

Radiology Department
July 2008 – June 2009
Awards/Abstracts/Publications/Presentations

Dr. Ahmad Al-Basheer

Abstracts

Dr. Ahmad Al-Basheer, John Greskovich, Mary Boerste, “Adaptive Radiotherapy Treatment Re-planning for Head and Neck Cancer Patients.” Abstract submitted to the AAPM.

Publications

Dr. Ahmad Al-Basheer, Glenn Sjoden, Monica Ghita, “Electron Dose Kernels to Account for Secondary Particle Transport in Deterministic Simulations.” Accepted by the *Nuclear Technology Journal* (Peer Reviewed)

Presentations:

Dr. Ahmad Al-Basheer’s paper entitled: "Application of Electron Dose Kernels to Account for Heterogeneities in Voxelized Phantoms," has been Accepted for the 2009 International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics. This paper will be presented orally as part of the special session, *Computational Medical Physics*. The date and time of this session will be forthcoming.

Dr. Ahmad Al-Basheer’s paper entitled: “Deterministic Radiation Transport Simulations for Diagnostic Imaging Applications,” has been Accepted for 2009 International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics. This paper will be presented orally as part of the special session, *Computational Medical Physics*.

Dr. Jerry Allison

Awards

Jerry Allison was presented the Jimmy O’Fenn Award for 2009 in recognition of his significant contributions to the field of medical physics, the AAPM, and the SEAAPM, during the SEAAPM Annual Meeting on March 14, 2009

Publications

N. E. Yanasak, J. D. Allison, Q. Zhao, and Tom C.-C. Hu. "The Use of Novel Gradient Directions with DTI to Synthesize Data with Complicated Diffusion Behavior". paper submission -- Medical Physics

N. E. Yanasak, J. D. Allison, T. C.-C. Hu, Q. Zhao, " Synthesis of Complicated Diffusion Geometries Using Novel Gradient Directions with DTI: When a Peanut is a Doughnut or a Propeller", Medical Physics, Submitted (2009)

N. Yanasak and J. Allison, "Synthesizing Crossing ADC Distributions Via Reassembly of Multiple k-Spaces". Paper submitted to the MICCAI conference (London, Sept. 2009):

Abstracts

Nathan Yanasak and Jerry Allison, "A Web-Based Educational Application for Exploration of K-Space Properties", submitted to the AAPM meeting (Anaheim, July 2009)

Jerry Allison and Nathan Yanasak, "Improving MRI Physics for Radiology Residents: Year One", submitted to the AAPM meeting (Anaheim, July 2009)

Grant proposals submitted

N. Yanasak (Lead Author), **J. Allison** and **R. Figueroa-Ortiz** (Co-Authors). "An Intuitive Approach to Teaching MRI Image Formation, Using a Musical Analog" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

J. Allison (Lead Author), **J. Rawson** and **N. Yanasak** (Co-Authors). "Web-Based Instructional Module for MRI Pulse Sequences" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

Z. Cao (Lead Author), **J. Allison** and **H. Williams**(Co-Authors). "An Image Quality Based Approach to Teaching Gamma Camera" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

Z. Cao (Lead Author), **J. Allison** and **H. Williams**(Co-Authors). "An Image Quality Based Approach to teaching PET" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

G. David (Lead Author), and **J. Allison** (Co-Authors). "Basics of X-ray and Mammographic Systems for Radiology Residents" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

New Grants Approved

RSNA/AAPM web-based Instructional Module (\$4,000, 1 year), entitled "MRI Image Formation", **N. Yanasak** (PI), **R. Figueroa-Ortiz**, **J. Allison**

RSNA/AAPM web-based Instructional Module (\$4,000, 1 year), entitled "MRI Pulse Sequences", **J. Allison** (PI), **J. Rawson**, **N. Yanasak**

RSNA/AAPM web-based Instructional Module for Radiology residents (\$4,000, 1 year), entitled "Proposal for Web-Based Instructional Module for MRI Contrast Agents", **T Hu** (PI), **J Rawson**, **J Allison**

RSNA/AAPM web-based instructional module (\$4,000, 1 year), entitled “Basics of X-ray and Mammographic Systems for Radiology Residents”, **G David (PI), J Allison**

Presentations:

N. Yanasak, J. D. Allison, Q. Zhao, T. C.-C. Hu, K. Dhandapani, “The Benefits of Non-Uniform Gradient Direction Specification in DTI: Simulations and Phantom Data” 50th AAPM Annual Meeting, Oral Presentation (2008)

Jerry Allison, "Medical Physics issues in Mammography" (presented as part of the American Association of Physicists in Medicine National Medical Physics Review Course in Houston, Texas: July 26, 2008)

Dr. Jerry Allison chairs the AAPM RSNA Education Coordination Subcommittee. The subcommittee coordinates: 60 hours of refresher course content; 8 symposia hours (AAPM/RSNA Physics Tutorial for Residents; AAPM/RSNA Tutorial on Equipment Selection; Physics Symposium); RSNA Daily Bulletin physics tip of the day and radiation safety tip of the day and physics case of the day. RSNA 94th Scientific Assembly and Annual Meeting, Chicago, Illinois, Nov. 30 – Dec. 5, 2008

Pulse Sequence and Clinical Utilization – **Jerry Allison**
Spring Pool Society Weekend Lectures; Saturday, March 7, 2009

HAC Submissions

Dr. Hadyn Williams (PI), Dr. Ghamande, Dr. Macfee, Dr. Allison, Dr. Hu, Dr. Josh Blackmon; Dr. Rawson to be added pending CITI HAC training.
NIH/NCI ACRIN 6671 – cervix cancer – “Utility of Preoperative PET-CT & USPIO MRI Prior to Primary Chemoradiation Therapy to Detect Retroperitoneal Lymph Node Metastasis in Patients with Locoregionally Advanced Carcinoma of the Cervix”

Samuel Almodovar

Abstracts

S. Almodovar, “The role of F18-FDG PET/CT in the evaluation of male SNM 56th Annual Meeting held in Toronto, Canada, June 13-17, 2009

Dr. Julio Araque

Awards

Dr. Julio Araque was presented with the 2009 Resident Exemplary Teaching Award at the SOM Faculty Senate Awards ceremony on April 15, 2009

Dr. William Bates

Presentations

William Bates, “CT Peripheral Vascular Disease” presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

Dr. Jake Blackmon

Open Clinical Trials

Dr. Hadyn Williams, PI; Dr. Suzanne Thigpen and Dr. Jake Blackmon, Sub-Investigators; Tom Lavin, Study Coordinator – “FDG-PET/CT as a Predictive Marker of Tumor Response and Patient Outcome: Prospective Validation in Non-Small Cell Lung Cancer.” ACRIN. Accruing patients

Dr. Josh Blackmon

HAC Submissions

Dr. Hadyn Williams (PI), Dr. Ghamande, Dr. Macfee, Dr. Allison, Dr. Hu, Dr. Josh Blackmon; Dr. Rawson to be added pending CITI HAC training. NIH/NCI ACRIN 6671 – cervix cancer – “Utility of Preoperative PET-CT & USPIO MRI Prior to Primary Chemoradiation Therapy to Detect Retroperitoneal Lymph Node Metastasis in Patients with Locoregionally Advanced Carcinoma of the Cervix”

Dr. Z. J. Cao

Grant Proposals submitted

Z. Cao (Lead Author), **J. Allison** and **H. Williams**(Co-Authors). "An Image Quality Based Approach to Teaching Gamma Camera" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

Presentations:

Dr. Zongjian Cao, “How Much X-rays Can Be Scattered From a SPECT/CT Room to an Adjacent Gamma Camera?”, SPIE Symposium on Medical Imaging - - accepted for presentation February 7 – 12, 2009

How much x-rays can be scattered from a SPECT/CT room to an adjacent gamma camera? Z J Cao, 2009 SPIE Medical Imaging Conference, February 2009, Orlando, Florida

Dr. Anil Cashikar

Publications

Mir, S, Fiedler, D & **Cashikar, AG** (2008) “Ssd1 is required for thermotolerance and Hsp104-mediated protein disaggregation in *Saccharomyces cerevisiae*”. *Molecular and Cellular Biology in press.*

Grant proposal submitted

A Cashikar, (PI), “Small Heat Shock Proteins in Parkinson’s Disease,” NIH/NINDS, (\$147,000)

NIH entitled “Mechanisms of Protein Aggregate Clearance.” PI: **Anil Cashikar**, \$1,470,000

Dr. Anil G. Cashikar, “Small Heat Shock Proteins in Parkinson’s Disease”, NIH Supplemental Request, Research Grant, \$123,500 Total Cost

Jim Corley

Presentations

“Pharmacology of Iodinated Contrast” presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

Gadolinium and NSF Update – **James Corley**
Spring Pool Society Weekend Lectures; Saturday, March 7, 2009

Dr. James Craft

Open Clinical Trials

Multi Center Study to Determine the Effectiveness and Safety of HEDA in the Screening of Women for Breast Cancer, Protocol No. 2007. Accruing patients

Dr. Alex Daley

Awards

Dr. Alexander Daley has been elected to become a Fellow in the ACR -- convocation ceremony will be May 3, 2009.

Vivek Dave:

Presentations

Vivek Dave and Clarence Joe, “CT Musculoskeletal Trauma” presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

MRI Osteomyelitis – **Clarence Joe / Vivek Dave** Sunday, March 8, 2009
Spring Pool Society Weekend Lectures

George David

Awards

George David, Course Director: American Association of Physicists in Medicine National Medical Physics Diagnostic Review Course in Houston; Texas July 26-27, 2008

Publication

George David, Deborah Gibbs, Hadyn Williams. “A Comprehensive PET/CT Database for Tracking Patient Variables”, published in the September/October, 2008, issue of *Radiology Management*.

Grant proposal submitted

G. David (Lead Author), and **J. Allison** (Co-Authors). "Basics of X-ray and Mammographic Systems for Radiology Residents" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

New grants submitted

RSNA/AAPM web-based instructional module (\$4,000, 1 year), entitled “Basics of X-ray and Mammographic Systems for Radiology Residents”, **G David (PI), J Allison**

Presentations

George David, “An Introduction to the Medical Physics Profession” (presented to the undergraduate physics seminar at South Carolina State University in Orangeburg, South Carolina on September 9, 2008)

George David, “Ultrasound Physics Resident Board Review” (presented to the radiology residents at Memorial Hospital, Savannah, Georgia on August 29, 2008)

George David, "Diagnostic X-Ray Equipment Testing" (presented as part of the American Association of Physicists in Medicine National Medical Physics Review Course in Houston, Texas: July 26, 2008)

George David, “Physics of Multidetector CT” presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

What is the clinical significance of lesions detected by PET/CT that are suspicious for a second primary malignancy? J.S. Beatty MD, **H.T. Williams** MD, A.L. Gucwa MD, S.S. Khichi BS, B.A. Nattier MD, D.Gibbs, CNMT, **G.S. David** MS, D.S. Lind MD, E.J. Kruse DO, J.M. McLoughlin MD. Society of Surgical Oncology 62nd Annual Cancer Symposium, March 5-8, 2009, Phoenix, AZ.

Dr. Ramon Figueroa

Awards

MCG Radiology Teacher of the Year: **Dr. Ramon Figueroa** – June 20, 2008

Dr. Ramon Figueroa was named Chair of the Rules Committee of the SILAN Society at the 20th annual meeting of SILAN in Cancun, Mexico, September 2008

Dr. Ramon Figueroa has been invited to serve on the Editorial Board of the ENT Journal for a 3 year term. The Editorial Board includes approximately 125 experts in otolaryngology, basic science, audiology, speech pathology, pathology, radiology and other related professions. The ENT Journal Editorial Board meets annually during the meeting of the Academy of Otolaryngology-Head and Neck Surgery.

Publications

Ramon Figueroa, “Imaging Anatomy in Revision Sinus Surgery”, chapter in the book Revision Sinus Surgery, has been published

Grant proposals submitted

N. Yanasak (Lead Author), **J. Allison** and **R. Figueroa-Ortiz** (Co-Authors). "An Intuitive Approach to Teaching MRI Image Formation, Using a Musical Analog" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

DOD Deployment Related Medical Research Program (DRMRP) entitled "Detection and Early Rehabilitation of Brain Injury (DERBI) Study." PI: Boyd Hunter, CO-Is: **James Rawson, Nathan Yanasak, Ramon Figueroa**, John Vender, \$594,615

New Grants Approved

RSNA/AAPM web-based Instructional Module (\$4,000, 1 year), entitled "MRI Image Formation", **N. Yanasak** (PI), **R. Figueroa-Ortiz, J. Allison**

Presentations

Ramon Figueroa, "CT Stroke and CTA Perfusion" presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

Ramon Figueroa, "CT Sinus" presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

Ramon Figueroa, "Pathology of the Anterior Skull Base", conference given at SILAN Society 20th Annual Meeting, Cancun, Mexico, September 6 – 8 , 2008

MRI Brain and Stroke—MRI, MRA and Diffusion Stroke

Ramon Figueroa Spring Pool Society Weekend Lectures; Saturday, March 7, 2009

MRI—Degenerative Disease of the Spine

Ramon Figueroa; Spring Pool Society Weekend Lectures; Saturday, March 7, 2009

MRI Seizure; **Ramon Figueroa**; Spring Pool Society Weekend Lectures; Saturday, March 7, 2009

Functional Evaluation of Brain with Advanced MRI

Ramon Figueroa Spring Pool Society Weekend Lectures; Saturday, March 7, 2009

Scott Forseen

Presentations

Scott Forseen, "CT Head and Spine Trauma" presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

Dr. John Greskovich

Awards

Dr. John Greskovich has received the Georgia Cancer Coalition Distinguished Clinician Award -- \$100,000 a year for 5 years

Abstract

Dr. Ahmad Al-Basheer, John Greskovich, Mary Boerste, "Adaptive Radiotherapy Treatment Re-planning for Head and Neck Cancer Patients." Abstract submitted to the AAPM.

Dr. Tom Hu

Awards

Tom Hu, PhD, has been invited to 2009 ISMRM 17th Annual Meeting Honolulu, Hawaii: April 18-24, 2009 to Chair, *Manganese Enhanced MRI: Methods & Applications*

Tom Hu, PhD, has been invited to be on the Editorial Board (Expert Consultant), *Magnetic Resonance Insights*

Tom Hu, PhD, has been invited to be an Ad Hoc Proposal Reviewer, A*STAR-NKTH Joint Grant Call Agency for Science, Technology and Research (A*STAR) and the Hungary National Office for Research and Technology (NKTH) Master Collaboration Agreement

Abstracts

Y. Yang, Y. Yang, B. Klein, **N. Yanasak**, X. Shi, W. D. Hill, **T. C.-C. Hu**, "Tracking Enhanced Green Fluorescence Protein (EGFP) and Micrometer-Sized Particles of Iron Oxide (MPIO) Labeled Mesenchymal Stem Cells (MSCs) in a Myocardial Infarction Model with Granulocyte-Colony Stimulating Factor (GCSF) Modulation", Proc. Intl. Soc. Magn. Reson. Med. 17, (Submitted 2008 for

F. Liu, B. Waghorn, J. Liu, **T. C.-C. Hu**, "Temporal Cardiac Manganese-Enhanced MRI with T₁-mapping in Mice following Myocardial Infarction", Proc. Intl. Soc. Magn. Reson. Med. 17, (Submitted 2008 for 2009 ISMRM meeting)

C. Gladin, L. Nguyen, C. Middleton, J. Liu, **N. Yanasak**, **T. C.-C. Hu**, "Using Magnanese-Enhanced MRI to Monitor the Efficacy of Angiotensin Converting Enzyme Inhibitor Treatment in a Murine Myocardial Infarction", Proc. Intl. Soc. Magn. Reson. Med. 17, (Submitted 2008 for 2009 ISMRM meeting)

S. Jacobs, S. Murph, M. Siegfried, S. Serkiz, **T. C.-C. Hu**, "Manganese - Gold Nanospheres as Positive Contrast Agents for Magnetic Resonance Imaging (MRI)", Proc. Intl. Soc. Magn. Reson. Med. 17, (Submitted 2008 for 2009 ISMRM meeting)

M. Siegfried, S. H. Murph, S. Jacobs, J. Liu, J.A. S. Hudson, **T. Hu**, S. Serkiz, "Cellular Uptake of Manganese based Nanomaterials", American Chemical Society National Meeting & Exposition, (Submitted 2008 for 2009 ISMRM meeting)

S. Murph, M. Siegfried, S. Serkiz, S. Jacobs, **T. Hu**, "Manganese- Bbased Nanomaterials as Positive Cell Labeling Contrast Agents for Magnetic Resonance Imaging (MRI)", American Chemical Society National Meeting & Exposition, (Submitted 2008 for 2009 ISMRM meeting)

B. Waghorn, Y. Yang, A. Baba, T. Matsuda, **N. Yanasak, T. C.-C. Hu**, "Assessing Manganese Efflux Using SEA0400 and Cardiac T₁-Mapping Manganese-Enhanced MRI in a Murine Model", Proc. Intl. Soc. Magn. Reson. Med. 17, (Submitted 2008 for 2009 ISMRM meeting)

Grant proposal submitted:

Autumn Schumacher (PI), **N. Yanasak, T. Hu**, S. Black (Co-Is) "MRI Cardia Biomarkers for Assessing Post-Myocardial Infarction in Aged Mice", RC1 NIH Challenge Grant, \$800,000 Direct costs

Autumn Schumacher (PI), **N. Yanasak, T. Hu**, J. Cannon (Co-Is) "Detecting Inflammation in Aging Rat Myocardium via MRI and Recurrence Quantification Analysis", PSRP Intramural Grant, \$25,000

Publications

Source: American Institute of Physics (AIP) Science Highlights of the 50th AAPM Meeting in Houston, July 27 to July 31
[http://www.newswise.com/articles/view/542895/ 2](http://www.newswise.com/articles/view/542895/2)) TRACKING STEM CELLS TO THE HEART "...For the first time, researchers have tracked [certain] stem cells in mice using magnetic resonance imaging (MRI) from their bone marrow origin to the injured site. This opens up the possibility of finding some therapeutic treatment to direct these cells after a heart attack..." **Tom C-C. Hu**

Book Chapter Submitted:

Comprehensive Toxicology, 2nd Edition "MANGANESE-ENHANCED MAGNETIC RESONANCE IMAGING (MEMRI): APPLICATIONS TO PRE-CLINICAL RESEARCH" **Tom C-C Hu**, Afonso C Silva, Ben Waghorn, **Nathan Yanasak**

[Waghorn B, Edwards T, Yang Y, Chuang KH, Yanasak N, Hu TC.](#)

Monitoring dynamic alterations in calcium homeostasis by T₁-weighted and T₂-mapping cardiac manganese-enhanced MRI in a murine myocardial infarction model. *NMR Biomed.* 2008 Sep 8. [Epub ahead of print] PMID: 18780285
[PubMed - as supplied by publisher]

E. Yanasak, J. D. Allison, Q. Zhao, and Tom C.-C. Hu. "The Use of Novel Gradient Directions with DTI to Synthesize Data with Complicated Diffusion Behavior". paper submission -- Medical Physics

NE Yanasak, JD Allison, Q Zhao (UGA), and TC-C Hu. "The Use of Novel Gradient Directions with DTI to Synthesize Data with Complicated Diffusion Behavior" was accepted for publication (*Medical Physics*).

T. C.-C. Hu, K-H. Chuang, **N. Yanasak,** A. P. Koretsky, "Improved Cardiac Manganese-Enhanced MRI (MEMRI) with T₁ Mapping in Rodent", *NMR Biomed.*, Accepted with Revision (2009)

B. Waghorn, Y. Yang, A. Baba, T. Matsuda, **N. Yanasak,** and **T. C.-C. Hu,** "Modulating Mn²⁺ Efflux with SEA0400, Using Cardiac T₁-Mapping Manganese-Enhanced MRI (MEMRI) in a Murine Model", *NMR Biomed.*, In Revision (2009)

T. C.-C. Hu, W. Bao, S. C. Lenhard, T. R. Schaeffer, P. Jacobs, T. Yue, R. N. Willette, B. M. Jucker, "In Vivo Monitoring of Inflammatory Cell Mobilization to Heart Following Myocardial Infarction", *NMR Biomed.*, In Revision (2009)

E. C. Henning, C. A. Ruetzler, M. R. Gaudinski, **T. C.-C. Hu,** L. L. Latour, J. M. Hallenbeck, S. Warach, "CNS-Resident Macrophages Are Essential Mediators of the Inflammatory Response Following Ischemia-Reperfusion", *J Cereb Blood Flow Metab*, Submitted (2009)

N. E. Yanasak, J. D. Allison, T. C.-C. Hu, Q. Zhao, "Synthesis of Complicated Diffusion Geometries Using Novel Gradient Directions with DTI: When a Peanut is a Doughnut or a Propeller", *Medical Physics*, Submitted (2009)

Tom Hu's research was featured in an article in *Image*, October 13, 2008

http://www.rt-image.com/The_Heart_of_Imaging_MRI_traces_path_of_stem_cells_to_site_of_MI/content=8904J05E48BE8C8640B69874448090441

Grant Proposals submitted

NIH / National Institute of Aging entitled "Assessing Heart Inflammation via Nonlinear Analysis of Magnetic Resonance Images." PI: Autumn Schumacher, Co-Is: **Tom Hu, Nathan Yanasak**, Joseph Cannon, \$404,250

NHLBI entitled "Stimulation of NO signaling during reproductive aging." PI: Stephen Black, Co-Is: **Tom Hu**, David Stepp, \$404,250

M. Siegfried, S. H. Murph, S. Jacobs, J. Liu, J.A. S. Hudson, **T. Hu**, S. Serkiz, "Cellular Uptake of Manganese based Nanomaterials", American Chemical Society National Meeting & Exposition, (Submitted 2008 for 2009 ISMRM meeting)

S. Murph, M. Siegfried, S. Serkiz, S. Jacobs, **T. Hu**, "Manganese- Bbased Nanomaterials as Positive Cell Labeling Contrast Agents for Magnetic Resonance Imaging (MRI)", American Chemical Society National Meeting & Exposition, (Submitted 2008 for 2009 ISMRM meeting)

B. Waghorn, Y. Yang, A. Baba, T. Matsuda, **N. Yanasak, T. C.-C. Hu**, "Assessing Manganese Efflux Using SEA0400 and Cardiac T₁-Mapping Manganese-Enhanced MRI in a Murine Model", Proc. Intl. Soc. Magn. Reson. Med. 17, (Submitted 2008 for 2009 ISMRM meeting)

New grants submitted

RSNA/AAPM web-based Instructional Module for Radiology residents (\$4,000, 1 year), entitled "Proposal for Web-Based Instructional Module for MRI Contrast Agents", **T Hu (PI), J Rawson, J Allison**

New Grants Approved

Georgia Research Alliance (GRA) VentureLab Phase I -- Principal Investigator, **Tom Hu**, Start: 02/28/2009 End: 06/30/2009; Project entitled: "Celtrast LLC" The goal of the Celtrast LLC is to develop novel MRI contrast agents as surrogate biomarkers that allow detection of calcium (Ca²⁺) movement so as to assess cellular dysfunction and disease progression at a level not currently possible. Direct Cost: \$50,000

NIH R21 PI: Autumn Schumacher, PhD – CO-Is: **Tom Hu and Nathan Yanasak**; Title: "Assessing Heart Inflammation via Nonlinear Analysis of Magnetic Resonance Imaging," The major goals of this project are to investigate the age-dependent links between cardiac structure / function and inflammation by incorporating MRI and novel nonlinear signal processing and analysis techniques. \$275,000 for 2 years

Presentations

B. Waghorn, Y. Yang, B. Klein, A. Baba, T. Matsuda, **N. Yanasak, T. C.-C. Hu**, "Modulating Mn²⁺ Efflux with SEA0400, Using Cardiac T₁-Mapping Manganese-Enhanced MRI (MEMRI) in a Murine Model" 50th AAPM Annual Meeting, Oral Presentation (2008)

Y. Yang, Y.H. Yang, B. Klein, **N. Yanasak**, X Shi, W.D. Hill, **T. C.-C. Hu**, "Magnetic Resonance Imaging to Track Mesenchymal Stem Cells (MSCs) in a Murine Myocardial Infarction Model" 50th AAPM Annual Meeting, Oral Presentation (2008)

N. Yanasak, J. D. Allison, Q. Zhao, **T. C.-C. Hu**, K. Dhandapani, "The Benefits of Non-Uniform Gradient Direction Specification in DTI: Simulations and Phantom Data" 50th AAPM Annual Meeting, Oral Presentation (2008)

B. Waghorn, T. Edwards, Y. Yang, **N. Yanasak, T. C.-C. Hu**, "Monitoring Dynamic Calcium Homeostasis Alterations by Cardiac Manganese-Enhanced MRI (MEMRI) with T₁ Mapping in a Murine Myocardial Infarction Model" 2008 World Molecular Imaging Congress (WMIC 2008), 137 (2008)-- As an oral presentation at 2008 World Molecular Imaging Congress, 10-13 September 2008, Nice, France.

B. Waghorn, Y. Yang, A. Baba, T. Matsuda, **N. Yanasak, T. C.-C. Hu**, "Effect of SEA0400 on Cardiac Mn²⁺ efflux rates, using T₁-Mapping Manganese-Enhanced MRI (MEMRI) in a Murine Model" 2008 World Molecular Imaging Congress (WMIC 2008), 1518 (2008)

Y. Yang, Y. Yang, B. Klein, **N. Yanasak**, X. Shi, W. D. Hill, **T. C.-C. Hu**, "Magnetic Resonance Imaging to Monitor Migration of Magnetically Labeled Mesenchymal Stem Cells in a Myocardial Infarction Model" 2008 World Molecular Imaging Congress (WMIC 2008), 1055 (2008)

Y. Yang, Y. Yang, **N. Yanasak, T. C.-C. Hu**, "Micrometer-Sized Particles of Iron Oxide (MPIO) Enhanced Cardiac MRI to Monitor Inflammatory Cells Infiltration in a Murine Myocardial Infarction Model" 2008 World Molecular Imaging Congress (WMIC 2008), 620 (2008)

HAC Submissions

Dr. Hadyn Williams (PI), Dr. Ghamande, Dr. Macfee, Dr. Allison, Dr. Hu, Dr. Josh Blackmon; Dr. Rawson to be added pending CITI HAC training. NIH/NCI ACRI 6671 – cervix cancer – "Utility of Preoperative PET-CT & USPIO MRI Prior to Primary Chemoradiation Therapy to Detect Retroperitoneal Lymph Node Metastasis in Patients with Locoregionally Advanced Carcinoma of the Cervix"

Patents

A non-provisional patent entitled "Systems and Methods for Parametric Mapping for Correction of Noise-based Systematic Bias of DTI Metrics, using a

DTI Mapping Phantom" (Co-Inventors: **Nathan Yanasak, Tom C.-C. Hu**) was filed on 01/15/08.

A non-provisional patent entitled "Systems and Methods for Rescaling Image Intensities with Diffusion MRI to Synthesize Complex Diffusive Geometries" (Co-Inventors: **Nathan Yanasak, Tom C.-C. Hu**) was filed on 01/15/08.

A non-provisional patent entitled "Systems and Methods for Parametric Mapping for Correction of Noise-based Systematic Bias of DTI Metrics, using a DTI Mapping Phantom" (Co-Inventors: **Nathan Yanasak, Tom C.-C. Hu**) was filed on 01/15/08.

A non-provisional patent entitled "Systems and Methods for Rescaling Image Intensities with Diffusion MRI to Synthesize Complex Diffusive Geometries" (Co-Inventors: **Nathan Yanasak, Tom C.-C. Hu**) was filed on 01/15/08.

Dr. Clarence Joe

Presentations

Vivek Dave and Clarence Joe, "CT Musculoskeletal Trauma" presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

MRI Osteomyelitis – **Clarence Joe / Vivek Dave** Sunday, March 8, 2009
Spring Pool Society Weekend Lectures

HAC Submissions:

PI: William Rosenblum, MD, Sub I:Eric Lincoln, MD, **Clarence Joe, MD**, Carol Terry, RN. "A Comparison of Immediate Versus Delayed Weight Bearing After Treatment of a Fracture of the Tibial Shaft with a Statically Locked Titanium Nail, a Randomized Prospective Study."

PI: William Rosenblum, MD, Sub I:Eric Lincoln, MD, **Clarence Joe, MD**, Carol Terry, RN. "Immediate Weight Bearing After Treatment of a Fracture of the Femoral Shaft with a Statically Locked Titanium Nail, a Randomized Study."

Dr. Kandace Klein

Abstract

Dr. Kandace Klein, Dr. James Rawson, "Breast Cancer Mortality in Georgia: Is there a relationship with the number of MQSA certified facilities in a county?"
Abstract submitted to RSNA 2009 Annual Meeting in Chicago, December 2009.

Presentation

Liver MRI -- **James Rawson, Kandy Klein** Spring Pool Society Weekend
Lectures Sunday, March 8, 2009

Dr. Gene Marnell

HAC Submissions

PI: Michael Edwards, MD; SubI's: **Eugene Marnell, MD**; Bruce MacFadyen, MD; John Mellinger, MD. "Development of a Multidisciplinary Treatment Center and Translational Research Program Focusing on Primary Hyperaldosteronism and other Adrenal Disorders; Identification of Immunohistochemical Biomarkers for Adrenal Tumors Using Gene Expression Profiling; Type 4 Serotonin Receptor Expression in Adrenocortical Tumors and Normal Adrenal Tissue"

Dr. Nahid Mivechi

Grant proposals submitted

Nahid Mivechi, (PI), Title: Role of HSP110 in Tauopathy, VA, (\$150,00, 1 year; \$650,000, all years)

NIH entitled "Function of HSPs in mouse models for human diseases." PI: Dimitrios Moskofidis, Co-I: **Nahid Mivechi**, \$1,291,361

NIH entitled "Role of heat shock factor Hsf1 in tumorigenesis." PI: **Nahid Mivechi**, \$1,837,500

Dr. Nahid Mivechi (PI) and Dr. Dimitrios Moskofidis, "Regulation and Function of Mammalian HSF4 in Vivo", NIH Research Grant, \$1,327,968 Total Cos

Dimitrios Moskofidis (PI) and **Dr. Nahid Mivechi** "Role of HSPs in animal models for human diseases", NIH Supplemental Request, \$440,000 Total C

Dr. Nahid F. Mivechi (PI) "Role of Heat Shock Factor 1 in Tumorigenesis"; NIH Research Grant, \$200,000 Direct Costs

Dr. Mivechi received a five year grant from NIH/National Cancer Institute for approximately 1.3 million dollars for the project entitled "Regulation and function of mammalian hsf4 in animal models."

New grants Approved:

Dr. Mivechi received a five year grant from NIH/National Cancer Institute for approximately 1.3 million dollars for the project entitled "Regulation and function of mammalian hsf4 in animal models."

Dr. James Rawson

Awards

James Rawson, Course Director: Pool Society Weekend, MCG, Augusta, Georgia, August 23-24, 2008

Abstracts

Dr. Kandace Klein, Dr. James Rawson, “Breast Cancer Mortality in Georgia: Is there a relationship with the number of MQSA certified facilities in a county?” Abstract submitted to RSNA 2009 Annual Meeting in Chicago, December 2009.

J. Allison (Lead Author), **J. Rawson** and **N. Yanasak** (Co-Authors). "Web-Based Instructional Module for MRI Pulse Sequences" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

Grant Proposal Submitted

DOD Deployment Related Medical Research Program (DRMRP) entitled “Detection and Early Rehabilitation of Brain Injury (DERBI) Study.” PI: Boyd Hunter, CO-Is: **James Rawson, Nathan Yanasak, Ramon Figueroa, John Vender**, \$594,615

New grants approved:

RSNA/AAPM web-based Instructional Module (\$4,000, 1 year), entitled "MRI Pulse Sequences", **J. Allison** (PI), **J. Rawson, N. Yanasak**

New grants submitted:

RSNA/AAPM web-based Instructional Module for Radiology residents (\$4,000, 1 year), entitled “Proposal for Web-Based Instructional Module for MRI Contrast Agents”, **T Hu** (PI), **J Rawson, J Allison**

Presentations:

James Rawson, “CT/MRI Renal Disease” presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

James Rawson, “CT Abdominal Trauma” presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

James Rawson, “Economics of CT Utilization” presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

Dr. James Rawson – with John Patti, MD, Richard Duszak, Jr. MD, Bibb Allen, Jr. MD, Christopher Ullrich, MD, Geraldine McGinty, MD for the RSNA Refresher Course -- *Radiology Reimbursement 2008 – 2009: How We Influence Our Economic Future* (In Conjunction with the American College of Radiology); RSNA 94th Scientific Assembly and Annual Meeting, Chicago, Illinois, Tuesday, December 2, 2008

Cardiac MRI – **James Rawson** / Gyanendra Sharma; Spring Pool Society Weekend Lectures; Sunday, March 8. 2009

Liver MRI -- **James Rawson, Kandy Klein** Spring Pool Society Weekend Lectures Sunday, March 8. 2009

MRI Gynecological Malignancies -- **James Rawson**; Spring Pool Society Weekend Lectures; Sunday, March 8, 2009

Fetal MRI – **James Rawson**; Spring Pool Society Weekend Lectures; Sunday, March 8, 2009

Open Clinical Trials

Liu A, Laird G, Li M, Scott J, Bhalla K, Coleman T, Jillella A, May A, Natarajan K, Samuel T, **Rawson J, Williams H**. A phase IA/II, two-arm, multi-center, open-label, dose-escalation study of LBH589 administered orally via different dosing schedules in adult patients with advanced hematological malignancies. Novartis. Accruing patients

HAC Submissions

Dr. Hadyn Williams (PI), Dr. Ghamande, Dr. Macfee, Dr. Allison, Dr. Hu, Dr. Josh Blackmon; Dr. Rawson to be added pending CITI HAC training. NIH/NCI ACRIN 6671 – cervix cancer – “Utility of Preoperative PET-CT & USPIO MRI Prior to Primary Chemoradiation Therapy to Detect Retroperitoneal Lymph Node Metastasis in Patients with Locoregionally Advanced Carcinoma of the Cervix”

Dr. Vincent Robinson

Dr. Vincent J.B. Robinson, has been appointed to a three-year term on the editorial board of the Canadian Cardiovascular Society’s *Canadian Journal of Cardiology*.

Dr. Chris Sheils

Awards

Dr. Chris Sheils was presented with the 2009 Outstanding Medical Student Teaching Award at the SOM Faculty Senate Awards ceremony on April 15, 2009

Dr. Veronica Solis

Publications

Williams HT, Solis V, Dillard TA, Gossage JR, Freant LJ. “Malignancy in Kaolin Pneumoconiosis found with F-18 FDG Positron Emission Tomography”. *Clinical Nuclear Medicine*. Jan 2008;33(1):4-7.

Dr. Gilberto Sostre

Awards

Dr. Gilberto Sostre, invited to be Guest examiner for the ABR oral examinations (Nuclear Radiology); May 30 – June 3, 2009

Dr. Gilberto Sostre has been invited to be a Guest Examiner for the ABR oral examinations -- [https://my.mcg.edu/portal/page/portal/News/archive/2009/Dr. Sostre named board examiner for American Board of Radiol](https://my.mcg.edu/portal/page/portal/News/archive/2009/Dr.Sostre%20named%20board%20examiner%20for%20American%20Board%20of%20Radiol)

Presentations:

Gilberto Sostre, “Role of CT in Pediatric Abdominal Masses” presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

Gilberto Sostre, “HRCT” presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

Dr. Suzanne Thigpen

Presentations

Dr. Suzanne Thigpen, “Breast Imaging,” American Medical Women’s Association (AMWA) MCG chapter – for Breast Cancer Awareness week, October 2008

Open Clinical Trials

Dr. Hadyn Williams, PI; Dr. Suzanne Thigpen and Dr. Jake Blackmon, SubInvestigators; Tom Lavin, Study Coordinator – “FDG-PET/CT as a Predictive Marker of Tumor Response and Patient Outcome: Prospective Validation in Non-Small Cell Lung Cancer.” ACRIN. Accruing patients

Dr. Hadyn Williams

Awards

Hadyn T. Williams, MD, appointed to the American College of Radiology Council Steering Committee (CSC) Subcommittee for revision of Practice Guidelines for Nuclear Medicine Procedures, October, 2008.

Hadyn T. Williams, MD, has been appointed as the ACNP (American College of Nuclear Physicians) alternate delegate to the AMA (American Medical Association) House of Delegates.

Hadyn T. Williams, MD, has been appointed to Editorial Board, *Clinical Nuclear Medicine*

Hadyn T. Williams, MD has been appointed as a Reviewer for the *Journal of Thoracic Oncology*.

Abstracts

J.S. Beatty MD, **H.T. Williams MD**, A.L. Gucwa MD, S.S. Khichi BS, B.A. Nattier MD, G.S. David MS, D.S. Lind MD, E.J. Kruse DO, J.M. McLoughlin MD. “What Is The Clinical Significance Of Lesions Detected By PET/CT That Are Suspicious For A Second Primary Malignancy?”, Abstract accepted for presentation at the Society of University Surgeons, Academic Surgical Congress, February 6 - 9, 2009.

J.S. Beatty MD, **H.T. Williams MD**, S.S. Khichi BS, A.L. Gucwa MD, B.A. Nattier MD, G.S. David MS, D.S. Lind MD, E.J. Kruse DO, J.M. McLoughlin MD., “Incidental PET/CT Findings in the Cancer Patient: How Should They Be

Managed?", Abstract accepted for presentation at the Society of Surgical Oncology, Annual Cancer Symposium, March 5 - 9, 2009.

Publications

CG Gourin, TL Watts, **H.T. Williams**, VS Patel, PA Bilodeau, TA Coleman. "Identification of Distant Metastases with PET-CT in Patients with Previously Untreated Head and Neck Cancer." *Laryngoscope*. 2008 Jan 14.

Williams HT, Solis V, Dillard TA, Gossage JR, Freant LJ. "Malignancy in Kaolin Pneumoconiosis found with F-18 FDG Positron Emission Tomography". *Clinical Nuclear Medicine*. Jan 2008;33(1):4-7.

George David, Deborah Gibbs, Hadyn Williams. "A Comprehensive PET/CT Database for Tracking Patient Variables", published in the September/October, 2008, issue of *Radiology Management*.

Grant proposal submitted

Z. Cao (Lead Author), **J. Allison** and **H. Williams**(Co-Authors). "An Image Quality Based Approach to Teaching Gamma Camera" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

Z. Cao (Lead Author), **J. Allison** and **H. Williams**(Co-Authors). "An Image Quality Based Approach to teaching PET" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

Presentations

Hadyn Williams, "PET/CT Lung Cancer" presented to Pool Society Weekend, Augusta, Georgia, August 23 & 24, 2008

PET/CT to identify penile squamous cell carcinoma (SCCA) metastatic lymph nodes: friend or foe? Matthew A. Collins MD, **Hadyn Williams** and James A. Brown MD Society of Urologic Oncology 9th Annual Meeting, Dec 4-6, 2008, Bethesda, MD.

PET/CT to identify bladder transitional cell carcinoma (TCC) postchemotherapy metastatic lymph nodes. Matthew Collins, MD, **Hadyn Williams**, MD, Teresa Coleman, MD and James Brown, MD. Society of Urologic Oncology 9th Annual Meeting, Dec 4-6, 2008, Bethesda, MD.

Relationship of FDG PET-CT SUV values and accuracy in head and neck squamous cell cancer surveillance. Lacey Adkins BS, Paul Weinberger MD, Teresa Coleman MD, **Hadyn Williams** MD, Christine Gourin MD, Lana Jackson MD. American Medical Association Eastern Regional Research Conference. December, 2008.

Incidental PET/CT findings in the cancer patient: How should they be managed?

John S. Beatty MD, **Hadyn T. Williams** MD, Beau A. Aldridge BS, Matthew P. Hughes BS, Viren S. Vasudeva BA, Angela L. Gucwa MD, D. Scott Lind MD, E. James Kruse DO, James M. McLoughlin MD. 2009 Fourth Annual Academic Surgical Congress, February 3-6, 2009, Fort Meyers, FL.

What is the clinical significance of lesions detected by PET/CT that are suspicious for a second primary malignancy? J.S. Beatty MD, **H.T. Williams** MD, A.L. Gucwa MD, S.S. Khichi BS, B.A. Nattier MD, D.Gibbs, CNMT, **G.S. David** MS, D.S. Lind MD, E.J. Kruse DO, J.M. McLoughlin MD. Society of Surgical Oncology 62nd Annual Cancer Symposium, March 5-8, 2009, Phoenix, AZ.

The predictive value of PET/CT findings suspicious for colorectal cancer in patients with non-gastrointestinal malignancies. John S. Beatty MD, **Hadyn T. Williams** MD, Beau A. Aldridge BS, Matthew P. Hughes BS, Viren S. Vasudeva BA, Angela L. Gucwa MD, D. Scott Lind MD, E. James Kruse DO, James M. McLoughlin MD. Society of American Gastrointestinal and Endoscopic Surgeons SAGES 2009 Scientific Session. April 22-25, 2009, in Phoenix, AZ.

The predictive value of incidental PET/CT findings suspicious for breast cancer in women with non-breast malignancies. John S. Beatty MD, **Hadyn T. Williams** MD, Beau A. Aldridge BS, Matthew P. Hughes BS, Viren S. Vasudeva BA, Angela L. Gucwa MD, D. Scott Lind MD, E. James Kruse DO, James M. McLoughlin MD. American Society of Breast Surgeons 10th Annual Meeting, April 22 – 26, 2009, San Diego, CA.

Revisiting the role of PET-CT in determining the need for planned neck dissection following chemoradiation for advanced head and neck cancer. Christine G. Gourin, Brian J. Boyce, **Hadyn T. Williams**, Anne V. Herdman, Paul A. Bilodeau, Teresa A. Coleman. American Laryngological, **Rhinological & Otological Society (TRIO)** - Annual **Meeting**, Phoenix , AZ Medical. **May** 29-30, **2009**.

HAC Submissions

Sharad Ghamande, (PI), Michael Macfee, (Sub-I), **Hadyn Williams**, (Sub-I), Study title: A Randomized Phase II Trial Comparing EC145 and Pegylated Liposomal Doxorubicin (PLD/Doxilr/Caelyxr) in Combination Versus PLD Alone in Subjects with Platinum-Resistant Ovarian Cancer – Protocol: EC-FV-04

Dr. Hadyn Williams (PI), Dr. Eileen Dickman, “Utility of Preoperative FDG-PET/CT and Ferumoxtran-10 MRI Scanning Prior to Primary Chemoradiation Therapy to Detect Retroperitoneal Lymph Node Metastasis in Patients with Locoregionally Advanced (IB2, IIA \geq 4CM, IIB-IVA) Carcinoma of the Cervix”

Dr. Hadyn Williams (PI), Dr. Ghamande, Dr. Macfee, Dr. Allison, Dr. Hu, Dr. Josh Blackmon; Dr. Rawson to be added pending CITI HAC training. NIH/NCI ACRIN 6671 – cervix cancer – “Utility of Preoperative PET-CT & USPIO MRI Prior to Primary Chemoradiation Therapy to Detect Retroperitoneal Lymph Node Metastasis in Patients with Locoregionally Advanced Carcinoma of the Cervix”

Dr. Hadyn Williams (PI), Dr. Eileen Dickman, “Utility of Preoperative FDG-PET/CT and Ferumoxtran-10 MRI Scanning Prior to Primary Chemoradiation Therapy to Detect Retroperitoneal Lymph Node Metastasis in Patients with Locoregionally Advanced (IB2, IIA \geq 4CM, IIB-IVA) Carcinoma of the Cervix”

Open Clinical Trials

Liu A, Laird G, Li M, Scott J, Bhalla K, Coleman T, Jillella A, May A, Natarajan K, Samuel T, **Rawson J, Williams H**. A phase IA/II, two-arm, multi-center, open-label, dose-escalation study of LBH589 administered orally via different dosing schedules in adult patients with advanced hematological malignancies. Novartis. Accruing patients

Dr. Hadyn Williams, PI; Dr. Suzanne Thigpen and Dr. Jake Blackmon, Sub-Investigators; Tom Lavin, Study Coordinator – “FDG-PET/CT as a Predictive Marker of Tumor Response and Patient Outcome: Prospective Validation in Non-Small Cell Lung Cancer.” ACRIN. Accruing patients

ACRIN –

Dr. Williams received final approval for the NIH/NCI-sponsored ACRIN Research Protocol 6678, "FDG-PET/CT as a Predictive Marker of Tumor Response and Patient Outcome: Prospective Validation in Non-small Cell Lung Cancer."

Dr. Nathan Yanasak

Awards

Nathan Yanasak has been selected to be the Chair of AAPM's Task Group #118 for 2009-(end of group, probably), developing QA standards for parallel imaging.

Abstracts

Y. Yang, Y. Yang, B. Klein, **N. Yanasak**, X. Shi, W. D. Hill, **T. C.-C. Hu**, "Tracking Enhanced Green Fluorescence Protein (EGFP) and Micrometer-Sized Particles of Iron Oxide (MPIO) Labeled Mesenchymal Stem Cells (MSCs) in a Myocardial Infarction Model with Granulocyte-Colony Stimulating Factor (GCSF) Modulation", Proc. Intl. Soc. Magn. Reson. Med. 17, (Submitted 2008 for 2009 ISMRM meeting)

B. Waghorn, Y. Yang, A. Baba, T. Matsuda, **N. Yanasak**, **T. C.-C. Hu**, "Assessing Manganese Efflux Using SEA0400 and Cardiac T₁-Mapping Manganese-Enhanced MRI in a Murine Model", Proc. Intl. Soc. Magn. Reson. Med. 17, (Submitted 2008 for 2009 ISMRM meeting)

C. Gladin, L. Nguyen, C. Middleton, J. Liu, **N. Yanasak**, **T. C.-C. Hu**, "Using Magnanese-Enhanced MRI to Monitor the Efficacy of Angiotensin Converting Enzyme Inhibitor Treatment in a Murine Myocardial Infarction", Proc. Intl. Soc. Magn. Reson. Med. 17, (Submitted 2008 for 2009 ISMRM meeting)

Nathan Yanasak and **Jerry Allison**, "A Web-Based Educational Application for Exploration of K-Space Properties", submitted to the AAPM meeting (Anaheim, July 2009)

Jerry Allison and **Nathan Yanasak**, "Improving MRI Physics for Radiology Residents: Year One", submitted to the AAPM meeting (Anaheim, July 2009)

Publications --

An article from **N. Yanasak** was accepted by *Enterprise Imaging* magazine as the cover story of the February 2009 issue. The article is entitled "The Growing Importance of Parallel Imaging in MRI", detailing the importance of this technique as well as the extra technical considerations important for being able to monitor quality of performance.
(non-peer reviewed)

Book Chapter Submitted: Comprehensive Toxicology, 2nd Edition
"MANGANESE-ENHANCED MAGNETIC RESONANCE IMAGING (MEMRI): APPLICATIONS TO PRE-CLINICAL RESEARCH"
Tom C-C Hu, Afonso C Silva, Ben Waghorn, **Nathan Yanasak**

[Waghorn B, Edwards T, Yang Y, Chuang KH, Yanasak N, Hu TC.](#)

Monitoring dynamic alterations in calcium homeostasis by T (1)-weighted and T (1)-mapping cardiac manganese-enhanced MRI in a murine myocardial infarction model.

NMR Biomed. 2008 Sep 8. [Epub ahead of print]

PMID: 18780285 [PubMed - as supplied by publisher]

N. E. Yanasak, J. D. Allison, Q. Zhao, and Tom C.-C. Hu. "The Use of Novel Gradient Directions with DTI to Synthesize Data with Complicated Diffusion Behavior".paper submission -- Medical Physics

NE Yanasak, JD Allison, Q Zhao (UGA), and TC-C Hu. "The Use of Novel Gradient Directions with DTI to Synthesize Data with Complicated Diffusion Behavior" was accepted for publication (*Medical Physics*).

Article by **Nathan Yanasak**, entitled "Parallel Imaging: Working in Parallel", will be published as the February '09 cover story for *Enterprise Imaging & Therapeutic Radiology Management*.

T. C.-C. Hu, K-H. Chuang, **N. Yanasak**, A. P. Koretsky, "Improved Cardiac Manganese-Enhanced MRI (MEMRI) with T1 Mapping in Rodent", *NMR Biomed.*, Accepted with Revision (2009)

B. Waghorn, Y. Yang, A. Baba, T. Matsuda, **N. Yanasak**, and **T. C.-C. Hu**, "Modulating Mn²⁺ Efflux with SEA0400, Using Cardiac T1-Mapping Manganese-Enhanced MRI (MEMRI) in a Murine Model", *NMR Biomed.*, In Revision (2009)

N. E. Yanasak, **J. D. Allison**, **T. C.-C. Hu**, Q. Zhao, "Synthesis of Complicated Diffusion Geometries Using Novel Gradient Directions with DTI: When a Peanut is a Doughnut or a Propeller", *Medical Physics*, Submitted (2009)

N. Yanasak and **J. Allison**, "Synthesizing Crossing ADC Distributions Via Reassembly of Multiple k-Spaces". Paper submitted to the MICCAI conference (London, Sept. 2009)

Grant proposals submitted

N. Yanasak (Lead Author), **J. Allison** and **R. Figueroa-Ortiz** (Co-Authors). "An Intuitive Approach to Teaching MRI Image Formation, Using a Musical Analog" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

J. Allison (Lead Author), **J. Rawson** and **N. Yanasak** (Co-Authors). "Web-Based Instructional Module for MRI Pulse Sequences" submitted to the RSNA/AAPM as a proposal to develop a web-based education module for Radiology residents (\$4,000)

K. Dhandapani (PI), and **N. Yanasak** (Co-I), "HMGB1 and Traumatic Brain Injury," NIH, (\$1,837,500)

RO1 entitled "HMGB1 & Traumatic Brain Injury" resubmitted to NIH. PI: Krishnan Dhandapani, Co-Is: **N. Yanasak**, J. Vender, \$2.8 million

NIH / National Institute of Aging entitled "Assessing Heart Inflammation via Nonlinear Analysis of Magnetic Resonance Images." PI: Autumn Schumacher, Co-Is: **Tom Hu**, **Nathan Yanasak**, Joseph Cannon, \$404,250

DOD Deployment Related Medical Research Program (DRMRP) entitled "Detection and Early Rehabilitation of Brain Injury (DERBI) Study." PI: Boyd

Hunter, CO-Is: **James Rawson, Nathan Yanasak, Ramon Figueroa**, John Vender, \$594,615

Autumn Schumacher (PI), **N. Yanasak, T. Hu**, S. Black (Co-Is) "MRI Cardiac Biomarkers for Assessing Post-Myocardial Infarction in Aged Mice", RC1 NIH Challenge Grant, \$800,000 Direct costs

Autumn Schumacher (PI), **N. Yanasak, T. Hu**, J. Cannon (Co-Is) "Detecting Inflammation in Aging Rat Myocardium via MRI and Recurrence Quantification Analysis", PSRP Intramural Grant, \$25,000

New Grants Approved

RSNA/AAPM web-based Instructional Module (\$4,000, 1 year), entitled "MRI Image Formation", **N. Yanasak (PI), R. Figueroa-Ortiz, J. Allison**

RSNA/AAPM web-based Instructional Module (\$4,000, 1 year), entitled "MRI Pulse Sequences", **J. Allison (PI), J. Rawson, N. Yanasak**

NIH R21 PI: Autumn Schumacher, PhD – CO-Is: **Tom Hu and Nathan Yanasak**; Title: "Assessing Heart Inflammation via Nonlinear Analysis of Magnetic Resonance Imaging." The major goals of this project are to investigate the age-dependent links between cardiac structure / function and inflammation by incorporating MRI and novel nonlinear signal processing and analysis techniques. \$275,000 for 2 years

Presentations

B. Waghorn, Y. Yang, B. Klein, A. Baba, T. Matsuda, **N. Yanasak, T. C.-C. Hu**, "Modulating Mn²⁺ Efflux with SEA0400, Using Cardiac T₁-Mapping Manganese-Enhanced MRI (MEMRI) in a Murine Model" 50th AAPM Annual Meeting, Oral Presentation (2008)

Y. Yang, Y.H. Yang, B. Klein, **N. Yanasak**, X Shi, W.D. Hill, **T. C.-C. Hu**, "Magnetic Resonance Imaging to Track Mesenchymal Stem Cells (MSCs) in a Murine Myocardial Infarction Model" 50th AAPM Annual Meeting, Oral Presentation (2008)

N. Yanasak, J. D. Allison, Q. Zhao, **T. C.-C. Hu**, K. Dhandapani, "The Benefits of Non-Uniform Gradient Direction Specification in DTI: Simulations and Phantom Data" 50th AAPM Annual Meeting, Oral Presentation (2008)

B. Waghorn, T. Edwards, Y. Yang, **N. Yanasak, T. C.-C. Hu**, "Monitoring Dynamic Calcium Homeostasis Alterations by Cardiac Manganese-Enhanced MRI (MEMRI) with T₁ Mapping in a Murine Myocardial Infarction Model" 2008 World Molecular Imaging Congress (WMIC 2008), 137 (2008)-- As an oral

presentation at 2008 World Molecular Imaging Congress, 10-13 September 2008, Nice, France.

B. Waghorn, Y. Yang, A. Baba, T. Matsuda, **N. Yanasak**, **T. C.-C. Hu**, "Effect of SEA0400 on Cardiac Mn^{2+} efflux rates, using T_1 -Mapping Manganese-Enhanced MRI (MEMRI) in a Murine Model" 2008 World Molecular Imaging Congress (WMIC 2008), 1518 (2008)

Y. Yang, Y. Yang, B. Klein, **N. Yanasak**, X. Shi, W. D. Hill, **T. C.-C. Hu**, "Magnetic Resonance Imaging to Monitor Migration of Magnetically Labeled Mesenchymal Stem Cells in a Myocardial Infarction Model" 2008 World Molecular Imaging Congress (WMIC 2008), 1055 (2008)

Y. Yang, Y. Yang, **N. Yanasak**, **T. C.-C. Hu**, "Micrometer-Sized Particles of Iron Oxide (MPIO) Enhanced Cardiac MRI to Monitor Inflammatory Cells Infiltration in a Murine Myocardial Infarction Model" 2008 World Molecular Imaging Congress (WMIC 2008), 620 (2008)

N. Yanasak presented a poster (entitled "Non-Uniform Gradient Prescription for Precise Angular Measurements Using DTI") at the Medical Image Computing and Computer-Assisted Intervention conference in NYC (MICCAI 2008).

Dr. Nathan Yanasak served as the director for the 2008 RSNA Refresher Course RC723 (Mini course: *Innovations and Advances in Medical Imaging Technology-Innovations and Advances in MR Imaging Technology: Parallel Imaging*). In addition, he gave a presentation entitled "*Clinical Applications and Image Quality Issues in Parallel Imaging*".

Parallel Imaging: Techniques and Clinical Applications– **Nathan Yanasak**
Spring Pool Society Weekend Lectures; Saturday, March 7, 2009

C. Wright, **N. Yanasak**, and A. Hauger, "Optimized Field Gradient Directions in Diffusion Tensor Imaging" –, given at the Phi Kappa Phi Student Honors Society at Augusta State University

Nathan Yanasak was invited to give a talk entitled "On the Benefits of Non-Uniform Gradient Prescriptions in DTI" in a special session of the IMACS World Congress (Computational and Applied Mathematics & Applications in Science and Engineering) (Athens, GA, Aug. 2009)

Nathan Yanasak gave a talk to the SOM Monthly Basic Science Conference on 4/17/09, entitled "An Introduction to Small Animal Imaging using Magnetic Resonance Imaging (MRI)"

Nathan Yanasak was invited to give a talk as part of the morning CE program at the 2009 AAPM meeting (Anaheim). The talk will be entitled "Diffusion Imaging: What it Can Tell Us about Cancer"

Patents

A non-provisional patent entitled "Systems and Methods for Parametric Mapping for Correction of Noise-based Systematic Bias of DTI Metrics, using a DTI Mapping Phantom" (Co-Inventors: **Nathan Yanasak, Tom C.-C. Hu**) was filed on 01/15/08.

A non-provisional patent entitled "Systems and Methods for Rescaling Image Intensities with Diffusion MRI to Synthesize Complex Diffusive Geometries" (Co-Inventors: **Nathan Yanasak, Tom C.-C. Hu**) was filed on 01/15/08.

A non-provisional patent entitled "Systems and Methods for Parametric Mapping for Correction of Noise-based Systematic Bias of DTI Metrics, using a DTI Mapping Phantom" (Co-Inventors: **Nathan Yanasak, Tom C.-C. Hu**) was filed on 01/15/08.

A non-provisional patent entitled "Systems and Methods for Rescaling Image Intensities with Diffusion MRI to Synthesize Complex Diffusive Geometries" (Co-Inventors: **Nathan Yanasak, Tom C.-C. Hu**) was filed on 01/15/08.