

# BMCAA newsletter

vol. 27 number 1 / Spring 2013 issue

[bmc.med.utoronto.ca/bmc/alumni](http://bmc.med.utoronto.ca/bmc/alumni)

## Interview:

The Minds Behind the  
New BMC Website

## Battle of the Titans:

Exclusive on Hall Train's  
Dinosaur Exhibit

## Uncon 2012:

Exciting Talks and a  
Brand New BMCAA  
Executive Committee

## MRPs:

Innovative Projects  
From the Class of 1T3



*Paul Wilby '12*

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## 2013 BMCAA Executive Committee Members

Co-Presidents: **Andreea Margineanu** 1T2 / **Merry Wang** 1T2

Secretary: **Minyan Wang** 1T2

Treasurer: **Andrea Gauthier** 1T2

Newsletter Editor: **Takami Fossat** 0T9

Fundraising Coordinator: **Natalia Burachynsky** 1T2

Web Development: **Michael Corrin** 0T6

BMC Student Representatives: **Olivia Yonsoo Shim** 1T3 / **Inessa Stanishevskaya** 1T3

## Corrections

Olivia Yonsoo Shim's name was misspelled in the Winter 2012 issue.

## On the Cover

Highlight from Extended Left Hepatectomy Procedure (still image from the 3D animated introduction to the new Toronto Video Atlas of Surgery, [tvasurg.ca](http://tvasurg.ca))

by **Paul Kelly** (1T1) in 2013

Myrian, Cinema4D and Adobe Photoshop

“ We all hope to work closely together to bring new ideas and creative approaches to fostering a continued enthusiasm for all BMCAA events and initiatives. ”

## Presidents' Message

Dear Alumni,

As your new co-presidents, we (**Andreea Margineanu** and **Merry Wang**) would like to send you a warm greeting in the **BMCAA spring newsletter**. We both graduated from BMC with the 1T2 class. Merry currently works in Research at Autodesk, and Andreea as a User Interface and Graphic Designer at Dundas Data Visualization, a software and business intelligence company.

We would like to thank Simon, Leslie, and the other past members of the BMCAA for their hard work in organizing great social events like the annual UnCon and the BMC Gala during their term. Their hard work and dedication will be missed, but we are excited to introduce all the new and returning members of the BMCAA committee.

The lovely **Takami Fossat** is our returning Newsletter Editor and Layout Designer, while **Michael Corrin** remains a staple of web coordination. Our new Fundraising Coordinator is **Natalia Burachynsky** and our new Secretary is **Minyan Wang**; both are 1T2 grads and collaborate with Lorraine TreCroce at LeaderLine Studios. Our new Treasurer is **Andrea**

**Gauthier**, also a 1T2 grad, and an Associate Biomedical Communicator at Bridgeable Research & Design. Our fabulous Student Representatives are **Olivia Yonsoo Shim** and **Inessa Stanishevskaya**, from the 1T3 class. As always, we want to thank Maeve Doyle, Graduate Program Officer extraordinaire, for her continued assistance, patience, and dedication to all things BMC.

We all hope to work closely together to bring new ideas and creative approaches to fostering a continued enthusiasm for all BMCAA events and initiatives. And speaking of new and innovative, we are delighted to announce the November 2012 launch of a brand new BMC program website through the combined efforts of **Lorraine TreCroce** of LeaderLine Studios, **Tabetha Lulham Rose** of Axon Digital Arts, and the BMC department.

Other highlights of the Spring Newsletter include an overview of our last UnCon, an announcement of Vesalius Trust Award recipients, and information about this year's crop of MRPs. A summary of BMC-related 2013 events is sure to bring excitement and interest in upcoming conferences and

exhibits. The 68th annual AMI 2013 Conference in Salt Lake City, Utah is themed FUSION: Connecting Minds, Visualizing Science and Medicine; we are very excited to announce details about this meeting in a thriving and beautiful city.

We'd like to thank AXS Studio, Imagineering, and Artery Studios for their generous food and beverage sponsorship of the 2012 UnCon. Thanks also go to the great roster of contributors and helpers at last year's UnConference. We definitely look forward to the next annual UnCon this year!

Please feel free to contact us at [bmcaa@utoronto.ca](mailto:bmcaa@utoronto.ca) if you have comments, suggestions, or simply just to chat! We look forward to meeting all of you at our social events.

Cheers!



Best Regards,  
- **Andreea** and **Merry**  
BMCAA Co-Presidents

# BMC at a Glance

## A Rapid Look at Some of This Year's BMC Happenings

### BMC Launches New Website

[Jump to page 5](#) to see our exclusive interview with the makers.



### BMCAA UnCon

[Jump to page 8](#) to get our full coverage of the event.

### Class of 2012 Convocation

November

### BMC Graduates' Work Featured in JVC

#### Gallery

**Andrea Gauthier's (1T2)** textbook illustration and

**Lyndsey Stephenson's (1T2)** neuroanatomy illustration are showcased

in the Journal of Visual Communications in Medicine's December 2012 Gallery.



### UofT Mississauga Magazine Features Comics and Medicine

Go [here](#) to read the full story featuring BMC alumna and faculty **Shelley Wall (0T4)**.

Included in the story are spreads from Shelley's own comic and alumna **Natalia Burachynsky's (1T2)** MRP. See also the Bulletin Board section to read about **Kerri Weller's (8T7)** Parrot Tulips painting and **Paul Kelly's (1T1)** Malaria illustration.

December

### BMC Alumna Wins Student Writing Competition

**Stefania Spano (1T2)** wins first place in the Dalhousie University Department of Psychiatry's Annual Student Writing Competition. See full article in the BMC archives [here](#).



### BMC Student's Illustration on the Cover of IMMPress Magazine

**Inessa Stanishevskaya's (1T3)** illustration on the evolution of the immune system is featured on the cover of the January 2013 issue of IMMPress Magazine. See full article in the BMC archives [here](#).



### Battle of the Titans Opens at the RBG

[Jump to page 11](#) to read about this exciting new exhibit from Hall Train Studios being showcased at the Royal Botanical Gardens.

January



**BMC Alumna's Work Showcased at SONSI 2013 Exhibit**

**Kathryn Chorney's (9T8)** work is on display at the Southern Ontario Nature and Science Illustrators 2013 Exhibit at the Richview Public Library Art Gallery. To view her artwork, go [here](#).

**BMC Graduate's Article Featured on InternetMedicine.com**

What is digital health? **Simon P. Ip (0T9)** explores this novel concept in his article recently published on InternetMedicine.com. Go [here](#) for the full article.

**BMC Takes Part in Health in the City**

BMC alum and director, **Nick Woolridge (9T2)**, participates with current students at the event that showcased solutions to some of Canada's health risks. BMC provided iPads featuring interactive education tools developed by BMC alumni.



**Work by AXS Appears in New Apple Ad**

Apple's new 'Together' ad features a 3D brain created by AXS Studio, Inc. Go [here](#) to view the video - the brain appears at around the 13th second.

**Vesalius Trust Award Winners Announced**

[Jump to page 12](#) to find out which students were named this year's recipients for the prestigious awards.



**FITC Toronto**

Future. Innovation. Technology. Creativity. Better known as Flash in the Can, it's coming to Toronto. [Jump to page 10](#) to check out our list of this year's recent and upcoming events.

February

March

April

**Rare Copy of 16th Century Anatomy Book now at UofT**

The Thomas Fisher Rare Book Library at the UofT St. George campus acquires a rare 1555 copy of Andreas Vesalius' De Humani Corporis Fabrica. Go [here](#) to view a video on The Globe and Mail website.

# Interview

## Our Exclusive on Who's Behind the New BMC Website



Screenshot from the new BMC website homepage.

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*Last November the BMC launched its brand new website. It now sports a new face, a new body, and a totally different attitude. The result of a collaborative effort between two start-up companies and the BMC faculty, we explore the behind the scenes of how this ambitious project came into being. **Lorraine Trecroce** (1T0) of LeaderLine Studios and **Tabetha Lulham Rose** (1T0) of Axon Digital Arts talk to us about their accomplishments, challenges, and inspirations that pushed them forward.*

*- Interview by **Takami Fossat** (0T9)*

**Q: Great work on the new BMC website! Could you please describe your individual contributions to this project?**

**LeaderLine:** LeaderLine Studios took the lead on the project with a focus on project management, information architecture, web design, and the design of different custom editing tools for many pages on the website. Axon Digital Arts was immediately brought on board to advise on the technical designs of these tools, and to program, develop, and build all of the custom widgets we required. All throughout we consulted on a regular basis with the BMC web committee to ensure that all stakeholder goals were met.

**Axon:** Axon Digital Arts was responsible for the website architecture and programming. Working with LeaderLine Studios we designed several specialized widgets including a system for entering/displaying staff and students, and a fantastic new gallery manager which will allow the BMC staff to show off the best award-winning work that the BMC students and faculty are creating.

**Q: Tell us a little about your experience working together as part of the BMC website dream team.**

**LeaderLine:** This wasn't the first time Axon and LeaderLine teamed up for web development. With our complementary skill sets and expertise we have been able to collaborate on other web projects with great success. We were excited to have the opportunity to work together again, and

especially alongside BMC faculty to develop a new online presence for the program.

**Axon:** As Lorraine mentioned, LeaderLine and Axon have been collaborating for a little over a year now. We were thrilled to be asked to build the new BMC website using LeaderLine's excellent designs and the expertise of the BMC faculty. The three teams worked very closely with one another and I think we are all really pleased with the result.

**Q: Why was there a need to redesign the BMC website? For example, were there specific problems in the previous website that needed to be addressed?**

**LeaderLine:** There were a number of reasons I went to BMC with my proposal for a re-design. In the proposal I suggested things like improved content updating tools, and a modernization of the design. I also suggested an updated information architecture to better address the common questions prospective students submit, and the questions current students frequently ask faculty. I also suggested an integrated showcase for student and faculty work to show off what BMC is all about. Finally, we also needed to integrate the program's social networking.

**Axon:** As a BMC student I worked for a year as the student web admin. From that perspective, the previous website architecture wasn't terribly easy to use in the back end and the files and pages tended to be somewhat disorganized - I felt this was mostly the fault of the content management system that was being used. We pitched WordPress as the new CMS because it's so user-friendly on the inside, which we felt would help the work-study students as well as the less-tech-savvy users who have to use it to update profiles, write blog posts, etc. the team at Axon worked especially hard to design custom widgets that were easy to understand and use so that training a new student every year won't be so challenging. We felt that this approach would allow the students and staff to do more with the website, including more frequent updates to the gallery and the student profiles, which should be at the core of the website experience.

**Q: What were your goals and how did you**

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## accomplish them?

**LeaderLine:** Well, to meet the goal of creating a more user-friendly experience for the administrators of the BMC site, we built the site in WordPress to take advantage of the CMS. Then we developed custom BMC plugins for editing content on pages with frequently updated content such as the student bio page. We worked closely with BMC faculty to develop the new design and to create a look and feel for the website that better represents the program. And the new information architecture was developed based on faculty and administrator experiences in dealing with student and prospective student questions. The IA and the design went through multiple iterations before becoming what you see today - and we've even tweaked things since receiving more feedback from prospective students after launch.

**Axon:** For Axon, our goals were particularly to create user-friendly experiences for the website administrators, so that's mostly inside-facing work but we hope it benefits the people who have to update the website. We were also concerned with creating a consistent user experience across all the modern browsers (and some of the more ancient ones - looking at you, Internet Explorer 7!) Much of the time we spent programming was in cross-browser compatibility, so that as many people as possible can enjoy the great designs that LeaderLine and BMC envisioned.

## Q: What was your inspiration for the new website?

**LeaderLine:** Some of the new features and sections were inspired by the Harvard MBA program website, and some design elements were inspired by the new GE website. Working closely on design with BMC faculty we had creative input from many members of the web team, so there was definitely inspiration taken from many other places as well.

**Axon:** LeaderLine and BMC were responsible for the overall vision. Our job at Axon was to make the dreams a reality if possible and to advise on aspects of the design that were beyond our reach.

## Q: Please describe any challenges that you encountered.

**LeaderLine:** One of the largest challenges we faced was finding ways to make the content easily editable by new administrators. All of our features need to be easily understood and intuitive to new users. We met this challenge by developing custom widgets in areas that require frequent editing, and by providing BMC with an administrator's handbook. Future users will be able to refer to the handbook for any editing task.

**Axon:** Technically speaking, I think Axon's biggest challenge was getting the gallery to work properly. The BMC team had a very specific vision for how the gallery should look and because visual art is really at the heart of the BMC program we really wanted to get that part right. We are particularly proud of what we accomplished with it in the end, despite many late nights and caffeinated beverages!

## Q: What is your favorite feature of the new website?

**LeaderLine:** My personal favourite feature is the Student Life section. I would have loved to have a semester-by-semester overview on what to expect while I was in the program. It includes things like deadlines for funding applications and MRP milestones - something I think all students can benefit from. I'm also a huge fan of the custom widgets developed by Axon Digital Arts for editing faculty and student profiles, and the blog that keeps everyone who visits the site up to date on the latest news.

**Axon:** I am a big fan of the gorgeous image headers on each page, which really bring out the concept of what BMC as a program is all about. The gallery is also a must-see.

**- Lorraine Trecroce (1T0) and  
Tabetha Lulham Rose (1T0)**



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# UnCon 2012

Continuing Education with the Latest News, Projects and Techniques



*The 2012 UnConference finished with new and returning speakers, fresh ideas and exciting presentations. Check out our events rundown recorded by former Secretary Tabetha Lulham Rose. Also check our who's who list of our returning and newly elected BMCAA Executive Committee members.*

**- Takami Fossat (OT9)**

## UnConference 2012 Events Rundown

### Presenters

#### 1. Simon Ip: How to survive the social media revolution

Simon's take on how social media has an effect on today's medical field.

#### 2. Peter Leynes: Way of the Avatar: Adventures in Toon Boom

Peter explains to us the basics of how to animate comics using Toon Boom.

#### 3. Michael Corrin: Color in illustration

A presentation of Michael's latest creation, an easy to use application for color selection.

#### 4. Stuart Jantzen: Troubleshooting tips

The all too familiar experience of troubleshooting made simple.

#### 5. Stefania Spano: HandsON

Stefania presents her MRP, a digital teaching tool for learning hand anatomy.

#### 6. Leslie Predy: DIY Science and Synthetic Biology

Do it yourself technology explained.

### BMCAA Committee member elections

#### New Co-presidents:

Andreea Margineanu and Merry Wang (replacing Simon Ip and Leslie Predy)

#### New Secretary:

Minyan Wang (replacing Tabetha Lulham Rose)

#### New Treasurer:

Andrea Gauthier

#### Returning Newsletter Editor:

Takami Fossat

#### New Fundraising Coordinator:

Natalia Burachynsky (replacing Lorraine Trecroce)



BMCers enjoying some good old social networking and pizza.

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# Events 2013

## A Look at Some of This Year's Recent and Upcoming Exhibits, Conferences and Competitions

Here is a list of some of this year's recently held and upcoming events. Regardless of whether you are able to make them or not, it's still worth going to the websites below and exploring what each event is about. If you missed any of earlier events, you can still go to the websites and check out what you missed!

**January 26th-April 7th - Battle of the Titans Exhibit**

Toronto, Canada at the Royal Botanical Gardens

<http://www.rbg.ca/dinos>

**February 2nd-24th - Southern Ontario Nature and Science Illustrators Exhibit**

Toronto, Canada at the Richview Library Art Gallery

<http://sonsi.ca/exhibits>

**March 18th - cellPACK Visualization Challenge**

<http://www.autopack.org/news/cellpackvisualizationchallenge2013ison>

**March 20th-22nd - Visualizing Biological Data 4th International Meeting**

Cambridge, Massachusetts USA

<http://vizbi.org>

**April 19th-20th - Medical Artists' Association of Great Britain 64th Annual Conference**

Liverpool, UK

<http://www.maa.org.uk/index.php/events/conferences>

**April 21th-23rd - FITC Toronto 2013**

Toronto, Canada at the Hilton Toronto Hotel

<http://fitc.ca/event/to13>

**June 17th-21st - BioCommunications Association BioImages 2013 Salon and Conference**

Monterey Peninsula, California USA

<http://www.bca.org>

**July 5th-7th - Comics and Medicine 4th International Conference**

Brighton, UK

<http://www.graphicmedicine.org/comics-and-medicine-conferences/2013-brighton>

**July 7h-13th - Guild of Natural Science Illustrators Annual Conference**

Bar Harbor, Maine USA

<http://www.gnsi.org/event/conference/gnsi-2013-annual-conference-bar-harbor-maine>

**July 17th-20th - Association of Medical Illustrators 68th Annual Meeting**

Salt Lake City, Utah USA

<http://www.ami.org/upcoming-meeting>

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# Battle of the Titans

## Hall Train's Dinosaur Exhibit at the Royal Botanical Gardens



A Tyrannosaurus rex and a Triceratops go face-to-face at Battle of the Titans.

**Battle of the Titans**, by famed artist **Hall Train**, is a major exhibit that broke attendance records early this year at the Royal Botanical Gardens in Burlington ON.

Having created signature pieces for major museum clients for over two decades, Hall Train Studios has now conceived, developed, and fabricated a complete exhibit -- from writing, graphics, and videos, to dioramas, interactive displays and, of course, full size dinosaurs!

Battle of the Titans places our two most familiar dinosaurs – T. rex and Triceratops – within the context of the ecological forces that shaped them and their world. The audience is asked to ponder the question of which one would win in a direct confrontation - and the answers

may be surprising. As people move through the exhibit, they find that not only were these two dinosaurs perfectly matched to fight each other, but actually depended on each other to survive as species. Clues are given throughout the exhibit to the answer of this strange paradox of interdependence. It lies in the environment -- the plants, forest, and ecology that shaped their entire existence, and ultimately led to their extinction. The show is about the mingled destinies of plants, dinosaurs, and mankind. And it's also a roaring good time!

Hall Train, as Creative Director, masterminded the entire show. Associates included **Kathryn Chorney (9T8)** who collaborated with Hall on writing, editing, and graphics production; the hardworking crew comprised

several Sheridan College alumni including two graduates of the Bachelor of Illustration program.

Several public events have been organized by the RBG. A debate held on February 16th featured Dr. David Evans of the ROM, Dr. Donald Henderson of the Royal Tyrrell Museum, and Dr. Phil Manning of the University of Manchester, chief paleontology consultant on Battle of the Titans. Another appearance by Dr. Manning took place February 21st, in which he discussed the research aspects of the exhibit including breaking news from the Mesozoic.

Details and a video on the exhibit can still be viewed on the RBG website at <http://www.rbg.ca>.

- **Kathryn Chorney (9T8)**

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# Vesalius Trust Awards

## This Year's Proud List of Winners from the BMC

The Board of Governors of the Association of Medical Illustrators established The Vesalius Trust in 1988 to develop and support education and research in health science communications. The Trust awards annual scholarships to students who have completed one year of curriculum in medical illustration programs and bases the awards on scholastic achievement and project merit. Applications are judged on background, education and project concept, and design and production plan.

Among the five accredited programs in North America, awards are limited to only 15 applicants. This year, students from the BMC program took home 9 awards including the prestigious Alan W. Cole Scholarship Award. This is the second year in a row that a BMC student has won this award, Cindy Lau having won it in 2012. Congratulations to the successful applicants and a warm thanks to all applicants for their fine efforts.

### Alan W. Cole Scholarship Award



**Andrea Zariwny** was named the top student scholar in The Vesalius Trust's 2013 scholarship competition for her project "Visuo-Haptic Learning of the Cochlea: Using physical

optical glyphs with Augmented Reality". She is developing a novel augmented reality (AR)-enabled teaching tool to demonstrate the complex structure of the human cochlea to medical students.

### Vesalian Scholar Award

**Inessa Stanishevskaya** was named Vesalian Scholar for her project "Redirecting Neuroblast Migration in the Adult Brain: A 3D Visualization of Novel Understanding and Therapeutic Potential for Stroke."

### Vesalius Trust Grant Award

**Melanie Burger** for "Lab3D: improving chemistry visual literacy";

**Melissa Cory** for "Visualizing the Progression of Multiple Sclerosis With Multimodal Video Microscopy";

**Laura Greenlee** for "Repetitive Transcranial Magnetic Stimulation (rTMS) Therapy Education Module: Empowering major depressive disorder patients to make informed treatment consent decisions";

**Angelica Ortiz** for "Molecular Spatial Dynamics in Learning: A Closer Look at Synaptic Remodeling in Hippocampal Neurons";

**Joy Qu** for "Macrophage heterogeneity: a potential therapeutic strategy for chronic pain relief";

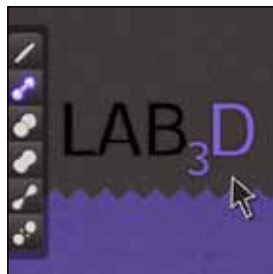
**Olivia Yonsoo Shim** for "Virtual Aortic Valve: an online interactive teaching aid for transesophageal echocardiography (TEE) and the anatomy of the Aortic Valve"; and

**Erin Warkentin** for "Pressure Ulcer Target: An Interactive iPad Application for Patient Education and Motivation."

- **Nick Woolridge (9T2) and Takami Fossat (0T9)**

# BMC Student MRPs

## A Sneak Peek at the Projects from the Class of 1T3



### Melanie Burger

Lab3D: improving chemistry visual literacy

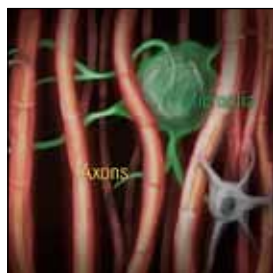
Research has demonstrated that student misconceptions in chemistry stem from an inability to visualize structures and processes at the particulate level. Visualizations such as animations show molecular structure and reaction dynamics explicitly and students whose education has included animations have shown a better grasp of key chemical concepts. Interactive animations might also afford an additional level of active engagement by inviting exploration of 3D molecular structure. Accordingly, this Master's Research Project focusses on the development of 3D interactive animations of organic chemistry reactions encountered in the undergraduate chemistry curriculum. Reaction animations will be modelled in Spartan, created with the ChemDoodle WebGL API, and hosted on the website, <http://www.lab3d.me/>. On the website users will be able to rotate, translate, scale and query animations in real time as well as toggle between standard modes of molecular representation and a custom method based on valence bond theory. The chief objective of this project is to engage and help undergraduate students build dynamic mental models of these complex chemical phenomena.



### Agnes Chan

Visualizing Palaeontology: 3D imaging of fossil crania and the development of a model-viewing user interface for vertebrate palaeontologists

Computed tomography (CT) imaging technology has allowed for the visualization of biological structures in unprecedented ways. 3D digital models derived from CT scans can be viewed from any angle, taken apart, visually enhanced, and otherwise manipulated without any damage to the original specimen. This project aims to harness the advantages of 3D imaging/modelling and apply it to the field of vertebrate palaeontology, where physical examinations of specimens may be limited by the fossil's condition, fragility, size, and location. A prototypal user interface in the form of a desktop application is being developed under the guidance of vertebrate palaeontologist Dr. Robert Reisz to assist researchers in examining the morphology of 3D fossil specimens. Key features include the ability to "explode" the cranium to view internal structures, and a ruler tool to take linear measurements on the specimen.



### Melissa Cory

Visualizing the Progression of Multiple Sclerosis With Multimodal Video Microscopy

Multiple Sclerosis (MS) is the most common neurological disease in young adults, yet its cause remains a mystery. A neurophotonics research group at Laval University is developing a cutting edge in vivo optical imaging technique known as multimodal video microscopy (MVM), which could revolutionize MS animal research. My MRP is an animation that integrates real MVM images with a dynamic 3D cellular visualization of the nervous system in an experimental mouse with MS-like symptoms. By visually interpreting this real imaging data, my animation aims to communicate the power of this new technology to the MS research community at large. Bridging the gap between the developers of MVM and the biologists could hasten implementation of the technology and ultimately lead to better treatment options for this debilitating disease.



### Jerusha Ellis

Taking Care of My Body and Mind – a guide for women living with HIV

New immigrant, refugee, and non-status women living with HIV and mental illness often fall through the cracks of the Canadian HIV/AIDS service network. Depressive symptoms are particularly dangerous when untreated in patients living with HIV because depression has been shown to lead to a greater risk of disease progression, and non-adherence to antiretroviral treatment. Many do not continue with psychiatric treatment because it does not meet their expectations. Also, when patients do not understand their current

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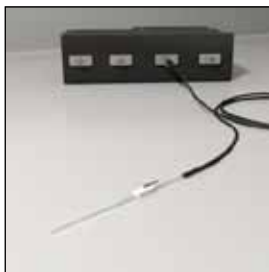
treatment they are less likely to believe it will be effective and manageable. My MRP will be to design, create, and evaluate an illustrated patient education website and print booklet about mental health treatment and service literacy. The materials will be specifically designed for the needs of recent immigrant, refugee, and non-status women who are living with HIV/AIDS and are seeking treatment for mental health concerns. The materials will detail what women can expect from treatment for depression, anxiety, or cognitive memory disorders from a psychiatrist or family doctor, and also how to navigate the appropriate mental health services. The goal of this project is to build patients' capacity to make mental health treatment decisions, and to provide patients with clear expectations of treatment.



### **Laura Greenlee**

**Repetitive Transcranial Magnetic Stimulation (rTMS) Therapy Education Module: Empowering major depressive disorder patients to make informed treatment consent decisions**

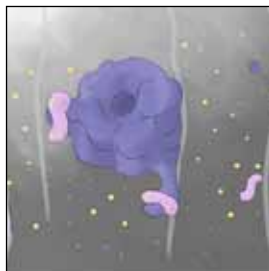
The promising treatment rTMS is an option for many with treatment-resistant major depression, yet the nature and process of this novel treatment is often not understood by potential patients. In this project I am collaborating with Dr. Downar of the Toronto Western Hospital-University Health Network (TWH-UHN) rTMS clinic. We aim to create an interactive and visual media-based educational module about rTMS therapy that patients find usable and informative, and that will help streamline the intake process at the TWH-UHN rTMS clinic. We are conducting an evaluation of patient needs and a usability test with the pre-existing clinic website. The data collected will inform the development of the module, and project success will be evaluated through a second set of patient interviews and usability tests. We expect that, through use of this educational module, patients will be able to learn and retain knowledge about rTMS treatment more easily. We hope that patients will feel empowered and more comfortable about making a decision about rTMS treatment.



### **Stuart Jantzen**

**Recording the Illuminated Neuron**

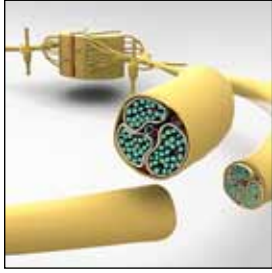
Researchers at Laval University have developed a new microprobe that can measure electrical activity from individual neurons in vivo in whole brains. It can also detect fluorescence in neurons, which is very useful for a wide variety of experiments in the field of neuroscience. The electrophysiology, physics, and even scale of the microprobe are difficult to grasp; visual explanations and hands-on exploration will provide a much better understanding of the concepts involved. I will be creating an animation in Maya which explains the function and use of this probe. I will also be creating an interactive simulator in Unity which allows the user to explore the function of the probe in a simulated neural environment. The audience will be primarily researchers in neuroscience and will be able to freely access the animation and simulator on the web.



### **Angelica Ortiz**

**Molecular Spatial Dynamics in Learning: A Closer Look at Synaptic Remodeling in Hippocampal Neurons**

The hippocampus is an essential part of the brain during the early phases of learning. In order to learn more about neuronal circuits in the hippocampus, scientists at Laval University have developed new visualization techniques to track the movement of certain molecules during synaptic remodeling of hippocampal neurons. The purpose of my project is to create a short 3D animation that communicates the molecular dynamics that have been observed in the laboratory and how they lead to synaptic remodeling. The animation will also describe how this synaptic remodeling strengthens certain neuronal circuits in the hippocampus, forming memory at the cellular level.



### Joy Qu

#### Macrophage heterogeneity: a potential therapeutic strategy for chronic pain relief

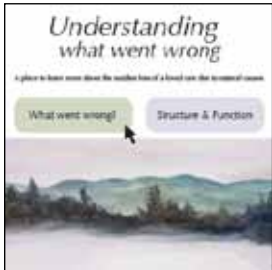
In collaboration with Dr. Ji Zhang from McGill University, I am creating a 3D animation for upper-level undergraduate and graduate students to help them understand the role of macrophages in neuropathic pain. Neuropathic pain is a chronic disease characterized by spontaneous and exaggerated pain response to non-harmful stimuli and is caused by damage to the peripheral nerves. This type of injury also elicits an inflammatory response. More specifically, the inflammation revolves around two distinct populations of macrophages, a key discovery made by Dr. Ji Zhang's lab. These cells play obligatory roles during the development of neuropathic pain, opening the door to new therapeutic strategies targeting these macrophage populations. The 3D animation is an ideal medium to communicate the complexity of the spatial architecture and dynamic processes in the peripheral nerve microenvironment. I personally hope that my animation will inspire upcoming scientists to pursue research in the growing field of neuroimmunology.



### Olivia Yonsoo Shim

#### Virtual Aortic Valve: an online interactive teaching aid for transesophageal echocardiography (TEE) and the anatomy of the Aortic Valve

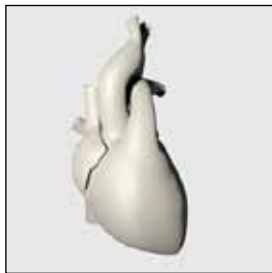
The ability to build a visual mental imagery of the anatomy of the Aortic root and its spatial relationship with the surrounding heart structures is a crucial skill to gain for a novice echocardiographer to interpret a TEE examination of the valve. Following the spirit of the Perioperative Interactive Education (PIE) group at the Toronto General Hospital Department of Anesthesia, Virtual Aortic Valve is designed to aid in building this skill. It involves: (1) an interactive 3D model built in Cinema 4D and Unity for the user to examine the Aortic valve and its surrounding structures in depth; (2) a short animation explaining the functional anatomy of the Aortic valve; and (3) a virtual TEE examination of the Aortic valve with an interactive 3D valve and pre-recorded TEE views.



### Laura E. Smith

#### Forensic Pathology Visualization for Bereaved Families: A Prototype Web Module Depicting Heart Pathologies Leading to Sudden Cardiac Death

Loss is a major catalyst for change in bereaved people; specifically, their need to make sense of what happened, and what it can and should mean for life after loss is a powerful feature of the response to the death of someone important to us. Sudden cardiac death (SCD) is among the most common causes of death in developed countries throughout the world, affecting men and women of any age, nationality, or ethnic group. Currently, there are no visual resources designed for bereaved families who may have questions regarding the cause of death of their loved one. Dr. Michael Pickup, a forensic pathologist and assistant professor at the University of Toronto, suggested the creation of an accessible resource for this audience. I will be creating a prototype web module describing how heart pathologies, such as atherosclerosis and long QT syndrome, occur with tactful visualizations and metaphor to help others understand what went wrong. A design research study will be conducted to gather formative feedback to ascertain whether the information provided improves understanding and if improved understanding is connected to a sense of relief or positive feelings in bereaved individuals.

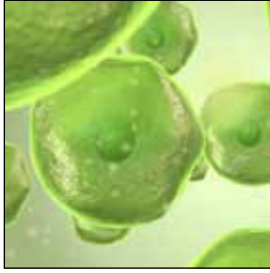


### Michael Soong

#### Heart i C: A Cardiology Educational App

As my Master's Research Project, I am developing a prototype iPad educational app. The prototype will be fully functional and is being created in collaboration with cardiologists at McMaster University. It will focus on teaching normal cardiac physiology and a single cardiac pathology, aortic stenosis, to medical students. As cardiology requires a strong knowledge of the timing of cardiac events, integration of animations and illustrations with medical data/imaging will be a key strategy for aiding students' understanding. In particular, the project seeks to build an overall picture of the patient by educating the user on how cardiac pathologies can manifest in both the patient exam and in advanced medical imaging technologies. In the future, other cardiac pathologies may be developed.





### **Inessa Stanishevskaya**

#### **Redirecting Neuroblast Migration in the Adult Brain: A 3D Visualization of Novel Understanding and Therapeutic Potential for Stroke**

Neuroblasts are specialized cells that arise from neural stem cells and differentiate into neurons in mammalian brains. Previously it was believed that neuroblasts were only present during embryonic development; however, it has recently been established that these cells continue to produce neurons throughout adulthood by means of a specific migratory pattern, known as the rostral migratory stream (RMS). During certain pathological conditions, most notably stroke, this migratory pattern is altered as some neuroblasts redirect towards the area of damage; however, few of them successfully differentiate in the damaged region. The goal of my project will be to develop a dynamic 3D animation that acts as both an educational and promotional platform for this research conducted by Dr. Armen Saghatelian's group at the University of Laval. It will explore the cellular and molecular mechanisms of neuroblast migration in the normal RMS, the development of the architecture of the RMS from neonates to adults, the migratory changes that occur during stroke, and the potential role that this knowledge may play in the development of regenerative therapies for stroke and other neurodegenerative diseases.



### **Erin Warkentin**

#### **Pressure Ulcer Target: An Interactive iPad Application for Patient Education and Motivation**

The most common complication of spinal cord injury (SCI) are skin wounds that are caused by unrelieved pressure. These sores, known as pressure ulcers (PUs), greatly diminish patients' quality of life. This is due to the rapid onset and lengthy healing period of the wound, which often requires hospitalization because of potential complications such as infection. Therefore, best practice targets the prevention of PUs through patient education. In an effort to improve prevention of PUs the goal of this MRP is to create a highly visual and interactive iPad application that evokes a motivated, educated and empowered response from SCI individuals at risk of PU. The interactive format of this technology will engage patients by putting them in control of their education. The app's design will deliver information through text, images, and animations, in order to accommodate a variety of learning styles. Finally, the app will also incorporate stories from persons with SCI through a graphic narrative designed to educate, motivate, and inspire its audience in a novel manner.



### **Andréa Zariwny**

#### **Visuo-Haptic Learning of the Cochlea: Using physical optical glyphs with Augmented Reality**

The purpose of this research is to develop a novel augmented reality (AR)-enabled teaching tool to demonstrate the complex structure of the human cochlea to medical students. The cochlea is small but intricate anatomical structure often represented as a snail shell-like object. It is more accurately defined as a spiral negative space within the temporal bone, but this is difficult to convey with traditional teaching tools (prosections and illustrations largely). Using a handheld tablet equipped with an integrated camera, digitally-rendered 3D models of this structure can be visually superimposed over illustrations or physical models of the cochlea, thus highlighting the negative space. A high-resolution CT scan will provide the digital morphometric data of the bony labyrinth. This data is used to develop accurate illustrations and 3D digital models of the structure. An interactive AR module is next developed to display these models when the device camera recognizes the appropriate visual triggers (glyphs or illustrations). An extension of this module includes testing the recognition of physical models as triggers.

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# Salt Lake City 2013

## 68th Annual Association of Medical Illustrators Meeting



Connecting Minds - Visualizing Science & Medicine  
**FUSION 2013**

Meeting preparation is now in full swing. The majestic host location of Salt Lake City awaits you! Aside from the cornerstone events of great speakers, creative and diverse concurrent sessions, and expertly guided workshops, this year's focus is on user experience. The meeting planners are working hard to offer more networking time, more time to explore the Salon and Media Exhibit, and an almost full day of Tech Showcase. Also planned are a more streamlined Awards Banquet, more innovative ways to network with sponsors, and an exciting Salon preview event called "Fast Frame".

This year's theme is **FUSION: Connecting Minds, Visualizing Science and Medicine**. The dynamic event will feature the latest breakthroughs in biomedical science and new technologies integrated with established subject matter such as professional business practices. The goal of this year's meeting is to create a conference that will make its participants feeling more connected, more informed and more inspired than ever before.

Salt Lake City is home to over 5000 information technology and life science companies making it one of the most robust business environments in the United States. It is also a place of striking beauty and adventure. With over fifteen national parks and monuments to explore, Salt Lake City promises its visitors an unforgettable vacation.

So get ready to explore, excel and expand your mind at the 68th Annual Association of Medical Illustrators Meeting in Salt Lake City, Utah. The official website opens mid-April, but the teaser website is up and running. Visit <http://ami.org/meetings/2013/teaser.html> for more details about the stellar line-up of speakers, sponsorship information, this year's theme, and the inspiring host city of Salt Lake City.

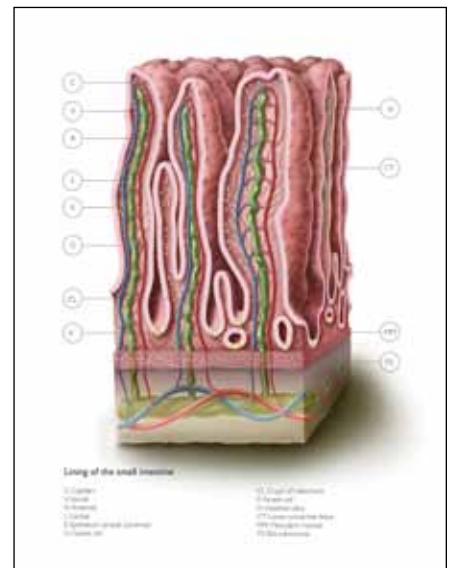
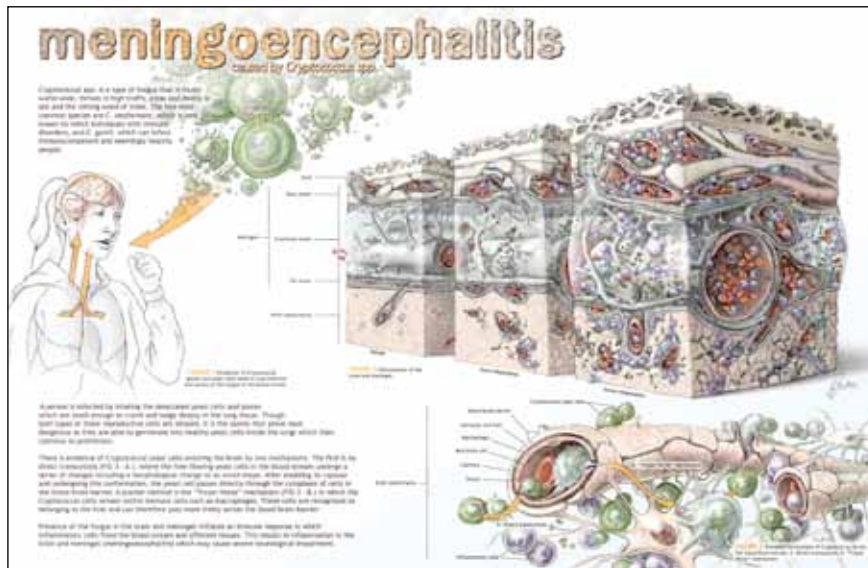


The Association of Medical Illustrators  
68th Annual Meeting  
Salt Lake City, Utah  
July 17-20, 2013

- **AMI Planning Committee and Takami Fossat (OT9)**

# Illustrations

## Alumni Showcase



Here are a few illustration submissions from some of your favorite BMC alumni.

### Top left

'Meningoencephalitis' by **Andrea Gauthier (1T2)**

Winner of the 2012 Orville Parkes Best in Show Award

### Top right

'Intestinal Villi' by **Shelley Wall (0T4)**

"Just done to keep my chops up," says Shelley

### Bottom left

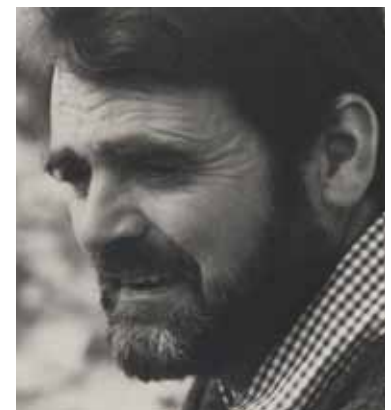
'Highlight from Extended Left Hepatectomy' by **Paul Kelly (1T1)**

Selected for BMCAA newsletter Spring 2013 cover

# Announcements

## Obituary

**Michael Hough**, husband of **Bridget Hough** (BScAAM 1968), died on January 25, 2013, aged 84. Michael was a well-known landscape architect (Ontario Place, Scarborough College, University College Quad) environmentalist and author (Cities and Natural Process, Out of Place, Bring Back the Don).



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# Announcements

## Engagements, Weddings, and Babies



### **Xuan Wang (OT8) and Susan Ngo wedding**

On December 30th, 2013, after 9 years, Xuan Wang and Susan Ngo, both lost hope of finding someone better and were married at Le Jardin Conference and Event Centre in Woodbridge. It was a clear winter day with just enough snow coverage. It was an action packed day with traditional and civil ceremonies, and a banquet dinner complete with lion dances and fellow BMCers.



### **Julie Saunders (OT4) and Mark Nitz baby**

Julie Saunders and Mark Nitz are delighted to announce the birth of their son, Miles. Miles was born Nov 22, 2012, and is the first grandchild on both sides of the family.



### **Sonya Amin (OT3) and Geoff Hodgetts baby**

Sonya Amin and Geoff Hodgetts welcomed Alexander Rose Hodgetts into the world on October 22, 2012. Alex arrived two weeks early making him the only member of the Amin-Hodgetts family on record to have shown up early for an engagement... ever! Here he is on his Birth Day weighing in at 7lbs 10 oz and decked out in a lovely St Mikes hospital sock hat. You rock that sock hat, Alex! Look carefully to see a telling sign of his Houdini-like ability to escape any swaddle.



### **Takami Iijima (OT9) and Yan Fossat baby**

We are proud to announce the birth of our daughter, Amélie Françoise Fossat. She was born on April 9, 2013 after only 5 hours of labor and 32 minutes of pushing! Amélie is a happy little baby who enjoys breastfeeding, sleeping (yes!), stroller walks, and baths.

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# Housekeeping

## BMC on LinkedIn and Facebook

Follow BMC on LinkedIn and on Facebook! You can catch the latest news, see current job opportunities and contribute to popular discussions on topics related to our profession. It's easy and free! Just go to [www.linkedin.com](http://www.linkedin.com) and join the group called **Biomedical Communications Alumni and Students** or visit the BMC Facebook page at [www.facebook.com/MScBMC](http://www.facebook.com/MScBMC).

## Please Keep in Touch!

**Email:** [bmcaa@utoronto.ca](mailto:bmcaa@utoronto.ca)

**Website:** [www.bmc.med.utoronto.ca/bmc/alumni](http://www.bmc.med.utoronto.ca/bmc/alumni)

**BMC wiki:** [www.bmc.med.utoronto.ca/bmcwiki](http://www.bmc.med.utoronto.ca/bmcwiki)



## Alumni MIA

Can you help us find the following AAM/BMC alumni?

Send us an e-mail at [bmcaa@utoronto.ca](mailto:bmcaa@utoronto.ca) if you know where they are hiding...

André Beerens 7T2  
Randy Averback 7T9  
Rick Billingham 7T3  
Anne Marie Black 7T2  
Lynn Goodchild (Kiryaly) 7T4  
Valerie Harrison 6T9  
Elizabeth Imrie 5T3  
Cathy Jeffery 8T5  
Laurie Johnston 7T5  
Frederick Kelly 4T9  
Emilienne Lambert 7T6  
Shumin Lee 8T9  
Per Lundquist 7T1

Jean MacGregor 7T2  
Pat Parsons 7T0  
Shirley Pavlik (Reddick) 7T4  
Annette Porter 6T5  
Glen Reid 6T9  
Carolyn Richardson 7T9  
Bev Ross 8T1  
Grant Ross 5T8  
Rasa Skudra 7T3  
Lynn Smiledge (Waldo) 7T8  
Jackie Steinmann 5T1  
Judith Walker 6T9  
Chris Yorke 9T5

Nadav Kupiec  
Robin Hamilton  
Beverley Nash  
Christine Perchal  
Gary Cousins  
Carin Cain  
Carolyn Olauson  
Paul Pedé  
Sarah Beaton  
Elenor Andrew  
Jacquelyn Shaw  
Stuart McGinniss  
Davia MacDougall

