

# RADIOLOGY RESEARCH UPDATE *January 2023, Issue 25*

## Department of Diagnostic Radiology and Nuclear Medicine

### GRANTS

**Piotr Walczak, MD, PhD** was awarded a five-year, \$2,986,702 R01 from the National Institute on Drug Abuse for “Image-guided Intra-arterial Administration of Antibody-releasing Glial Progenitors to Control the HIV CNS Reservoir”

**Rao P. Gullapalli, PhD, MBA** was awarded a three-year, \$1,025,802 U.S. Army Medical Research Acquisition Activity/Geneva Foundation Contract for “Comprehensive Assessment of Blast Traumatic Brain Injury in a Gyrencephalic Species: Biomechanical, MRI, Behavioral and Neuropathological Characterizations.”

**Yajie Liang, MB, PhD** was awarded a two-year, \$463,124 R21 grant from the National Institute on Aging for “Shedding Light on Functional Heterogeneity of Dementia-related Alpha-synuclein Strains.” Dr. Liang also received a two-year, \$154,500 R03 grant from the National Institute of Neurological Disorders and

Stroke for “Intravital 2-photon Imaging the Integration of Transplanted Embryonic Neurons in a Mouse Model of Cerebral Ischemia at the Subacute Phase.”

**Ze Wang, PhD** was awarded a two-year, \$441,886 R21 from the National Institute on Aging for “Assessing Chronic Pain Using Brain Entropy Mapping.”

**Thomas Ernst, Dr rer nat** was awarded a \$243,253 subaward from the Regents of the University of California, San Diego for “NIH RECOVER: A Multi-site Observational Study of Post-Acute Sequelae of SARS-CoV-2 Infection in Pediatric Populations.”

**Dirk Mayer, Dr rer nat** was awarded a fifteen-month, \$193,617 R21 grant from the National Institute of Diabetes and Digestive and Kidney Diseases for “Metabolic Imaging of Hyperpolarized <sup>13</sup>C Pyruvate in Polycystic Kidney Disease.”

**Vikas Kundra, MD, PhD, Kristina McElwee, Nikita Rednam, Barton F. Lane,**

**MD, and Guang Li, PhD** received a \$125,000 UMMC Innovation Challenge award for “Decreased IV Contrast Dose CT Imaging: Meeting the Challenges of IV Contrast Shortages and Reducing Cost and Patient Exposure.”

### FEATURED PUBLICATIONS

**Tang S, Sours Rhodes C, Jiang L, Chen H, Roys S, Badjatia N, Raghavan P, Zhuo J, Gullapalli RP.** Association between Sleep Disturbances at Subacute Stage of Mild Traumatic Brain Injury and Long-Term Outcomes. *Neurotrauma Rep.* 2022 Jul 15;3(1):276-285. doi: 10.1089/neur.2022.0004. PMID: 35982983; PMCID: PMC9380873.

**Liang HJ, Ernst T, Cunningham E, Chang L.** Contributions of Chronic Tobacco Smoking to HIV-associated Brain Atrophy and Cognitive Deficits. *AIDS.* 2022 Mar 15;36(4):513-524. doi: 10.1097/QAD.0000000000003138. PMID: 34860196; PMCID: PMC8881356.

**Santomartino SM, Siegel E, Yi PH.** Academic Radiology Departments Should Lead

Artificial Intelligence Initiatives. Acad Radiol. 2022 Aug 11:S1076-6332(22)00407-X. doi: 10.1016/j.acra.2022.07.011. Epub ahead of print. PMID: 35965155.

**Beheshtian E, Putman K, Santomartino SM, Parekh VS, Yi PH.** Generalizability and Bias in a Deep Learning Pediatric Bone Age Prediction Model Using Hand Radiographs. Radiology. 2022 Sep 27:220505. doi: 10.1148/radiol.220505. Epub ahead of print. PMID: 36165796.

**Chen R.** Bayesian Coherence Analysis for Microcircuit Structure Learning. Neuroinformatics. 2022 Oct 5. doi: 10.1007/s12021-022-09608-0. Epub ahead of print.

**Menken MS, Isaiah A, Liang H, Rivera PR, Cloak CC, Reeves G, Lever NA, Chang L.** Peer Victimization (Bullying) on Mental Health, Behavioral Problems, Cognition, and Academic Performance in Preadolescent Children in the ABCD Study. Front Psychol. 2022 Sep 26;13:925727. doi: 10.3389/fpsyg.2022.925727. PMID: 36225678; PMCID: PMC9549775.

## RSNA 2022

RSNA's annual meeting was held November 27-December 2, 2022. In the session, "On Call Primer for Residents – Don't

Miss Diagnosis: Tricky Trauma That Keeps You Up at Night" **Clint Sliker, MD** presented "Blunt Cerebrovascular Injury (BCVI) - Findings, Outcomes and Controversies." **Uttam Bodanapally, MBBS** presented, "Pearls of Chest Trauma," and **Alexis Boscak, MD** and **Matt Dattwyler, MD** discussed spine trauma.

**Omer Awan, MD** presented the national residency image case based competition at RSNA and also gave a talk on "Social Media: Case Based Opportunities for Career Advancement."

**Kamyar Ghabili, MD**, Post Doc, Yale/UMSOM, **Jamil Shaikh, MD**, Assistant Professor, University of Florida, **Jeffrey Pollak, MD**, Professor, Yale School of Medicine, **David Elwood, MD**, Assistant Professor, Emory University School of Medicine, and **Nariman Nezami, MD**, authored "Percutaneous Combined Chemical and Mechanical Necrosectomy for Walled-Off Pancreatic Necrosis: A Retrospective Analysis." Dr. Nezami was the presenter.

## NEW: NIH DATA MANAGEMENT AND SHARING POLICY

NIH has issued the [Data Management and Sharing \(DMS\) policy](#) (effective

January 25, 2023) to promote the sharing of scientific data. Sharing scientific data accelerates biomedical research discovery by enabling validation of research results, providing accessibility to high-value datasets, and promoting data reuse for future research studies.

Under the DMS policy, NIH expects that investigators and institutions:

- Plan and budget for the managing and sharing of data
- Submit a DMS plan for review when applying for funding
- Comply with the approved DMS plan

Individual NIH Institutes, Centers, or Offices may have additional policies and expectations (see [NIH Institute and Center Data Sharing Policies](#)).

NIH offers a number of resources explaining the DMS policy, including webinars and reading materials. Visit: [Scientific Data Sharing](#)

Source: NIH

## SIGN 2022

*By Piotr Walczak, MD, PhD and Miroslaw Janowski, MD, PhD*

On August 22-23, 2022, the conference of the Society for Image Guided

Neurointerventions (SIGN) was held. This very successful scientific event took place at the extraordinary venue of the medieval Warwick Castle located in the West Midlands, England. The conference attracted key experts in basic and clinical research who recognize the valuable role of advanced imaging and image guidance to improve treatments of central nervous system (CNS) diseases. SIGN conferences highlight the unique contributions of experts from the fields of radiology, neurosurgery, neurology as well as biomedical engineering, genetics and others, to advance minimally invasive, effective treatment of currently incurable CNS diseases.

The scientific value of all sessions was outstanding, but we would like to highlight a few of them. The topic of focused ultrasound brought together the major players in this field, including our own **Dr. Dheeraj Gandhi**, in addition to scientists from Stanford, Sunnybrook, Georgia Tech, and Imperial College London, UK. The field of neurosurgery was prominently represented by Dr. Graeme Woodworth – chair of neurosurgery at UMB, Dr. Lim – chair of neurosurgery at Stanford, and Dr. Raphael Guzman – vice-chair of neurosurgery at the University of Basel,

Switzerland. Various aspects of endovascular neurointerventions were presented by clinicians from UCSF, Miami, France and Poland. **Dr. David Dreizin** made an excellent contribution to the artificial intelligence session. The program culminated with two exceptional keynote speakers – a pioneer of FDG PET and endower of the Alavi-Bradley Symposium on Molecular Imaging and Theranostics– Dr. Abass Alavi from UPenn and Matt Brookes - biomedical engineer and pioneer of quantum technology for the next generation brain imaging from the University of Nottingham, UK. SIGN 2022 was truly intercontinental, featuring speakers not only from Europe and North America, but also South America, Africa and Asia.

The intimate setting of the medieval town of Warwick stimulated very fruitful discussions and initiated plans for new projects and grant submissions. We also were pleased with the strong representation of the new generation of young scientists. In the competition for early stage investigators the best were selected, including **Dr. Guanda Qiao** from our department, who won the 1<sup>st</sup> place award, Dr. Pavlos Anastasiadis from UMSOM's neurosurgery department who won the 2<sup>nd</sup>

place award, and **Dr. Ania Andrzejewska** from Poland who won the 3<sup>rd</sup> place award (of note, Dr. Andrzejewska recently started a visiting fellowship in our department).

The success of the SIGN conference series encourages its continuation, and with a mission to build momentum for image-guided neurointerventions around the world, SIGN leadership is partnering with **Dr. Rao Gullapalli** to host SIGN 2023 in India, and we hope it will be a very successful event as well. The organizers would like to take an opportunity to invite all scientists and clinicians interested in this field to join us for SIGN 2023 at the end of the year.

SIGN2022 was fully managed by SIGN ([www.neurosignsociety.org](http://www.neurosignsociety.org)) and organized in collaboration with the Children's Brain Tumour Drug Delivery Consortium based in Nottingham, UK.

*Drs. Walczak and Janowski are founding members of SIGN.*



Please send contributions to **Radiology Research Update** to Brigitte Pocta at [bpocta@som.umaryland.edu](mailto:bpocta@som.umaryland.edu)