Announcing the Winners of the autoPACK Visualization Challenge 2012: Present HIV in Blood Plasma

By Graham Johnson, PhD, CMI

For years I’ve studied the artwork posted on CG Society (a popular website and discussion forum for digital artists who work primarily in the 3D, film and game industries, www.cgsociety.org). I dreamed of what molecular worlds might look like when visualized with the diverse skill sets represented across both the AMI and CG Society’s ~200,000 members. By late 2012, the autoPACK software (originally developed as part of my PhD thesis) could generate reliable cell-scale models assembled with molecular details, and we had refined its Graphic User Interface (GUI) enough to make autoPACK suitable for public use.

With planning and funding support from Chris Andrews and Carlos Olguin of Autodesk, I designed a contest to challenge participants to explore the mys-

(Cont’d on page 3)
We're diving right into our summer issue with this year's fantastic line-up of candidates for the Board of Governors election. Each nominee brings a unique set of talents to the organization, so please take some time to read their motivational statements and cast your vote! We also hear from our President-Elect, Cory Sandone, whose talents, experience, and ambitions leave us inspired.

We fill you in (particularly the newer AMI members!) on the AMI Fellowship program and how to earn those oh-so-mysterious Fellow points. Michelle Davis provides a comprehensive look at how to make a complex-branching neuron using ZBrush and FiberMesh. We’re also introduced to the world of graphic novels in a special edition of the quarterly book review by Wendy Beth Jackelow with Lydia Gregg and Wendy Hiller Gee.

Marcia Hartsock brings us updates on the hidden gems of the Vesalius Trust Collection of Art in the Service of Science from the Lloyd Library. We also announce the 2013 Inez Demonet Scholar, Natalie Koscal, who gives us some insight into her future aspirations. Catherine Au-Yeung, an inspired first year student from Toronto, shares her experience of the tri-school exchange hosted at Hopkins. Graham Johnson announces the winner of the autoPACK Visualization Challenge, Jenn Belanger brings us important upcoming events, and Christy Krames gets us geared up for the 2013 AMI Meeting with details about the conference and Salt Lake City.

We hope you enjoy this issue and, as always, we’d love to hear any feedback or requests (written or drawn!).

From the Newsletter Team

The Association of Medical Illustrators assumes no responsibility for statements reflecting the opinions submitted by individual members published in the AMI News. The AMI News (ISSN # P-179) serves as a forum for the thoughts of its members as well as a vehicle for reporting news events and the proceedings of the Association’s committees.

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Letters Policy
Letters printed in the AMI News do not necessarily reflect the editorial position of the AMI News or the opinion of the Association of Medical Illustrators. Letters should be sent via e-mail to the editor, must be exclusive to the AMI News and must include the writer’s full name, address and daytime telephone number. The editorial review board of the AMI News reserves the right to condense letters.

Letters and Comments

We'd love to hear your thoughts on our features, please email us (newsletter@ami.org) or send mail to the AMR address to the left.

All materials for the Fall 2013 newsletter must be submitted by Monday, August 26th, 2013.

Like to doodle or cartoon? We’d love to include these and other small sketches in our newsletter. Please send your images to the address above if you’re interested in having them published. Images must be 350 dpi for color or tone and 1200 dpi for B/W line, no smaller than 2.5" x 2.5".

Newsletter Submission Guidelines

Digital version of AMI Newsletter available in the Online Members Community (OMC) Library: http://community.ami.org

Non-Sequitor

The Great Salt Lake

The Great Salt Lake is the largest natural lake west of the Mississippi River. It is roughly 75 miles long and 35 miles wide, but it is quite shallow, with an average depth of 13 feet, and its deepest point is 34 feet. 1.1 million tons of minerals are deposited in the lake each year by its tributaries. As it has no outlet (besides evaporation), it has very high salinity - far saltier than sea water - and its mineral content is constantly increasing. The Great Salt Lake is too salty to support fish and most other aquatic species, but brine shrimp and several types of algae do live in the lake.
terious world of HIV. Ludovic Autin and I supplied contestants with several choices of 3D models of HIV floating in blood plasma. The more complex models contained hundreds of thousands of molecular components that contestants interacted with via a standardized autoPACK GUI running in Cinema 4D, Maya, and Blender. To broaden the user-base, in the 11th hour Autin worked day and night with Christopher Diggins of Autodesk to provide a GUI for 3D Studio Max, followed by Soft Image and PMV. In February, Tom Goddard added support for Chimera. Ultimately, in an official CG Society art contest (http://autopack.cgsociety.org/) run by Ballistic media, I challenged the participants “to convey humanity's complex relationships with HIV, be they emotional, political, or intellectual.” I further asked them “to excite general audiences with visuals that will help our labs spread interest in the search for a cure.”

The contest accomplished several major goals for the autoPACK project and fell short on others. Biologists improved the accuracy of the models via a dynamic database to help merge cutting edge science with top quality art. Many entries demonstrated how artists and illustrators could spend more time researching and planning stories and exploring aesthetics with the obstacles of modeling reduced. To truly improve the quality of the models, however, we must lure more researchers to critique and adjust the model input parameters. We hope that providing a portal to “see” their improvements in realtime or through the eyes of artists will excite more researchers to participate in the future. While the general packing solutions provided by autoPACK should interest other industries (e.g. math, engineering, and physics) enough to improve the core algorithms, we only received one script improvement. This suggests that future contests should incorporate specific tasks we want to accomplish as part of the challenge itself, e.g., to have a prize for “most improved lipid packing algorithm.”

On a small-scale outreach level, the contest introduced many artists who’d never heard of a “lipid” to the fascinating realm of cell biology. Exposing this group to tools like autoPACK, ePMV, mMaya, and BioBlender should have a broader impact by improving the accuracy of molecular depictions in film and TV. In turn, we in the AMI can learn techniques and approaches for molecular visualization and story-telling from the “Hollywood” style artists or find new collaborators for big production projects. Perhaps most exciting, the open aspect of the challenge inspired extreme artistic license, resulting in many metaphorical explorations that can entice general audiences to learn more about the molecular world (figure 1).

2nd Prize (still image excerpt). Jiri Klusak from Svitavy, Czech Republic. jiri.klusak@gmail.com
In a very tight race for 1st place, Biomolecular chemist Jiri Klusak tamed and expanded the autoPACK models with his own optimizations and packings to submit an epic physiological poster describing a portion of the HIV life cycle. Jiri writes, “The goal was to depict my inner vision of a dynamic and crowded molecular landscape and AutoPACK really convinced me [that it is] an awesome tool for this purpose.”

Please visit http://autopack.cgsociety.org to enjoy, discuss, and study all of the entries.
Visit http://www.autopack.org/cellpack-challenge2012 to watch for future challenges, learn how the software can help researchers, or to learn more about the structure of HIV.

autoPACK developed by: Graham Johnson1,2 & Ludovic Autin2, Mostafa Al-Alusi2, David Goodsell2, Michel Sanner2 & Art Olson2
1Mesoscope Lab in qb3@UCSF (California Institute for Quantitative Biosciences, University of California, San Francisco)
2Molecular Graphics Lab at The Scripps Research Institute, La Jolla
*Thanks to Thomas Brown for early alpha testing and images used in the contest announcement poster.

Government

Candidates for President Elect and Board of Governors
by Jane Hurd, AMI Past President and Nominating Committee Chair (jhurd@janehurd.com)

On behalf of the Nominating Committee, I’m pleased to present for your consideration this year’s slate of candidates for President Elect and Board of Governors. These individuals have stepped forward to take a leadership role in shaping the future of our organization. They were selected based on their ongoing contributions and commitment to the AMI, along with their willingness to serve.

Polling will be open for all AMI professional members from June 18 through
July 18, 2013 (prior to the start of the business meeting). To access the ballot, professional members can log in to their member account at www.ami.org and click on the Board Ballot link on the left. If you need a password, please contact hq@ami.org.

Professional members may vote for no more than three of the five Board candidates. The candidate for President Elect runs unopposed, as the President Elect is selected by the Board based upon qualifications and interest.

If you are interested in running for the Board of Governors in next year’s election, please contact Jane Hurd, Nominating Committee Chair (jhurd@janehurd.com).

Cory Sandone
Nominated for President-Elect

Current Position/Qualifications
Thank you for the invitation to serve as President-Elect of the AMI. I bring experience and perspective to the position, having served in a variety of leadership roles in the AMI. These include: Board of Governors (2006-10), ARC-MI committee member (2006-10), content coordinator/editor for the new AMI website (2008), chair of Communications Editorial Committee (2008-11), and program co-chair for the Baltimore AMI meeting (2011). I have been a faculty member in the graduate program at Johns Hopkins for 23 years and am the illustrator and co-author on several surgical atlases. I am a Certified Medical Illustrator (CMI) and a Fellow of the AMI.

I think I am approachable to all members of our association, from the "first timers" at a meeting to those who have earned lifetime achievement awards. I have been in the AMI for almost 30 years and have perspective on the evolution our profession has undergone. Because I have the good fortune to interact with graduate students every day, I maintain rapport with newer members of our association. I respect the enthusiasm with which they embrace the rewards and challenges of new and emerging technologies. I am pleased our membership continues to grow; let's strive to make our meetings affordable to as many members as possible.

I have had leadership training at Johns Hopkins and have had many opportunities to work collaboratively with experts in medical fields. I believe professionalism is a critical factor in being well compensated for our work, and will represent our association with civility and professional integrity.

Goals for Leadership
Recently, AMI leadership has tackled the tough job of internally examining who we are and what we do. I admire the work done on this challenge; it has revealed our identity and value well beyond the role of the traditional medical illustrator. The AMI is a diverse group and we support and embrace the growing variety of skills of our members. Two traits we share are 1) our value as content creators, because we understand biomedical subject matter and 2) our expertise as communication specialists, regardless of media.

The next step is to bring this vision to those outside our association, to bring our collective internal understanding to the marketplace. The AMI will benefit from developing and strengthening external alliances with other professional associations and industry partners to raise awareness of our profession. This can be done through an active speakers bureau, with AMI reps having a presence at medical/scientific/healthcare profes-
sional meetings and industry conferences. This can lead to exciting collaborations and more and diverse employment opportunities for our members.

Finally, I think our association can help members by keeping communication open but not overwhelming.

Our great association has a rich history and a bright future as medical and scientific knowledge grow and healthcare continues to need excellent visual communication. It would be my pleasure to serve as President-Elect and I would be honored to give the Presidential Address at the 70th meeting of the AMI.

Emily Shaw
Candidate for Secretary

Biography

Emily Shaw holds two positions in tandem as described below.

Medical Illustrator: Emily holds a BFA in painting and art history from Maryland Institute College of Art and a MA in Medical Illustration from The Johns Hopkins University School of Medicine's Department of Art as Applied to Medicine. In 2003 at Hopkins, she was awarded a Vesalius Trust Alan W. Cole scholarship for her thesis project on trypanosome KDNA replication. She has been the sole proprietor of Illustrating Medicine for a decade with clients such as National Institutes of Health, Johnson & Johnson, and Lippincott Williams & Wilkins. Emily's medical illustration portfolio can be viewed at http://www.illustrating-medicine.com.

Simulation Specialist: Emily has almost a decade of experience in the field of clinical simulation, developing virtual reality "serious games", serving as the Mid-Atlantic Simulation Specialist for Laerdal Medical, proctoring the FLS exam for SAGES, and is currently the regional Senior Simulation Technologist for SiTEL of MedStar Health. Her clinical experience includes volunteer work as an Emergency Medical Technician Basic for a local fire department, she serves as an American Heart Association instructor, and she was a top performer in the EMT-Paramedic training program at CCBC. Her work relates to the field by tying together the world of simulation and medical simulation with identifying areas where medical illustrators can contribute to simulator R&D whether it be virtual reality serious games to hands-on physical task trainers and high fidelity patient simulators, a topic which Emily presented at a recent AMI meeting. She has over a decade of experience in both fields and has brought much of the technology that she embraces on the simulator R&D side into the AMI through coordination of workshops at the Techniques Boutique.

Why do you want to be a Board member? What do you hope to gain over the term of your Board membership?

Emily would like to be a member of the AMI BOG to gain perspective as to what direction the association is moving and hopes to influence the natural evolution of the AMI to become more interconnected with other relevant fields and associations, such as SSIH and MMVR (Medicine Meets Virtual Reality). She has organized the First Timer's Workshop and Techniques Boutique over the years and would push the recruitment of new members into active participation in the AMI on committees to keep the association moving forward in the areas of technology, medical education and simulation.

Please describe your goals for the AMI and how your leadership on the Board will benefit the association.

Emily has over a decade of experience in both fields and has brought much of the technology that she embraces on the simulator R&D side into the AMI through coordination of workshops at the Techniques Boutique. Emily is actively creating a bridge between the AMI and SSIH (Society for Simulation in Healthcare) by collaborating with the appropriate AMI committees to have MI presence at SSIH and bringing together AMI members who are pushing the envelope of technology.

What notable skills or training would you bring to the Board?

Emily has strong interpersonal skills, networking through creation of two LinkedIn groups (Clinical Simulation Network and Medical Illustrators Group) both of which are pushing IK members, organizational skills/meeting planning (coordinated FT and Tech Boutique), a decade of experience in business development, simulator R&D, and clinical education. She blends her clinical experience as a trained EMT-P and certified EMT-B with her current positions to best meet clinical training needs. This blend of clinical practice and development of tools to support clinical education will be a benefit to the BOG help bring the AMI closer to the current trends in medical education which Emily supports on a daily basis at the SiTEL Clinical Simulation Center.

David Cheney
Board of Governors Candidate

Please briefly describe your current position and how your work relates to the medical illustration industry.

I am one of the eight medical illustrators at Mayo Clinic, responsible for creating medical illustrations for broad audiences of healthcare professionals and patients.

As a group, our work helps promote Mayo Clinic’s best practices in education, research, patient care, public relations, and marketing. Though I frequently partner with physicians and scientists to create anatomical, surgical and pathophysiological visuals for, as well as instructional videos, exhibits, presentations, and the web, my primary responsibility is to support the Section of Patient Education (SPE).

In addition to the illustrations I create on a daily basis, I recently began exploring the possibility of creating physical anatomical models for use by physicians in both the clinical setting (explaining anatomy and pathologies to patients), as well as in their role as educators (teaching medical students and residents) in the Mayo Medical School and Residency Programs.

Why do you want to be a Board member? What do you hope to gain over the term of your Board membership?

Being considered a candidate for the Board of Governors is both exciting and humbling. I recognize that there are many professional members of our
talented Association with much more experience than I bring to the table -- that's just a fact! I'm still relatively young in the profession, and have a lot yet to learn. However, the opportunity to learn from and work with a group of such talented and respected colleagues is very exciting to me. In terms of what I personally hope to gain over my potential term of Board membership, I would hope to gain a deeper understanding and appreciation for the leadership of the Association of Medical Illustrators. I have benefited from membership in this Association since grad school, and have been in awe of how things "get done". I know there is so much work being done behind the scenes to make the AMI function. I'd love to gain some insight into this process -- And hopefully be able to offer my energy, efforts, and ideas in order to continue to propel the AMI forward.

Please describe your goals for the AMI and how your leadership on the Board will benefit the association.

There has been a lot of discussion recently regarding the AMI's identity, and how the way we are perceived can either benefit or hinder us. As with any issue that involves and affects many different people, there are many different views and ideas on how best to position the AMI in order to keep us "relevant" in a dynamic and evolving niche field. I don't have all the answers for how best to resolve this, and I may not have the experience to understand all the nuances of what a name implies, but I do know what the AMI means to me, and I recognize the value of this organization to our members and to our clients. I'm eager to learn, I'm great at listening and considering alternative views and opinions, and I'm not afraid to ask questions. I believe that recognizing when I don't have all the answers, and being humble enough to ask questions and seek help, is a strength, not a weakness. I would like to see the AMI become more nationally recognized - specifically within the medical and scientific arenas of course, but also among non-medical professions. I think we have an amazing opportunity to show the world what our members can do, and to position ourselves to be considered CONTRIBUTORS, rather than merely participants in exciting advancements in science and medicine.

What notable skills or training would you bring to the Board?

I've had several opportunities to serve in leadership positions throughout my life. As a kid, I achieved the rank of Eagle in the Boy Scouts of America program. My involvement in scouting taught me to work with and lead others. A few years later I served a voluntary 2-year church mission to Bolivia, learning from, teaching, and serving the people there. I learned to love and appreciate people from different cultures, beliefs, and backgrounds, and to communicate in another language. I learned how important it is to value each individual, to listen carefully, and consider different ideas... even when they differ from your own. Later, as a student in Biological & Pre-Medical Illustration at ISU, I was elected President of our student organization. I was responsible for conducting club meetings, planning group trips and events, and lining up guest lectures. At Mayo Clinic, I frequently function as both illustrator and art director on various projects. I've learned to delegate responsibilities to other illustrators at times, and to constantly look for consultations and feedback on projects. I've been a past Salon Judge, presented Techniques Showcases, and given talks at AMI events and in the community. I'm currently the Vice Chair of the Digital Salon committee for this year's Annual Conference, and will be actively involved in helping organize next year's conference when it comes to Rochester. I've also been involved in the AMI Mentor Program, and look forward to continued service in this program for years to come. I'm passionate about the field of medical illustration, and proud to be a member of the AMI.

Marc Dryer
Board of Governors Candidate

Please briefly describe your current position and how your work relates to the medical illustration industry.

I am a Senior Lecturer at the University of Toronto in the Biomedical Communications graduate program. My primary responsibilities include teaching 3D biomedical visualization techniques to our graduate students, supervising graduate student masters research projects, helping to determine the overall curriculum of the program, and developing and teaching undergraduate courses in various areas of scientific visualization. While 3D biomedical animation and visualization is my primary area of interest I am also actively involved in forensic visualization, forensic facial approximation, and archaeological illustration both at the practical level and as areas of curricular development.

Why do you want to be a Board member? What do you hope to gain over the term of your Board membership?

As a faculty member in one of the accredited graduate programs designed to train medical illustrators I feel a responsibility to maintain an ongoing and influential relationship with the Association of Medical Illustrators. While I see great value in occupying a position that will enable me to help steer the direction our association takes, I see equal value in what I can learn from being part of the board about the present state of our profession. I need to be able to teach my students about the field they propose to enter, and as a member of the Board of Governors I will gain a perspective on it that my role in academia cannot offer.

Please describe your goals for the AMI and how your leadership on the Board will benefit the association.

My central goal for the AMI is that it remain relevant to the needs of its members and the markets they serve while not giving up a leadership role in pushing the profession forward in ways that the market, our members, and the relevant educational institutions will follow. I think this is a difficult task, being both a leader and a follower, but it is essential for the organization maintain its role as the primary association in our field. This tension between leading and following marks the central character of the AMI: a tension born of the pull between tradition and innovation. This tension is essential to keep our association grounded and relevant, but it needs to be managed to ensure we don’t collapse into a small core or spin off into
Employed as a “medical illustrator” for the past 20 years at the University of Tennessee College of Veterinary Medicine I have worked through all sorts of technologies. If any profession should be well versed to adaptation it should be the artist trained as a scientist and vice versa. Why? Because we are called to see and develop ideas that others have difficulty putting into words. To engage our viewers we have to see from different points of view. I believe we are the profession that should be at the forefront of exploring the new technologies. I want to see educated elegance, and who better to set the design in motion than our profession. We each can explore our role in this brave new world. As a good friend in technology media PR said, “We are meeting the New Wild West.” So let’s see where this bronco takes us.

Why do you want to be a Board member? What do you hope to gain over the term of your Board membership?

I would like to see our profession become a positive influence in the developing new business models. If we are on the ground floor of these new models we can influence others toward a win-win solution for all creators whether via online collaborations, creative consultation, or to develop new models to visualize difficult and complex scientific equations. The more we engage others to form these collaboration the better we can adapt for the coming trends of the future. Change never stops. The association will only survive by being honest in all areas of our profession which means we have to sometimes look at our reasons for decision making. Change for the sake of change isn’t always good... it’s just change. Yet, keeping something the way it has always been done can be detrimental. I think we have to make the best decision for all our members.

Please describe your goals for the AMI and how your leadership on the Board will benefit the association.

On a day-to-day basis anyone who works in the academy is assured of a variety of "fires" that have to be addressed for faculty, staff and/or students so it’s important in my job to find the best solution for the situation; even if I don’t have an answer it is my job to find a solution. It’s not about saying "I can’t" it’s about saying "I will". As an association we need to look at our strengths (our members) and make sure that every member is engaged in some way. If each member pledged 15 minutes a week to the AMI, I think it would make for a much stronger association. People would become engaged, build new friendships and might find a new ability that they didn’t know existed. Dues may drive the operations and the online needs of the AMI but our strength over the years is the ability to help each other adapt and grow. That means we need to share all our abilities. We need to develop future leaders for our profession. If you look at the problem as a mountain, it's always a mountain, but if you engage many hands and set each hand to a small task the mountain can be moved. It may not happen overnight but it will move. So let’s look at setting a goal and then engaging all our membership by breaking things down into small tasks so every member becomes the solution.

Leslie Leonard
Board of Governors Candidate

I am a Senior Medical Illustrator and Medical Writer at Nucleus Medical Media. I’ve worked in Nucleus’ Medical Legal Art department for the past six years, writing proposals and collaborating with lawyers and medical experts to create case-specific illustrations for use in settlement negotiations and trials. I also write scripts for Nucleus’ custom animations.

Why do you want to be a Board member? What do you hope to gain over the term of your Board membership?

The AMI has given me a lot - I’ve benefitted from the advice and information on the listserv and the OMC, been inspired and challenged by the lectures, workshops, and artwork on display at the annual meetings, and received invaluable guidance and support from many individual members who have helped me throughout the course of my career. I am truly honored to have been asked to serve on the Board of Governors, and would

Deborah Haines
Board of Governors Candidate

Please briefly describe your current position and how your work relates to the medical illustration industry.

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love the opportunity to give back to the organization that has given me so much. I'm also interested in getting a behind-the-scenes view of how the AMI functions, and excited at the prospect of serving alongside the other board members, for whom I have the utmost respect.

Please describe your goals for the AMI and how your leadership on the Board will benefit the association.

This is such an exciting time to be an AMI member! As a group, we are expanding and diversifying our roles, collaborating in new and unexpected ways, and creating artwork in an incredible variety of media and on exceptionally varied subject matter. New technologies are changing the way we work and the ways in which others view and interact with our work. I want the AMI to evolve along with the evolution of our profession as a whole, and I want the people who work in all of the varied aspects of our field to feel that the AMI has something worthwhile to offer them. I also hope to encourage more of our members to become more involved in our organization.

What notable skills or training would you bring to the Board?

I have served as vice-chair and graphic designer on the AMI Newsletter committee since Spring of 2009. Over the past five years, I've helped to design and proofread each issue of the AMI Newsletter. This has, in turn, helped me to stay abreast of current issues facing our organization!

At Nucleus, a big part (and to me, the most rewarding part) of my job has been collaborating with others. I often work with lawyers and medical experts to ensure that exhibits are accurate, team up with other illustrators and animators to write job proposals. As a result, I have a deep appreciation for the many varied roles that members of our profession take on, as well as experience in bridging the divides between us.

Kevin Millar
Board of Governors
Candidate
Please briefly describe your current position and how your work relates to the medical illustration industry.

I am currently employed at INVIVO Communications Inc. in Toronto, Canada, where I have been for the last 14 years. We are a specialized medical visualization company that produces custom work for pharmaceutical, medical device and biotechnology companies. My role as the Vice President of Production is to oversee all creative, technical, and administrative aspects of our projects. Internally, I work with our medical illustrators, animators, user experience designers, programmers and medical writers on each project. My goal is to ensure that INVIVO continues to maintain its reputation for producing high-quality, medically accurate animations, interactive tools, mobile applications, and illustrations. I have been at INVIVO since its inception and I have played a key role in the strategic planning, direction, and growth of the company. With nearly 60 employees, we are now one of the largest employers of AMI members.

Why do you want to be a Board member? What do you hope to gain over the term of your Board membership?

This opportunity was first presented to me by Jane Hurd, someone who I have respected and admired throughout my career. I was honored that she would reach out to me as a potential candidate. Being on the Board of Governors would be my way of giving back to an organization that has been supportive of me during professional years. It also presents an opportunity to learn from my peers and participate in discussions or decisions that will help steer the AMI. Based on my background, I believe that I can offer a unique perspective and insight into topics related to new technologies, which is where I have focused much of my career. Although I've come to know many AMI members, I would like to become a mentor for recent graduates, new members, or others who wish to pursue a career with a similar focus to mine.

Please describe your goals for the AMI and how your leadership on the Board will benefit the association.

I hope that by being on the Board of Governors, I can help to help navigate the AMI through an exciting transition period. Many new members now occupy jobs or possess skills that were not associated with our profession many years ago. I would like the AMI to embrace new types of medical art, including data visualization, medical writing, mobile applications, and medical gaming. I want to see an increased awareness about the AMI outside our organization through networking and collaborations with other groups. Ultimately, this will lead to a stronger, more diverse membership base and ensure that our industry continues to have high-value, good paying jobs.

What notable skills or training would you bring to the Board?

Over the course of my career, I have occupied several different positions ranging from medical illustrator, to medical animator & writer, to art director and senior management. This has given me an in-depth understanding and appreciation for the many areas that people in our field operate. As part of my current leadership role, I am responsible for the training and encouragement of my team members. I believe that my ability to assist others in their own development, while speaking about my experiences, could be valuable to our new or prospective members. In past years, I have been a presenter at the AMI annual conferences. At the most recent meeting in Toronto, I volunteered as a co-chair for the planning committee. I thoroughly enjoyed working with this talented and energetic group to make the event successful. I want to carry that enthusiasm with me as a member of the Board of Governors.

Kevin Millar
Board of Governors
Candidate
Please briefly describe your current position and how your work relates to the medical illustration industry.

I am currently employed at INVIVO Communications Inc. in Toronto, Canada, where I have been for the last 14 years. We are a specialized medical visualization company that produces custom work for pharmaceutical, medical device and biotechnology companies. My role as the Vice President of Production is to oversee all creative, technical, and administrative aspects of our projects. Internally, I work with our medical illustrators, animators, user experience designers, programmers and medical writers on each project. My goal is to ensure that INVIVO continues to maintain its reputation for producing high-quality, medically accurate animations, interactive tools, mobile applications, and illustrations. I have been at INVIVO since its inception and I have played a key role in the strategic planning, direction, and growth of the company. With nearly 60 employees, we are now one of the largest employers of AMI members.

Why do you want to be a Board member? What do you hope to gain over the term of your Board membership?

This opportunity was first presented to me by Jane Hurd, someone who I have respected and admired throughout my career. I was honored that she would reach out to me as a potential candidate. Being on the Board of Governors would be my way of giving back to an organization that has been supportive of me during professional years. It also presents an opportunity to learn from my peers and participate in discussions or decisions that will help steer the AMI. Based on my background, I believe that I can offer a unique perspective and insight into topics related to new technologies, which is where I have focused much of my career. Although I’ve come to know many AMI members, I would like to become a mentor for recent graduates, new members, or others who wish to pursue a career with a similar focus to mine.

Please describe your goals for the AMI and how your leadership on the Board will benefit the association.

I hope that by being on the Board of Governors, I can help to help navigate the AMI through an exciting transition period. Many new members now occupy jobs or possess skills that were not associated with our profession many years ago. I would like the AMI to embrace new types of medical art, including data visualization, medical writing, mobile applications, and medical gaming. I want to see an increased awareness about the AMI outside our organization through networking and collaborations with other groups. Ultimately, this will lead to a stronger, more diverse membership base and ensure that our industry continues to have high-value, good paying jobs.

What notable skills or training would you bring to the Board?

Over the course of my career, I have occupied several different positions ranging from medical illustrator, to medical animator & writer, to art director and senior management. This has given me an in-depth understanding and appreciation for the many areas that people in our field operate. As part of my current leadership role, I am responsible for the training and encouragement of my team members. I believe that my ability to assist others in their own development, while speaking about my experiences, could be valuable to our new or prospective members. In past years, I have been a presenter at the AMI annual conferences. At the most recent meeting in Toronto, I volunteered as a co-chair for the planning committee. I thoroughly enjoyed working with this talented and energetic group to make the event successful. I want to carry that enthusiasm with me as a member of the Board of Governors.

Kevin Millar
Board of Governors
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This technique reveals how to create a complex-branching neuron easily and entirely in ZBrush by harnessing the FiberMesh controls. After creating the basic neuron body, you’ll be creating FiberMesh on top of FiberMesh to establish dendrite branching. This technique is easily adaptable and can be used similarly for other branching or meshwork kinds of elements. This tutorial assumes basic knowledge of ZBrush.

Establish the Basic Neuron Body:
We’re creating a pyramidal neuron - with basal dendrites, apical dendrites, and dendritic spines.

To begin, create the soma, axon, and a couple branches of the dendritic tree. ZSpheres are a good and easy way to do this (Figure 1), and they result in decent topology. Use some basic brushwork with the move brush and smoothing to finesse this basic structure (Figure 2). For information on using ZSpheres please refer to this tutorial: http://www.digitaltutors.com/11/training.php?pid=3505.

Create an adaptive skin for the ZSpheres and mask off the soma where you want the first layer of basal dendrites to sprout by painting on the geometry while holding the control key (Figure 3). You can open the FiberMesh subpalette in the Tools palette. Select LightBox > Fibers and choose any very basic FiberMesh. The "Tall Weeds" preset is a pretty good place to start.

Use the settings below to create the first level of basal dendrites (Figure 4).

Create the Basal Dendrites
Key Values:
• Drop the MaxFibers to 0.01. We need very few fibers, especially initially.
• Drag the ByMask farthest to the right - this assures fibers will only sprout from our masked part of the soma.
• Imbed: value of .3. This helps make sure when you subdivide the finished FiberMesh, it will still be within the soma.
• Establish a nice medium Length - 400 worked well.
• Match the gravity curve as shown, and set Gravity to about .43940.
• Modifying the NoV slider to about .2 varies the gravity applied to the branches and results in more believable dendrite bending.
• Playing with HTangent and VTangent values can help modify branch direction.
• Choose a Profile of 4 and Segments of 6 or similar.
Create Several More Layers of Basal Dendrites
The adjustments for these secondary and tertiary basal AND apical dendrites include:
• higher MaxFibers
• adjusting Length as need be
• decreasing Coverage (they need to be slimmer)
• increasing Profile (this helped assure the dendrites won’t need to be subdivided)

Tips when creating dendrites:
Besides manual brush masking, use Masking > Mask by Fibers to mask off which areas of the dendrites you want new dendrites to sprout from. Drag the profile to match the curve shown right in Figure (7). This selects the tips of the fibers. Choose FiberMask to apply the mask.

Before adding the next layer of dendrites, you can use groom brushes, smoothing, or move brushes to adjust. Figure (8) shows the finished basal dendrites, built with four ‘layers’ of FiberMesh dendrites, each added to the previous dendrite subtool.
Create the Apical Dendrites
Create apical dendrites in the same way as creating basal dendrites - with one important difference: *Gravity* needs to be adjusted - we need these flaring up, not down (Figure 9):

![Gravity 0.6097, Nov 0.](image)

Figure (10) shows apical dendrites built from 3 layers of FiberMesh.
You can even add a few dendrites off the axon using similar settings (keep *Gravity* at or near 0.)

---

Add Dendritic Spines
As a final touch to our model, we’ll even create dendritic spines with FiberMesh.
Select one of your dendrite subtools and use the settings shown in Figure (11) to create dendritic spines shown in Figure (12).

![FiberMesh](image)

Important settings include:
*MaxFibers*: ~2.6
*ByMask* (if using): drag all the way to the right
*Imbed*: .2
*Length*: 2
*Width Profile*: this is important to give the spines their shape - create a curve similar to what's shown.
*Coverage*: 18
*ScaleRoot*: 1.4 | *ScaleTip*: .01
0 the values for *Gravity*, *HTangent*, and *VTangent* *Profile*: 6
*Segments*: 10

Before Pressing *Accept*, choose *Save* (Figure 13) to save these settings.

Now press *Accept* and select the next subtool you want to add dendritic spines to.
Choosing *Open* and navigating to your saved preset will let you start with the exact same settings; adjust if need be.

![Save and Open](image)

Now you have a finished neuron model, complete with body, basal and apical dendrites, and dendritic spines.
Play with these settings - merge subtools, add more dendrites or keep the neuron simpler.
Save several FiberMesh presets to make creating multiple neurons easy.
Below are a couple renders with some materials and lighting applied and composited in Photoshop of the finished pyramidal neuron!
For me, the graphic novel or memoir is the ultimate in story telling—a tale revealed in words and images. This month’s column features three graphic memoirs with medical themes that will appeal to the artistry as well as the scientific curiosity we all share as medical illustrators. Wendy Hiller Gee and Lydia Gregg join me in reviewing books that piqued our medical, literary, and visual interests: Our Cancer Year by Harvey Pekar and Joyce Brabner, Special Exits by Joyce Farmer and Stitches by David Small.

-Wendy Beth Jackelow

Our Cancer Year by Harvey Pekar and Joyce Brabner
Review by Wendy Hiller Gee

Anyone who has suffered through a difficult illness—or cared for someone who has—will find a bit of their own story in Our Cancer Year, a graphic novel by Harvey Pekar and Joyce Brabner. This is an intimate story told by a married couple navigating the uncertainties of Harvey’s cancer diagnosis and treatment, set against the backdrop of the Gulf War. The story artfully weaves together their fear about his cancer with anxiety about war in the Middle East and how that will affect a group of teenage activists Joyce befriended at a peace conference.

The late Harvey Pekar (1939-2010) was renowned for his American Splendor comics, which told everyday stories of his life as a file clerk in a Cleveland, Ohio hospital. This collaboration with Joyce Brabner, also an author, is an unflinching look at their everyday experience of cancer. Artist Frank Stack supports the story’s deeply emotional core with his energetic, sometimes frenetic drawings. As Harvey reaches the depths of despair and physical pain with his treatment, Stack’s drawings become increasingly disorganized and raw. In illustrating tender, hopeful moments, he uses a simple, almost abstract style. Whatever the style, the drawings knit the emotions and themes of this book together in a powerful way.

This honest story, compellingly told and marvelously illustrated, is a highly recommended read.

Special Exits by Joyce Farmer
Review by Lydia Gregg

This beautifully drawn memoir depicts the decline in health of the author’s father and stepmother as they age in their home in southern Los Angeles. The author, Joyce Farmer, does not leave the reader suspended in discomfort as any narrative addressing such a topic could. Instead, she gracefully yet unapologetically portrays the lives of the aging couple, Lars and Rachel, who are cared for by Lars’s daughter, Laura, leaving the reader with an unsentimental, balanced appreciation of the transition from life to death. Subtleties of the interactions between characters are brought to life through uncommonly masterful storytelling. Farmer captures the difficult circumstances of navigating the medical system and the choices one must make in caring for elderly parents while skillfully weaving in the humorous moments we encounter during everyday life.

Particularly noteworthy is the success of her style, seldom found in current comics and graphic novels. The amazingly consistent amount of detail in each panel is neither distracting nor extraneous to the storyline. This intricate rendering, when coupled with the very regular 8-panel layout, creates an immersive experience as Farmer guides the reader through this tremendously personal narrative. Farmer’s decades of experience are evident in the way she gracefully depicts the pacing of events to the rhythmic passing of daily life.

Works like this are only rarely achieved by even the most experienced greats in the history of comics. Robert Crumb put it best in describing Special Exits as "One of the best long-narrative comics I’ve ever read, right up there with Maus... I actually found myself moved to tears.”

Stitches by David Small
Review by Wendy Beth Jackelow

Stitches by David Small, the children’s book illustrator, is an account of his childhood which is a far cry from the exuberance and whimsy he portrays in his own work. He grows up, a sickly child, in a family where the little communication there is exists wordlessly. His mother slams cabinets, his radiologist father pounds a punching bag in the basement, his brother drums while David draws. At age eleven, his mother’s friend notices a growth on his neck that remains untreated for more than three years. When David finally has surgery to remove the tumor, it is discovered to be malignant. The huge scar down his neck and his inability to speak due to the removal of part of his larynx are tangible evidence of the gravity of his affliction, yet the word “cancer” is never spoken. David’s muteness sets him apart from everyone and he is miserable until he meets a wise therapist who is able to make David realize he is not the problem. David’s distant and cruel mother and father hold secrets that prevent them from ever being the kind of parents a child with a life threatening condition needs, especially a boy as sensitive as
their son. His life of art and introspection is what ultimately saves him.

If one could write and illustrate a film noir book, this would be it. Beautifully expressive brush and ink figures with washes convey the dark sadness and mystery of David's childhood. The first image we see of his mother is a menacing shadow across the kitchen floor, an early indication of her role as a parent. The illustrations convey his vivid interior life as well as the horrible truth of his story. We are observers watching a child go through a terrible medical ordeal with a family incapable of enough love to support him or even tell the truth about his cancer. The pictures truly speak louder than the words in this sad and powerful memoir.

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**Vesalius Trust**

**The Vesalius Trust Collection of Art in the Service of Science**

*by Marcia Hartsock, MA, CMI*

**Donated Inventory Now Online!**

The complete inventory of Martin Finch's artwork is now available on the Lloyd Library and Museum website. The online inventory on the Museum Collection portion of the site also includes donated work and artifacts of medical illustrators Mary Maciel (donated by Jan Warren) and Leon Schlossberg (donated by Marie Dauenheimer).

[http://www.lloydlibrary.org/museumcollections.html](http://www.lloydlibrary.org/museumcollections.html)

Over the past several years, the Vesalius Trust has collaborated with the Lloyd Library and Museum to establish a collection of traditional medical illustration that will archive and preserve our field's foundations, and will serve to support future research and education in the area of visual communication in medicine, surgery, health, and science. In addition to the work of Finch, Maciel, and Schlossberg, the Collection currently includes the work of Jody Fulks-Sjogren, Mel Deidrich (donated by John Nyquist), Bob Demarest, Rick Hall, Marcia Hartsock, Caspar Henselmann, Jean Hirsch (donated by Bob Demarest), Teri McDermott, Muriel McLatchie (donated by Bob Demarest), Catherine Twomey, and Bill Westwood.

To protect against unauthorized or inappropriate use, the Lloyd does not put images of artwork collections on their website. All of the work in its entirety, including sketches, job records, and communications, is available to researchers/educators in person, and to national or international researchers per the Lloyd's research guidelines.

**Leon Schlossberg’s Art Box Part of “The North American Experience: Early America Illustrated”**

A wooden box that belonged to medical illustrator Leon Schlossberg containing his art supplies is included in an exhibition "North American Experience: Early America Illustrated," on display at the Lloyd Library and Museum through June 21, 2013. Leon's pencils and crow quills pens present an example of the type of art materials that might have been used by 18-19th century naturalist explorers.

Following is the display text that accompanies the art box.

“The wooden art box on display belonged to Leon Schlossberg, a medical illustrator at Johns Hopkins Hospital, Baltimore, Maryland. Schlossberg did illustrations for the hospital, as well as taught illustration to would-be medical illustrators at the Johns Hopkins University School of Medicine. The box, which contains a variety of illustration tools, including pencils, penholders, and a variety of carbon dust drawing tools, was donated to the Vesalius Trust Collection at the Lloyd in 2012 by Marie Dauenheimer, one of Schlossberg’s former students. While certainly a 20th century toolkit, some of the supplies are not so different from what naturalist explorer/illustrators would have had available to them on their own expeditions for drawing natural history specimens, and help us imagine the process.”

---

**2013 Inez Demonet Scholarship Winner**

The Inez Demonet winner for this year is

**Natalie Koscal**

Johns Hopkins University

Natalie Koscal obtained her B.Sc. in General Biology from Cornell University. While there, she completed the Bartel’s Science Illustration Internship at the Cornell Lab of Ornithology. She recently earned her M.A. in Medical and Biological Illustration from Johns Hopkins University School of Medicine. Natalie is excited to be entering the professional field of medical illustration and intends to continue learning and exploring creative, innovative ways of visually representing science. She is very thankful for the great honor of receiving the Inez Demonet Award.

The Inez Demonet Scholarship is awarded annually to the student who exhibits outstanding merit and potential in the field of medical illustration. This prestigious award was designated by
The 2013 Tri-University Exchange

by Catherine Au-Yeung, Class of 1T4 BMC Program

The 2013 Tri-University Exchange was graciously hosted at Johns Hopkins University this spring and attended by students and faculty from the University of Toronto’s Biomedical Communications (BMC) program and Georgia Regent University’s Medical Illustration program. For those of us students from BMC, I can confidently say that we were all very excited and happy to go on our first medical illustration Mecca. After 10 hours of traveling, we arrived at Johns Hopkins University and were pleasantly surprised to see green foliage after a very long winter in Canada. Our evening continued with a warm welcome from the students, faculty and staff of Johns Hopkins University’s department of Art as Applied to Medicine. For some of us students, it was a happy reunion after having met at the 2012 AMI conference in Toronto. For others, it was a great opportunity to connect over food and refreshments. All the while, we were surrounded by a bedazzling collection of illustrations. Some were original pieces by Max Brödel; others were done by past and present students of the JHU program. This not only was a great beginning to our exchange program, but also incredibly humbling and inspiring.

The next two days of the exchange program were filled with outstanding seminars and workshops organized by David Rini. The seminars were given by a mixture of specially invited guests and faculty from all three schools. A variety of interesting and informative topics were covered. These included: comics in medicine with Shelley Wall, research evaluating the effectiveness of visual media with Jodie Jenkinson, lighting techniques for photography with Norm Baker, optimizing workflow with Andrew Swift, publishing with Dana Dreibelbis, cutting edge technology applied to anaplastology with Juan Garcia, and military medicine with Elizabeth Weissbrod. Graham Johnson, a graduate of the Johns Hopkins program, was honored as the Samson Feldman visiting scholar and shared his lecture entitled “A Virtual Mesoscope to Model and Visualize Structural Systems Biology”. We were fortunate to have Dave Killpack share his personal journey towards becoming a professional in the field of medical illustration and beyond, and to have Nick Klein enlighten us with his thoughts on what being a technical artist means.

During one afternoon, a panel of freshly graduated JHU alumni kindly shared their post-grad experiences, giving us a sneak peek into what may lay ahead for some of us students. They also generously offered us advice and were happy to answer any of our questions. Some memorable tidbits of counsel included “Don’t worry as much...” and “It takes longer than you expect to get paid.”

To formally finish off the exchange, we ended with four quick mini workshops. Amanda Behr taught us how to simulate watercolor painting in Photoshop - which some of us are now taking advantage of in our projects! Dave Killpack shared with us his tips and tricks with ZBrush. Andrew Swift enthusiastically taught us the basics of Osirix. And lastly, Michael Jenson took us into the “Batcave” of Cinema4D.

Despite the packed schedule that we already had, we were still eager to get to know our student counterparts. Funnily, or maybe freakishly, we discovered that both first year classes from the BMC and JHU program had been independently playing the same game over the past year within our respective classes. This game, known to us as “Telepictionary” but...
As a new Professional member of the AMI, I was a little intimidated and, honestly, a little embarrassed to not really know what having the “FAMI” title meant or how to become a Fellow myself. With a little research though, I learned to fear not! Here is your quick guide to the Fellow Program, why it is integral to the future success of the AMI, and how you can get started (or maybe you’ve already started and didn’t know it!).

What is the AMI Fellow Program?
The AMI Fellow program was established as a means to encourage members to participate in the activities of the Association and to recognize dedicated members who have generously volunteered their time and effort toward improving the Association. Becoming a Fellow of the AMI (FAMI) is one of the highest honors bestowed by the Association and began with the inaugural Fellow class of 1988 (although discussion of the importance of the program began as early as 1958). The gold pin an AMI Fellow receives upon induction does not just represent their achievements, but most importantly honors their commitment to bettering the AMI and cultivating its successful future.

Where Do I Start? How Do I Earn Fellow Points?
A member can become an AMI Fellow once they have accrued 1,000 fellow points. Fellow Points are numerical values associated with specific volunteer activities that benefit and promote the AMI. This includes a wide range of undertakings, from serving on a committee, to helping plan or participate in the annual meeting, to writing or editing various editorial and scholarly articles relevant to medical and biological visual communication. You can even accrue Fellow points by submitting your artwork in the Annual Meeting Salon!

Where do I Log My Fellow Points?
Volunteered already? Plan to volunteer, present, or exhibit soon? Great! Logging your volunteer activities and Fellow Points is as easy as knowing where to go:
- Log-in as an AMI member
- On the home page, scroll to the bottom of the Admin Links menu on the left-hand side of the screen. Click the Fellow Points link.

Fellow Point Examples

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A few of our personal favorites... but we might be biased!

...and many more! To see all ways to accrue points, visit http://www.ami.org/about-the-ami/fellow-program.html

Students from all three programs come together to play The Greatest Game in the World.
AMI Meeting

FUSION 2013: Connecting Minds, Visualizing Science & Medicine
by the AMI 2013 Annual Meeting Planning Committee

We are counting down the days until we converge and connect in Salt Lake City. This summer’s annual meeting is sure to appeal to our diverse membership, reflecting a program with inspirational offerings for everyone. The Planning Committee has worked diligently to provide a wide range of topics for this year, with particular focus on Bioscience, Business and Mobile Media. Here is a breakdown of some of what you can expect:

6 Plenary Sessions will explore spectacularly diverse topics - from new technologies in data visualization (Jens Krueger), to the role of the medical illustrator in forensic pathology (Rick Hellman), to mastering business strategies (Peleg Top), to an inside look at the world of the Netter collection (Carlos Machado), and finally, to the futuristic world of living systems design (Andrew Hessel). This year’s Keynote speaker, Dr. Roberta Ness, will challenge us to reframe how we see the world in order to gain fresh insights into everyday work, and to think “outside the box”.

17 Concurrent Sessions will keep everyone hopping from one place to the next. Among your many choices will be An Essential Guide to Mobile Technology (Tim Butler) and Visual Note Taking (Joanna King). You’ll have to decide among discovering the opportunities for illustrators in surgical training in digital format (Brian Dunham, MD) and exploring the future of scholarly publishing (Tonya Hines).

You’ll have the opportunity to watch artist and author Don Seegmiller create a masterpiece with Corel Painter, and also learn how to improve your work station habits with Physical Therapist, Ester Smith. For those with four-footed interests, Lauren Sawchyn will explore the market for medical illustrators within the veterinary world.

10 Workshops will offer in depth and hands-on opportunities in small group settings. These learning opportunities include such topics as upper limb dissection, an intro into WebGL, Zbrush for beginners, principles of classical animation, 3D molecular modeling, and an overnight traditional painting workshop.

We have expanded the very popular Tech Showcase this year so attendees can experience a full day of talented artists who are presenting a variety of cutting-edge techniques. Within the realm of 3D we are showcasing: digital sculpting, interactive 3D graphics on the web, Osirix to Zbrush workflows and 3D machining/printing. In conjunction, there will be an oil painting demonstration, guitar making, concept art for videogame development and many more surprises!

All Things Salon
As always, the annual member’s Salon and Media Exhibit will provide the opportunity to view stunning visual solutions to a wide range of visual communications challenges. There are some exciting innovations this year. Efforts have been made to make the Salon more streamlined, more compact for easier viewing, and more “front and center” with the creation of “Fast Frame”, a Salon preview event. Categories have been updated and consolidated for better viewing. An animation theater will provide continuous display of animated submissions and a dedicated digital viewing room, with iPad and computer stations, will be located next door.

The Salon Opening Reception, sponsored by Amgen, will kickoff the annual meeting Wednesday evening. We are extending an invitation to this event to local leaders in the biotech and arts education community so that they may better understand what we do, how we do it, and the potential for collaboration.

Join us Saturday morning for Winning Ways LIVE!, a salon critique event where participants can learn the complete backstory to some award-winning projects. Our own esteemed member, Dr. Steve Harrison, will act as facilitator for this engaging and informative event during which creators will provide feedback and answer questions from the audience.

Several temporary art exhibits are being installed in the Salt Lake area this summer, at the Eccles Medical Library and additionally at the Salt Lake Public Library downtown. These small outreach displays of award-winning images are designed to promote the AMI and to invite new audiences to become part of our community.

IMPORTANT SALON DEADLINE: Tuesday June 18 is the last day to upload electronic files, animations and interactive entries to Dropbox.

“This Is the Place!”
Brigham Young knew it, and soon you will know that the Annual AMI meeting will be the place to be this summer. Salt Lake City and surrounding areas have much to offer, so consider bringing those nearest and dearest for an unforgettable vacation. There are plenty of family-friendly things to do right in Salt Lake City:

Local Salt Lake City Family Activities:
• Utah’s Hogle Zoo
• Hike or bike Emigration Canyon (and stop at Ruth’s Diner for brunch!)
• Clark Planetarium and IMAX theatre.
• The new Natural History Museum of Utah – from dinosaurs to gemstones this architecturally stunning museum covers 150 years of Utah history.
• Tracy Aviary, home to over 135 bird species.
• Family History Library - Explore your roots by visiting the largest genealogical library in the world.
• The Leonardo Museum – a contemporary science, art and technology museum in downtown Salt Lake City.

Day trips:
• A 40-minute drive takes you to Little Cottonwood Canyon, home to Alta and Snowbird Ski & Summer Resorts. Revel in July’s wildflowers with a hike to Catherine’s Pass, just up from Alta. Take Snowbird’s iconic tram to 11,000 feet, or if you prefer laying low, stick with their Alpine Slide.
• Big Cottonwood Canyon (home to Brighton & Solitude Resorts). Enjoy a half-hour scenic drive through Guardsman Pass, a gravel road leading from the top of Big Cottonwood to Park City.

• Park City, Utah, a ski and summer resort town, about 40 minutes away. Restaurants, art galleries and wonderful shopping can be found along Main Street. Try the toboggan track left from the 2002 Olympics! Or, head to Deer Valley Resort for miles of mountain biking trails for every level of rider.

FUSION: Connecting Minds, Visualizing Science and Medicine, – describes the essence of what the meeting planners have in store for the 68th annual conference. As we learn, exchange ideas and explore the creative process, we hone our expertise as both visual artists and scientific researchers, and further our standing as essential links to a world increasingly influenced by visual media. We look forward to seeing you in a few weeks!

Events, Notices, Upcoming Contests, & Deadlines

Edited by Jennifer Belanger

Imagine Science Film Festival
Open Call for Submissions
ISFF seeks films that transform scientific thought or process into visually-engaging worlds - films that veer away from clichés, stereotypes, or traditional scientific reporting, and present a fresh and innovative portraits to scientific filmmaking. Films should incorporate science into a compelling narrative while maintaining credible scientific groundings, and feature a scientific or technological theme and storyline or a leading character who is a scientist, engineer, or mathematician.

Deadlines:
Early Deadline: May 1, 2013
Regular Deadline: June, 15
Late Deadline: August 15
http://www.imaginesciencefilms.org/festival/submit-your-film/

Face Off:
Skull-A-Day VS. Street Anatomy
May 31 – August 25, 2013
International Museum of Surgical Science, Chicago, IL.
A collection of skull paintings, sculptures, and other art from a wide range of artists, put together by the Skull-A-Day and Street Anatomy blogs.

Art, Wax, Death and Anatomy: Illustrated Lecture with Art Historian Roberta Ballestriero
June 3, 2013
The Last Tuesday Society, London, UK.
With the rise of Neoclassicism, the art of wax modelling became repulsive to artistic sensibilities; however, it continued to thrive in the fields of normal and pathological anatomy, obstetrics, zoology and botany. Interest in anatomical wax models during the eighteenth century led to the creation of beautiful collections where art and death harmonically cohabit. This illustrated lecture will discuss the art and history of wax modeling both the sacred and profane.
Roberta Ballestriero is an associate lecturer in History of Art for the Open University, in U.K. She started her research on the art of ceroplastics in 1995 and since 2004 she has presented at numerous conferences and has published several articles on her thesis subjects.

BIOCOMM 2013
(BioCommunications Association)
June 17-21, 2013, Asilomar State Park on the Monterey Peninsula, CA
http://bca.org/annual_meeting/biocomm2013/biocomm_2013.html

Comics & Medicine 2013
Ethics Under Cover: Comics, Medicine and Society
July 5-7, 2013, Brighton, East Sussex, UK

GNSI 2013 Annual Conference
July 7-13, 2013, Bar Harbor, ME
http://www.gnsi.org/event/2012GA

AMI Annual Conference
FUSION 2013: Connecting Minds, Visualizing Science & Medicine
July 17-20, 2013, Salt Lake City, UT
http://www.ami.org/upcoming-meeting/

SIGGRAPH
July 21-25, 2013, Anaheim, CA
http://s2013.siggraph.org/

IEEE Scientific Visualization Contest 2013 (Developmental Neuroscience)
Deadline July 31, 2013
http://sciviscontest.visweek.org/2013/VisContest/index.html

WMIC 2013
(World Molecular Imaging Congress)
September 18 – 21, 2013, Savannah, GA
http://www.wmicmeeting.org/
Events and Notices (continued)

**AMI Medical Illustration**

**Sourcebook No. 27 Deadline**
September 20, 2013

This print + web marketing program helps you reach top medical and scientific art buyers all over the world. The sooner you reserve, the sooner you can add your portfolio to the Sourcebook's companion website. Visit www.medillsb.com or contact Serbin Communications for more information.

Tel: 800-876-6425.
Email: admin@serbin.com.

**NSF International Science & Engineering Visualization Challenge**

**Deadline September 30, 2013**

The National Science Foundation (NSF) and *Science* created the International Science & Engineering Visualization Challenge to celebrate science visualization and to encourage its continued growth. The spirit of the competition is to communicate science, engineering and technology for education and journalistic purposes.

Judges appointed by NSF and *Science* will select winners in five categories: Photography, Illustration, Posters & Graphics, Games & Apps, and Video.


**IMI Conference 2013**

(Institute of Medical Illustrators)
October 4-5, 2013, Leicester, UK


**Leonardo da Vinci:**

**The Mechanics of Man**
August 2 – November 10, 2013
The Queen's Gallery, Buckingham Palace, London, England

This exhibit features Leonardo's anatomical investigations during the winter of 1510-11, the results of which are recorded in the ‘Anatomical Manuscript A.’


Complex branching neuron by Michelle Davis. See the Techniques column on page 9 to learn how this image was created!