This has been a very exciting couple of months. We just concluded our 6th Annual TMII Symposium with again excellent invited external and internal speakers that featured and captured the best science from our imaging and nanomedicine research community. Don’t miss reading about our selected abstract and poster winners. We have already started planning the TMII 2017 meeting. Please feel free to email me any feedback and suggestions.

That excitement continued with the TMII external advisory board strategic planning (SP) meeting where we received very strong feedback. Thanks for the wonderful input and suggestions as we continue to put together our TMII SP to submit to the Dean’s office. I can’t thank enough TMII, the Department of Radiology faculty and all other committee members and stakeholders for their hard work and suggestions.

More excitement is apparent by the several stories in this issue celebrating the success of our TMII members such as Dr. Priti Balchandani who secured her first NIH R01 and was bestowed this year with the Harold and Golden Lamppost Research Award. We are also featuring Dr. Claudia Calcagno-Mani for her Scientist Development Grant from the American Heart Association. Just to mention one more, I am proud of my Master’s student Chloe Solomon for her Community Service that was Recognized by Mount Sinai Graduate School. Finally, remember to participate in the October 19, 2016 3rd Annual Brain Imaging Center Symposium where Dr. Rita Goldstein (whom we will feature in the upcoming issue) and this year annual meeting committee have organized a very exciting meeting on brain imaging research.

I wish you all a great read of the TMII Newsletter and a great start of the Summer!

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UPCOMING EVENTS

TMII Frontiers of Imaging Seminar Series
> May 26, 2016 1pm - 2pm: James Rudd, PhD - Senior Lecturer, University of Cambridge TBD Hess Center - Seminar Room B
> June 23, 2016 1pm - 2pm: Hersh Chandarana, MD - Associate Professor, NYU School of Medicine TBD Hess Center - Seminar Room B
> July 27, 2016 1pm - 2pm: Thomas Hope, MD - Assistant Professor, University of California, San Francisco “Current and future applications of PET/MRI in abdominopelvic malignancies” Hess Center - Seminar Room B
> July 28, 2016 1pm - 2pm: Michael Hope, MD - Associate Professor, University of California, San Francisco “Advanced Cardiovascular Imaging Techniques” Hess Center - Seminar Room B
> August 25, 2016 1pm - 2pm: Aytekin Oto, MD - Professor, University of Chicago TBD Hess Center - Seminar Room B

TMII Seminar Series
> May 23, 2016 3pm - 4pm: Sonia Nielles-Vallespin, PhD - Staff Scientist, National Heart, Lung and Blood Institute “The micro-structural dynamics of myocardial wall thickening. An in vivo cardiac diffusion tensor magnetic resonance imaging study” Hess Center - TMII Large Conference Room s1-117

For more information on these and other events go to: http://tmii.mssm.edu/events
As the Director of the High Field MRI program at TMII, Dr. Balchandani focuses on developing novel techniques to exploit the power of high-field MR magnets to visualize the brain in unprecedented detail. She leads a team of 7T scientists to devise creative engineering methods to overcome some of the main limitations of operating at high magnetic fields, thereby enabling high-resolution whole-brain anatomical, spectroscopic and diffusion imaging as well as unlocking new contrast mechanisms and sources of signal. In order to achieve these goals, Dr. Balchandani’s team focuses on novel radio frequency (RF) pulse and pulse sequence design as well as specialized hardware solutions such as parallel transmission. These techniques are ultimately applied to improve diagnosis, treatment and surgical planning for a wide range of neurological diseases and disorders. Some clinical areas of focus for Dr. Balchandani’s team are: improved localization of epileptogenic foci; imaging to reveal the neurobiology of depression; and development of imaging methods to better guide neurosurgical resection of brain tumors.

In 2016, Dr. Balchandani was awarded an R01 grant from the National Cancer Institute entitled “7T Neurosurgical Mapping Protocol for Endoscopic Resection of Skull Base Tumors” with her Co-Investigator, Dr. Raj Shrivastava, Associate Professor of Neurosurgery. Recently, Priti was named the recipient of The Dr. Harold and Golden Lamport Research Award given to Assistant Professors who show exceptional potential for making significant contributions over an extended period of time. She has also been awarded the NARSAD Young Investigator Grant for her work in imaging depression. Dr. Balchandani is also forging collaborative relationships with institutions such University of Pennsylvania as well as industry partners. As a result of these collaborations, she is acting as PI of the academic sub-award of an upcoming transfer of a NIH Small Business Technology Transfer grant.

Dr. Balchandani has launched the ultra-high field MRI program at TMII and has successfully translated 7T MRI to clinical use. She has already recruited and trained a strong team of scientists and engineers for her research lab and initiated collaborative relationships with clinicians and researchers in Neurosurgery, Neurology, Neuroradiology and Psychiatry. These collaborative relationships have resulted in translational work which has directly benefitted patients and already resulted in several publications and funded grants, including her recent R01.

The Balchandani lab has been highly productive over the last year. All lab members, including graduate student Judy Alper, postdoctoral scholar Rebecca Feldman, and former instructor Hadrien Dyvorne, have obtained several talks and posters for the upcoming International Society for Magnetic Resonance in Medicine (ISMRM) meeting in Singapore. Recently, Rebecca Feldman was named junior fellow of ISMRM, a prestigious designation which was also awarded to Dr. Balchandani earlier in her career.

Congratulations to the Balchandani Lab!
New AHA Funding to Develop Advanced Methods in Cardiovascular Mouse MRI
Claudia Calcagno, MD, PhD

Dr. Calcagno, MD, PhD, is an Instructor of Radiology at the Icahn School of Medicine at Mount Sinai. Her research focuses on the development of non-invasive quantitative imaging techniques to cardiovascular disease, with specific focus on the measurement of atherosclerotic plaque permeability and inflammation with MRI and PET. She has been extensively involved in applying these techniques in pre-clinical drug trials in atherosclerotic rabbits, and clinical trials in humans.

Dr. Calcagno was recently awarded a highly competitive Scientist Development Grant from the American Heart Association entitled “Quantitative permeability imaging of the mouse atherosclerotic vessel wall by self-gated DCE-MRI with compressed sensing”. This work will develop an optimized self-gated acquisition and compressed sensing reconstruction to develop high temporal and spatial resolution DCE-MRI to quantify endothelial permeability in the aortic root of atherosclerotic mice. By investigating the relationship between imaging, and genetics, cellular and molecular assays in the arterial wall, the application also aims to take the first step in integrating quantitative, non-invasive imaging with -omics in this important animal model of cardiovascular disease.

Community Service Recognized by Graduate School
Chloe Solomon, BS

Chloe Solomon is first year graduate student in the Masters of Science in Biomedical Sciences (MSBS) who, under the supervision of TMII Director Dr. Zahi Fayad, is examining the relationship between chronic psychological stress and cardiovascular inflammation in patients diagnosed with post-traumatic stress disorder using PET/MR imaging. Chloe was recently recognized for her extensive work in the community when she received the graduate student award for Outstanding Community Service.

As a part of the East Harlem Health Outreach Partnership (EHHOP) http://icahn.mssm.edu/education/medical/clinical/ehhop, a student run clinic at Mount Sinai, Chloe is the Radiology Referrals Manager coordinating all radiology scans for the clinic and helps to resolve patients’ outstanding radiology bills. Chloe is also an advocate for the Sexual Assault and Violence Intervention (SAVI) Program at Mount Sinai. There she advocates and provides crisis counseling for survivors of sexual assault and interpersonal partner violence in seven emergency departments across NYC. For more information: http://www.mountsinai.org/patient-care/service-areas/community-medicine/areas-of-care/sexual-assault-and-violence-intervention-program-savi

As a teacher for MedDocs at Mount Sinai, which provides science enrichment classes to inner city high school students, Chloe in taught two semesters on the cardiovascular system the pulmonary system. For more info: http://webcommons.mssm.edu/meddocs/

Lastly, Chloe volunteered last semester with First Generation Scholars at Mount Sinai that provides one-on-one consulting for high school seniors first in their family to apply to college. She helped a student create her college list, fill out college applications and develop/revise a personal statement. For more information: http://icahn.mssm.edu/education/student-resources/student-organizations/community-outreach/first-generation-scholars

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TMII Human Imaging Core

TMII Human Imaging Core is the backbone of the Translational and Molecular Imaging Institute and is responsible for coordinating, supporting and executing imaging research at Mount Sinai including, neuroimaging, cardiovascular imaging, cancer imaging, nanomedicine (molecular imaging and drug delivery), and image processing.

The Core is fully staffed to support all the image acquisition (1.5T, 3T, 7T, PET/MRI, PET/CT, Dual Source CT, Ultrasound), image analysis, scheduling, and performance of the proposed experiments. The Core has an extensive and expanding inventory of research imaging facilities and equipment, including ancillary support which encompasses exam rooms, imaging processing workstations, and laboratories (wet lab space, cell and chemistry preparation and a radionuclear lab). The Core’s resources are fully supported by user fees drawn from research grants, instrumentation grants, industry contracts, and agreements. Our core facilities are available for use to all qualified investigators from academic, medical, government, and industry laboratories.
The 6th Annual TMII Symposium was held at the Icahn School of Medicine to nearly 200 attended from departments and campuses across Mount Sinai Health System, including ISMMS, St. Luke’s, West and Beth Israel, as well as area institutions such as SUNY Stony Brook, NYU, Rutgers, Columbia, MSKCC, Albert Einstein College of Medicine and NHLBI.

Thank you to all those who attended and who helped organize.

World renowned in their fields, the invited speakers discussed:

- Cutting edge methods in connectivity in human brain,
- PET imaging in Alzheimer’s disease,
- Quantitative imaging using MRI Fingerprinting
- Image-guided cancer therapy using nanomedicine and
- The latest advance in vessel wall imaging using MR coronary angiography.

From the 50 abstracts submitted 4 were and chosen for talks:

- Alan Seifert, PhD (ISMMS) “DANTE-EPI for CSF Suppression in Cervical Spinal Cord BOLD fMRI at 7T” - Neuroimaging Session
- Stefanie Hectors, PhD (ISMMS) “Assessment of tumor heterogeneity in hepatocellular carcinoma using combined DCE-MRI and BOLD measurements” - Cancer/Body Imaging Session
- Yiming Zhao, PhD (ISMMS) “Augmenting drug-carrier compatibility improves tumor nanotherapy efficacy” - Nanomedicine Session
- Joseph Lerman (NHLBI) “Lack of improvement in aortic vascular inflammation is associated with an increase in coronary plaque burden in psoriasis” - Cardiovascular Imaging Session

Additionally, one poster from each program was awarded Best Poster:

- Ronan Abgral, (ISMMS/University of Brittany) “Usefulness of Combined FDG-PET/MRI to Diagnose Active Cardiac Sarcoidosis” - Cardiovascular Imaging
- Octavia Bane, (ISMMS) “Assessment of inter platform variability of T1 quantification methods used for DCE-MRI in a multicenter QIN phantom study” - Cancer/Body Imaging
- Lindsay Hill, (NYU) “Rapid Qualification of Gadolinium in Nanoparticles by Time-Resolved Fluorescence” - Nanomedicine
- Rafael O’Halloran, (ISMMS) “Clustered, Connectivity-Based Surgical Planning for Deep Brain Stimulation” - Neuroimaging

Videos of the talks are available now. You can find them on the TMII YouTube playlist or follow the link: http://tmii.mssm.edu/tmii2016. 
BIC CORNER

Congratulations to Dr. Willem Mulder, who placed first among more than 40 participants in the first annual BIC 10k event in Central Park. The drizzling rain cooperated by ending just before the start and seemed to invigorate everyone. Please have a look through pictures of many of the fit and happy participants on the BIC website: https://bic.mssm.edu/about/2016-bic-10k/

On October 19, 2016, please plan to attend the 3rd Annual BIC Symposium. Advance registration is now open and can be completed online at https://bic.mssm.edu/blog/bicday/bicdayregistration/. The organizing committee has arranged for Helen Mayberg MD to present the keynote address before the series of sessions on computational approaches to neuropsychiatric disease, novel and naturalistic fMRI methods, and brain stimulation. Poster presentations will be followed by time for wine and cheese. The symposium flyer is attached and we look forward to seeing you there!

At the 7T high-field MRI, installation of the video and audio capabilities for presenting and collecting functional data is complete and finishing testing. You can contact the BIC technical group to inform us of your plans for research at 7T (as well as 3T and PET-MR/mMR) and to solicit feedback and advice. A survey to describe planned studies is available at https://www.inchoir.org/redcap/redcap/surveys/?s=yvQFxxdbJY.

The BIC website now allows registration using your existing Mount Sinai account for single-sign-on with your familiar account name and password. When you logon, and as NIH submission deadlines approach, please remember the importance of including BIC in applications for funding. A document with reference language for justifications of support is available for use in grant preparations, at https://bic.mssm.edu/blog/including-bic-in-upcoming-nih-grant-submissions/.

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