Chair’s Corner

With this inaugural issue of the resurrected Pathways, our hope is that this newsletter, published quarterly, can grow to a venue that is both entertaining and informative. Most importantly, it will provide a forum to recognize the achievements and interests not only of the faculty, but also of all in the Department who collectively are so vital to our success and mission. There are many. Most know about our faculty: we have 103 of those on either the ladder or research track. However, you may not appreciate that Pathology is the professional home for 36 postdoctoral trainees, 16 graduate students, 28 residents, 8 clinical fellows, 26 managers, 29 admins, and 99 other research professionals, academics, or technicians. In total, 345 people, working within an annual budget of $60M, account for Pathology’s success and stature. We are also truly a global and diverse community. Overall, 57% of our folks are women; 55% white; 26% Asian or Indian; 8% African American; and 3% Hispanic. Drawing on a concept from genetics, it would be safe to assume that the Department reflects hybrid vigor.

The year past has been remarkable in many ways, some obvious, and others less so. The macro environment continues to be challenging both for research and for clinical care. Resources are limited, competition is fierce, and the expectations of patients and payers for timely, cost-effective, and appropriate care have never been greater. Our faculty and staff have responded admirably to these challenges, going the extra mile to assure success in our mission and fiscal balance. Extramural research funding in the Department is substantially increased across nearly all investigators; clinical

New Training Program for Young Cancer Biologists

Adapted by David Stern, PhD, Professor of Pathology, from an article by Steve Kemper published in the Yale Cancer Center’s “Centerpoint Magazine,” Fall-Winter 2016, Renee Gaudette, Editor.

Yale Cancer Center is distinguished by its commitment to translational medicine—that is, to turn promising laboratory breakthroughs into new cancer therapies. Yale University is a leading center for education of PhD biologists who are destined to become leaders in diverse areas of the biological and biomedical sciences. Yet, until recently, Yale offered no predoctoral or postdoctoral training programs in basic science that focused specifically on cancer research. The new Yale Cancer Biology Training Program fills that gap and initiates young basic scientists into the practicalities of translational medicine. The goals are to complement traditional PhD training, to educate predoctoral and postdoctoral trainees about real-world clinical issues in oncology, and to prepare them to lead translational teams comprised of basic scientists and clinicians.

“This kind of training is not typical for PhD students or postdoctoral fellows,” said the program’s director, David F. Stern, PhD, Professor of Pathology, Associate Director of Shared Resources at YCC, and Co-Leader of the Signal Transduction Research Program. “We’ve been training bench scientists the same way since I was a grad student—classroom training, lab experience, and then the development of an independent research project. But, we finally understand enough about the biology of cancer processes that scientific investigators can now work closely with clinicians in developing the best ways of controlling disease. So there’s a real need here for this training.”

The need was created by the swiftly changing landscape of cancer science. In the past, basic scientists and clinicians worked on separate tracks, without much contact. But new insights into the biology of cancer have created an explosion of therapies that harness the immune system or direct drugs at specific genetic and molecular targets. Researchers, clinicians, pharmaceutical companies and patients all want to speed up the process of turning these insights into effective remedies. For that to happen, research scientists and clinicians must work in tandem and create a bench-to-bedside-to-bench circuit in which lab breakthroughs can be tested in the clinic, analyzed, and improved.

Faculty Focus

Dr. Adebowale Adeniran Promoted to Director of Cytopathology

Since the departure of the previous director over a year ago, Dr. Adebowale (Debo) Adeniran, Associate Professor, Department of Pathology, had been serving as Interim Director of the Department’s Cytopathology Program. His promotion to Director was announced recently by Dr. Jon Morrow, Chair.

As Interim Director, Debo deftly handled the complex administrative responsibilities of this position, overseeing a high-volume and complex cytopathology laboratory and its staff, while maintaining a productive and high-quality clinical service that enjoys the respect and confidence of patients and physicians alike. Debo has also earned an enormous level of respect among our own faculty and has proved to be a dedicated and skillful mentor of his peers and an outstanding teacher.

Dr. Malini Harigopal Named Director of Breast Pathology


During Dr. Malini Harigopal’s approximately two years as Interim Director for Breast Pathology, under her guidance and with the support of her colleagues the service grew to be an excellent program, providing high-quality, responsive diagnostic and consultative services to surgeons and oncologists treating patients with breast cancer. Also during this time, while the Department was conducting an extensive national search, it became increasingly clear that in Malini we already had an outstanding breast pathologist capable of bringing the service to new levels of excellence. Malini completed her initial medical training in India, followed by residency training in pathology and laboratory medicine at the University of Chicago. Her subspecialty training in cytopathology, breast pathology, and renal pathology was done at Weill-Cornell, and she joined Yale in 2003. At Yale she has studied extensively the role of predictive markers and circulating tumor cells in guiding breast cancer treatment, along with studying the application of molecular methodologies to en-

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Meet Dr. Robert Homer

Robert Homer, MD, PhD, Professor of Pathology, has been Director of Anatomic Pathology at the VA Connecticut Healthcare System, West Haven, since 1994 and lead thoracic pathologist at Yale since 2004. Rob entered the MD-PhD program at YSM in 1979, after obtaining his undergraduate degree in physics from Harvard. His PhD work, with Donal Murphy, was on a novel major histocompatibility complex (MHC) antigen type I structure within the murine MHC.

After medical school graduation, Rob chose to make his professional “home” here, a decision based, in part, on his comfort with and confidence in his pathologist colleagues. Furthermore, Rob learned that Yale was expecting a new pathologist, one worth hanging around for, namely Dr. Juan Rosai. After several years, looking to further his studies in immunology, Rob returned to the laboratory of Richard Flavell, who had recently been recruited from Biogen in Cambridge, MA. Flavell brought an entirely new, highly molecular approach to immunology at Yale. During this period, Rob created a transgenic line of mice around for, namely Dr. Juan Rosai. After several years, looking to further his studies in immunology, Rob returned to the laboratory of Richard Flavell, who had recently been recruited from Biogen in Cambridge, MA. Flavell brought an entirely new, highly molecular approach to immunology at Yale. During this period, Rob created a transgenic line of mice.

However, challenges always remain. Beyond the obvious ones of competition and resource constraints, perhaps the greatest threat to our mission and purpose is the eroding job and life satisfaction of our faculty and staff. Our “climate” retreat last year highlighted this as a major problem afflicting our Department. We are not alone; similar surveys across both the Hospital and School have arrived at the same conclusion, as have national surveys of physicians and scientists. While the external environment is what it is, we do have much control of the internal environment.

Over the coming year, we will be spending considerable effort toward improving our work environment, mentoring faculty and staff, creating opportunities, encouraging mutual respect, team building, and seeking ways to enhance career satisfaction for all. We are the fabric of a great university, and our mission is noble. Stay tuned to this space for updates as we continue on this journey.

Jon S. Morrow MD, Ph.D.
Raymond Yesner Professor and Chair
Chief of Pathology, YNHH

A Welcome from the Chair
(article continued from page 1)

productivity is increased; and our faculty have continued to innovate and lead in many diverse forums and settings. Our staff have responded as well with a well-oiled grants team led by Shilpa Shukla and Corinne Brewi; impeccable Grand Rounds support from Suzanna Cruz; efficient management of our residency training program by Deb Wycoff; and a major reorganization of our business and support systems by Margaret Gilshannon and Cynthia Ziehl. Michele Dorey will be expanding her role looking after our billings and collections as part of a newly formed team at Yale Medicine. Other examples would include Art Belanger undertaking special training at the Dade County Medical Examiner’s office on medical photography; new leadership appointments that include a Director of mentoring (Gilbert Moeckel); Autopsy Director (José Costa); Outreach Director (Angelique Levi); Educational Liaison (David Hudnall); Director of our Breast Program (Malini Harigopal); Director of Hematopathology (Mina Xu); Director of Quality and Safety (Vinita Parkash); chair of the Status of Women in Medicine committee (SWIM) (Marie Robert); two appointments to the Faculty Advisory Committee (Vinita Parkash and Themis Kyriakides); Director of Cytopathology (Adebowale (Debo) Adeniran); Director of Epigenomics (Qin Yan); Director of Finance and Administration (Margaret Gilshannon); and many others unmentioned.

Milestones achieved include a major philanthropic gift by Joe and Lucille Madri to endow a professorial chair in Pathology; the establishment of a new multidisciplinary Center for Research in Aging (Y-Age), headed by Gerry Shadel; and the endowment by Donald King of a lectureship in honor of Averill Liebow and Harry Greene. Personally, I continue to be amazed, impressed, and awed by the breadth and quality of our Department’s contributions to the School, the University, and the nation. We have much of which to be proud.

The next 10 to 15 years were highly productive, with Rob’s work appearing frequently in Science, Nature Medicine and Journal of Clinical Investigation, among others. Rob still consults on various experimental models of lung disease, both neoplastic and non-neoplastic, and works with collaborators using human tissues.

The Yale pulmonary section, Rob became his collaborator to help with his numerous animal models of lung disease. Rob has been involved in medical school curriculum development as the former Director, Medical Student Course Module and current Director of Medical Studies for the Department.

Rob was instrumental in the creation by Robert Camp, MD, PhD, of a new web-based pathology lab system, and Rob Camp ultimately won the Bohmfalk Award for Excellence in Pre-Clinical Instruction for this work.

Rob was also on the YSM curriculum committee for many years where he helped plan and implement the new medical school curriculum both through efforts on various committees and then as a co-director with Sheldon Campbell from Laboratory Medicine of one of the master courses for the pre-clinical curriculum. Rob also has a secondary appointment as Professor, Internal Medicine, Pulmonary and Critical Care Medicine, YSM.

Those who have the privilege to work with Rob know him to be highly articulate, direct and insightful, with a quick wit and a dry sense of humor. When asked about activities outside of work, hobbies, etc., Rob’s answer was that all his are either dull or unprintable! We seriously doubt this, as there’s nothing dull about Rob.

V.I.P. (Very Important Pathologist)
The Pathology Outreach team has been very busy working on several endeavors to keep up with a rapidly changing healthcare environment. The team, made up by Angelique Levi, M.D., Director of Outreach, Kevin Schofield, Director of Clinical Operations, and Stephanie Weirman, Physician Liaison, is constantly evaluating how we can generate new business, always focused on client retention and engagement, and looking for opportunities to bring global recognition and awareness to our high quality services.

This past year, we attended several national conferences of varying audiences, looking to establish new work and bring awareness to the expertise that we are so fortunate to have in our pathology department. In the last 6-9 months we promoted our GYN, Thyroid FNA, and Renal Pathology services at national clinical and scientific meetings. Recently back from the American Society of Nephrology (ASN) International meeting where Dr. Moeckel was an invited speaker, we had the opportunity to promote our concierge Renal pathology services as well as the 3rd edition of Dr. Kashgarian’s informative textbook, Diagnostic Atlas of Renal Pathology, this newest edition focusing on the specific and personalized approach to the central role of renal biopsy in the diagnosis of kidney disease and overall patient management. The opportunity to have our pathologists framed as invited international speakers and subspecialty experts is certainly significant and contributes to our global reputation as leaders in our field. The meeting generated several serious leads to national and international business that we are actively pursuing. We are always looking for opportunities to highlight and showcase our pathologists and their work. Please share with the team if you have something in your specialty we can highlight.

In addition to national meetings, Stephanie is on the road every week visiting prospective client practices. Most recently, we have been targeting outreach for the oral pathology service. We have gained 17 new providers so far this calendar year and are tracking a volume increase of more than 30% over last year. We are expanding our reach beyond our primary service area into Fairfield County, as well as counties north and east of Yale-New Haven.

In surveying our current client base this year, we learned of the urgency to be connected technologically to our clients. In the world of evolving healthcare requirements of electronic medical records (EMRs), there is great need to be able to interface with our customers’ platforms in order to make their workflow and our pathology reporting seamless, and remain competitive with reference laboratories in the marketplace. While interfacing with our clients isn’t a novel endeavor for us, working with a third party vendor to help expedite these requests is new. We are happy to be able to offer this service to existing and prospective clients moving forward. This connection will help solidify our client relationships and their sense of loyalty to our services.

Our diagnostic programs are state-of-the-art and we are happy to provide services across several subspecialties, offering services in Cytopathology, Molecular Diagnostics/Tumor Profiling/Precision Medicine and Surgical Pathology. Most recently, we started performing PD-L1 immunohistochemical testing and interpretation for Non-Small Cell Lung Cancer and are thrilled to partner with pulmonary oncology colleagues in the Smilow Cancer Hospital to promote this offering through Smilow Cancer Center Grand Rounds, OncLive and regional talks. Keep your ears open for a new molecular thyroid panel to be launched in the calendar year 2017!

For more information about our Pathology Outreach services, please feel free to contact any member of our team.
Happy hour attendees enjoyed drinks, food, and the company of their colleagues from across the Department: research, clinical, faculty, postdocs, graduate students, residents, fellows, and others. These events were well received and attended, and it was gratifying to see “regulars” develop over the months, attendees who made a habit of coming to interact with other professionals from the Department. The happy hours will continue in 2017, with the first scheduled for Thursday, January 26, 2017, at 20 York St., EP2-646.
Our Pathology Grants Team

By Cynthia Ziehl

Funding through grants is vitally important to the Department’s research mission. With this in mind, the Department took a look at the process for grant submissions approximately three years ago and at that time, the Grants Team was formed. With an increasing volume of submissions, a complex portfolio of funding sources, translational and clinical research and interdepartmental and inter-organizational collaborations, the decision was made to form a team of specialized experts to support this critical function. The Department’s Grants Team is a valuable resource, which through a streamlined, efficient process offers a high level of support and has become a model for other Departments in the medical school. Anyone in the Department, from graduate student to professor, research as well as clinical, who wants to apply for external and/or internal funding can take advantage of the services provided by the Grants Team.

The Grants Team is overseen by faculty director Gerald Shadel, PhD, Professor of Pathology and of Genetics, Joseph A. and Lucille K. Madri Professor of Experimental Pathology, and Director, Yale Center for Research on Aging (Y-Age). Shilpa Shukla is Grants and Contracts Manager for the department; Corinne Brewi is Grants Coordinator; there is an additional Grants Coordinator in the Business Office (open position); Karen D’Angelo and Samara Diggs handle biosketches and other support; and Sharen McKay, Lab Manager for the Shadel Lab, provides support as the Research Funding Consultant.

In addition to the federal sponsors NIH and DoD, grant applications are submitted to a wide array of funding sources, including the American Cancer Society, the American Heart Association, and other private foundations, and sponsored research agreements and contracts are negotiated with pharmaceutical and biotech companies. There are also interdepartmental collaborations within Yale (for example, with Yale Cancer Center); inter-organizational collaborations in the form of subcontracts with external academic institutions, and internal pilot projects.

Since July 2016, the Department has received $6.61 million in grant and contract funding. Funding in past years was $16.8 million for fiscal year 2016 (July 1, 2015 to June 30, 2016) and a total of $14.0 million in fiscal year 2015 (July 1, 2014 to June 30, 2015). So far since July 1, 2016, there have been 50 grant applications submitted for a total of $39.2 million.

Shilpa highlights some details of the grant process. A Principal Investigator (PI) who wants to submit a grant application starts by entering the Pathology grants queue, which is accessed through the Pathology website: https://medicine.yale.edu/pathology/supportservices/grants/. Once in the queue, the Grants Team helps the PI through the entire process. The IRES (Integrated Research Enterprise Solution) Proposal Development tool is used to prepare and submit grant applications and get internal approvals. The IRES Proposal Tracking tool is used for tracking grants and contracts after submission. All documents related to the grants and contracts are available in this secure system. Since Yale started using IRES a few years ago, the process has become streamlined and very efficient.

The timeline for receipt of funding varies according to the sponsor and is typically 3 to 9 months from the time of submission. Before the grant is funded, the team submits required documents to the sponsor and ensures that the compliance requirements are met, including human and animal protocols congruency, and provides other information requested by the sponsor. The team then coordinates with the award manager at OSP for the grant funds to be released to the Department. Shilpa sets up the budget for the new grant and passes it on to the PI’s assigned accountant, who monitors the funds. During the lifecycle of the grant, progress reports have to be submitted to the sponsor and annual budgets have to be prepared. Shilpa and her staff work with the finance team from the time the grant is funded until the closeout. Final Reports have to be submitted at the time of the closeout.

Researchers in the Department of Pathology at Yale School of Medicine are conducting sponsored research into the underlying causes of disease as well as improving diagnostic and therapeutic options for patients.

—Dr. Gerry Shadel

Shilpa comments that the grants process is highly detailed and requires extensive coordinating with other parties, both within and outside Yale. “Pathology is a high volume multidisciplinary unit, and the grants team deals with a lot of different areas and personnel—faculty, proposal, contracts, and award managers in the Office of Sponsored Projects (OSP), other departments within Yale, compliance officers, sponsors, other universities, and the department finance team.”

In addition to its robust clinical and teaching missions, the Yale Department of Pathology engages in cutting-edge research aimed at unlocking the underlying causes of disease as well as improving diagnostic and therapeutic options for patients. We are closing the gap between basic research and life-saving clinical studies.

—Dr. Gerry Shadel
Research Highlights

Study Identifies Effective PD-L1 Tests for Lung Cancer featured in cancernetwork.com

On October 31, 2016, a video interview of Robert Homer, MD, PhD, Professor of Pathology, was featured in the online journal cancernetwork.com. The introduction to the video presentation states, “A new study found that the PD-L1 assay SP142 detects significantly lower levels of PD-L1 expression compared with other available tests. Researchers examined the effectiveness of four assays, finding that the other three—28-8, 22c3, and E1L3N—all showed similar results of PD-L1 expression. Currently only the 22c3 assay, manufactured by Dako, is required by the US Food and Drug Administration as a companion diagnostic test before treatment with pembrolizumab (Keytruda), an anti–PD-1 immunotherapy approved for the treatment of lung cancer and others. In this video Robert J. Homer, MD, PhD, of the Yale Cancer Center and Smilow Cancer Hospital in New Haven, Connecticut, discusses the results. The study was sponsored by the National Comprehensive Cancer Network (NCCN) and Bristol Myers Squibb.”

To view the video, go to http://www.cancernetwork.com/videos/study-identifies-effective-pd-l1-tests-lung-cancer.

Study by Wang Min, PhD, and Hanjiao (Jenny) Zhou, PhD, in Journal of Clinical Investigation

October 10, 2016. The article entitled “Tumor-associated macrophages drive spheroid formation during early transcoelomic metastasis of ovarian cancer,” detailing the study by Dr. Wang Min, Professor of Pathology, and Hanjiao (Jenny) Zhou, Postdoctoral Associate, of the Min Lab and other researchers, was published online in The Journal of Clinical Investigation.

A brief description (written by Ziba Kashef) of the article appears in YaleNews and states: “Ovarian cancer is difficult to diagnose at early stages. Once it has spread beyond the ovaries, it is more challenging to treat and can be fatal. During metastasis, ovarian tumor cells detach from the primary tumor site and migrate to the abdominal cavity, where their survival is supported by white blood cells known as tumor-associated macrophages. In a recent study, senior author and Yale Pathology professor Wang Min demonstrated that the tumors release substances called cytokines to attract macrophages, which then secrete growth factors that promote tumor cell growth and proliferation. The study reveals a mechanism that provides researchers with a promising target for treating ovarian and other metastatic cancers.”

To view the full article and accompanying video, go to: www.jci.org/articles/view/87252.

Min Lab Team Publishes Study in Nature Medicine

September 21, 2016. In a study entitled, “Endothelial exocytosis of angiopoietin-2 resulting from CCM3 deficiency contributes to cerebral cavernous malformation,” a team of researchers from the Min Lab, led by PI Wang Min, PhD, Professor of Pathology, reveal they have pinpointed a marker that contributes to a chronic condition affecting the brain. Known as cerebral cavernous malformations, the condition is characterized by a tangle of capillaries in the brain’s white matter, which can cause headaches, seizures, bleeding, and even death. No effective therapy exists. (It has been reported that Olympic runner Florence Griffith Joyner, who died suddenly in 1998, had this condition.) Using an animal model of the disease, Min and his co-authors identified a growth factor (angiopoietin-2) that when blocked by an antibody, eliminates the malformations. “We have discovered a new and effective therapy for this potentially debilitating disorder,” he noted. See “Abstract” at right.

To see the full article, go to http://www.nature.com/nm/journal/v22/n9/full/nm.4169.html.

Endothelial exocytosis of angiopoietin-2 resulting from CCM3 deficiency contributes to cerebral cavernous malformation, W Min et al.

ABSTRACT

Cerebral cavernous malformations (CCMs) are vascular malformations that affect the central nervous system and result in cerebral hemorrhage, seizure and stroke. CCM arises from loss-of-function mutations in one of three genes: CCM1, CCM2 and CCM3 (PDCD10). CCM3 mutations in humans often result in a more severe form of the disease compared to mutations in the other two CCM genes, and CCM3 knockout mice show severe defects, the mechanistic basis for which is unclear. We have recently reported that CCM3 regulates exocytosis mediated by the UNC13 protein family. Here, in investigating the role of endothelial cell exocytosis in CCM disease progression, we found that CCM3 suppresses UNC13B/VAMP3-dependent exocytosis of angiopoietin-2 (ANGPT2) in brain endothelial cells. CCM3 deficiency in endothelial cells augments exocytosis and secretion of ANGPT2, associated with destabilized endothelial cell junctions, enlarged lumen formation, and endothelial cell-pericyte dissociation. UNC13B deficiency, which blunts ANGPT2 secretion from endothelial cells, or treatment with a neutralizing ANGPT2 antibody normalizes the defects in the brain and retina caused by endothelial cell-specific CCM3 deficiency, including disruption of endothelial cell junctions, vessel dilation and pericyte dissociation. Thus, enhanced secretion of ANGPT2 in endothelial cells contributes to the progression of the CCM disease, providing a new therapeutic approach for treating this devastating pathology.
Graduate Students Defend Theses

Two graduate students from the Department of Pathology’s Graduate School of Arts and Sciences defended their theses in December. Announcements are sent Department-wide for these important events, which are open to anyone who would like to attend.

**Susan Scanlon, MD, PhD** candidate, Experimental Pathology (Glazer Lab), presented “Regulation of DNA Repair by Hypoxic Stress and Hypoxia-Related Pathways,” on December 13, 2016. Susan will continue her studies here at Yale School of Medicine in the MD/PhD program.

**Loren M. Moore, PhD** candidate, Experimental Pathology (Rimm Lab), presented “Biomarker and Cellular Studies of Neuronal Calcium Sensor-1 in Breast Cancer,” on December 20, 2016. Loren will be going to Memorial Sloan-Kettering Cancer Center for a two-year fellowship program in clinical chemistry.

Dr. Jian Cao (Yan Lab) Awarded Grant

Jian Cao, PhD, Associate Research Scientist in the Yan Lab under PI Qin Yan, PhD, has been awarded a $50,000 independent grant from Lion Hearts.

There were three Lion Heart research grants awarded for work to be done beginning in January, 2017, and completed by December, 2017. Kathleen van Rijn of the Lion Hearts describes the grant submissions, including Dr. Cao’s, “They are provocative, brilliant submissions and so worthy of our funding. All of the grants submitted this year were excellent, but the committee unanimously chose these three for their quality and creativity.” Below is a summary of Dr. Jian Cao’s granted work.

**Targeting KDM5s to Enhance the Response to Immune Checkpoint Inhibition in Breast Cancer: Jian Cao, PhD, $50,000**

The goal of this research is to target KDM5s to enhance the response to immune checkpoint inhibition in breast cancer. Inhibition of these KDM5s release the brakes on patients’ immune cells and free these immune cells to attack breast cancer tumors. The results of this research will pave the way for an application of KDM5 inhibitors for immunotherapy. Earlier work has shown a connection between the KDM5 family, innate immune response and suppression of breast cancer. This study will investigate the mechanism of anti-tumor immune response induced by KDM5 inhibition in combination with PD-1 blockade. This work will build on recent and current advances in immunotherapy as a new and viable breast cancer treatment.

Recent Grant Funding

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<th>Grant Recipient(s)</th>
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<tr>
<td><strong>July 1, 2016 to Sept 21, 2016</strong></td>
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<td>Katie Politi, Don Nguyen, Narendra Wajapeyee</td>
<td>Lung SPORE Supplement</td>
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<td>Narendra Wajapeyee</td>
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<td>Qin Yan</td>
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<td>Shang-Min Zhang (Yan Lab)</td>
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<td>Jeffrey Sklar</td>
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<td><strong>Sept 21, 2016 to Oct 19, 2016</strong></td>
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<td>Jeffrey Sklar</td>
<td>Research Contract Award</td>
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<td>David Stern</td>
<td>New T32 Cancer Biology Training Program</td>
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<td><strong>Oct 19, 2016 to Dec 7, 2016</strong></td>
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<td>Steven Kleininstein</td>
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<td>David Rimm</td>
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<td>David Rimm</td>
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Dr. Joanna Gibson Participates in Multiple Fundraisers

By Cynthia Ziehl

On October 21, 2016, Dr. Joanna Gibson, Assistant Professor of Pathology, was a contestant along with her teammates in the New Haven Reads 5th Annual Spelling Bee to raise funds for this non-profit literacy organization. This event, a spelling bee for adults, is held every year, and last year it raised $35,000! Typically these funds are used by the organization to buy workbooks, learning tools and aids, and computer programs for the students it serves.

Participants in the spelling bee compete in teams of three and collaborate on the spelling; when a word is announced, the team has 20 seconds to figure out and write the correct spelling on a white board to be displayed. Joanna says this format is less stressful than reciting aloud, but it’s still exciting! Teams can discuss and work it out when there are differences of opinion on the correct spelling, which, in Joanna’s view, makes for an easier and more fun competition. Joanna has competed in this bee all five years, since it started as an event, and for the last three she has also been on the committee that plans the event, which, she points out, doesn’t translate to any competitive advantage! All the teams are encouraged to dress up in costumes and have team names; Joanna’s team was “The Quotations,” and they dressed like a 1950s girl band. Joanna says she has enjoyed meeting the people who run New Haven Reads and appreciates those who are working hard to improve New Haven. If you’d like to see photos or learn more about the spelling bee, go to www.newhavenreads.org.

Joanna was introduced to New Haven Reads by Dr. Christel Haberland, Clinical Instructor in Pathology, and Joanna volunteered as a reading instructor for several years. Many students at New Haven Reads come from immigrant families or are socially disadvantaged; students who come for tutoring do not pay for services. New Haven Reads addresses a need for which there are very few other resources for a majority of these students. Joanna points out that if children are behind in reading, it’s hard for them to catch up, and that New Haven County has big discrepancies in reading levels. Grass roots organizations such as New Haven Reads are helping to bring resources and working to close the gap in achievement levels. “As proof that this type of intervention works, a local student who was tutored at New Haven Reads has now been accepted at Yale,” as detailed during last year’s Donor Thank You event!

Joanna’s fundraising efforts are not limited to spelling competitions, and she’s not afraid to get her hands (and other things) dirty for a worthy cause! On October 10, she participated in a Tough Mudder Race in New Jersey. What is Tough Mudder? A description from the website toughmudder.com sums it up this way:

Tough Mudder is a 10-12 mile mud and obstacle course designed to drag you out of your comfort zone by testing your physical strength, stamina, and mental grit. With no podiums, winners, or clocks to race against, it’s not about how fast you can cross the finish line. Rather, it’s a challenge that emphasizes teamwork, camaraderie, and accomplishing something almost as tough as you are.

Tough Mudder is a large organization that holds events all over the US to raise money for veterans’ groups. Joanna and her team raised $500. She offers advice to anyone who is considering a Tough Mudder event: it’s physically demanding, you have to be in shape, and you have to have a good team so you can support each other, since some of the obstacles can’t be done except by a team working cooperatively. For this reason, Joanna also feels it’s a good team-building exercise. Besides Tough Mudder, Joanna likes to participate in many other fundraisers that require a physical challenge, and has completed several 5K races, Fight for Air Climbs, and Smilow Closer to Free 25K Rides.
Faculty Emeritus

Dr. Tavassoli, Professor Emeritus

Dr. Tanya Tavassoli reports that she has been traveling and teaching. At right are some of her professional engagements since retiring from her post in the department as Professor of Pathology earlier in 2016.

Gerald Shadel, PhD, and Yale Center for Research on Aging (Y-Age) Host Northeastern Glenn Aging Symposium

The Second Annual Northeastern Glenn Symposium on the Biology of Aging was held on Friday November 4, 2016, at the Maurice R. Greenberg Conference Center, New Haven, CT, sponsored by the Glenn Foundation for Medical Research and hosted by Gerald Shadel, PhD. Joseph A. and Lucille K. Madri Professor of Pathology and Director, Yale Center for Research on Aging (Y-Age).

This regional, one-day symposium highlighted research advancements in understanding the biology of aging and its implications for human health. The goals of this meeting were: to provide a venue for scientific exchange between academic investigators in the northeast focusing on aging research; to promote inter-institutional collaborations in aging research; and to give graduate students and postdoctoral associates the opportunity to present their research and get feedback in an intimate setting with local experts in the aging field.

The meeting, which was by invitation only, was free to all attendees and included lunch and a poster session. Talks by graduate students and postdoctoral associates were selected from submitted abstracts. The program featured the speakers listed at right.

Northeastern Glenn Aging Symposium Featured Speakers:

Christina Camell (Yale Center for Research on Aging, Yale School of Medicine) NLRP3 inflammasome controls adipose tissue macrophage homeostasis during aging

Brian Jones (Brown University) A somatic piRNA pathway in the Drosophila fat body suppresses transposable elements ensuring metabolic homeostasis

Ziyun Wu (Harvard Medical School) A conserved innate immune response pathway determines longevity

Brandon Miholland (Einstein College of Medicine) Profound differences in somatic and germline mutation rates in humans and mice

Tahmineh Tabrizian (Einstein College of Medicine) Intestinal stem cell function is impaired by exposure to an old environment

Sun Kim (Brown University) Defining chromatin network dynamics in aging neuronal stem cells

Corey Willis (University of Connecticut School of Medicine) Aging in primary astrocyte cultures impacts inflammation-induced extracellular vesicle functions

Derek Drake (Glenn Center, Harvard Medical School) REST and the regulation of stress-resistance, brain aging and lifespan

Noga Ron-Harel (Glenn Center, Harvard Medical School) Altered T cell mitochondrial dynamics with aging

Myoungjoo Kim (Yale Center for Research on Aging, Yale School of Medicine) Promoting antigen-specific CD8 T cells in older adults against influenza viruses

Jenna Bartley (University of Connecticut Health Center) Aging augments the impact of influenza respiratory tract infection on mobility impairments, muscle-localized inflammation, and muscle atrophy

Caitlin Ondracek (Glenn Center, Massachusetts Institute of Technology) Enhanced function of novel sirtuin enzymes achieved through directed evolution

Gabriela Farias Quipildor (Einstein College of Medicine) Central IGF-1 preferentially improves healthspan in male mice

Anna Petrashen (Brown University) Translational regulation of IGF-1 by MYC

Ethan Sarnoski (Yale Center for Research on Aging, Yale University) Single-cell analysis of replicative lifespan in diploid Saccharomyces cerevisiae

Israel Pichardo (Glenn Center, Harvard Medical School) The mammalian smORFeome: screening for peptides that function as longevity factors.

Linz, Austria: Oct. 12-14, 2016: Postgraduate course in Diagnostic Breast Pathology. Lecture and multiple case presentations

Linz, Austria: Oct. 17-19, 2016: Postgraduate course in Diagnostic Gynecologic Pathology. Lectures and multiple case presentations

Clinical News

Quality Improvement and Patient Safety (QuIPS) Education Sessions

Courtey of John Sinard, MD, PhD, from the AP Newsletter

On the evenings of November 15 and November 21, Dr. Vinita Parkash, Associate Professor of Pathology, led two educational sessions on quality improvement and patient safety as part of the evolving program to educate clinical faculty and to focus attention on efforts to improve the care we deliver to our patients. The talks included background information about medical errors, with a focus on pathology errors, and discussion of examples of some of the errors that have occurred in our department that were ultimately classified as serious safety events. Many of the discussions were “lively,” and it was clear that faculty are both very engaged in patient safety concerns and committed to working to improve the quality of care. One of the “take home” messages from the discussions was the need to create a recurring forum for open discussion of safety events that involve pathology, with the aim of increasing awareness and brainstorming ideas for process changes which may help to reduce the likelihood of the same kind of event occurring again.

An important part of event investigation is the process of apparent cause and root cause analysis. The goal is to try to find gaps or weaknesses in the system that represent opportunities for improvement. In very broad terms, it is a three-step process: analyze what actually happened relative to what the “should” have happened, look for things that could have been done at any step along the way to prevent the undesirable outcome, and then decide what process changes could reasonably be put into effect.

Another part of the process is the classification of the safety event. This generated a lot of discussion at the meetings, so a brief overview of the classification system might be of value. Yale-New Haven Hospital has engaged the Healthcare Performance Institute (HPI) to assist in building a culture of patient safety. They have a system for classifying patient safety events that includes an assessment of whether or not the “breach” reaches the patient and what level of harm to the patient results from that event. The three broad categories are “Serious Safety Events,” “Precursor Safety Events,” and “Near Miss Safety Events,” with 5, 4, and 3 subcategories, respectively. Examples of events provided by HPI for each category of the classification do not speak to the types of events that involve Anatomic Pathology processes, and we are working on refining a better set of examples more pertinent to our practice.

Dr. Pei Hui Speaks at 32nd Annual Ella T. Grasso Memorial Conference

Pei Hui, MD, PhD, Professor of Pathology, was a featured speaker at the 32nd Annual Ella T. Grasso Memorial Conference. Management & Treatment of Gynecological Cancers, held on November 16, 2016, at Yale’s West Campus. Dr. Hui is also Clinical Director, Molecular Diagnostic Laboratory; Director, Gynecologic Pathology; and Director, Gynecologic and Breast Pathology Fellowship Program.

Dr. Hui’s presentation was “Critical Review of the 2014 WHO Pathologic Classification of Tumors of the Female Genital Tract.” The 32nd Annual Ella T. Grasso Memorial Conference reviewed significant updates on a variety of topics of importance to gynecologists, oncologists, and other relevant specialists. Topics included state-of-the-art management of advanced ovarian cancer and other gynecologic cancers, transplantation and fertility preservation, as well as Dr. Hui’s update on WHO pathologic classification of tumors of the female genital tract and their clinical significance.

This annual conference is held in memory of Ella T. Grasso, who was the first woman to be elected Floor Leader of the House in 1955 in Connecticut and was also the first woman to chair the Democratic State Platform Committee, serving from 1956-68. In 1974, the people of Connecticut chose her as the nation’s first woman to be elected governor in her own right. In 1980, Gov. Grasso was diagnosed with ovarian cancer; poor health led her to resign in December of that year. She passed away in Hartford, CT, on February 5, 1981.

Drs. Steven Curry and Peter E. Schwartz originally established the conference as a joint effort between their two institutions—the University of Connecticut and Yale University—to honor Governor Grasso and to provide the latest information on the care of gynecologic cancer patients to the physicians of Connecticut. It remains one of the longest running cooperative programs involving these two institutions.
We Need an Overdiagnosis Awareness Month

The following article by Drs. Benjamin Mazer, Pathology First-Year Resident, and Manju Prasad, Professor of Pathology, was published in The Boston Globe, bostonglobe.com, December 7, 2016.

September was Prostate and Thyroid Cancer Awareness Month, October was Breast Cancer Awareness Month, and November was Lung Cancer Awareness Month. We should designate December as Cancer Overdiagnosis Awareness month, because a lot of cancers diagnosed by screening tests will never kill you.

Through decades of advocacy by patients, family members, and doctors, the public has never been more aware of the dangers of slow-growing, yet sometimes deadly cancers like thyroid, breast, and prostate cancer. Newer, more sensitive tests are promoted to encourage early detection and treatment. These interventions, it is said, “save lives.” Undoubtedly, some lives have been saved by the increased early detection and treatment of symptomless cancers. Yet there is another side: the problem of overdiagnosis. That’s when doctors diagnose a disease that won’t cause the death of a patient during the patient’s lifetime. And it is a complicated problem: Many diagnoses and treatments doctors provide today simultaneously have the ability to be either life-saving or unnecessary but nonetheless life-altering.

Overdiagnosis is something physicians are increasingly concerned about. It’s time for a frank public discussion because we, as doctors, will never be able to address overdiagnosis without the input of the patients we serve. One recent example is actor Ben Stiller’s announcement that a PSA blood test had resulted in his being diagnosed and treated for symptomless prostate cancer. The actor made a clear-cut declaration the test had saved his life. In truth, the situation is more nuanced. Prostate cancer is included among cancers frequently overdiagnosed since most people with symptomless prostate cancer will never be harmed by it. But the unnecessary diagnosis and treatment will produce unwanted symptoms, as well as psychological and social consequences. The experience will be life-altering but not life-saving for all patients and their loved ones.

How can something as terrible as cancer occur without causing symptoms or death? The final definitive diagnosis of cancer is rendered by pathologists, like us, after a doctor takes a tissue sample, a biopsy. We examine the tissue under a microscope and may detect certain features that lead us to believe these cells are malignant. We often perform additional tests to confirm malignancy.

What pathologists do is high-tech and scientific but not clairvoyant. When we make a diagnosis of cancer, we are suggesting the cells we are seeing have the possibility to grow, spread, and hurt the patient, even take a life. But a possibility is not a certainty. We are still imperfect fortune-tellers. Even when a pathologist correctly diagnoses cancer, doctors know cancers can behave with varying degrees of aggressiveness. The degree of a cancer’s aggressiveness cannot be perfectly predicted for each patient, so doctors will typically treat most cancers. Better safe than sorry, goes the reasoning.

However, through advancements in technology, we have come to know that what pathologists call “cancer” is far more prevalent than we could have imagined. A large number of people are living with cancers inside their body that will never harm them because they will grow very slowly and may not spread.

For example, the number of people diagnosed with thyroid cancer has more than tripled since 1975, yet the number of people dying of it hasn’t changed at all. How is this possible? The simple answer is many healthy people have small harmless cancers within their thyroids that we have got-

(Continued on page 12)

HER2 Testing is the Topic of Educational Session

On December 2, 2016, approximately 25 of the Department’s clinical pathologists, residents, fellows, and staff from the Molecular Diagnostics group attended an educational program presented by David Hicks, MD, Professor and Director of Surgical Pathology, University of Rochester Medical Center, which was arranged and hosted by Malini Harigopal, MD, Director of the Department’s breast pathology team. Dr. Hicks’ presentation, “Explore HER2 Testing,” was an unbranded, interactive discussion designed to highlight the 2013 ASCO/CAP HER2 testing guideline recommendations for breast cancer.

Discussion topics included the importance of multidisciplinary collaboration to enhance HER2 testing quality in breast cancer; the practical implications of the 2013 ASCO/CAP guidelines; potential ways to improve HER2 testing accuracy; and case studies exploring a variety of HER2 testing challenges, such as tumor heterogeneity and equivocal results.

Dr. David Rimm on Biomarker Testing in Lung Cancer

Adapted from onclive.com. (October 19, 2016)

In a short video by Onclive, David L. Rimm, MD, PhD, discusses various options for biomarker testing in lung cancer. Dr. Rimm is Professor of Pathology and of Medicine, Director of Pathology Tissue Services, and Director of Translational Pathology, Yale Cancer Center.

In the video, Dr. Rimm explains that genomics testing involves an examination of the mutational or neoantigen load. While this assay does select patients with a high mutational load, Dr. Rimm feels that this method is insufficiently sensitive, such that it misses those patients who may not have a high mutational load, but would still benefit from therapy. Dr. Rimm is more optimistic about another form of biomarker testing, which involves looking at the immune cell microenvironment. In this method, one can measure the distribution and properties of T-cells determined by coexpression of other markers.

We Need an Overdiagnosis Awareness Month

(article continued from page 11)

ten very good at spotting with newer high-resolution imaging technology. And since we practice better-safe-than-sorry medicine, we treat them all. But healthy people’s thyroids contained these small symptomless cancers before CT scans and ultrasounds were invented. Even when we couldn’t spot and treat these cancers, most people never suffered from any problems related to these tumors. This has led doctors and patients to face a hard reality: Treating small thyroid cancers doesn’t often save lives because they aren’t life-threatening to begin with. To be sure, treatment is helpful in some patients, but all must risk complications such as injury to nerves and salivary glands, and many must take thyroid hormones for life.

Doctors are struggling with what to do. When should we treat these small cancers? When do the risks of treatment outweigh the benefits? Is safe always better than sorry?

The American Thyroid Association has recently published guidelines against overdiagnosing and overtreating small, symptomless cancers. But this is not a decision for physicians alone; patients must participate, too. Yet, it is hard to have an honest, nuanced discussion take place when myriad awareness months instill the fear of death in patients. Shouldn’t people also hear about the cancers that will never hurt them?

Pathologist Elliott Foucar notes that there are many “diagnosis survivors who are mistakenly regarded as cancer survivors.” They are survivors of ultra-sensitive screening techniques that diagnosed small cancers that were not lethal. We believe these survivors need their own public awareness campaign to foster a conversation about unnecessary diagnosis. Some diagnosis survivors may feel relief. Others may feel anger because they received potentially unnecessary treatments. But through the regular, public conversation that awareness brings, doctors and patients can better participate in a shared decision-making process.
New Residents 2016 - 2017

Santiago Delgado, MD — AP/CP
Santiago received his MD in 2012 from Escuela de Medicina Luis Razetti, Universidad Central de Venezuela (Caracas, Venezuela). He enjoys a variety of musical styles, photography, writing, and traveling.

Benjamin Mazer, MD, MBA — AP/CP
Benjamin earned his MD in 2016 and his MBA in 2011, both from University of Rochester, NY. Prior to that, he was an undergraduate at Swarthmore College, class of 2010. Benjamin likes listening to public radio and podcasts, as well as cooking interesting vegetarian dishes.

Omeed Hafez, MD — AP/C
Omeed obtained his MD at the University of Wisconsin in 2016. He was also an undergraduate there, class of 2010. Omeed enjoys football and computer games.

Haris Mirza, MBBS, PhD — AP/CP
Haris received his medical degree in 2006 from Dow Medical College, University of Karachi (Pakistan). He did his graduate work at Yong Loo Lin School of Medicine (Singapore), class of 2012. Haris enjoys hiking, tennis, cricket, and cooking.

Hatem Kaseb, MBBCH, MPH, PhD — AP/CP
Hatem obtained his medical degree from Cairo University (Giza, Egypt) in 2005. He then received his MPH in Public Health Genetics and his PhD in Human Genetics, both from University of Pittsburgh (2016). Hatem enjoys reading, outdoor activities, fitness training, and practicing martial arts.

Kristin Stendahl, MD — AP/CP
Kristin earned her MD at University of Minnesota, 2016. She received her undergraduate degree from University of Texas, class of 2004. Kristin enjoys cross-country skiing, running, biking, and hiking.

Deepika Kumar, MBBS — AP/CP
Deepika received her medical degree in 2004 from Government Medical College (Amritsar, India). Her hobbies and interests include baking, cooking, reading, and swimming.

Douglas Rottmann, MD — AP/CP
Douglas attended Wayne State University School of Medicine (Detroit), where he received his MD in 2016. He completed his undergraduate work at University of Michigan (Ann Arbor), class of 2012.

Residency Program Updates from Dr. Diane Kowalski

Reported by Cynthia Ziehl

Recruitment season is well underway for incoming new residents who will start July, 2017. As of the second week of December, 56 applicants had been interviewed, not including CP applicants. With 5 weeks left, the Department will finish up having interviewed approximately 82 applicants (out of 400 applications). These numbers are fairly consistent with previous years’ levels. Variations from year to year can be due to cancellations caused by extreme weather.

We’ve seen increased interest in both the AP-only and CP-only and physician/scientist tracks, as well as the AP/CP residency track. Match Day, which is when applicants are matched to programs, is March 17, and that’s when we’ll know who our new residents will be in the program starting in July. We’ll include a list of incoming new residents in the next newsletter.

Dr. Diane Kowalski, Associate Professor of Pathology and Director, Residency Program, sends her thanks to all the faculty and residents who have helped with recruitment season and have helped to make it successful again this year. Many of our residents and fellows will be presenting posters and abstracts at USCAP in March, 2017. Some may not have been notified yet that they will be presenting. We will cover Department activities at USCAP in the next edition of the newsletter.

Dr. Benjamin Mazer, first-year resident, had an article published in The Boston Globe that he co-wrote with Dr. Manju Prasad, Professor of Pathology. (See page 11).

Dr. Haris Mirza, first-year resident, has been accepted into the physician/scientist track with the Department. Several of the Department’s third-year residents have already secured fellowships: Dr. Peter Chen will be at MD Anderson for surgical pathology; Dr. Michael Hwang will be going to MD Anderson for surgical pathology and GU; Dr. Josh Jeanty will be going to the University of Michigan for a cytopathology fellowship; Dr. Chris Sebastian will be doing a molecular fellowship in our Department; Dr. Sara Rutter will be doing a transfusion fellowship with Laboratory Medicine at Yale; and Dr. Wade Schulz will be doing a Blood Bank fellowship at Yale.
Report Generation Hosts Annual Event to Honor Breast Cancer Survivors

By Michelle Cordone

Each October, which is Breast Cancer Awareness Month, members of the Report Generation unit and other clinical area volunteers from the Department host a potluck lunch to honor survivors of breast cancer. This is the fourth year that Report Generation Manager Rachael Leftridge, herself a breast cancer survivor, and her team have organized and hosted this event, to which anyone in the Department who would like to come (and bring a dish!) was invited. The luncheon celebrates the lives of the breast cancer survivors within the Department, and this year we acknowledged that men can also get breast cancer. To organize and host this event, volunteers from Report Generation, and anyone else interested in participating, hang posters, decorate and/or bring in one of their favorite food items (desserts always welcomed!). Rachael is extremely passionate about this cause as she lost her mom to metastatic breast cancer. Our mission is to champion continuous faith, love and hope. All cancers matter!

Pathology Events

Department Hosts 3rd Annual Pathology Family Outing

By Cynthia Zielb

This year’s annual family outing took place on a warm and sunny Saturday, October 15, at East Rock Park in New Haven. As well as enjoying the sunshine and company of colleagues, friends, partners, spouses, and entire families from the Department, attendees appreciated the side dishes and desserts they brought to the outing and hot dogs, hamburgers, and fries that were available from the Cow-Abunga food truck hired for the event. There were Frisbees, boomerangs and ball games for those who wanted to play and a crafts table with pumpkins and other Halloween theme items to decorate. We have some talented and motivated crafters in the Department, particularly some of the residents! We were expecting that the crafts would appeal to children at the outing, but there was an enthusiastic group of adults who enjoyed them as well. This was an enjoyable time for the 72+ attendees, and we’re looking forward to next year’s outing.

A big thank you to Lori Taylor for her help and support with planning, set-up, games, and cleanup and to Kerri Stratton for her help with cleanup.

Pathology Soccer Game Event

By Dr. Peter Chen. Photos courtesy of Dr. Karin Finberg.

A resident-and-fellows team vs. faculty team soccer match took place on Sunday, September 11, at 4:00 p.m. at Veteran’s Memorial Park in Branford. Over 50 residents, fellows, and faculty members showed up for this momentous event! Several of the residents suggested team names based on Co-Path quick texts. The faculty team name chosen was NFM, i.e., “negative for malignancy,” since our faculty at Yale are not malignant! And the resident-and-fellow team name adopted was WSA, i.e., “without significant abnormality,” since all residents and fellows at Yale are indeed WSA.

The game was full of excitement, with the final score 6-6. The high score with frequent goals and the closeness of the score throughout the game definitely contributed to the thrill. The faculty had an excellent showing and displayed tremendous talents on the soccer field. Who knew we had so many ex-college soccer players in our midst?!

Some highlights included the initial goal of the game, which was scored within several minutes of the game’s start by Dr. Andrea Barbieri. Dr. Debo Adeniran scored an amazing shot with a head ball into the goal and was nominated for game ball/MVP afterwards. Dr. Hatem Kaseb scored 5 of the 6 goals for the WSA. Other players who showed significant talent on the field (honorable mentions) included Drs. Sam Katz, Rick Torres, Angelique Levi, Chris Sebastian, JP Lavik, and Caleb Cheng.

At half time, everyone enjoyed mandarin oranges and other refreshments, and Dr. Manju Prasad graciously picked up our pizzas for us (from Marco’s Pizzeria) after the game. Clearly, everyone had fun!

A footnote from Dr. John Sinard: “Special thanks to Peter Chen for spearheading this event!”

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A footnote from Dr. John Sinard: “Special thanks to Peter Chen for spearheading this event!”
Annual Department Holiday Party

By Cynthia Ziehl

The Department of Pathology hosted its annual holiday party this year on Thursday, December 8, at the Boyer Center. Everyone from the Department, along with family and friends, was invited to this celebration of the season, which included delicious food, a holiday crafts table for children of all ages, and a visit from Santa! Those who wanted—adults and children alike—could get their photo taken with Santa. This event would not have been possible without the help of Department staff who handled setup on the day of the event: Karen D’Angelo, Karen Reynolds, Jessica Reyes, Phil Davis, Judy Mitnick, Kathie Havin, Jo-Ann D’Agostino, Kyle Preston, and Sarah Whitaker. A special thanks goes to Jo-Ann D’Agostino, who helped plan the event and handled arrangements for food, drinks, tables, and decorations; Kate Henderson, who ran the photo booth; and Kyle Preston, who was Santa.

Clinical Staff Participate in the Salvation Army “Adopt a Family” Program

By John Sinard

The Salvation Army of Connecticut and Rhode Island has an annual December holiday program which pairs families in need with sponsors willing to “adopt” that family. Eligible families include low-income working families and victims of fire, severe illness, or domestic violence. These families have or are experiencing severe economic, emotional or physical crises. Sponsors are typically groups of people who are sent family information and their wish lists for purchases.

The clinical managers and the staff in Histology, Report Generation, the Gross Room and Ac- cessioning/FS areas, Cytology/Outreach in CB5, and a few faculty members have been participating in this program annually as a sponsor team. This year, the group adopted five families! New clothing, shoes, toys, household items, Walmart gift cards, and grocery store gift cards were purchased from the families’ wish lists. These were put on display at the December 15th clinical staff ethnic potluck luncheon (which included an ugly sweater/top contest), in which several residents also participated. As nicely stated by Rachael Leftridge, the coordinator of our participation in the Adopt-a-Family program, “Giving back to those in the community in which we work is how we spread holiday cheer.” Congratulations on another a successful year!
Staff Updates

Pathology Business Office Restructure

By Margaret Gilshannon

December 19, 2016. As you may know, we’ve had some restructuring going on within the Pathology Business Office and the Chair’s Office and I wanted to summarize those changes for everyone.

Business Office Restructure

Serena DelBasso
Senior Finance Manager

Serena provides strategic direction and analysis for the department, and as well as oversight for all business office functions, including the grants team.

Grants Team
Shilpa Shukla
Corryn Brewi
TBN Grants Assistant

Teresa Notaro
Associate Administrator

Teresa continues to provide oversight for the accounting staff and operational management and financial support to the Director of Finance and Administration and the Senior Finance Manager. As some of you may know, Teresa has also begun the very well-deserved phased retirement process and in general she is not here on Fridays as she begins her transition.

Accounting Staff
Kimberly Fiorentino
Patrick Hendrickson
Sha Liu
Nagwa Nassif

Billing Office Changes

Effective February 6, Michele Dorey, Joanne Fowler, and Florence Pimer will report to the Yale Medicine Central Billing and Coding unit but will continue to work with Pathology.

• Flo and Joanne will continue to be the main billers for Pathology faculty.
• Michele will assume the role of a Clinical Analyst working with Pathology and other related departments.

Aileen Baldwin (as of Jan 2)
Clinical Revenue Cycle and Compliance Manager

Aileen is filling this new role responsible for directing the optimization of physician billing and reimbursement and revenue capture. She will lead charge capture implementation projects for the department and will be our main contact between the YM central billing unit, YM reimbursement staff, and department faculty and managers. Contact: aileen.baldwin@yale.edu

Chair’s Office Changes

Kathie Hawtin has joined the Chair’s office, supporting Dr. Morrow’s calendar and taking on Faculty Affairs duties as Jo-Ann D’Agostino begins her transition toward phased retirement. In general, Jo-Ann is not here on Fridays, so feel free to contact Kathie at Kathie.hawtin@yale.edu or 785-3624.

Spotlight on Staff

Meet Allison Morrione,
Pathology Department Autopsy Technician

By Cynthia Ziehl

In the life of this busy autopsy technician, there’s no such thing as a typical day, which is part of what makes Allison’s job enjoyable. Her duties include receiving and releasing patients and the varying paperwork requirements those tasks demand, contacting doctors to find out if families want autopsies performed, identifying errors on the death certificate and contacting the appropriate person to make corrections, and fielding a wide variety of calls that can range from inquiries about patients’ belongings to lengthy discussions involving process and procedural details.

A significant part of Allison’s role is to teach residents and rotating students how to perform autopsies, including the preliminary tasks of checking the autopsy paperwork for valid consent, preparing the patient for autopsy (which includes recording height and weight), and placing the patient on the table. Art Belanger, Manager of the Autopsy Service, is a Pathologists’ Assistant and leads the training of the residents in the various techniques of performing autopsies. Residents typically come with little or no experience in autopsy; while the technicians know a lot about disease processes, as Allison points out, “We’re not doctors,” so the role of the Autopsy staff is that of technical support and training.

Another important part of her job is working with the teaching collection, called the Archives. She collects these specimens from novel or interesting autopsy or surgical cases. They are used mostly for YSM teaching purposes but can also be provided to others as tissue for teaching. Allison explains that “hands-on is the best way to learn; you can’t feel pneumonia on a picture, but if you have a tissue sample to give to a student, they can see the tissue consolidation, feel the texture of it. At autopsy, I tell people the hardest things to see are the adrenals and pancreas because they blend in, and they don’t look like the pictures in the book.” Autopsies can range from a relatively simple biopsy-only procedure to a full, unrestricted autopsy, and the Service does between 200 and 220 per year. An autopsy can take anywhere from one to several hours to complete depending upon the complexity of the case. As Allison points out, “We never want to hold up the patient from being buried or cremated, whichever the family has chosen.” The physical autopsy is done as efficiently as possible out of consideration for the patient and family.

The Director of the Autopsy Service is Dr. José Costa, Professor of Pathology and of Orthopaedics and Rehabilitation and Director of Bone & Soft Tissue Pathology. Dr. Raffaella Morotti is the Associate Director of the Autopsy Service and Professor of Pathology. Art, the Manager and PA, has a master’s degree in Medical Laboratory Science. Tony Lopes has been with Yale for 25 years and is currently the Lead Autopsy Technician. Allison has been in the Department for ten years and is an Autopsy Technician Level II. She started as an intern, then became a casual, and worked her way up to full-time status. Completing the unit are Lyndsey Gress, Autopsy Technician Level I, and Brianna Losty, who is helping out as a casual employee.

Allison credits her career growth to the outstanding teaching abilities, skills, and knowledge of Tony and Art, from whom she learned. She says they are great teachers who have developed their own techniques, which they’ve passed along to her and others. She also feels that, “We have a lot of great doctors we interact with here!”

Allison has a dual bachelor’s degree in Forensic Science and Biology, as well as a master’s degree in Forensic Science specializing in Crime Scene Analysis. She is currently enrolled in an MBA program with Capella University, which she plans to finish by the end of 2018. As part of her coursework for her MBA, she has been planning a pathology blog. She also works a second job, which she’s had for eight years, with Eversight Connecticut, the Connecticut Eye Bank, doing cornea recoveries. Her ultimate career goal is to be a manager in the healthcare industry.

Despite her demanding work and school schedule, Allison finds time to enjoy hobbies with her husband, Nick. They love adventure, travel, and hiking. They’ve traveled in Italy, been
Long Service Recognition Celebration

By Cynthia Ziehl

The Department held a recognition celebration on August 3, 2016, to honor 31 employees for their many years of service to the Department and the University. This is an annual event to which the entire Department is invited, and employees’ years of service, ranging from 5 to 35 years, in increments of 5 years, are celebrated. Dr. Jon Morrow spoke about each employee honored and presented a personal thank you, and food and beverages were served. To prepare for the presentation, each honored employee’s manager was asked to send some informal notes on the employee’s role in the department to Dr. Morrow. All the managers’ comments expressed sincere, detailed appreciation for the hard work and dedication of these long-term employees; below are several examples.

35 Years
Lucille Giaquinto
Lisa Gras
30 Years
Judith Mitnick
Monica Talmor
25 Years
Tony Lopes
20 Years
Brian Jameson
Oleg Kruglov
15 Years
Barbara Biernat
Amos Brooks
Vikram Kapoor
9 Years
Samantha St. Clair
8 Years
Debra Wycoff
7 Years
Lucy Feefer
6 Years
Dennis Hackett
5 Years
Keisha Birdine
Hailong Meng
Natarzyna Nasuta
Ryan Nelson
Shanna Peng

Judy is the backbone of the Electron Microscopy lab. What many people don’t know is that she is actually Judith Mitnick, PhD. Prior to coming to work with Mike Kashgarian in the EM lab, Judy was one of the world’s leading experts in yeast biology, making sure that our beer tastes as good as we hope it would. Rumor has it that Dr. Moeckel has tried several times to get Judy to join him in opening a Bavarian-style microbrewery in the basement of Lauder Hall. True to her excellent character, she has always refused. Judy is the reason that the EM lab has been running without a single day lost due to technical glitches for many years. She is the quintessential multi-tasker, taking care of everything from accessioning specimens, communicating with outside hospitals, maintaining excellent quality of EM sections, managing image files, etc., etc… the list goes on! What she does not know is that she is not permitted to retire for the next 30 years, so she is likely going to be the longest serving member of the Department of Pathology in the near future. Judy, I cannot say enough about how valuable you are for the Renal EM lab. Thank you for your service and outstanding dedication.
— Dr. Gilbert Moeckel

Brian Jameson is the Atlas upon whose shoulders rests the world of Bridgeport Surgical Pathology. As Super-PA, he leaps over tall buckets in a single bound, and handles 20,000 surgicals with his bare hands. Well, with appropriate PPE anyway. He is loved and respected at Bridgeport as well as in New Haven. Congratulations, Brian, on 20 years of service very well done.
— Dr. Paul Cohen

Tony started as a technician with no experience but with the willingness to learn, and learn he did. In the early 1990s, Tony found a place in our Morgue and Autopsy service by committing himself to the ideas of patient care and the general overall educational theme of the Service. Tony is called upon daily to serve as a resource for those learning the trade. Tony is driven to provide the best in patient care. He is called upon daily to interact with families and friends who have just lost a loved one and does so with genuine empathy. Tony will stand and deliver when it comes to providing assistance to those who are in emotional pain, and those who work with Tony, both inside and outside Yale, have nothing but the highest regard for him. Tony has proven himself a great worker, leader, and friend to all.
— Art Belanger

Dr. [Hailong] Meng has a PhD in Computer Science, as well as a Masters in Biochemical Engineering. As part of the Kleinsein Lab at Yale, Dr. Meng has been leading the bioinformatics analysis and data management efforts for several large collaborative and multi-institutional human immune profiling projects. This includes the NIAID Program for Research on Immune Modelling and Experimentation (PRIME) and the NIAID Human Immunology Project Consortium (HIPC). Along with his careful efforts to manage the large amounts of data associated with these projects, Hailong has helped substantially to design and carry out sophisticated analysis strategies. His integral contributions have resulted in being co-author on 13 peer-reviewed publications.
— Dr. Steven Klenstein

Amos Brooks is much appreciated for his animal tissue expertise. Clients of YPTS Developmental (Research) Histology depend on Amos for high quality special stains and immunohistochemistry. His deep expertise and friendly, approachable manner make our facility a very popular and effective method for scientists to get great histology for their research projects. While he is not often an author, there is no doubt that in his 15 years here, he has significantly contributed to hundreds of discoveries reported by Yale investigators. He was also an essential member of the YPTS team that won Yale’s President’s Award for 2015.
— Dr. David Rimm
Pathology Faculty Featured at YCC Grand Rounds

Six Pathology Department faculty were featured speakers at recent Yale Cancer Center Grand Rounds.

Peter Humphrey, MD, PhD, Professor of Pathology; Director, Genitourinary Pathology. “High-grade Prostate Cancer: Clinico-pathologic and Molecular Aspects,” October 4, 2016.

Needs: There is a clinical gap that needs to be addressed that includes the need for education on a new prostate cancer grading system. Objectives: To understand the new prostate grading system and the clinical significance of it. To become familiar with the molecular aspects of high-grade prostate cancer.

Manju Prasad, MD, Professor of Pathology; Director, Endocrine, Head & Neck Pathology. “NTRK Fusion Oncogene in Pediatric Papillary Thyroid Carcinoma,” November 1, 2016.

Needs: The incidence of thyroid cancer has been increasing, especially in adolescents. The results of The Cancer Genome Atlas project showed thyroid cancers with unexpected genetic abnormalities in CT. Objectives: To better understand these results and the genetics of papillary thyroid carcinoma (PTC) as well as the genotypic diversity of pediatric PTC.

Jeffrey Sklar, MD, PhD, Professor of Pathology and of Laboratory Medicine; Director, Molecular Diagnostics Research Program. “The NCI-MATCH Trial for personalized Cancer Medicine: Overview and Update,” November 1, 2016.

Needs: It is important for professionals in the clinical and research oncology communities to understand the rationale of the NCI-MATCH trial. Objectives: To raise awareness of the NCI-MATCH trial and its availability to patients and to understand the practical principles of personalized cancer medicine and the current status and future directions of the trial.


Needs: Appreciation of the roles of innate immune system components, specifically neutrophils, as modulators of cancer behavior is necessary to better understand and utilize immunotherapeutic approaches in cancer treatment. Objectives: To develop appreciation of N1 and N2 neutrophil subtypes and their implications in the treatment of cancer and the potential use of engineered/activated neutrophils in cancer treatment.


Needs: The increase in melanoma incidence has been so dramatic it has been called an “epidemic.” However, melanoma mortality has not risen significantly, suggesting the melanoma epidemic is likely not a true phenomenon. Objectives: To understand that the epidemic rise in melanoma diagnosis is contrasted by relatively slight increase in morbidity and mortality, suggesting overdiagnosis of melanoma.

Samuel Katz, MD, PhD, Assistant Professor of Pathology. “mRNA Reprogramming for Cell Based Immunotherapy,” December 6, 2016.

Needs: The field of cancer immunotherapy is emerging and mRNA can be used to redirect the immune system against cancer. Objectives: To better understand the various strategies of immunotherapy in oncology and the benefits of mRNA for gene therapy. Discuss novel strategies to boost cancer immunotherapy.

Recent Clinical Faculty Talks

Courtesy of John Sinard, MD, PhD, from the AP Newsletter


Dhanpat Jain: 9th GI Pathology Course, Bucharest, Romania. Nov 4-5. “Approach to liver biopsies with minimal changes”; “Diagnostic approach to vascular disorders of the liver”; “Barrett’s, bile, and adenocarcinoma: Have we been on the wrong path?”


Alexa Siddon: ASCP Annual Meeting, Las Vegas, NV. Sep 15. Course: “Algorithmic approaches to consultative clinical pathology in a flipped classroom.”

Dhanpat Jain: International Congress of the IAP, Cologne, Germany. Sep 26. “Pathology of Rare Disease: Multispecialty considerations for seeing the unseen.”


Recent Clinical Faculty Publications

Courtesy of John Sinard, MD, PhD, from the AP Newsletter


A Training Program for Young Cancer Biologists

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“We tried to figure out what PhD students and postdoctoral fellows are missing with standard biomedical PhD training,” said Dr. Stern, “and that has a lot to do with understanding the clinical world, the whole disease side, and also the practical limits on what clinicians can and can’t do because of drug toxicities and working with patients—limiting factors in the real world. They can learn these things by training with and working with clinicians and clinician-scientists.”

The program has several key components. Graduate students and postdoctoral fellows already have scientific mentors, but every trainee in the new program will also have a clinical mentor, a guide into the hurly-burly of real-world medicine. The trainee will shadow the clinician during appointments and rounds, and will attend tumor boards where treatment recommendations are made for challenging diagnoses.

The second part of the clinical training will use specialized coursework to introduce participants to the practical challenges of creating clinical trials from research ideas. Basic scientists need to understand this complex process so that trials can be designed for maximum efficiency and value to scientists, clinicians, and patients.

The CBTP builds upon over twenty-five years of leadership by the Department of Pathology in graduate training in cancer through Pathology 630b, Cellular and Molecular Biology of Cancer, course directors Dr. David Stern and Dr. Qin Yan. Pathology faculty teaching the class are Dr. Stern, Dr. Yan, Dr. Sinard, Dr. Rimm, Dr. Katz, Dr. Madri, Dr. Wajapeyee, Dr. Rosenberg, Dr. Politi, and Dr. Jensen. Karen D’Angelo is course administrator. Experimental Pathology graduate students Wesley Cai and Nathan Fons are teaching assistants for 2017.

The program also adds two new classes to the standard curriculum. The first is Pathology 681, “Advanced Topics in Cancer Biology,” launched by Dr. Qin Yan, Fall 2016, with modules taught by Dr. Yan (cancer epigenetics), Dr. Politi (targeted cancer therapy), and Dr. Nik Joshi, Department of Immunobiology (immune checkpoint therapy). For the second course, clinicians who specialize in various cancers describe the most critical problems within their areas of expertise. “Those critical problems can be the best ones for trainees to focus on in their research,” said Dr. Stern. Trainees also do a clinical analysis of patient tumor samples to gain experience in analyzing and interpreting genetic tumor information.

The two-year program is funded by a new grant from the National Cancer Institute of about $232,000 per year for five years, with additional financial support from Yale Cancer Center and Yale School of Medicine. The funding provides each trainee with a stipend plus tuition. Interest by predoctoral and postdoctoral trainees has been strong. The first enrolled class was finalized December 1, 2016, with six PhD students and three postdocs enrolled. The group includes Jacqueline Starrett, an Experimental Pathology student in Katerina Politi’s lab, Jennifer Garbarino, a student in Ranjit Bindra’s lab, and Alexandra Charos, a postdoctoral trainee in Marcus Rosenberg’s laboratory. Other trainees are in Immunobiology, Pharmacology, and Therapeutic Radiology. Eventually the program will include 16 trainees, split equally between PhD students and postdoctoral fellows.

Because of the extra work required on top of their regular programs, trainees must be highly motivated to specialize in cancer research. “Many PhD trainees will eventually run their own labs,” said Dr. Stern. “We want to train generational leaders in cancer research.”

The CBTP was developed by David F. Stern, PhD, Professor of Pathology, in association with Qin Yan, PhD, Associate Professor of Pathology, Peter Glazer, Professor and Chair of the Department of Therapeutic Radiology and Genetics, and many other members of the Pathology Department and other departments. Pathology faculty trainers for the program include the above mentioned Drs. Stern and Yan, as well as primary Pathology faculty Samuel Katz, MD, PhD. Michael Krauthammer, MD, PhD, Don Nguyen, PhD, David Rimm, MD, PhD, Narendra Wajapeyee, PhD, and secondary faculty Ranjit Bindra, MD, PhD, Marcus Rosenberg, MD, PhD, Ryan Jensen, PhD, and Diane Krause, MD, PhD. Production of the core T32 training grant supported by the NIH National Cancer Institute was an enormous effort led by the Pathology Grants Team, including Corinne Brewi, Karen D’Angelo, Paula Grimm, and Shilpa Shukla, with additional assistance from Karen Reynolds.
Dr. Adebowale Adeniran Promoted
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In our search for a new director, it became clear that Debo was a superior candidate. A graduate of the University of Ibadan, Nigeria, College of Medicine (where he was valedictorian), Debo gained broad experience in clinical medicine before coming to the United States to undertake residency training in Anatomic and Clinical Pathology at the University of Cincinnati. This was followed by fellowship training in Surgical Pathology at M.D. Anderson Cancer Center in Houston, and fellowship training in Cytopathology at Memorial Sloan-Kettering Cancer Center in NYC. Since joining our faculty in 2008, Debo has established himself not only as a superbly trained and key member of our surgical pathology and cytopathology teams, but also as an outstanding educator and academician. He has received the Benjamin Castleman Award from the USCAP in recognition of his scholarly achievements, and the Averill Liebow teaching excellence award bestowed by our Housestaff. He serves as the Associate Director of our post-graduate training program in Pathology. His specialized expertise in thyroid neoplasms has earned him broad recognition, particularly for his contributions in identifying genomic alterations in the RET, BRAF, and RAS genes in thyroid cancers, and for correlating these mutations with their diagnostic and prognostic relevance in papillary tumors. Debo also brings a strong focus and expertise in genitourinary pathology to many of his studies and supports clinical trials as a reference pathologist for the Eastern Cooperative Oncology group. He is active on several national committees of the CAP and the ASCP.

Dr. Malini Harigopal Named Director
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Malini has applied innovative methods of quantitative evaluation to the interpretation of biopsy and cytological samples and has demonstrated, in an important series of papers, that these methods can more accurately assess the prognostic and predictive value of several biomarkers, establishing her as an emerging leader in this important field. Beyond these studies, Malini has contributed to many clinical-correlation studies, books, book chapters, and case reports. On the teaching front, Malini is an active contributor to the School’s educational programs and to house staff education, and for these efforts she consistently receives high marks.

Spotlight on Staff —Allison Morrione
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to Hawaii, have hiked the Rocky Mountains, Grand Canyon, and portions of the Appalachian Trail. Their goal is to hike the tallest mountain in every state in the US! At the other end of spectrum, Allison and Nick love to dance, take ballroom lessons, and go out as often as possible. Allison shared that after hiking the Grand Canyon, she and Nick got dressed up and went to Las Vegas to go dancing!
At the end of our interview, Allison emphasized that she really loves what she does, and it clearly shows!

Please Welcome...
Corinne Brewi welcomed her first grandchild in December, granddaughter Zoe Cara-Donna, born December 13, 2016, at 11:57 am in Chicago, IL, weight 7 lbs.
Congratulations!

Congratulations to Dr. Veerle Bossuyt, Assistant Professor of Pathology, and husband John Vultee on the birth of their daughter, Amber Vultee, born October 22, 2016, 7 lbs., 3 oz., shown being welcomed by big brother Ian and big sisters Monique and Lyn!

“OOPS!”
We try to be as thorough, accurate, and complete as possible in our reporting of news from the Department. If we have missed something or need to print a correction or clarification, please let us know, and we’ll be sure to include it in the next issue.