Letter From the Chair

by Peter Jensen

We are excited about launching this newsletter and look forward to any suggestions from either faculty or staff in the Pathology Department. We are interested in not only ideas for content, but also ideas about how we might present information through this mechanism.

One of the things happening this year is our goal to drive the development of an institutional research initiative that we call Triple I (III), which is Immunology, Inflammation, and Infectious Diseases. The concept is to make this broad area of science and medicine an important research priority for the institution. What we hope to see is a continuation of the building of a very robust research portfolio across all departments. If you think about it, it’s hard to think of almost any area of medicine where there aren’t important diseases that have mechanisms that are related to the immune system, inflammation, or infectious diseases.

We hope to be able to play an important role in defining the impact of what we do in Pathology.
Anatomic Pathology

Faculty Focus
by Dr. Frederic Clayton

Dr. Mary Bronner, the Division Director of Anatomic Pathology, has asked me to talk about the new Dental School pathology course that I am directing beginning this summer. The University of Utah’s Dental School is in its second year of classes. With 20 students this year, we expect to double enrollment next year to 40 students. The University broke ground on the new School of Dentistry in August of last year and it is expected to be completed in late 2014. With all of this growth and new Dental School curriculum, it is obvious that some pathology training is needed to educate students about systemic conditions involved in dental practice. There is a significant pathology component of the dental board exam, and dental students need to be prepared for that. Currently there are 30 hours of pathology lecture content required for students. The Robbins textbook of Pathology is the required student material. The text also has online material available to the students. The lecture content will be both didactic and practical, with case presentations and some involvement with gross specimens.

An impressive list of faculty head up the list of lecturers. Besides myself, students will hear from Drs. Dan Albertson, Kristi Smock, Mohamed Salama, Elke Jarboe, Erinn Downs-Kelly, and Mary Bronner, all speaking on their area of expertise.

AP Educational Endeavors
by Dr. Cheryl Palmer

New AP Fellows 2014-2015

Peter A. Abasolo, M.D.  One of our new Cytopathology Fellows, Peter was born and raised in the Chicago area. He graduated from the University of Illinois at Urbana-Champaign with a B.S. in Molecular and Cellular Biology. Peter earned his M.D. at the Loma Linda University School of Medicine in Loma Linda, California. He then completed his AP/CP residency training at Harbor-UCLA Medical Center in Torrance, California. His hobbies include running, listening to and playing music, and Chicago sports. He is very excited to continue his training at the University of Utah and to enjoy the landscape of the great Beehive State.

Phillip D. Stephenson, D.O.  Phil just successfully completed a Surgical Pathology Fellowship here at UUHC and is now one of our new Cytopathology Fellows. After obtaining an undergraduate degree in Microbiology at Weber State, Phil attended Kirksville College of Osteopathic Medicine in Missouri. An AP/CP residency at the University of South Dakota led him to our Surgical Pathology Fellowship. Growing up in St. George (his wife is from Ogden), moving to SLC was like “coming home.” Phil is an avid sports fan, and enjoys spending time with his wife and three children.

Zhiyong Ren, M.D., Ph.D.  Our new GI Fellow, Ren was born in Tianjin, China. He received his M.D. from Tianjin
Medical University, and his Ph.D. from the University of Texas Health Science Center in Houston, Texas. His main academic interest is the molecular study of GI pre-malignant conditions. Outside of work he enjoys tennis, Hi-Fi, and looks forward to visiting the mountains and learning to ski in Utah.

**Gonzalo Barraza, M.D.** This year, AP has three new Surgical Pathology Fellows. Well known to the department, Gonzalo just finished his AP/CP residency. A native of Peru, Gonzalo received his BS in Biological Chemistry from the University of Texas at Arlington and his MD from UT Southwestern in Dallas. Gonzalo is known for his athletic prowess in climbing and snowboarding and loves the mountains of Utah.

**D. Jacob Fjeldsted, M.D.** Jacob was born in Salt Lake City and completed his undergraduate training in German at the University of Utah and Brigham Young University. He then pursued both his medical training and combined AP/CP residency at Saint Louis University School of Medicine. Some of Jacob’s "extracurricular" goals for this year include teaching his kids to ski and learning to play the drums. As general surgical pathology is one of his primary interests, he is particularly excited to be a part of the Surgical Pathology Fellowship at the University of Utah.

**Mazdak A. Khalighi, M.D.** Maz grew up about thirty minutes outside the great city of Detroit, Michigan. He graduated from the University of Michigan in Ann Arbor with a degree in cellular and molecular biology and received his M.D. from Jefferson Medical College in Philadelphia, Pennsylvania. He completed a clinical internship in pediatrics at Stanford University and his anatomic pathology residency at the University of California Los Angeles. He most recently completed a fellowship in medical renal pathology at the University of Chicago and looks forward to continue his training in general surgical pathology at the U.

**New Chief Residents 2014-2015**

I am delighted to tell you a little bit about our new PGY-4 Chief Residents for 2014-2015. Dr. Lily Marsden, left, is our Chief for CP. She is a Salt Lake City native with dual degrees in Biology and Anthropology and a graduate of the University of Utah School of Medicine. While she completed her internship year at the Medical University of South Carolina, she thankfully rejoined us for her PGY-2 year in AP/CP.

Dr. Kajsa Affolter, right, our Chief for AP, is a native of Kansas and matriculated from Kansas State University (BS in Microbiology) and the University of Kansas (MD). They both bring energy and boundless personality to these positions!

**New AP/CP Interns 2014-2015**

We have four new AP/CP interns beginning this month! From left to right, Lester Corser, MD; Ryan Craig, MD, PhD; Andrew Meschter, MD; and Joy Roman, MD. Please make them feel welcome to our department when you see them. There is a short biography on each of the interns on the departmental website:

Recent publications from AP Faculty, Residents and Fellows


26. Hegde M, Ferber M, Mao R, **Samowitz W**, Ganguly A; Working Group of the American College of Medical Genetics and Genomics (ACMG) Laboratory Quality Assurance Committee. ACMG Technical Standards and


Pediatric Pathology
by Dr. Ted Pysher

Welcome Our New Fellow

The Division of Pediatric Pathology welcomes its new fellow, Dr. Dennis R. Johnson, who comes to Utah after completing a surgical pathology fellowship at the H. Lee Moffit Cancer Center at the University of South Florida, Morsani School of Medicine in Tampa. Dennis received his PhD in Biochemistry at the University of Massachusetts in Lowell, MA; and his MD from Ohio State University. He was a resident in Anatomic Pathology at Yale University School of Medicine, and completed fellowships in Clinical and Molecular Genetics at Yale and Molecular Diagnostics at Children's Hospital of Los Angeles. Dennis has worked in basic and diagnostic laboratories, and biomarker development; and in 2012 he trained with Dr. Enid Gilbert-Barness, a world-renowned pediatric pathologist. He is a diplomat of the American Board of Medical Genetics in Clinical Molecular Genetics as well as Clinical Genetics.

Pediatric Pathology Spotlight: Jessica Comstock, M.D.

Our featured pediatric pathologist in this issue is Dr. Jessica Comstock, who has been a faculty member in the Division of Pediatric Pathology for five years. A native of Iowa, Jess received her BA in Biology from Simpson College, and her MD from the University of Iowa Carver College of Medicine, where she also did a post-sophomore fellowship in pathology. We were lucky enough to attract her to our Pathology Residency Program, and Jess served as a co-chief resident in 2007-2008. Jess then completed a fellowship in Pediatric Pathology, also in Utah; and is certified by the American Board of Pathology in Anatomic and Clinical Pathology and Pediatric Pathology. She has identified an interest in Perinatal and Placental Pathology, and is Co-Director of the Autopsy Service at Primary Children's Hospital (PCH) and Director of the Pediatric Pathology Autopsy Rotation. Jess also directs the Coagulation and Point of Care sections of the PCH Lab. She recently completed a three-year term on the Fellowship Committee of Society for Pediatric Pathology, and is beginning a three-year term on the Autopsy Committee of the College of American Pathologists. Jess has also led CAP Laboratory Inspection teams. In addition to peer-reviewed journal articles, Jess has contributed numerous chapters to Diagnostic Pathology: Soft Tissue Tumor, Diagnostic Pathology: Pediatric Neoplasms, Diagnostic Pathology: Neoplastic Dermatopathology, and Diagnostic Pathology: Non-neoplastic Dermatopathology; she also is the lead author for Diagnostic Pathology: Fetal Histology.

Jess is married to Dr. Chuck Galaviz, an anesthesiologist at the University of Utah, and has three children (twins Levi and Ian, age 7, and Robin, age 5). She enjoys running and is often training for a Ragnar Relay or local half marathons. She will run her first full marathon this September. Jess also enjoys riding her bicycle, crocheting gifts for family and friends, and reading.
Clinical Pathology

Faculty Spotlight
by Dr. Karl Voelkerding

I was asked to talk a little bit about the award I received from the College of American Pathologists. It was an award for service recognition in the area of bringing forward the development of standards for laboratories to implement a new technology referred to as Next Generation Sequencing. This new technology is expanding and growing and is replacing other technologies that are used for sequencing. It is being applied for sequencing tumors of patients, for sequencing the germ line or blood cells of patients to determine the basis of inherited disorders, and to sequence samples from patients to determine what their microbial content is, such as viruses and bacteria. So in that regard it’s really a technology that’s being applied in a spectrum of diagnostic applications.

We set the general requirements for Next Generation Sequencing in year one of this project. In year two we were involved in establishing the requirements for a specific application of NGS that consists of taking a blood sample from a pregnant woman and sequencing the DNA that is circulating in the bloodstream to determine whether or not the mother is carrying a child with Down Syndrome. It is an emerging area of sequencing application in what is called non-invasive prenatal testing. It is a very significant advance that took well over a decade of research and development. We knew that it was another area that had a unique aspect to it because it has the possibility of a screening modality for all pregnant women.

As a technology, Next Generation Sequencing is quite complex. There is complexity both in terms of the instrumentation that is used, the reagents that are used, and the complexity of processes. To be done properly it requires very thorough validation processes performed by technologists in the laboratory that are working on high complexity testing. Once you generate the sequence data there is a large amount of information that has to be analyzed to reduce it to an interpretable report that is meaningful for patient care. That requires special tools, computer software, algorithms, and those, too, require individuals with expertise to operate them.

Within the College of American Pathologists it was noted that this technology was starting to move into the clinical laboratory, and it was further recognized the College of American Pathologists had not established any standards for how to best implement this in the clinical laboratory. One of the primary roles of the College of American Pathologists is to establish standards of operation for clinical laboratories and to also implement and provide proficiency testing to laboratories in terms of the laboratories being able to assess whether or not they are doing testing properly for patient care. I received an invitation from the College of American Pathologists to lead a group to develop standards for Next Generation Sequencing for laboratories. I received that invitation because I had already been active in this area using it for both basic science and translational research and publishing in this area, so I had already developed some national recognition. The College of American Pathologists were also very interested in having someone lead the group who was based in a clinical laboratory setting using the technology.

We convened a working group in 2011 meeting both face-to-face and by conference calls over a series of months. We were on a very tight timeframe because when standards are developed, they have to undergo a review and vetting process within the rest of the College of American Pathologists and then they have to be published by the College. So there is a lead-time that has to be met in order to make these deadlines. We were able to do that and we have the first set of laboratory accreditation requirements in this area of Next Generation Sequencing published in July, 2012 by the CAP. Our manuscript describing the development of the accreditation concepts and philosophies is in press in The Archives of Pathology and Laboratory Medicine.
Medical Laboratory Science Division
by Justin Rhee

MLS Update

One of the things I’ve been asked to talk about is IPE -- Interprofessional Education. The benefits of IPE are to help students prepare for their future practice. As a medical laboratory scientist, you interface with clinical staff, nurses, physician’s assistants, physicians, and surgeons. We’ve been working with the College of Nursing, the Bachelor of Science Nursing Program, and also the Acute Care Nurse Practitioner Program to develop a scenario that we’re running in simulations. We have a simulated critically ill patient scripted so that our students can interact with each other and as a team to solve problems and also to get some practice communicating. I think that sets them up nicely for their future practice.

Another topic is our experimentation with flipped classrooms. Flipping classes is something we are discovering and working through. I would say generally they have been very successful. A flipped classroom means that the student works through the lecture and homework before they come to class. Once they get to class they spend more time doing problem solving, group work, and case studies. So it’s kind of like taking the lecture and making it the homework, and then making the homework be the class. That’s nice for an instructor because we can help them work through the more challenging problems that they might get stuck with on their own and solve those issues with them. There are some challenges with flipped classrooms. Most of our students are working while they are in our program, many full-time, and some have young families, and sometimes they just don’t have the time to do the homework. But generally it has been very positive, the students seem to enjoy learning in this format, it’s more hands-on, and their exam results have improved because they interact more.

There has also been interest in our division using “Top Hat.” Top Hat is audience response tool similar to “Turning Point.” It allows the student to use any electronic device: a cell phone with text options, an iPad, or a laptop, to collect lecture data. The student doesn’t have to go out and purchase a $50 clicker for class. Top Hat also has a contract with Pearson, our primary book publisher. So if the instructor is using a Pearson textbook they have already collected a databank of quiz questions to employ. The students and instructors both really like this system. An instructor can immediately tell the weak points of the class’s understanding. What I also like about Top Hat is that the student can log in and see all the questions the instructor has asked throughout the entire course. That functions as a nice review for them.

I also want to talk about some of the things my colleagues and I are doing in our Division. I will be stepping into the Program Director position in July. Karen Brown, the previous program director, will be phasing into partial retirement, but she will still continue to teach and run our clinical internship program, and I will take over her administrative duties. The pre-MLS advising will be managed by Takara Blamires who will be our new Associate Program Director.

Karen Brown recently presented two workshops for ARUP, one was a hematology session in California, and the other was a phlebotomy session in Oregon. She travels quite a bit to give these lectures for ARUP. She is also currently serving as the national chair of the ASCP Board of Governors. It’s an honor to have someone on our faculty in that position. She has also authored three peer reviewed commentaries as part of a project between ASCP and the American Proficiency Institute.

Becky Buxton has helped mentor a student who is a graduate of the U of U Student Global Health Conference. We have travelled to Ghana twice as a faculty and have recently learned that the antibody identification screening that they are doing is 100% in concordance with commercially prepared reagents. We are looking for
a way to implement antibody screening to help assure the safety of blood transfusion in a cost effective way. JoAnn Fenn, Karen Brown, Takara Blamires, and Dr. Diana Wilkins are currently travelling to Viet Nam to participate in a faculty exchange program with ASCP and the CDC branch in Viet Nam. It has been a great year for ASCLS-UT. We have increased our membership, held a “Mad Scientist” 5K Fun Run and Food Drive in October, donated over 400 lbs. of food to the Utah Food Bank, and held a successful Spring Seminar to provide continuing education and networking opportunities for Medical Laboratory Scientists and students. Attendance at the 2014 seminar was the highest it has been in over 5 years.

**MLS 2013-2014 Poster Presentations**


**Microbiology & Immunology Division**

*by Dr. Tom Lane*

**Faculty Spotlight**

Dr. Tom Lane recently came to the Department of Pathology from the University of California, Irvine. He is a researcher specializing in multiple sclerosis, a disease that affects more than 2.3 million people worldwide. Recently Dr. Lane’s team stumbled onto a startling discovery. During a routine experiment, human stem cells were transplanted into mice genetically engineered with a condition mimicking the symptoms of human MS. The expectation of the research team was that the transplanted cells would be rejected by the mice. “My postdoctoral fellow, Dr. Lu Chen, came to me and said, ‘The mice are walking.’ I didn’t believe her.” The mice had been so disabled that they had to be fed by hand because they could not stand long enough to eat and drink on their own. But within ten to fourteen days of receiving the human neural stem cells they began to walk and to demonstrate other motor skills. Six months later the improvement was still evident. “This was a complete surprise for us because we started the experiment with a completely different idea in mind. This is really a happy accident.” This development doesn’t only apply to MS. Dr. Peter Jensen said, “You can think of Alzheimer’s, other forms of dementia, as well as Parkinson’s, and diseases that have traumatic injury to the brain or spinal cord.”

Currently the transplantation of stem cells is an invasive procedure requiring surgery on the spinal cords of the mice. Dr. Lane hopes to change that, “What we hope to do is find out what these cells are secreting that actually changes the environment in the diseased tissue. And if we can identify what factor or factors are being secreted, then we might be able to put those chemical signals into a drug that can be used to deliver the therapy much more easily. The long term goal would be to make it into a pill form.”
Greetings from the Department of Pathology administration team! Our team consists of nearly thirty Department of Pathology employees and approximately fourteen ARUP employees who comprise the basic framework of support for our faculty. Our administrative professionals are located in numerous locations to include: ARUP facilities, Emma Eccles Jones Medical Research Building, School of Medicine, University of Utah Hospital, Primary Children's Hospital, and Huntsman Cancer Hospital. When working with these professionals, you quickly come to learn that the only common characteristic among each individual, is that each member’s role is unique and designed according to their specific faculty needs; a remarkably difficult attribute when striving for autonomy within the department! Some of the most basic functions performed by our staff include: faculty, staff, resident recruitment and onboarding, purchasing, booking travel, reimbursement, IT support, account reconciliations, grant and research fund procurement, student class and laboratory training—and this is only to name a few! Our administrative staff are dedicated and driven to support the educational, academic, and clinical missions of our organization.

Managing the availability of information securely and conveniently is an obstacle that Department of Pathology administration is actively working to resolve. A few of our efforts include:
- Path-IT is actively preparing for a campus deployment of “Box” - a secure portal to transfer files electronically that will replace unprotected methods of data transfer.
- The Department of Pathology’s website will be migrating to a new platform which will make better use of available technology to display information more creatively and pull from other sources to keep website content current.
- What are the “other sources,” you ask? One initiative of our administrative team is to have bi-annual audits of faculty profiles with MBM. Keeping MBM current with faculty CV’s, publications, photographs, etc. will automatically pull into web applications such as ‘Find-a-doc’, and our very own department website. In other words, maintaining the information within MBM will ensure that faculty profile and activity information is current throughout the University enterprise.
- The Department of Pathology and ARUP are working together to create numerous exciting opportunities within the realm of telepathology. Telepathology is currently utilized to scan high resolution images of histologic and cytologic images for diagnostic, teaching, and research purposes. Telepathology offers a unique opportunity to digitally send and view microscopic images. Many of our administrative staff are at the forefront of this effort, managing the technical details to make this effort a success.

http://www.cell.com/stem-cell-reports/abstract/S2213-6711%2814%2900112-X
Administrative Spotlight: Amy Motta

We would like to highlight one of our many professionals - Amy Motta, Administrative Assistant, working at Huntsman Cancer Hospital. Amy has nineteen years working for the Department of Pathology; seven with ARUP and twelve with the University of Utah. Amy wears many hats, most notably; she supports Dr. Cheryl Palmer as the Residency Program Coordinator. Amy has celebrated many accomplishments in her career - most recently she was elected to a third term on the GMEC committee at the School of Medicine, 2014-2015. Also, in May 2014, Amy was elected as a Member-at-Large to the GMEAS Council (part of the Association of Pathology Chairs,) and will serve in that role from 2014-2016. Amy will be presenting a poster at the annual APC meeting, in Boston titled “Using LEAN Techniques to Cut Waste in GME Program Administration.” Amy regularly collaborates with GMEAS peers regarding residency programs activities.

When asked what she attributes to her success as a coordinator, Amy responded “I’m not smart enough to be a doctor but I can help create them!” Amy started her career in the Department of Pathology as a medical transcriptionist. She discovered that she liked working with residents so much, that when the residency coordinator position was available she went for it.

Outside of work, Amy enjoys volunteering for numerous locals efforts. She is a Poll Manager for Salt Lake County Elections Division, she volunteers for the Best Friends Pet Adoption Center, walking and caring for animals. She also volunteers at an assisted living center; regularly challenging its residents to mind-numbing bouts of bridge. We would like to thank and congratulate Amy Motta, a great example within the Department and a pillar-of-strength within her community!

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