default program should be a home first policy rather than automatically putting the elderly in nursing homes from hospitalizations. Through telemedicine, I can take a remote team and support caregivers in real time. In this project we’ll do a closed video of the patient to determine the care given – we’ll do this on a regular basis for six months, and then check back at 12 and 18 months.”

In the next decade Dr. Butler would like to improve care of the frail elderly by developing centres of excellence. He said it is important to increase the number of allied health professionals, particularly physiotherapists and occupational therapists. “In Eastern Health we have two physiotherapists but we need 15. We have one occupational therapist, but we need 10. We need a School of Physiotherapy here.”

In addition to his clinical work, Dr. Butler is a resource person for the local and national Alzheimer’s societies. His research interests include polypharmacy and providing real time support for seniors in their homes via computer technologies. “I think seniors in Newfoundland and Labrador are the best patients in the world. I love to go to work each day and enjoy the privileges a career in family medicine offers.”



“HE IS ONE OF THE MOST KNOWLEDGEABLE PHYSICIANS IN THE FIELD OF GERIATRICS WITH GREAT CLINICAL SKILLS AND A DEDICATION TO TEACHING. HE IS A VISIONARY IN THE FIELD OF GERIATRICS.”
~ DR. GARY TARRANT

Members of Dr. Roger Butler’s family attended the Awards Dinner. From left: Christine Butler, granddaughter Claire, Dr. Butler, eldest son Dr. Matthew Butler and his wife Dr. Trina Butler.

Research skills program for rural and remote doctors launched

A NEW 18-MONTH research skills program for rural and remote family doctors was launched during October's Family Medicine Education Forum in Steady Brook.

6 for 6 is a family medicine initiative whereby six rural and remote doctors from Newfoundland and Labrador, New Brunswick and Nunavut will be accepted annually.

"The prime intent of 6 for 6 is to assist participants in conducting their own research project that is of interest to them," said Dr. Cheri Bethune, professor of medicine and one of the main organizers of the program. "In doing this they will gain the research and leadership skills to assist others. Upon completion of the program, participants can then build a local regional network of doctors and engage them in research activities. These individuals could utilize the knowledge they acquire through the program to lead this group, act as a liaison with resources and support systems at the Faculty of Medicine, and pass along their acquired knowledge and skills."

Given the right circumstances, this program could also assist with recruitment and retention of doctors to rural and remote areas who are interested in rural health research.

6 for 6 is a flexible, self-paced learner-centered program that utilizes a blended learning model involving eLearning (web-based and mobile learning with podcasts and facilitated small group problem solving sessions) and face-to-face learning. It is based on sound educational curriculum development principles and entails synchronous and asynchronous learning models. For the face-to-face learning, participants attend structured sessions at the Faculty of Medicine on six separate occasions. The name 6 for 6 therefore reflects that six participants will be accepted annually and that six structured sessions will take place at the Faculty of Medicine.



From left: Dr. Wendy Graham, Dr. Marshall Godwin, Patti McCarthy, Shari Fitzgerald, Dr. James Rourke, Dr. Cheri Bethune and Dr. Shabnam Asghari participated in the 6 for 6 program launch.

Each 6 for 6 participant will have a personal mentor and the support of a research assistant to aid them during the program and with their individual research project.

The first 6 for 6 class begins in April 2014. Applications for this class were due in November 2013. To be eligible to apply for this program, individuals had to: be a rural or remote family physician (non-GFT), reside outside the Avalon Peninsula of Newfoundland and Labrador, have CFPC membership and at least one year in practice, have no certification in advanced research skills, and be able to commit the time to participate in the program. Upon completion, participants will receive a Certificate in Rural Research and Scholarship.

6 for 6 has received funding for a three-year period. Participants will be accepted annually in the fall based on their geographical location, research interest and leadership skills. For more information visit: www.med.mun.ca/familymed/teachers/Six-for-Six.aspx or contact Shari Fitzgerald at shari.l.fitzgerald@mun.ca or by phone: 709 777 2494.

Rehabilitation moves into community setting

DIANE COLFORD has Parkinson's disease but her life has improved considerably since she started participating in NeuroFit, a unique community-based program for neurologically impaired adults.

"I did the rehabilitation program at the Miller Centre but found it was not challenging enough," said Ms. Colford. "NeuroFit is excellent for me; I've gone back to gardening after three years. It's amazing what this program has done for me!"

NeuroFit was started by Dr. Michelle Ploughman, assistant professor of medicine and clinical research scientist with Eastern Health, and Jennifer Shears, senior physiotherapist at the Miller Centre. "We started NeuroFit in response to the lack of community opportunities available to neurologically impaired adults upon discharge from formal rehabilitation," explained Dr. Ploughman.

Partnering with the Ches Penny Family YM-YWCA in St. John's, Ms. Shears and Dr. Ploughman run a 10-week, two evenings a week circuit style program. Initially funded by an Eastern Health Lighthouse grant, it is now supported by the Newfoundland and Labrador Brain Injury Association (NLBIA). They have just finished the third 10-week session and hope to promote its sustainability next year. This past year students from kinesiology, psychology, nursing and other areas of study at Memorial, in addition to physiotherapy



Diane Colford works on balance exercises with the help of Chelsea Harris (front).

and occupational therapy students from Dalhousie, have contributed greatly to the success of the NeuroFit program by volunteering their time.

"It's a transition from hospital-based rehabilitation to the real world," said Dr. Ploughman. "It's based on the concept of helping people build stamina. About half of the people in this program need wheelchairs or walkers but to participate all they need to be able to do is stand up, turn and sit. We break every task down into its components – it's a transition to independence."

Chelsea Harris, a Memorial master's of public health graduate, is Dr. Ploughman's research assistant, and she volunteers with NeuroFit. "This program is all about teaching people to regain independence. It's a step back into the community by doing exercises to regain balance and mobility."

Fatima Osomo, who is doing a master's in public health at Memorial, is working with the NLBIA to help run NeuroFit under the Graduate Student Work Experience Program (GradSWEP). She enjoys the work and says she has always enjoyed working with vulnerable populations. "Back home in Nigeria my Dad has had several strokes, so I knew what to expect. In Nigeria, I worked with youth groups to educate them about STDs including HIV and AIDS."

Physiotherapist Bonnie Hibbs is working with NeuroFit through funding from the Brain Injury Association. "About half of the people who go through NeuroFit maintain their Y memberships and continue to exercise," she said. "The people who keep coming maintain their quality of life and don't suffer as much from depression."



Members of the NeuroFit team (from left): Fatima Osomo, Chelsea Harris, Bonnie Hibbs and Dr. Michelle Ploughman.

About 10 clients can be accommodated in each session of NeuroFit. Although participants are responsible for their own Y memberships, it still costs money to run the program. Dr. Ploughman and Ms. Shears are looking for more permanent funding – they know the program works and they are committed to keeping it going.

“The NeuroFit program is having a lasting effect for many of the participants,” said Dr. Ploughman. “The result is a healthier population among adults with neurological impairments.”

“IT’S A TRANSITION FROM HOSPITAL-BASED REHABILITATION TO THE REAL WORLD,” SAID DR. PLOUGHMAN. “IT’S BASED ON THE CONCEPT OF HELPING PEOPLE BUILD STAMINA. WE BREAK EVERY TASK DOWN INTO ITS COMPONENTS – IT’S A TRANSITION TO INDEPENDENCE.”



Fatima Osomo, left, helps NeuroFit participant Gary Foster with his workout.

New program offered by PDCS

PROFESSIONAL DEVELOPMENT and Conferencing Services (PDCS) offered an interprofessional and interactive continuing professional development program hosted at the medical school Sept. 13-14 on Dermatology and Wound Care: New Perspectives That Influence Practice.

More than 140 delegates attended the program, including family physicians, nurse practitioners, nurses, pharmacists and other health professionals from across Canada. For those unable to come to St. John's or register on those dates, the program was also available live via webcast and archived online for access at any time.

The conference featured both national and local guest speakers including Dr. Greg Archibald (Class of 1980), from Dalhousie University. "I was extremely impressed with the enthusiasm of the participants over the conference," he said. "One family doctor astutely commented that they had never seen this material before and questioned its absence from undergraduate curriculum. I was able assure her that advocacy is gaining momentum across the country, particularly in Nova Scotia where I practice, to embed it in schools of medicine and the health professions and create provincial programming."

Other presenters included Dr. Gary Sibbald from the University of Toronto, Cathy Burrows from Wound Prevention and Care, Halifax; Andy Hoar, Halifax; Dr. Rebecca Law, School of Pharmacy, and Dr. Tracey Brown-Maher, a dermatologist and wound care specialist with Eastern Health.

"Hosting an event which brings together a diverse health professional group such as this requires innovative planning and learning formats," said Fran Kirby, director of PDCS. "By offering a range of formats including lectures, hands-on workshops, and interactive case studies, the program was a great success, and I believe our delegates have gained a lot of new and practical knowledge this weekend."

Dr. Sibbald was also encouraged by the feedback he received from the weekend. "It's always great to visit Newfoundland, and the job PDCS did in organizing this event was excellent. I know the variety included within the program design meant that there was something useful for everybody over the day-and-a-half time frame."

PDCS offers a full range of services in the area of accredited continuing professional development planning and delivery. Visit www.med.mun.ca/pdcs for more information.



From left: Dr. Gary Sibbald, Dr. Greg Archibald, Andy Hoar, Cathy Burrows, Fran Kirby and Dr. Rebecca Law.



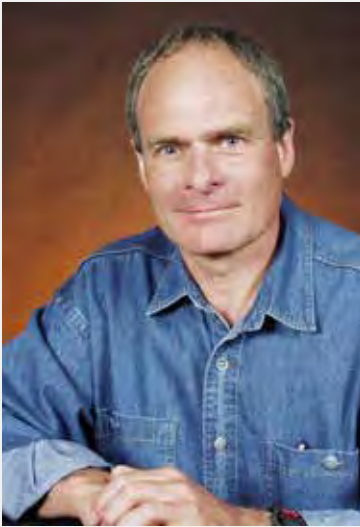
From left: Dr. James Hogg, Dr. Reza Tabrizchi, associate dean for research and graduate studies, and Dr. Sharon Peters, vice-dean.

2013 Gairdner Lecture

ON OCT. 17 Dr. James Hogg, University of British Columbia, gave the 2013 Gairdner Lecture at the Faculty of Medicine on the topic developing new treatments for chronic lung disease. This was part of the Gairdner National Program lecture series. Dr. Hogg was recently recognized with the 2013 Canada Gairdner Wightman Award for his outstanding leadership in the understanding and treatment of chronic respiratory disease and for his visionary career as a national research builder.

Throughout his career, Dr. Hogg's research has remained focused on the mechanisms and anatomical sites of obstructive lung disease. He has been acknowledged with an array of recognitions and scientific awards. He was named an Officer of the Order of Canada in 2005 and elected to the Royal Society of Canada in 1992 and to the Canadian Medical Hall of Fame in 2010. In 2003, Dr. Hogg was the recipient of the American Society for Investigative Pathology Chugai Award and he has been honoured on several occasions by the American Thoracic Society.

Of note



DR. BOB MILLER, associate professor of family medicine, has been awarded a 2013 Certificate of Merit Award from the Canadian Association for Medical Education (CAME). These certificates are awarded annually to recipients who have made a contribution to medical education deemed to be valuable within their medical school. Dr. Miller was named the 2011 Family Physician of the

Year by the NL Chapter of the College of Family Physicians of Canada.

DRS. MICHELLE PLOUGHMAN AND JASON MCCARTHY were awarded the Dr. Tony Hakim Stroke Recovery Research Award at the recent Canadian Partnership for Stroke Recovery Meeting in Montreal Oct. 17-20. This \$50,000 grant supports their project examining the synergistic effects of aerobic and cognitive training in people with stroke.



DR. DENNIS SHARPE, who recently retired from the Faculty of Education, has received an award from the Centre for Collaborative Health Professional Education (CCHPE) at Memorial in recognition of his commitment and contribution to the work of the centre. Dr. Sharpe served as co-director of CCHPE for six years with fellow co-director, Dr.



Vernon Curran. During that time, Drs. Sharpe and Curran were instrumental in the development of the Graduate Diploma Program in Health Professional Education that is linked to the M.Ed. (Post-Secondary Studies) degree. As well, Drs. Sharpe and Curran were co-principal investigators of the Health Canada project Collaborating for Education and Practice: An Interprofessional Education Strategy for Newfoundland and Labrador. This project laid the foundation for the interprofessional education program currently offered at Memorial. Dr. Sharpe served as a member of the steering committee of the Canadian Interprofessional Health Collaborative and was an editorial board member of the *Journal of Interprofessional Care*.



DR. MICHAEL WOODS, associate professor of genetics, has received the Canadian Cancer Society's Medal of Courage in recognition of exhibiting exceptional courage in his personal battle with cancer and serving as an inspiration and role model to others. Dr. Woods is past president of the Newfoundland and Labrador Division

of the Canadian Cancer Society. As a molecular geneticist in the Discipline of Genetics; one of his primary research interests is in the genetics of colorectal cancer, specifically studying the population of Newfoundland and Labrador. He obtained his PhD from Memorial in 2001 and then received a post-doctoral fellowship from the National Cancer Institute of Canada to study colorectal cancer genetics at Mt. Sinai Hospital in Toronto. During this time he was diagnosed with testicular cancer, but has been cancer free for the past 10 years.

New faculty



DR. LINDA KELLY
ASSISTANT PROFESSOR OF
NEUROLOGY

Dr. Linda Kelly (Class of 2005) has returned to the Faculty of Medicine following a neuro-ophthalmology fellowship at Emory University from 2011-2013. She did her residency in neurology at

Memorial from 2005-2010.

Inspired by teachers such as Drs. William Pryse-Phillips, Alan Goodridge and Mark Stefanelli, Dr. Kelly decided to pursue a career in neurology. Her current practice is based at the Health Sciences Centre, with one day a week at the Miller Centre.

Dr. Kelly has published in the areas of teaching ophthalmoscopy to medical students and idiopathic intracranial hypertension. During her residency at Memorial she was involved in three studies about multiple sclerosis, assessing patients in multicentre trials for various medications.

In her spare time, Dr. Kelly has been involved with various volunteer activities, including St. John Ambulance. She was admitted to the Order of St. John in 2012; in 2010 she received a certificate for 2,000 hours of voluntary community service to St. John Ambulance, and in 2009 she received the Service Medal of the Order.



DR. ADAM DUBROWSKI
DISCIPLINE OF EMERGENCY
MEDICINE

Dr. Adam Dubrowski brings a wealth of knowledge in optimizing the use of simulation as a teaching method to his new position as associate professor in the Discipline of Emergency Medicine. He will provide

leadership and build scholarship and research capacity in the development and evaluation of simulation programs in the new Clinical Learning and Development Centre in the Faculty of Medicine.

“I am a resource to everyone,” he said. “Although my primary appointment is with the Faculty of Medicine, my vision is to network throughout university units such as the School of Nursing and the School of Human Kinetics and Recreation as well as the Marine Institute, with geographical locations from St. John’s to Corner Brook to Goose Bay, with scholarship in simulation. Together with a creative and visionary team, I am working to build what we are calling

the Tuckamore Network – like the small stunted evergreens that form closely matted ground cover on the barrens, we are stronger by holding together.”

Dr. Dubrowski’s research career began by studying factors influencing the acquisition of technical skills for surgery. “I believe that we are in an era where only fully competent health professionals should provide care to patients and simulation is one of the many tools that can be used to achieve this competency,” he said. “In the past, I’ve studied the factors influencing the retention and maintenance of skills learned in simulated settings. More recently my interests have evolved to study the acquisition of complex clinical skills, behaviours and attitudes by progressively changing the simulated experiences to match the learner’s needs.”

Dr. Dubrowski earned his PhD in kinesiology from the University of Waterloo in 2001 and joined the Wilson Centre and Department of Surgery at the University of Toronto. From 2007 he was director of the Centre of Research in Nursing Education at the Lawrence S. Bloomberg Faculty of Nursing. In 2009 he joined the Sick Kids Learning and Research Institutes and the Department of Pediatrics.



DR. JULIE EMBERLEY
ASSISTANT PROFESSOR OF
PEDIATRICS

Dr. Julie Emberley (Class of 2006) has joined the Faculty of Medicine as an assistant professor of pediatrics; she is also a staff neonatologist at the Janeway Children’s Health and Rehabilitation Centre.

After earning her MD at Memorial, Dr. Emberley did a pediatric residency at the Children’s Hospital Los Angeles in California. Following that, she did a neonatal-perinatal medicine fellowship with the Integrated Training Program at the University of Toronto, the Hospital for Sick Children, Mount Sinai Hospital and Sunnybrook Health Sciences Centre in Toronto. In 2013 she completed a master of health sciences in bioethics at the Institute for Medical Sciences, Joint Centre for Bioethics, University of Toronto.

In 2012, Dr. Emberley was awarded the Audrey Tan-Dy Humanitarian Award from the Neonatal-Perinatal Medicine Training Program for consistently demonstrating superior clinical skill and compassion, humanism, altruism respect and empathy in providing care to infants and their families.

Dr. Emberley’s research interests are in the area of ethics. She presented a poster at the Canadian Bioethics Society Conference last spring titled Promoting Justice for Vulnerable Newborns Using Rawls’ Social Contract Theory; this poster

was also presented at the annual meeting of the American Society for Bioethics and Humanities. in Atlanta, Georgia, held in October 2013. She also made oral presentations at these two conferences on the topic Randomized Controlled Trials in Maternal-Fetal Surgery (MFS): Who is the Subject and Why it Matters. In October of 2013 she was an invited speaker on a panel for Ethical Issues in the Care of Adolescents in the ER at the Janeway Emergency Pediatric Conference.

“I am currently working on a research project to examine ethics education within the Pediatrics Residency Program to help in the development of a new curriculum,” said Dr. Emberley. “We want to ensure that trainees are prepared to deal with ethical issues in practice and we are looking at how best to do that within the residency program.”

Dr. Emberley is also collaborating on another project based in Toronto on family-integrated care. “St. John’s is a small centre, but in collaboration with other centres we can engage in innovative ethics and neonatal research on a national level.”



DR. LYN POWER
ASSISTANT PROFESSOR OF FAMILY
MEDICINE

Based at the Burin Family Practice, Dr. Lyn Power (Class of 1996) was recently appointed as an assistant professor in the Discipline of Family Medicine. She is a clinical educator in the Rural Medical Education Network (RMEN) and the site lead for the Family Medicine Project for Enhanced Rural and Remote Training (PERRT) within its postgraduate training program.

Enhanced rural training is offered in Burin and Grand Falls-Windsor whereby residents can spend up to one year of their two-year program based at one rural site. This option was financed in 2011 through special funding from the provincial Department of Health and Community Services and Health Canada. Dr. Power has been instrumental in getting the Burin site up and running.

Dr. Power’s faculty interest is in longitudinal clerkships and last year she piloted an extended clerkship rotation in Burin. With her faculty appointment, she will now be able to block off time for educational and administrative work to improve the programs for clerkship and residency. In addition to Dr. Power, the MUN preceptors in Burin are Drs. Stacey Saunders and Bill Moulton.

Dr. Power has been in Burin since August 1998, following a locum in Clarenville. “I wanted a well-rounded practice and I had identified that size of a centre as where I wanted to practice. I am currently chief of emergency and the learning curve is continuous.”

In 2011, Dr. Power received the Dr. Yong Kee Jeon Award from the Discipline of Family Medicine for excellence in teaching family medicine residents.

Dr. Power said the biggest challenge to living in a rural area is keeping up with the sports and music interests of her sons Liam, 12, Shaemus, 10 and Simon, age 5. “Fortunately my husband is able to stay home because a lot of opportunities are St. John’s-based, and that requires a lot of travel.”

New staff



HEIDI
COOMBS-
THORNE
MEDICAL
EDUCATION
SCHOLARSHIP
CENTRE

Heidi
Coombs-Thorne,
PhD, has joined

the Medical Education Scholarship Centre (MESCC) as a research assistant II, providing research support to faculty, residents and students involved in educational activities.

Heidi’s work involves managing and co-ordinating the design and implementation of research plans and proposals, including help with literature reviews and manuscript preparation. She’s currently working on projects with faculty members in anesthesia, family medicine and emergency medicine.

“There are always new projects coming in,” she said. “People usually find me through word-of-mouth.”

Some people come to Heidi with an idea for a research project, and she can help them formulate it and move them through the ethics review. Others have papers prepared, and she can help with editing. “If someone wants to approach a journal with a paper they have written I can help them think in terms of pitching it.”

For anyone interested in availing of Heidi’s services, she can be contacted at 709 777 7096 or hthorne@mun.ca.

A passion for teaching

DR. SHAKTI CHANDRA'S career has been dedicated to teaching anatomy both inside the classroom and in the broader community. She is known in classrooms throughout the province for her captivating presentations on the human body.

“I have always believed that the key to healthy living is education,” said Dr. Chandra. “Sometimes seeing is believing – if I can prevent just one person from not smoking by showing them a smoker’s lung or persuade another to take better care of their own body, it’s worthwhile.”

Dr. Chandra began teaching gross anatomy at the medical school in 1974. “I enjoy the labs, tutorials and review sessions. In addition, I feel very comfortable giving lectures on any part of the body and am the only anatomist at Memorial who has delivered all the lectures in the course.”

There is no doubt that students appreciate her effort and many choose to work with her in the lab not only to earn some money but also learn anatomy. Over a period of eight years, 40 residents did an elective with her.

The proof of her teaching effectiveness is reflected in the teaching awards she has received. She was named Teacher of the Year twice (in 2011 and 1996), an award given by first-year medical students. In 2013 she received the Excellence in Teaching Award, a university-wide award given by the MUN Students’ Union.

Dr. Chandra’s work and community outreach is based on a firm belief that everyone should have the opportunity to see what they are made of – what lies beneath the skin. To make it easier for people to have this opportunity, she travels from community to community. For the Anatomy Outreach Program she developed, she tailors the presentations according to the audience.

“These are interactive sessions where the audience has a chance to see and feel real human bones, organs, body parts and artificial joints. Attending the presentations gives the audience a better understanding of the bony framework, the muscles that move and stabilize the body, as well as the internal organs.”

Dr. Chandra says that the “dead teach the living.” The anatomical specimens allow people to see for themselves, for example, the effect of smoking on the lungs. “Everyone knows that smoker’s lungs look black, still they are shocked to see the two sets of lungs side by side. They see a cirrhotic liver that may have been caused by excessive alcohol intake. They may hold the heart of somebody who had a double coronary bypass. It is one thing to hear about coronary bypass but another to hold a heart with bypass and see where the arteries were stitched and appreciate how small the coronary arteries are which get blocked resulting in a heart attack.”

On a recent visit to a school, Dr. Chandra was told by two graduates of the school who were visiting that they remembered the presentations and have never smoked. “One student said, ‘That was the best school day ever,’ while another shook my hand, thanked me, and said, ‘See you in the medical school.’”

Over the years Dr. Chandra has taken great pains to ensure she can demonstrate the body’s structures clearly. The plastinated specimens she currently uses are far different than the specimens she used prior to 2002, when she began using plastinated specimens. “At one time we produced plastinated specimens here but for various reasons we stopped producing them. Then I went to Queen’s University, where I plastinated and brought back 100 specimens – these were good but not superb, and moreover these were small specimens.”

Fascinated by the Body Worlds exhibition created by Dr. Gunther von Hagens, the inventor of the unique plastination technique, she contacted him and ended up spending a sabbatical year at the Plastinarium in Guben, Germany during 2011-2012 and a few weeks the following year.

During her time in Germany, Dr. Chandra produced 100 plastinated specimens, including many full body specimens. As



Dr. Chandra demonstrates one of the new plastinated anatomy specimens she created during a sabbatical in Germany.

a gesture of appreciation for her work, Dr. von Hagens donated half of the specimens created by Dr. Chandra to Memorial University, plus plastinated slices and anatomy glass to her. The value of the whole collection is \$343,000.

“This is my legacy to the medical school,” said Dr. Chandra. “My work with Dr. von Hagens and bringing back plastinated specimens, including whole bodies, has not only fulfilled my dream but will be a tremendous asset to the medical school and the province for years to come.”

Dr. Chandra notes that Memorial is the only medical school in Canada to have full body plastinates. “It makes it a lot easier to appreciate the relationships and follow structures. Students have the opportunity to learn at their own pace and in their own time without the limitations of fresh cadavers. In fact these may be the only full cadavers that our students will get to see.”

Dr. Chandra said that the best way to learn anatomy is to see real specimens. “These are far superior to any 3D animation that one may follow. We are well aware of the limitations of the traditional cadavers – the chemicals, expertise to dissect, difficulty in storage and display, and deterioration with time. I gave it all to ensure that Memorial has the finest specimens that I could provide. These specimens will last almost forever.”

The stained slices in various planes complete the picture.” Some of these are in back lighted viewing boxes and others in frames. It is like having a CT scan or MRI in colour rather than shades of grey,” she explained.

Dr. Chandra’s achievements in teaching, scholarly activity, creative work and service are truly astonishing. In the past few months, she has made 14 educational videos using the plastinated specimens that she created. “The videos vary in length from 10-45 minutes and demonstrate the structures clearly, with questions posed in between as well as at the end of the presentation to check understanding.”

The advantage of these videos, over others available commercially, is that the students have the option to view the very specimens that are used in the video. “In fact they can view the specimen as they watch the video,” said Dr. Chandra. “And they can test their knowledge by turning the sound off! Also these are in high definition. These videos along with the specimens that I have produced will change the way students learn anatomy.”

Dr. Chandra’s videos can be viewed at <http://www.youtube.com/user/MUNmedicine/videos>.

Dr. Chandra’s passion is teaching. “I go out of my way to help students learn. The creative process of dissecting and making videos gives me great satisfaction because I feel that my teaching contributes to the making of good physicians. I strive to go a step ahead and make a difference in their lives. Student feedback ensures that I do.”



Dean James Rourke and Dr. Chandra with one of the full body plastinated specimens donated to Memorial by Dr. Chandra.

Memorial researcher receives new Canadian Cancer Society grant

DR. MANI LARIJANI, a biomedical sciences researcher in the Faculty of Medicine, has been awarded a new Canadian Cancer Society Innovation Grant to study how to stop an immune system enzyme from turning some immune cells into aggressive cancer cells. The presentation was made Aug. 22 at Daffodil Place.

The three-year grant, worth close to \$200,000, is funded through a generous donation from the estate of W. Gary Rowe, a successful St. John's lawyer, art collector and philanthropist who died June 21, 2010.

"Research was important to Gary and community was important to Gary," said Betty Simms, Mr. Rowe's wife. "This donation brings those two things together so wonderfully. We are proud to be supporting this project."

Dr. Larijani and his research team are studying a DNA-damaging enzyme called activation induced deaminase (AID) that mutates the genome of normal immune cells, thereby transforming them into leukemias. "AID also contributes to tumor adaptation and drug escape by continuing to mutate tumor genomes," said Dr. Larijani. "Therefore, inhibiting its activity will be of benefit for lymphoma/leukemia treatment. We will use this grant to study several innovative approaches towards designing specific inhibitors of AID activity."

While AID makes antibodies more effective at fighting infection it can also mistakenly turn some immune cells into the most aggressive types of cancers and may also make some tumour cells resistant to cancer treatments. "AID makes these mistakes in almost half of the genes in those immune cells," said Dr. Larijani. "We will be studying the function of the enzyme in lymphoma and leukemia."

Not much is known about how the structure of the AID enzyme and how it works, and Dr. Larijani's lab is one of the few research groups working with AID. The team has already made some interesting discoveries related to this enzyme, including comparing how AID works in different animals and humans and computer modelling of AID. "This new project builds on this pioneering work, studying the enzyme in details to determine which are the critical parts of its structure so that treatments can be developed to block its harmful functions," said Dr. Larijani.

At the presentation ceremony at Daffodil Place, hematologist Dr. Mary-Frances Scully said that cancers of the blood and immune system cover a whole spectrum of disorders, including 120 different sub-types. "In children, acute leukemia is the most common cancer of the blood. In adults, about 20 per cent of cancers are cancers of the blood and immune system."

Dr. Mike Woods, past president of the Canadian Cancer Society NL Division and a genetics researcher at Memorial, described Dr. Larijani as a "rising star in the Faculty of Medicine." He noted that there were a large number of applications for this grant and the applications were reviewed in the same pool as all other Canadian applications, through a rigorous process at the national level.



From left: Matthew Piercy, executive director of the Canadian Cancer Society NL Division, Betty Simms, Dr. Mani Larijani, Dr. Mary-Frances Scully and Dr. Mike Woods.

"This new project builds on this pioneering work, studying the AID enzyme in details to determine which are the critical parts of its structure so that treatments can be developed to block its harmful functions."

MUN researchers launching information campaign on diabetes complications

NEW RESOURCES to improve the care of children and adolescents with type 1 diabetes and diabetic ketoacidosis are being rolled out to pediatric emergency rooms across the province.

The project is led by Dr. Leigh Anne Newhook, associate professor of pediatrics, and was funded by the Public Health Agency of Canada. Diabetic ketoacidosis (DKA) is a potentially life-threatening complication which happens predominantly in those with type 1 diabetes. It results from a shortage of insulin; in response the body switches to burning fatty acids and producing acidic ketone bodies that cause most of the symptoms and complications.

As a way of informing health care professionals, educators and the general public about the signs and symptoms of diabetes in children, a poster campaign has already been undertaken which involved sending posters to all family doctors' offices, public health offices, pharmacies and schools. "Early detection of type 1 diabetes has been shown to reduce episodes of DKA," said Dr. Newhook.

A 2013 calendar has also been produced as part of the DKA project. Two research assistants from the Janeway Pediatric Research Unit went to the Canadian Diabetes Association Camp Douwanna in July 2012. Activities with the camp participants included education and DKA prevention. The artwork produced by the children and teens was used to develop a calendar, along with diabetes education tips of the month. The calendar has been distributed to families and health care professions in the province.

"We are now about to roll out a series of knowledge translation resources to pediatric emergency rooms across the province including a poster for DKA management, a resource binder for health care providers, and project brochures for families," said Dr. Newhook.

As part of the project, new guidelines were produced by specialists at the Janeway. "Pediatric DKA guidelines are different than adult DKA guidelines," explained Dr. Newhook. "Pediatric DKA is a life-threatening condition that can occur in children and teens with type 1 or type 2 diabetes. The management in pediatrics differs than that for adults, largely because children can develop a complication called cerebral edema."

Designed and developed by diabetes nurse educator Donna Hagerty, DKA prevention toolkits have been made available to families with a child with diabetes. Included in the kit are insulin syringes to be used for giving back-up insulin doses if needed, ketone strips and instructions for parents to follow if their child has high blood sugars.

As part of the project, members of the team visited hospitals across the province and met with health care professionals.



From left: Debbie Harnum, Dr. Bob Porter, Dr. Leigh Anne Newhook, Dr. Shahzad Waheed, Dr. Karen Murphy, and Dr. Kevin Chan.

Participants were taught about early detection of diabetes in children, management and prevention of DKA. "Also coming soon is a web-based on-line course developed for family physicians and pediatricians on the management of pediatric DKA which will be available nationally," said Dr. Newhook.

As part of the Newfoundland and Labrador DKA Project, research studies have been presented at local and national conferences and submitted for publication. One project was a qualitative study focusing on the needs of families dealing with childhood diabetes, and the second was a review of all cases admitted to the Janeway Hospital from 2008-2011. Ongoing research will look at whether the number of admissions of DKA changes after the project is completed. Graphic design and support for all the materials developed for the campaign were provided by Jennifer Armstrong, Health Sciences Information and Media Service.



Collaborative research empowers and protects indigenous communities



THE INTELLECTUAL PROPERTY Issues in Cultural Heritage (IPinCH) Project has received \$50,000 as the inaugural recipient of the Social Sciences and Humanities Research Council of Canada's (SSHRC) Partnership Award.

Dr. Daryl Pullman, professor of ethics in the Division of Community Health and Humanities, is a team member of IPinCH, which promotes a model of collaborative research that empowers and protects indigenous communities, while also enriching scholarly inquiry. Dr. George Nicolas, an archaeologist at Simon Fraser University, is the principal investigator of IPinCH.

Dr. Pullman became involved in this project in 2008 when it was first funded through a \$2.5 million grant from SSHRC. He is chair of the Bioarchaeology, Genetics and Intellectual Property Working Group, which is exploring issues such as what happens when data are contradictory at the interface between genetics and culture.

"The IPinCH project includes more than 50 international scholars from a broad range of disciplines," said Dr. Pullman, who was asked to join the project because of his work in genetics related to health. "Those affiliated with my working group are looking at how genetic and biologic data are used in discussions about cultural relationships and affiliations. For example, in settling issues over sovereignty, or rights to land, material objects, and intellectual property, are genetic data being given more credence than oral tradition?"

Dr. Pullman has contributed a chapter on the relationship between genetics and culture to *The Ethics of Cultural Appropriation*, published by Wiley, and he will be contributing a book chapter on the ethics of repatriation of ancient remains for the upcoming book *Traces of Ochre*, edited by Dr. Fiona Polack of Memorial's Department of English, that is examining a range of issues related to the Beothuk. He also co-authored an article with Dr. Nicolas for the journal *Inuit Studies*.

IPinCH is an international collaboration of archaeologists, indigenous organizations, lawyers,

anthropologists, ethicists, policy makers, and others working to explore and facilitate fair and equitable exchanges of knowledge relating to archaeology.

Dr. Pullman is a member of the Research Oversight Committee for a National Centre of Excellence focussing on Technology Evaluation in the Elderly. He served previously on the Canadian Institutes for Health Research (CIHR) Stem Cell Oversight Committee, on the advisory board for the CIHR Institute of Genetics and as a member of the CIHR Standing Committee on Ethics. He was the GE³LS lead for the Atlantic Medical Genetics and Genomics Initiative (AMGGI), a large Genome Canada funded project designed to cover the full spectrum of genetic work from gene discovery, to clinical application, to health policy development. He is currently GE³LS lead and co-principal investigator with Dr. Terry-Lyn Young, Genetics, and Dr. Kathy Hodgkinson, Clinical Epidemiology, for a large-scale project on sudden cardiac death, funded by the Atlantic Canada Opportunities Agency. He has published widely on a variety of issues in research and clinical ethics, and has a particular interest in the concept of human dignity and how it relates to the notion of genetic identity.

Launch of new research initiative

THE LIVING WITH HIV/AIDS (LHIV) Innovation Team held an official launch Sept. 23 of a major new research initiative with a goal to transforming the way chronic HIV/AIDS care is delivered in Canada. This \$2.5 million five-year team grant is funded by the Canadian Institutes of Health Research, and is being conducted in Newfoundland and Labrador, Ontario and Manitoba.

The goal of the LHIV Team is to conduct the foundational work required to shift the majority of HIV care to the primary healthcare community, while maintaining essential ties to specialist HIV care. The aim is to improve the quality of HIV care by exploring improved provider communication, strategizing around ethical issues arising in care and empowering self-management for persons living with HIV/AIDS.

Dr. Clare Liddy and Dr. Claire Kendall, the principal investigators from the Bruyère Research Institute in Ottawa joined team members from Newfoundland, including Drs. Chris Kaposy, Jill Allison, Shabnam Asghari and PhD student Zack Marshall. Dr. Richard Marceau, vice-president (research), attended the launch, along with Dr. Reza Tabrizchi, associate dean for research and graduate studies

(medicine), and Dr. Marshall Godwin, director of the Primary Healthcare Unit. Community partners attending the launch included staff members from the provincial HIV Clinic.

Dr. Asghari explained that with improved treatment, people with HIV are now living longer and developing other chronic conditions associated with aging and specific HIV- and treatment-associated disorders. “These multiple chronic conditions need to be managed, but the current system is not designed to deliver this kind of comprehensive care,” she said. “The goal of this project is to change how care is delivered by using innovative strategies to connect family doctors and specialists.”

Since the HIV virus emerged, the care of people with HIV has been a source of ethical issues, said Dr. Kaposy. “Health care providers and people living with HIV have developed ways of managing ethical issues in HIV care. But since the move to an emphasis on primary care is a new development, we are interested in finding out what new ethical issues might arise in this care environment and creating tools to support clinicians and people living with HIV. Our team – with the health ethics expertise available in the Faculty of Medicine – is also available to help provide recommendations on how to deal with these ethical issues.”

Mr. Marshall said this project provides an exciting opportunity to partner across provinces as well as within Newfoundland and Labrador, by bringing together an interdisciplinary team of university-based researchers and clinicians, policy makers, community organizations and people living with HIV. “Part of my involvement in this project is to support the engagement of community partners, some of whom will be working together for the first time.”



From left: Zack Marshall, Richard Cullen, Dr. Reza Tabrizchi, Dr. Chris Kaposy, Dr. Clare Liddy, Dr. Claire Kendall, Dr. Marceau, Dr. Shabnam Asghari, Dr. Jill Allison, Dr. Marshall Godwin, Dr. Debbie Kelly, and Cheryl Schultz.

Grad student involved in citizen engagement



WHAT VALUES do the public find important in decision making? A public engagement project in central Newfoundland has explored that question through focus group sessions and on-line engagement sessions, and the results are currently being analyzed.

Peter Wilton, a master's student in the Applied Health Services Research program, is working with Central Health on evaluating the public engagement exercise. The initiative was started due to a perceived need to engage more with the public related to challenges of service delivery and how decisions should be made regarding resource allocation. It was put off by various partners in the community including Central Health, the College of the North Atlantic and the rural secretariat.

The focus group and on-line engagement sessions focused on the values that the public find important in decision making. “There were two scenarios, one involving education, the other health, that participants were asked to think about during the sessions,” said Mr. Wilton. “Information from the sessions was collected and will be used in the forthcoming publication of a report by Central Health and the other partners.”

Mr. Wilton's project focused on a process evaluation and comparison of the two engagement methods. Every member of the public participating was asked to complete a survey, and he also interviewed members of the planning committee.

This engagement project was innovative because of a number of factors, said Mr. Wilton. “Over 60 per cent of residents in central Newfoundland live in rural areas – it's a very dispersed population with an aging population. There were several different community partners involved and different methods of engagement used.”

While his research is not yet complete, Mr. Wilton noted that the response to the online engagement was not as good as the response to the focus group sessions. “The online engagement part of the initiative was innovative but it's a new technology, especially for people living in rural areas.”

Mr. Wilton's research is supported by an award from the Harris Centre Student Research Fund. His supervisory committee members are Drs. Roger Chafe, Doreen Neville and Rick Audas, all from the Faculty of Medicine.

Janeway grant supports research in development of childhood obesity



DR. PARDIS PEDRAM, a PhD student in the Faculty of Medicine, has received \$5,000 from the Janeway Research Advisory committee to investigate the role food addiction and gastrointestinal hormones play in the development of childhood obesity.

Dr. Pedram, under the supervision of Dr. Guang Sun, is currently investigating the prevalence of food addiction in the general adult Newfoundland population. On Sept. 4, 2013, she published a landmark paper in the *PLOS ONE* journal indicating, for the first time, that food addiction is significantly prevalent in the general population and is significantly associated with the development of obesity in adults.

“We found that one in 20 adults in the general population are indeed addicted to food and more importantly this addiction is significantly associated with the severity of obesity,” said Dr. Pedram.

These important findings have garnered national and international attention through numerous newspaper, television and radio interviews.

Dr. Pedram now wishes to expand her research focus to determine if food addiction is also significantly prevalent among children in the general population and whether this condition is again associated with the development of obesity. “At present, there is no research available whether children in the general population are vulnerable to food addiction which could subsequently lead to childhood obesity or even juvenile diabetes,” she said.

This will be the second consecutive grant awarded to Dr. Guang Sun’s students by the Janeway Children’s Hospital. Last year PhD student Farrell Cahill and M.Sc. student Danny Wadden also won \$5,000 for their research proposal investigating the role appetite and energy regulation gastrointestinal hormones play in the development of childhood obesity. Their work has already led to many significant findings which will be presented through three poster presentations at the 31st Annual Obesity Society Scientific Meeting in Atlanta, Georgia, USA, from November 11-16, 2013.

“The World Health Organization approximates that globally there are 43 million overweight children under the age of five,” said Mr. Cahill. “This is especially relevant for the province of Newfoundland and Labrador considering it has one the highest rates of obesity and diabetes in Canada.” Mr. Wadden goes on to explain that, “Our interest in obesity is of critical importance considering that excess adipose (fat) tissue accumulation is associated with various co-morbidities such as diabetes, cardiovascular disease and various types of cancer which are being found at earlier and earlier stages of life.”

Dr. Sun and his team believe their work in food addiction will help to find more specific causes of childhood obesity and its co-morbidities which will aid in the development of effective treatments for these conditions. For more information on participation in the study, please contact Dr. Guang Sun at 709-777-8661 or by email at gsun@mun.ca. (See related article p.36).



Neuroscience Golden Synapse 2013

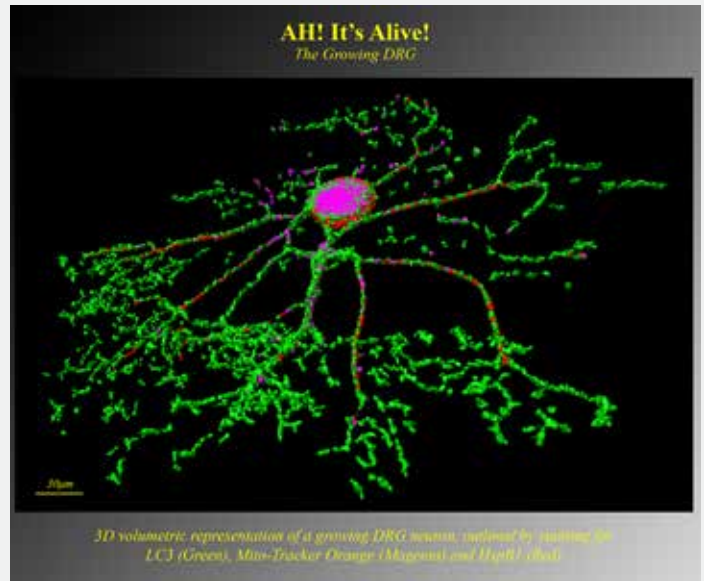
THE NEUROSCIENCE Golden Synapse 2013 and awards reception was held at the Fluvarium on May 31, 2013. The Golden Synapse is an annual seminar competition amongst graduate students in the neurosciences program within the Faculty of Medicine.

This year's competition included two guest lectures. The first, by Dr. Carolyn Harley, professor *emeritus*, Department of Psychology, was titled The Rewards of Being Nosey in Science. The keynote lecture was given by Dr. Tamas Horvath, a professor at the School of Medicine, Yale University. He engaged the audience with his talk titled Hypothalamic hunger-promoting neurons regulate higher brain functions and longevity.

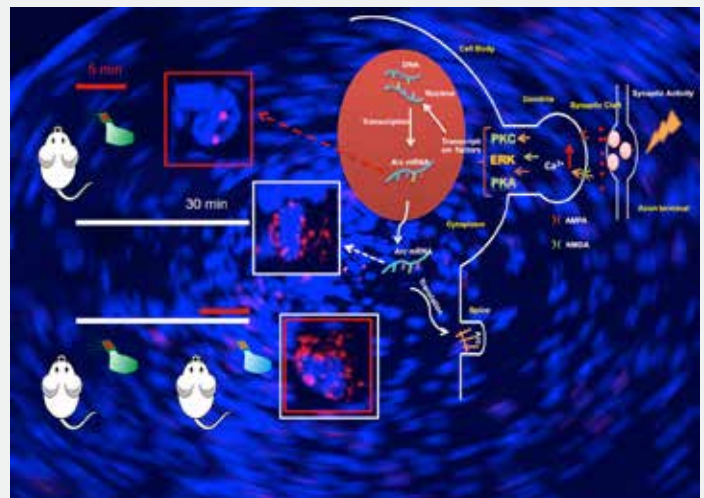
Victoria Linehan was awarded Best PhD presentation, Natasha Belanger-Willoughby received the award for the Senior M.Sc. presentation, and Alex Dias was awarded Best First Year M.Sc. presentation. All three students were supervised by Dr. Michiru Hirasawa.

The 2013 symposium planning committee launched their first cover art competition for the symposium booklet. Joseph Clarke, a PhD candidate in Dr. Karen Mearow's lab was awarded first place for *AH! It's Alive! The Growing DRG*. Amin Shakhawat, a PhD student in Dr. Qi Yuan's lab was awarded the second-place prize for *Seeing is Believing: A Neuronal Code for Smell in the Brain*.

The symposium was financially supported by the Office of Research and Graduate Studies (visiting speaker program), and a Distinguished Travelling Scientist Program grant from the Society for Neuroscience.



AH! It's Alive! The Growing DRG by Joseph Clarke



Seeing is Believing: A neuronal code for smell in the brain by Amin Shakhawat



Victoria Linehan



Natasha Belanger-Willoughby



Alex Dias

Cancer and Development Graduate Research Symposium



Hope in Bloom

THE ANNUAL Cancer and Development Graduate Research Symposium took place June 7, 2013 at the Junior Common Room, Gushue Hall, followed by an evening awards reception at Portobello's Restaurant. The 15 graduate students in the program had the opportunity to present their independent research findings to peers, faculty and guests, and a chance to win one of the Mary program prizes for best oral presentation – the Mary O'Neill Award (M.Sc.) or the Mary Pater Award (PhD) – or a poster prize.

The 2013 winners were: Sarah Dinn (Mary O'Neill Award), supervised by Drs. Daniel MacPhee and Karen Mearow; and Kerri Smith (Mary Pater Award), supervised by Dr. Ann Dorward. Karla Morrissey, supervised by Drs. Hélène Paradis and Robert Gendron, was the M.Sc. poster prize winner. Faculty members that have supervised or co-supervised students in the Cancer and Development graduate program include: Drs. Hélène Paradis, Bob Gendron, Christopher Kovacs, Jules Doré, Ann Dorward, Edward Kendall, Kensuke Hirasawa, Guang Sun, Jon Church, Laura Gillespie, Kenneth Kao, John Thoms, Cathy Popadiuk and Gary Paterno.

In addition to student presentations, the audience was enlightened by two research seminars provided by visiting speaker Dr. Peter Lansdorp (MD, PhD), affiliated with the Terry Fox Laboratory of UBC and current scientific director of the European Research Institute for the Biology of Ageing, University Medical Center, Groningen, The Netherlands.

The 2013 symposium planning committee also launched their inaugural cover art competition for the symposium booklet, with two winners chosen from five entries. Yumiko Komatsu was awarded first place for *Hope in Bloom* (oil on board); Leena Derwish was awarded the second place prize for a digital portraiture of John Lewis Paton, the first president of Memorial University.

Financial support for the symposium was provided by the Office of Research and Graduate Studies (visiting speaker program). The 2014 Cancer and Development Graduate Research Symposium is scheduled for Fri. June 13. For more information about the Cancer and Development graduate program, visit: www.med.mun.ca/graduate/home.aspx.

Participants in the Cancer and Development Graduate Research Symposium 2013 included (front row, from left) Leena Derwish, Pardis Pedram and Peyvand Amini; (second row, from left): Roya Derwish, Yumiko Komatsu, Manohari Samaraweera and Sarah Dinn; (third row, from left) Shengnan Li, Julia Ferguson, Kerri Smith and Clare Lewis; (fourth row, from left) Karla Morrissey, Danny Wadden, Nader Abusara and Aimee Hand.



Alumni news

CLASS OF 1987

The Care Transformation Team at Alberta Health Services, led by Dr. Ann Colbourne, received the President's Excellence Award for Outstanding Achievements in Quality and Safety Improvement. Over the past two years, this team has worked with the medicine, renal and neurosciences programs at the University of Alberta Hospital and Royal Alexandra Hospital to engage patient advisors, front-line teams, physicians and leaders in providing patient and family-focused, accessible quality care through a sustainable workforce in an improvement culture. The Care Transformation Team has implemented initiatives such as daily interprofessional Rapid Rounds, front-line leadership councils, and tools for managing clinical performance and giving information to patients and families.

CLASS OF 1991

Dr. Carman Giacomantonio has been presented with the Order of Italy, and is thereby honoured as a Knight of the Italian Republic. The award was presented to him in recognition of his role as chief medical director of Cancer Care Nova Scotia, and for his outstanding role as a clinician, researcher, educator, and community leader. The ceremony was held April 27 at the Italian Canadian Convention Centre in Halifax. It was presented to him by the Canadian Consul General of Italy, the Honorary Consul of the Italian Republic for Nova Scotia, and was recognized by the prime minister of Canada.

Immunology and Infectious Diseases Graduate Student Research Symposium

THE 24TH ANNUAL Immunology and Infectious Diseases Graduate Student Research Symposium was held at the GEO Centre on Aug. 16, 2013, followed by an awards reception at The Rooms.

Invited speakers included Nader Abusara, Dr. Tiago Hori, Dr. Marije Booman, Hannah Munro, Yanyan Huang, Craig Ayre, Ludmila Gouveia, Kim Chafe and Dr. Valerie Booth, as well as visiting speaker Dr. Marc-Andre Langlois, University of Ottawa.

Graduate students were given a chance to win prizes for best research presentations. Best Overall Presentation (PhD or M.Sc. level) of \$200; Best M.Sc. Student Award of \$100; and Best PhD Student Award of \$100.

Hassan Kofahi, supervised by Drs. Rodney Russell and Michael Grant, won Best Overall Presentation. He is studying the mechanisms by which hepatitis C virus destroys the liver cells that it infects. Nathan Taylor, supervised by Dr. Rodney Russell, won Best M.Sc. Student Award. He is studying how the hepatitis C virus develops resistance against antiviral drugs used to treat HCV-infected individuals.

Justin King, supervised by Dr. Mani Larijani, won Best PhD Student Award for his presentation titled Model-guided mutational analysis of activation-induced cytidine deaminase (AID) to elucidate structure-function relationships. He is studying a potent genome mutating enzyme called AID – currently the structure of this molecule is unknown and, along with it, many of its characteristics. The purpose of his research is to better understand the molecular mechanisms of AID and, using this insight, develop molecular inhibitors that would be beneficial for leukemia/lymphoma patients.



From left: Dr. Rodney Russell, Hassan Kofahi and Dr. Michael Grant



Nathan Taylor, right, and Dr. Rod Russell



Justin King, left, and Dr. Mani Larijani

Graduate student publications

In this issue of *MUNMED* we continue our feature on some of the publications by our graduate students. While the first authors on these papers are graduate students in the Faculty of Medicine, in all cases these students are greatly supported by their supervisors and other team members.



PEYVAND AMINI, a master's student supervised by Dr. Guang Sun, is first author on the paper, Beneficial Association of Serum

Ghrelin and Peptide YY with Bone Mineral Density in the Newfoundland Population, published in *BMC Endocrine Disorders Journal*. "Ghrelin and peptide YY are appetite regulating hormones involved in the regulation of energy homeostasis," explained Ms. Amini. "However, their effect on bone density was largely unknown. In this paper, association of ghrelin and PYY with body density parameters was investigated in more than 2,000 subjects from the CODING study. There was a significant positive association between circulating ghrelin and bone density in women that suggests high levels of ghrelin might have beneficial effects on bone density in the female population. In our study, PYY was not a significant player in determining bone density." The other authors on this paper are Farrell Cahill, Danny Wadden, Yunqi Ji, Pardis Pedram, Sangeetha Vidyasankar, Yanqing Yi, Wayne Gulliver, Gary Paterno, Hongwei Zhang, Alecia Rideout and Guang Sun.



FARRELL CAHILL, a PhD student supervised by Dr. Guang Sun, is first author on the paper, Short-term Overfeeding

Increases Circulating Adiponectin Independent of Obesity Status, published in the *PLOS ONE*. The other authors of the paper are Peyvand Amini, Danny Wadden, Sammy Khalili, Edward Randell, Sudesh Vasdev, Wayne Gulliver and Guang Sun. "Insulin resistance comprises about 90 per cent all diabetic cases and has become an ever increasing healthcare challenge with a significant fiscal burden," said Mr. Cahill. "This is especially relevant to Newfoundland and Labrador considering it has one the highest rates of diabetes and obesity in Canada."

Mr. Cahill explained that the accumulation of white adipose tissue (WAT) is the product of a chronic positive energy balance in an obesogenic environment. "Numerous disorders such as insulin resistance have shown a strong association with the accumulation of fat mass. Once regarded as a site for energy storage, recent research has shown that WAT secretes a large number of physiologically active proteins thus playing an integral role in human endocrinology and energy homeostasis."

Adiponectin, an insulin sensitizing and anti-inflammatory hormone, is one such protein released from adipose tissue. "Accumulating evidence suggests that adiponectin is strongly associated with glucose and lipid metabolism, and that its potential protective role is hampered by the fact that circulating adiponectin is low in the overweight/obese," said Mr. Cahill. "However, our study has shown for the first time that circulating adiponectin levels, independent of adiposity, will increase to potentially aid in the attenuation of insulin resistance during weight gain. After a seven-day positive energy challenge in 64 young male volunteers from the St. John's area, it

was found that circulating adiponectin concentration significantly increased independent of obesity status. "The findings are a positive step in indicating that adiponectin can equally protect obese and non-obese individuals from the development of insulin resistance."



JOSEPH CLARKE, a PhD candidate supervised by Dr. Karen M. Mearow, is first author on the paper, Cell Stress Promotes the

Association of Phosphorylated HspB1 with F-Actin, published in *PLOS ONE*. The maintenance of cellular structure (its cytoskeletal integrity) is a key determinant in the survival and growth of cells during stressful cellular episodes, such as radiation, inflammation or heat stress. In neurological diseases, such as the combined motor and sensory neuron disorder Charcot-Marie-Tooth disease, perturbations in cytoskeletal integrity can lead to either an establishment or progression of the disease state. "By studying how cytoskeletal integrity is maintained during cell stress and disease, and by identifying proteins that are involved in this process, we can then further develop treatment strategies that focus upon improving cell survival and growth," explained Mr. Clarke. "Previous studies from our lab have demonstrated that HspB1 promotes neuronal survival in adult rodent peripheral sensory neurons and CNS cortical neurons. Further, we have demonstrated that HspB1 plays a role in regulating axonal growth in adult rodent

sensory neurons and this appeared to be dependent upon interactions of HspB1 with the cytoskeleton, in particular, actin. In order to test this hypothesis directly we, in this study we: determined the distribution of endogenous HspB1 and filamentous actin (F-actin) in neuroendocrine PC12 cells by confocal microscopy; investigated a potential direct interaction between HspB1 and F-actin by Western analysis; and pharmacologically modified HspB1 in order to determine if the phosphorylation state of HspB1 influenced its association with F-actin.”

Mr. Clarke said this study demonstrates that the small heat shock protein B1 (HspB1) directly interacts with the cytoskeletal protein filamentous actin (F-actin) under normal conditions, and that this interaction is further enhanced by cell stress. “This work is the first to show a direct interaction of HspB1 with F-actin specifically in a cellular system.”



JILLIAN COLLINS, an M.Sc. student supervised by Dr. Christopher Kovacs, is first author on the paper titled, Lactating

Ctgrp Nulls Lose Twice Normal Bone Mineral Content due to Fewer Osteoblasts and More Osteoclasts, While Bone Mass is Fully Restored Post-weaning in Association with Upregulation of Wnt signaling and Other Novel Genes, published in *Endocrinology*. This study looked at changes in the maternal skeleton in Ctgrp null mice, which lose 50 per cent of spine mineral content during lactation but restore it fully, and found that the most marked changes occurred in genes not previously associated with

bone metabolism. “The post-lactation skeleton shows dynamic activity with more than 7 genes differentially expressed,” said Ms. Collins. “Some of these genes are likely to promote bone formation during postweaning by stimulating the proliferation and activity of osteoblasts, inhibiting osteoclasts, and increasing energy use.” Collaborators include Dr. Robert Gagel from the University of Texas MD Anderson Cancer Center, Dr. Cliff Rosen from Tufts University in Boston, and Dr. Natalie Sims from the University of Melbourne. Authors on this paper in addition to Ms. Collins are Beth Kirby, Janine Woodrow, Robert Gagel, Clifford Rosen, Natalie Sims and Christopher Kovacs.



KAZI HAQ, a PhD student supervised by Dr. Bruno Stuyvers, is first author on the paper, Evoked Centripetal Ca²⁺ Mobilization in

Cardiac Purkinje cells: Insight From a Model of Three Ca²⁺ Release Regions, published in the *Journal of Physiology*. “The research in Dr. Stuyvers’ lab utilizes a combination of experimental and computational approaches to elucidate the mechanism of ventricular tachycardia arising specifically from abnormal Ca²⁺ signaling in cardiac Purkinje fibres,” explained Mr. Haq. “The intracellular Ca²⁺ activity of Purkinje fibres is assessed by fast high resolution confocal microscopy. A computational model was developed to dissect the various components of Ca²⁺ dynamics of Purkinje fibers. In turn, the numerical reconstructs of cell observations allow to address hypotheses which are not testable with conventional experimental techniques.”



KAYLA HOLDER, an M.Sc. student co-supervised by Drs. Rodney Russell and Michael Grant, is first author of the paper, Hepatitis C

Virus-Infected Cells Downregulate NKp30 and Inhibit Ex Vivo NK Cell Functions, published in the *Journal of Immunology*. “This project examined the impact hepatitis C virus (HCV)-infected hepatoma cells have upon ex vivo natural killer cells, our natural defender against viral infections,” explained Ms. Holder. “We noted that the direct interaction of HCV-infected cells with natural killer cells significantly dampened the ability of natural killer cells to lyse target cells. Interestingly, HCV-infected cells caused decreased surface expression of a natural killer cell activating receptor, NKp30, and this receptor interacts with a ligand found to be up-regulated HCV-infected cells. Functional experiments confirmed that the decline in NKp30 expression on the surface of natural killer cells was responsible for the decline in their functions. As this interaction significantly dampens NK cell lysis, this may represent a mechanism of HCV immune escape in vivo and provides insights into how HCV may establish chronic infection.”

Ms. Holder also expressed her gratitude towards the volunteers who donated for the study. “I cannot truly express how thankful I am to every person who donated their blood. Although they cannot be named, this work could not have been done without their overwhelming generosity.” The other authors on this paper are Staci Stapleton and Maureen Gallant.

Graduate student publications



GILLIAN MORRISON, an M.Sc. student supervised by Dr. Qi Yuan, is first author of the paper titled, A Role for

the Anterior Piriform Cortex in Early Odor Preference Learning: Evidence for Multiple Olfactory Learning Structures in the Rat Pup, published in the *Journal of Neurophysiology*. “In our lab, we are interested in the neural circuitry of olfactory memories during early life in rats,” explained Ms. Morrison. “Specifically, we have honed in on a cortical structure called the anterior piriform cortex (aPCX) and have characterized its role in early odor preference learning, an associative learning model. We have shown that the aPCX plays a major role in forming new memories at this young age and that neuromodulation in the aPCX is critical for such learning. For example, if we temporarily ‘shut off’ cellular activity in the aPCX, pups are unable to learn to associate tactile stimulation with a novel odor (peppermint). The same is true if we block NMDA receptors or beta-adrenoceptors prior to odor conditioning. We also employed in vitro electrophysiology and were able to induce long-term potentiation (LTP) at the synaptic level. This was followed by ex vivo electrophysiology, which supported our LTP model.”



JUSTIN KING, a PhD student supervised by Dr. Mani Larijani, is co-first author with research assistant Hala

Abdouni of the paper, Zebrafish AID is Capable of Deaminating Methylated Deoxycytidines, published in *Nucleic Acids Research*. Mr. King said the paper describes their discovery that activation-induced cytidine deaminase (AID) from zebrafish but not human (or other species examined) can deaminate methylated cytidines. “Here, we showed for the first time that AID, a DNA-mutating enzyme previously thought to be strictly involved in the immune system, can actually act in epigenetic regulation and developmental regulation of gene expression in some species,” he explained.

Using molecular docking techniques, they describe the interaction between different species of AID and methylated/non-methylated DNA on the molecular level. Their analysis of the AID-DNA complex suggests that increased enzymatic efficiencies on methylated substrates were not simply due to a larger catalytic pocket. Rather, subtle conformational differences in the loops that govern and stabilize the catalytic pocket of AID allow for a more flexible structure to accommodate the extra volume of the methyl group. Mr. King’s research is supported by a Ph.D. fellowship from the Beatrice Hunter Cancer Research Institute.



YUN ZHU, an M.Sc. student supervised by Dr. Peter Wang, is first author of the paper titled Dietary N-nitroso Compounds

and Risk of Colorectal Cancer: A Case-Control Study in Newfoundland and Labrador and Ontario, Canada, published in the *British Journal of Nutrition*. “Several N-nitroso compounds (NOC) have been shown

to be carcinogenic in a variety of laboratory animals, but evidence of their carcinogenicity in humans is lacking,” explained Ms. Zhu. “We aimed to examine the association between NOC intake and colorectal cancer (CRC) risk and possible effect modification by vitamins C and E and protein in a large case-control study carried out in Newfoundland and Labrador and Ontario.”

A total of 1,760 case patients with pathologically confirmed adenocarcinoma and 2,481 population controls were asked to complete a self-administered FFQ to evaluate their dietary intakes one year before diagnosis (for cases) or interview (for controls). N-nitrosodimethylamine (NDMA) intake was found to be associated with a higher risk of colorectal cancer and there was evidence of effect modification between dietary vitamin E. Individuals with high NDMA and low vitamin E intakes had a significantly increased risk than those with both low NDMA and vitamin E intakes.

This paper is a continuation of the research team’s early work on pickled meat and CRC, which was first published in *Cancer Causes and Control* in 2010. It partially answers the question why pickled meat is associated with an increased risk of CRC in Newfoundland. The other authors on this paper were Peizhong Peter Wang, Jing Zhao, Roger Green, Zhuoyu Sun, Barbara Roebethan, Josh Squires, Sharon Buehler, Elizabeth Dicks, Jinhui Zhao, Michelle Cotterchio, Peter T. Campbell, Meera Jain, Patrick S. Parfrey and John R. McLaughlin.

Ms. Zhu has published four first-authored or co-first-authored papers in peer-reviewed journals, and a fifth is under revision. Her PhD studies will begin in January and will be supported by the Beatrice Hunter Cancer Research Institute.

Changes coming to MCAT

MEMORIAL UNIVERSITY is the only medical school in Canada participating in research on the new Medical College Admissions Test, in partnership with the Association of American Medical Colleges.

As part of the admission process to medical school, almost all U.S. schools and many Canadian schools require the Medical College Admission Test® (MCAT®). This is a standardized, multiple-choice examination designed to assess the examinee's problem solving, critical thinking, and knowledge of science concepts and principles prerequisite to the study of medicine. The MCAT is one of the criteria that admissions committees consider in the selection process.

The current version of the test has been in use since 1991. A comprehensive review of the MCAT® was just completed by the Association of American Medical Colleges (AAMC) and based on this review, the MCAT is changing in 2015 to preserve what works about the current MCAT exam, eliminate what isn't working, and enrich the exam by giving attention to the concepts tomorrow's doctors will need. AAMC realizes that physicians in society now have to perform many roles and a broader educational background is essential.

One major change in the MCAT 2015 exam is to include a section on the social and behavioural sciences: Psychological, Social, and Biological Foundations of Behavior (PSBB). The PSBB section assesses knowledge and use of introductory psychology, sociology, biology, research methods, and statistics concepts that provide a solid foundation for learning in medical school. The addition of this section to the exam recognizes the importance of socio-cultural and behavioural determinants of health and health outcomes. AAMC is now conducting a study to validate the PSBB section of the 2015 Medical College Admission Test to learn whether PSBB scores predict a student's academic performance in behavioral and social sciences courses and clerkships.

AAMC has partnered with 12 medical schools in the United States and Canada, who were targeted for partnership based on several criteria including institutional mission and matriculant diversity, to complete the PSBB validity study. Memorial University is the only medical school in Canada to participate in this exciting initiative. Over the past month, first- and second-year medical students have been invited to participate in this study and over 80 per cent have completed the PSBB test.

Science advances rapidly, the health care system is transforming in big ways, our population is becoming more diverse every day and tomorrow's doctors need to be prepared. Those factors play a major role in shaping what students learn in medical school and what they need to know when they begin. The new MCAT will change how students are selected into medical school in the future and will be a better test for tomorrow's doctors.

"This research will help us select students with the greatest potential to succeed in our medical education program and become tomorrow's best doctors," said Dr. James Rourke, dean of medicine.

Information on the new MCAT can be found on the AAMC website: www.aamc.org/students/applying/mcat/mcat2015/admins/.

White Coat Ceremony 2013

THE ANNUAL White Coat Ceremony took place Oct. 11 in the main auditorium of the Faculty of Medicine for the Class of 2017. Among those receiving their short white coats were first-year students Chelsea Ash and Lisa Bacque. Dr. Don McKay, associate dean for undergraduate medical education, and Dr. Scott Moffatt, assistant dean for student affairs, presented students with white coats.

Speakers at the ceremony included Dean James Rourke, Dr. Scott Moffatt, assistant dean of student affairs, Dr. Nigel Duguid, College of Physicians and Surgeons of Newfoundland and Labrador, and Dr. Kelly Monaghan, family medicine resident. The ceremony concluded with a recitation of the Declaration of Geneva, led by professor *emeritus* Dr. William Pryse-Phillips.



Chelsea Ash (front) and Lisa Bacque received their short white coats from Dr. Moffatt (front) and Dr. McKay.

Newfoundland Drugstores: A History

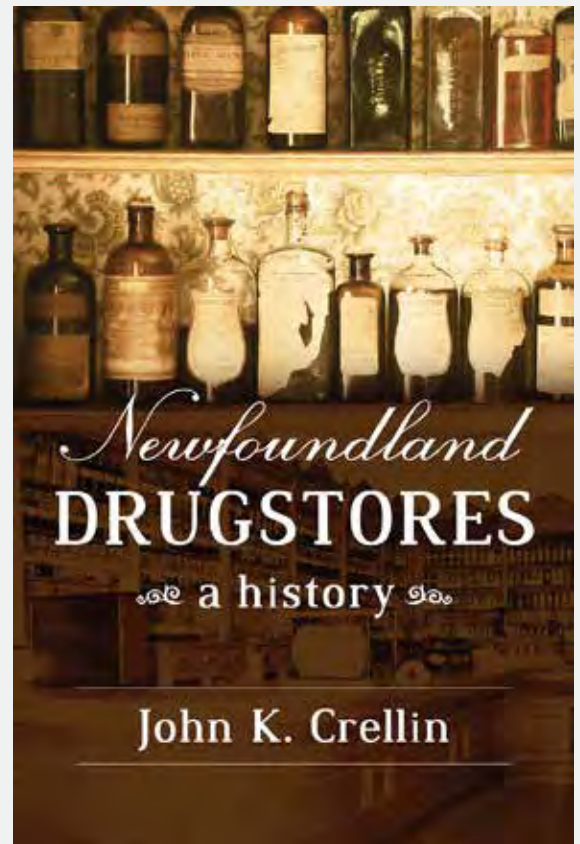
By John Crellin

ALTHOUGH PRIMARILY associated with filling doctors' prescriptions and selling medicines and other items for self-care, historically drugstores have also been operated as general stores, selling an intriguing range of toiletries, perfumery, confectionery, seeds for the garden, and household items.

For many years, the shopping experiences of customers owed a good deal to the distinctive drugstore aura created by a store's elegant wooden fixtures, rows of attractive glass containers, and a characteristic aroma arising from drugs and the preparations compounded on the premises. *Newfoundland Drugstores* by John K. Crellin, Faculty of Medicine, is a fascinating account of the important and varied roles that drugstores played in Newfoundland society.

Dr. Crellin holds British qualifications in medicine, pharmacy and the history of science. His career spans three countries, at the Wellcome Institute for the History of Medicine in the U.K., at Southern Illinois and Duke Universities in the USA, and at Memorial University, where he was the John Clinch Professor of Medical History until his official retirement in 2002. He continues to teach complementary and alternative medicine at the Faculty of Medicine.

Newfoundland Drugstores: A History is available in stores or can be ordered through Flanker Press at www.flankerpress.com/nl_drugstores.html.



Second Medical Education Scholarship Forum

THE FACULTY of Medicine's Medical Education Scholarship Forum will be held May 29 and 30, 2014, in St. John's (venue to be announced at a later date). You are invited to submit an abstract for a workshop, oral presentation or poster. Submissions may focus on undergraduate, graduate, and postgraduate education as well as continuing medical education/continuing professional development. The deadline for abstract submissions is Feb., 14, 2014.

Eligibility to Submit Abstracts

- The content of each abstract you develop is unique.
- You (first person listed on abstract) verify that all co-presenter(s), (if applicable), consent to be included on the abstract.
- You and your co-presenter(s), (if applicable), are able and willing to present at any time during the day of the forum.
- You and your co-presenter(s), (if applicable), plan to register for, attend, and present at the forum.
- You and your co-presenter(s), (if applicable), are able to pay all expenses to present at and attend the forum (i.e., preparing and copying of presentation materials, travel, hotel, etc.).

Workshops will be 1.5 hours. Please restrict your formal presentation to allow time for interactive formats and group discussion. Oral presentations will be allotted 15 minutes for both presentation and discussion time. Posters will be available for viewing throughout the day.

Abstracts will be received by the Medical Education Scholarship Centre (MESC) via email at mesc@med.mun.ca. You will be sent an email acknowledging receipt of your submission. Abstracts will be reviewed for appropriate content by the Academic Council of the centre. Notification of acceptance and schedule information will be forwarded to you in April 2014.

For further information visit www.med.mun.ca/MESC/.

New admissions interview process launched

THE FACULTY OF MEDICINE has launched a new, unique to Memorial University, medical school admissions interview process.

On Nov. 16 about 250 applicants, 150 interviewers, 50 medical students and 50 staff co-ordinators converged on the medical school to take part in this year's interview process for admissions. TaMMI is the name of the new interview process and reflects a hybrid of a traditional interview with multiple-mini interviews (MMI). Most medical schools in Canada have replaced the traditional panel interview with the MMI developed by McMaster University. However, research at Memorial has shown benefits of the traditional panel interview so it was decided to do a hybrid of both the traditional and MMI and conduct research to compare how students do on the two parts.

"What is remarkable is that we are one of the first medical schools to combine the traditional interview and the MMI," said Dr. James Rourke, dean of medicine. "We are a leader in this way and recognize the importance of doing research to see how they compare. This research is at the forefront of medical school admissions around the world."

Dr. Rourke said the launch of TaMMI is important to both the applicants and to the faculty. "It is important to the candidates as they are choosing their career. It is important to us because we are picking the doctors of tomorrow. It is essential we apply the best methods to try and select the candidates that are best suited to be these doctors of tomorrow."

The day took significant co-ordination and planning. At any one time, 94 interviews were on-going (64 MMIs and 30 traditional interviews). By the end of the day, each applicant had participated in nine interviews (eight, eight-minute MMIs and one traditional panel 30-minute interview).

The launch of TaMMI was a well-organized process co-ordinated through the Clinical Learning and Development Centre. Interviewers came from throughout Newfoundland and Labrador, New Brunswick and Prince Edward Island and included physicians, professors, community representatives, Aboriginal and rural representatives, medical students and residents.

"Community engagement was evident throughout the day as interviewers and staff gave their time and expertise to ensure the complex event ran smoothly," said Dr. Wanda Parsons, assistant dean of admissions. "I would like to thank everyone involved in making the day a success."

With the interviews completed, the Admissions Committee will now begin the holistic review and scoring of each applicant file. Successful candidates will be notified in spring 2014.



From left: Dr. Sharon Buehler and Dr. Kam Mong prepare for medical school admissions interviews with Dr. James Rourke, dean of medicine.

The dangerous curve?



Dr. Beth Linker.

IN 2004 the U.S. Preventative Services Task Force called for an end to scoliosis screening in American public schools but the practice endures, even though most other nations (including Canada) have ended their own screening programs.

The history of scoliosis screening programs in 20th century America was examined in the 2013 Dr. Nigel Rusted Lectureship in Medical Humanities on Nov. 15. Dr. Beth Linker, University of Pennsylvania, said America's fixation with scoliosis began over a century ago, when spinal curvatures became reconceptualized as indicators of deadly disease.

"The pharmacological revolution all-but-eradicated the diseases once associated with scoliosis," she said. "Yet to this day, scoliosis is seen as a dangerous deformity, even though the exact nature of the health risk remains unclear."

Dr. Linker, whose career started as a physical therapist, described how the practice of prescribing exercise for back curves was replaced beginning in the 1930s as the specialty of orthopedic surgery grew. New treatments included surgery and bracing; by the 1950s the practice of body casting was used for children as young as five.

"Intervention was usually done with the belief that the scoliosis would cause pain or heart and lung problems," said Dr. Linker. "But some studies suggest there is no more pain or morbidity in those with scoliosis than those without; it's a matter of self-esteem."

Dr. Linker said that scoliosis screening is deeply grounded in the past and the "dangerous curve" message stuck.

In memory



DR. WILLIAM HEXT MARSHALL, one of the founders of the Faculty of Medicine, died in St. John's Sept. 19 at age 80. Dr. Marshall was recruited to the Faculty of Medicine in 1968; he was appointed director of postgraduate medical education and later became the first secretary of the Curriculum Committee.

As the first associate professor of immunology, the task of establishing research facilities fell to Dr. Marshall. Under his direction a clinical immunology diagnostic laboratory was established and he became its director. Over his career, Dr. Marshall received many research grants and supervised one of the first large immunology studies, the West Coast Health Survey. He later founded Terra Nova Biotechnology Ltd., a private company set up to commercialize medical test technology developed at MUN.

Dr. Marshall had a gradual retirement, finally finishing all professional duties in 2007. He leaves to mourn his wife, Dr. Ingeborg Marshall, and a large family including two sons and three grandchildren.



DR. JOHN REGINALD MARTIN, one of the early members of the Faculty of Medicine, died on April 29, 2013, in Ottawa, at age 91.

Dr. Martin joined the new medical school in 1971, following a career in Montreal where he served as director of the Arthritis Clinic at the Montreal General Hospital. He was the first rheumatologist to practice in Newfoundland and Labrador. Later in his career, he developed interests in occupational health and held a variety of leadership positions including director of Northern Medicine and Health Program and provincial chief occupational medical officer.

Dr. Martin was the author of two books, *Leonard Albert Miller – Public Servant* (1998) and *The Fluorspar Mines of Newfoundland – Their History and the Epidemic of Radiation Lung Cancer* (2012) as well as numerous scholarly articles, publications and studies.

He is survived by his wife of 54 years, Claire (née Connor) as well as children, grandchildren and a large extended family.

DOROTHY ROBBINS (nee Ricketts), wife of former vice-dean of the Faculty of Medicine, Dr. Carl Robbins, died Oct. 13, 2013 at the age of 66 years after a 10-year struggle with lymphoma. Predeceased by her son Todd, she was the loving wife of Carl; mother of Ian (Jennifer) and Megan (Andrew); grandmother of Isaac, Amelia, Murray and Nyla; sister of Grace (Reg) Stapleton; and friend to a large circle of people. Dorothy's main focus in life, particularly in recent years, was her family. On a professional basis she had a satisfying career as a social worker involved in public policy development in women's issues.



DR. JAMIE THIBODEAU (Class of 2005) died Sept. 2, 2013 at the age of 37. Raised in Chipman, New Brunswick, he completed an honours degree in anthropology and English with a minor in fine arts at the University of New Brunswick before moving to Newfoundland to join the MUN medical school.

Jamie joined the Canadian Armed Forces while in medical school and, after completing his residency in family medicine at Memorial, he served at CFB Wainwright in Wainwright, Alberta, as base surgeon, then CFB Garrison in Edmonton, Alberta, as brigade surgeon and officer commanding medical company. His next move was to CFB Comox on Vancouver Island where he was the wing surgeon. He then completed an extended tour of duty in Kandahar, Afghanistan, with the Kandahar Provincial Reconstruction Team, for which he earned the Chief of Defence Staff Commendation.

Jamie was a valued and much loved member of MUN Med's Class of 2005. He was a warm, humorous and a kind hearted friend who was never happier than when he was making those around him laugh. He was dedicated to his career in medicine but also had a keen understanding and enjoyment of the world beyond school; he loved martial arts and reading, trying new restaurants and discussing current events. He was a dedicated member of Big Brothers/Big Sisters of Canada.

Jamie is survived by his wife, Kare, as well as his parents Debbie and Allan and his sister Alana. Donations in his name may be made to his memorial fund, set up via the BC Cancer Foundation. One hundred percent of the donations will go to head and neck oncology research. To donate visit bit.ly/donateJamie.

This article was written by classmates of Dr. Thibodeau, in particular Dr. Jessica Kirk.

Loss of a great medical pioneer



THE HON. DR. ARTHUR MAXWELL (MAX) HOUSE, former Newfoundland and Labrador lieutenant governor and telemedicine leader, passed away Oct. 17 at the age of 87.

“He was a giant among us at the medical school,” said Dr. James Rourke, dean of medicine. “He was one of those people who

had most inspiring ideas and he was a champion of those ideas. Dr. House is known all around the world as the father of telemedicine.”

Dr. House was also one of the key founding fathers of the medical school at Memorial. “Working with Dr. Ian Rusted, he put the pieces together to make it work,” said Dr. Rourke.

Born in Glovertown in 1926, Dr. House attended Memorial University College (1944-1947) and then Dalhousie University Medical School where he graduated with his MD. After practicing for a few years, he completed his training in 1959 at the Montreal Neurological Institute, McGill University. For many years, Dr. House was the only neurologist in the province. He later completed additional post-graduate work in neurology at the National Hospital in London, England (1965) and became a Fellow of the Royal College of Physicians and Surgeons (1972).

Dr. House practiced neurology in St. John’s for almost four decades (1960-1997). Throughout his career, he held a number of appointments at the General Hospital in St. John’s, including chief of the Division of Neurology (1966-1981), director of the Electroencephalography Laboratory (1961-1986), director of the Department of Diagnostic Neurophysiology (1986-1992), chief of staff (1966-1974) and member of Board of Governors of The General Hospital Corporation (1966-1974).

In addition to being a founding leader in the establishment of Memorial’s medical school, Dr. House spent 30 years as a neurology professor at Memorial and held a number of administrative appointments. In 1975, Dr. House started the telemedicine program at Memorial and became a leader in the development of telemedicine internationally. He retired as a full-time faculty member in 1993 but remained with the university until 1997 as a consultant and advisor

while continuing his work in telemedicine. Dr. House served on many provincial and national organizations and committees and was involved in research projects throughout his career.

In February 1997, Dr. House was appointed as Newfoundland and Labrador’s 10th Lieutenant Governor and served in this role until 2002. After retiring from this position, he returned to Memorial as Honorary Research Professor.

During his career, Dr. House received numerous awards and recognitions. He was president of Canadian Neurological Society from 1970-1971, named to the Order of Canada in 1989, and promoted to an Officer of the Order of Canada in 2005. received the Atlantic Canada Innovator of the Year Award in 1990, the Canadian Medical Association’s Medal of Service in 1997, invested into the Order of Newfoundland and Labrador in 2005, and appointed Honorary Member of the Canadian Medical Association in 2006.

Dr. House is survived by his wife of 61 years, Mary, as well as children Rosemary (John Housser), Christopher and Peter (Colleen) and grandchildren Sally and Emma Housser and A.J., Laura and Evan House.



Dr. House preparing for Unispace '82, held in Vienna, Austria. Memorial University demonstrated Canadian satellite technology in the fields of health and education through a live transmission from St. John’s to the Hofburg Palace, Vienna.

Food addiction and the development of human obesity

A NEW PAPER from the laboratory of Dr. Guang Sun, professor in the Faculty of Medicine at Memorial University, shows that food addiction is an important contributing factor in the development of obesity.

“Our findings are the first of their kind in the world,” said Dr. Sun. “We have shown that food addiction is indeed an important contributing factor in the development of obesity. The prevalence of food addiction was 5.4 per cent and increased concomitantly with obesity status defined by either body mass index (BMI) or body fat percentage.”

This is the first scientific study of food addiction at the population level. The paper, titled *Food Addiction: Its Prevalence and Significant Association with Obesity in the General Population*, was published Sept. 4 in *PLOS ONE*. The first author is Pardis Pedram, MD, a PhD candidate under the supervision Dr. Sun. Co-authors include Danny Wadden, Peyvand Amini, Wayne Gulliver, Edward Randell, Farrell Cahill, Sudesh Vasdev, Alan Goodridge, Jacqueline Carter, Guangju Zhai, Yunqi Yi and Guang Sun.

A total of 652 adults from Newfoundland and Labrador – 415 women and 237 men – participated in this study. Food addiction was assessed using the Yale Food Addiction Scale and the macronutrient intake was determined from the Willet Food Frequency Questionnaire. The study found that the clinical symptom count(s) of food addiction (similar to the measurement of fasting blood sugar concentration in diabetic patients) is strongly associated with the severity of obesity. The study also revealed that women are twice as likely to be diagnosed with food addiction than men.

“More remarkably the clinical symptom count(s) of food addiction are also strongly associated with adiposity measurements in non-food addicted people, or the remaining 94.6 per cent of the population,” said Dr. Sun. “This means that although individuals may not be clinically diagnosed with food addiction, food addiction symptoms are potentially part of the cause of increased fat mass in the general population.”

Dr. Sun said the findings regarding the important role of food addiction in the development of human obesity have important influence in the field of obesity study and are a big factor for physicians, insurance companies and government to consider in treatment method, insurance and government policy makings just like the battle history of smoking on human health.

Obesity and overweight are the fifth leading cause of global death and the second most preventable cause of death in the United States. “Weight gain is usually the result of a complex interaction between an individual’s biology and environmental factors which lead to energy surplus,” explained Dr. Sun. “One important cause of energy surplus is overeating and a proportion of the population may develop an obsessive/compulsive relationship to certain foods. These individuals chronically consumer more food than they need to maintain health and show compulsive intake behaviours associated with loss of control of eating.”

Dr. Sun said that accumulating research evidence has documented neurobiological and behavioural similarities between compulsive overeating and psychoactive drug dependence, leading researchers to use the term of food addiction to describe this pattern of overeating.

The obesity studies carried out by Dr. Sun’s team are primarily funded by grants from the Canadian Institutes of Health Research (CIHR).



Some of the team members involved in the new study of food addiction at the population level are back (from left): Dr. Ed Randell, Farrell Cahill, Dr. Wayne Gulliver and Danny Wadden. Front (from left): Dr. Guang Sun, Alecia Rideout, a fourth-year honours student in biochemistry, Pardis Pedram, MD, PhD candidate and first author of the paper, and Hong Wei Zhang, research assistant.