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St. Jude Children's Research Hospital
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1. Current Position at St. Jude

Assistant Member Department of Diagnostic Imaging St. Jude Children's Research Hospital Memphis, TN 38105	July 2020 - Present
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2. Education and Training

B.E, Biotechnology, Panjab University	2003 - 2007
Ph.D., Neurochemistry, Jawaharlal Nehru University	2007 - 2014

3. Professional Career

Post-Doctoral Research, Department of Radiology, Perelman School of Medicine, University of Pennsylvania	May 2014 - March 2018
Research Associate, Department of Radiology, Perelman School of Medicine, University of Pennsylvania	March 2018 - June 2020

4. Professional Memberships

International Society for Magnetic Resonance in Medicine (ISMRM)
 World Molecular Imaging Society (WMIS)
 NMR Society of India (NMRS)

5. Honors and Awards

All India Rank 1 in CEEB test conducted by Jawaharlal Nehru University, New Delhi	2007
Bachelor of Engineering with Honors, Panjab University	2007
All India Rank 22 in Graduate Aptitude Test in Engineering (GATE), India	2007
Travel Grant from Department of Biotechnology, Govt. of India	2012
Travel Grant from Council for Scientific and Industrial Research, Govt. of India	2013
Suma cum Laude for the abstract at the 24 th Annual meeting of the International Society for Magnetic Resonance in Medicine, Singapore	2016
Junior Fellow Award from the International Society of Magnetic Resonance in Medicine (ISMRM)	2016
Travel Grant from Biomedical Postdoctoral Council, University of Pennsylvania to attend 24 th and 25 th Annual meetings of the International Society for Magnetic Resonance in Medicine	2016,2017
Magna cum Laude for the abstract at the 25 th Annual meeting of the International Society for Magnetic Resonance in Medicine, Singapore	2017
Student Stipend Award at the World Molecular Imaging Congress Meeting	2017,2018

Educational Stipend from the International Society of Magnetic Resonance in Medicine (ISMRM)	2012,17,18,19
Moderated Scientific Session at the Annual meeting of ISMRM	2020
Appointed Associate Member of the St Jude Comprehensive Cancer Center Program	2020
Poster abstract reviewer at the St Jude Data Sciences Symposium	2022

6. Patents

1. Reddy R, Haris M, Hariharan H, Bagga P, Marincola FM, Schnall M. Non-nutritive sweeteners and polyols as imaging agents US Patent App. 16/075,395
2. Reddy R, Hariharan H, DeBrosse C, Nanga RPR, Bagga P. Chemical exchange saturation transfer (CEST) imaging of lactate (LATEST). United States Patent (US2017/0227619)

7. Publication Record

A. Peer Reviewed Publications

i. Original Research Articles:

1. Bagga P and Patel AB. Regional Cerebral metabolism in mouse under chronic manganese exposure: Implications for Manganism. (2012) *Neurochem Int* 60:177-85
2. Bagga P, Chugani AN, Varadarajan KS, Patel AB. In vivo NMR studies of regional cerebral energetics in MPTP Model of Parkinson's Disease: Recovery of Cerebral Metabolism with Acute Levodopa Treatment. (2013) *J Neurochem* 127:365-77
3. Veeraiyah P, Noronha JM, Maitra S, Bagga P, Khandelwal N, Chakravarty S, Kumar A, Patel AB. Dysfunctional Glutamatergic and GABAergic activities in prefrontal cortex of mice in social defeat model of depression. (2013) *Biol Psychiatry* 76:231-38
4. Bagga P, Behar KL, Mason GF, De Feyter H, Rothman DL, Patel AB. Evidence for plasma glutamine uptake by brain: Implications for metabolic modeling of ¹³C NMR data. (2014) *J Cereb Blood Flow Metab* 34:1666-72
5. DeBrosse C, Nanga R, Bagga P, Nath K, Haris M, Marincola F, Schnall M, Hariharan H, Reddy R. Lactate Chemical Exchange Saturation Transfer (LATEST) Imaging in vivo: A biomarker for LDH activity. (2015) *Sci Rep* 6:19517
6. Bagga P, Chugani AN and Patel AB. Neuroprotective effects of caffeine in MPTP model of Parkinson's Disease: A ¹³C NMR study. (2016) *Neurochem Int* 92:25-34
7. Haris M, Singh A, Reddy S, Bagga P, Kneeland BJ, Tjoumakaris FP, Hariharan H, Marincola FM, Reddy R. Characterization of viscosupplementation formulations using chemical exchange saturation transfer (ViscoCEST). (2016) *J Transl Med* 14:92
8. Bagga P and Patel AB. Pretreatment of caffeine leads to partial neuroprotection in MPTP model of Parkinson's Disease. (2016) *Neural Regen Res* 11:1750-51
9. Bagga P, Crescenzi R, Krishnamoorthy G, Nanga RP, Garimall S, D'Aquila K, Reddy D, Greenberg JH, Detre JA, Hariharan H and Reddy R, GluCEST as an imaging biomarker for metabolic and motor function alterations in mouse model of Parkinson's disease. (2016) *J Neurochem* 139:432-439
10. Krishnamoorthy G, Nanga R, Bagga P, Hariharan H, Reddy R. High sensitivity 3D gagCEST imaging of in vivo human knee cartilage at 7T. (2016) *Magn Res Med* 77:1866-73
11. Bagga P, Haris M, D'Aquila K, Wilson NE, Marincola FM, Schnall MD, Hariharan H and Reddy R, Non-caloric sweetener provides magnetic resonance imaging contrast for cancer detection. (2017) *J Transl Med* 15:119
12. Haris M, Bagga P, Hariharan H, McGettigan-Croce B, Johnson L and Reddy R, Molecular imaging biomarkers for cell-based immunotherapies. (2017) *J Transl Med* 15:140
13. Bagga P, Pickup S, Crescenzi R, Martinez D, Borthakur A, D'Aquila K, Singh A, Verma G, Detre JA, Greenberg J, Hariharan H, Reddy R. In vivo GluCEST MRI: Reproducibility, background contribution and source of glutamate changes in the MPTP model of Parkinson's disease. (2018) *Sci Rep* 8:2883

14. Zhou R, [Bagga P](#), Nath K, Hariharan H, Mankoff D, Reddy R. Glutamate-weighted chemical exchange saturation transfer magnetic resonance imaging (GluCEST MRI) detects glutaminase inhibition in a mouse model of triple-negative breast cancer. (2018) *Cancer Res* 78:5521-5526
15. [Bagga P](#), Wilson N, Rich L, Marincola FM, Schnall MD, Hariharan H, Haris M, Reddy R. Sugar alcohol provides imaging contrast in cancer detection. (2019) *Sci Rep* 9:11092
16. Nisar S, Hashem S, Bhat AA, Yadav SK, Azeem MW, [Bagga P](#), Uddin S, Reddy R. Association of genes with phenotype in autism spectrum disorder. (2019) *Aging (Albany NY)* 11:10742-770
17. Singh A, Debnath A, Cai K, [Bagga P](#), Haris M, Hariharan H, Reddy R. Evaluating Feasibility of Creatine-weighted CEST MRI in Human Brain at 7T using Z-spectral Fitting Approach (2019) *NMR Biomed* 32:e4176
18. Bhat AA, Syed N, Azeez L, Nisar S, Hashem S, Macha MA, Yadav SA, Krishnakutty R, Shanmagaonkar M, Al-Naemi H, [Bagga P](#), Reddy R, Dhawan P, Akobeng A, Uddin S, Frenneaux MP, El-Rifai W, Haris M. Claudin-1; A double-edged sword in cancer. (2020) *Int J Mol Sci* 21:569
19. [Bagga P](#), Hariharan H, D'Aquila K, Wilson N, Elliot M, Nanga RPR, Haris M, Detre J, Reddy R. Single-Voxel ¹H MR spectroscopy of cerebral nicotinamide adenine dinucleotide (NAD⁺) in humans at 7T using 32-channel volume coil. (2020) *Magn Reson Med* 83:806-814
20. Rich LR, [Bagga P](#), Wilson NE, Schnall MD, Detre JA, Haris M, Reddy R. ¹H magnetic resonance spectroscopy of ²H-to-¹H exchange quantifies the dynamics of cellular metabolism in vivo. (2020) *Nat Biomed Engg* 4:335-342
21. Nisar S, Bhat AA, Hashem S, Syed N, Yadav SK, Uddin S, Fakhro K, [Bagga P](#), Thompson P, Reddy R, Frenneaux MP, Haris M. Genetic and Neuroimaging Approaches to Understanding Post-Traumatic Stress Disorder. (2020) *Int J Mol Sci* 21:4503
22. Hashem S, Nisar S, Bhat AA, Yadav SK, Azeem MW, [Bagga P](#), Fakhro K, Reddy R, Frenneaux MP, Haris M. Genetics of structural and functional brain changes in autism spectrum disorder. (2020) *Transl Psychiatry*. 10:229
23. Parker KR, Migliorini D, Perkey E, Yost KE, Bhaduri A, [Bagga P](#), Haris M, Wilson NE, Liu F, Gabunia K, Scholler J, Montine TJ, Bhoj VG, Reddy R, Mohan S, Maillard I, Kriegstein AR, June CH, Chang HY, Posey AD, Satpathy AT. CD19 expression in human brain mural cells as a target of immunotherapy-associated neurotoxicity. (2020) *Cell*. 183: 126-142
24. Nisar S, Bhat AA, Hashem S, Yadav SK, Rizwan A, Singh M, [Bagga P](#), Macha MA, Frenneaux MP, Reddy R, Haris M. Non-invasive biomarkers for monitoring the immunotherapeutic response to cancer. (2020) *J Transl Med*.18:471
25. Nisar S, Bhat AA, Singh M, Karedath T, Rizwan A, Hashem S, [Bagga P](#), Reddy R, Jamal F, Uddin S, Chand G, Bedognetti D, El-Rifai W, Frenneaux MP, Macha MA, Ahmed I, Haris M. Insights into the role of CircRNAs: Biogenesis, characterization, functional, and clinical impact in human malignancies. (2021) *Front Cell Dev Biol* 9:617281
26. Bhat AA, Nisar S, Maacha S, Carneiro-Lobo TC, Akhtar S, Siveen KS, Wani NA, Rizwan A, [Bagga P](#), Singh M, Reddy R, Uddin S, Grivel JC, Chand G, Frenneaux MP, Siddiqi MA, Bedognetti D, El-Rifai W, Macha MA, Haris M. Cytokine-chemokine network driven metastasis in esophageal cancer; promising avenue for targeted therapy. (2021) *Mol Cancer* 20:2
27. Amjad S, Nisar S, Bhat AA, Shah AR, Frenneaux MP, Fakhro K, Haris M, Reddy R, Patay Z, Baur J, [Bagga P](#). Role of NAD⁺ in cellular metabolism and signaling pathways, (2021) *Molecular Metabolism* 10:1195
*Corresponding author
28. Yadav S, Bhat AA, Hashem S, Nisar S, Kamal M, Syed N, Temanni M, Gupta R, Kamran S, Azeem M, Srivastava A, [Bagga P](#), Chawla S, Reddy R, Frenneaux M, Fakhro K, Haris M. Genetic Variations Influence Brain Changes in Patients with Attention Deficit Hyperactivity Disorder; (2021) *Transl Psych* 11:349
29. Lone SN, Bhat AA, Wani NA, Karedath T, Hashem S, Nisar S, Singh M, [Bagga P](#), Das BC, Bedognetti D, Frenneaux MP, Reddy R, El-Rifai W, Haris M, Siddiqi M. miRNAs as Novel Immunoregulators in Cancer; (2021) *Sem Cell Dev Biol* 124:3-14
30. Driscoll N, Erickson B, Murphy BB, Richardson AG, Robbins G, Apollo NV, Mathis T, Hantanasirisakul K, [Bagga P](#), Gullbrand S, Sergison M, Reddy R, Wolf JA, Chen I, Lucas TH, Dillingham T, Davis KA, Gogotsi Y, Medaglia JD, Vitale F. MXtrodes: MXene-infused bioelectric interfaces for multiscale electrophysiology and stimulation; (2021) *Sci Transl Med* 13:eabf8629
31. Chauhan R, Bhat AA, Masoodi T, [Bagga P](#), Reddy R, Gupta A, Sheikh ZA, Macha MA, Haris M, Singh M. Ubiquitin-specific peptidase 37: an important cog in the oncogenic machinery of cancerous cells; (2021) *J Exp Clin Cancer Res* 40:356

32. Cember ATJ, Wilson NE, Rich LJ, Bagga P, Nanga RPR, Swago S, Swain A, Thakuri D, Elliot M, Schnall MD, Detre JA, Reddy R. Integrating ^1H MRS and deuterium labeled glucose for mapping the dynamics of neural metabolism in humans; (2022) *Neuroimage* 251:118977
33. Mehraj U, Alshehri B, Khan AA, Bhat AA, Bagga P, Wani NA, Mir MA. Expression Pattern and Prognostic Significance of Chemokines in Breast cancer: An Integrated Bioinformatics Analysis; (2022) *Clin Breast Cancer*
34. Nisar S, Bhat AA, Masoodi T, Hashem S, Akhtar S, Ali TA, Amjad S, Chawla S, Bagga P, Frenneaux MP, Reddy R, Fakhro K, Haris M. Genetics of glutamate and its receptors in autism spectrum disorder; (2022) *Mol Psychiatry*
35. Li Y, Steinberg J, Coleman Z, Wang S, Subramanian C, Li Y, Patay Z, Akers W, Rock CO, Jackowski S, Bagga P*. Proton magnetic resonance spectroscopy detects cerebral metabolic derangement in a mouse model of pantothenate kinase-associated neurodegeneration; (2022) *J Transl Med* 20:103 *Corresponding Author

ii. Book Chapters and Monographs:

Haris M, Ahmed SN, Hashem S, Bhat AA, Yadav S, Shanmugakonar M, Al-Naemi HA, Bagga P, Uddin S, Reddy R. Functional in vivo imaging of tumors. pp 3-50. Tumor Microenvironment. Editors. Francesco Marincola MD and Peter P Lee MD. Publisher: Springer

iii. Reviews and Conference Proceedings:

IUPAB sponsored International Workshop on NMR and its Applications in Biological Systems, Tata Institute of Fundamental Research (TIFR), Mumbai, India	2010
SERC (DST) sponsored training school on Biophysics in Medicine: Advanced Training in Experimental Imaging, All India Institute of Medical Sciences (AIIMS), New Delhi, India	2011
International Society for Magnetic Resonance in Medicine, Melbourne, Australia	2012
International Society for Magnetic Resonance in Medicine, Salt Lake City, Utah, USA	2013
International Society for Magnetic Resonance in Medicine, Toronto, Ontario, Canada	2015
Fourth International Workshop on Hyperpolarized Carbon-13 and Its Applications in Metabolic Imaging, Philadelphia	2016
World Molecular Imaging Congress, New York, NY, USA	2016
International Society for Magnetic Resonance in Medicine, Singapore	2016
World Molecular Imaging Congress, Philadelphia, PA, USA	2017
International Society for Magnetic Resonance in Medicine, Hawaii, USA	2017
International Society for Magnetic Resonance in Medicine, Paris, France	2018
World Molecular Imaging Congress, Seattle, WA, USA	2018
International Society for Magnetic Resonance in Medicine, Montreal, Canada	2019
International Society for Magnetic Resonance in Medicine, Virtual Meeting	2020
SNO/NCI Joint Symposium: Targeting CNS Tumor Metabolism, Virtual Meeting	2021
International Society for Magnetic Resonance in Medicine, Virtual Meeting	2021

iv. Abstracts:

1. Patel AB and Bagga P (2010) Simultaneous assessment of neuronal and astroglial metabolism in mouse brain. *Proc Intl Soc Magn Reson Med* 18:3482, Stockholm, Sweden
2. Patel AB and Bagga P (2011) Glutamatergic and GABAergic neurotransmission in Manganism using ^{13}C NMR spectroscopy, *Proc Intl Soc Magn Reson Med* 19:2211, Montreal, Canada
3. Bagga P and Patel AB (2011) NMR studies of brain energetics in mouse model of Parkinson's Disease, Proc Intl Symp Metabol Signal Brain Health Disease 25:100, Hyderabad, India
4. Bagga P, Varadarajan KS, Rohith TV and Patel AB (2011) A novel strategy for studying neuronal and astroglial metabolism simultaneously, *Proc Asian Biophys Assn-Ind Biophys Soc* 7:110, New Delhi, India
5. Bagga P, Koya B, Chugani AN and Patel AB (2011) Metabolomics of mice urine using ^1H NMR spectroscopy, Symposium on Magnetic Resonance & 17th Conference of National Magnetic Resonance Society, Amritsar, India
6. Bagga P, Suresh MK and Patel AB (2012) Investigation on Neuroprotective Role of Caffeine against MPTP

- Induced neurotoxicity in mice using ^{13}C NMR spectroscopy, *Proc Intl Soc Magn Reson Med* 20:1773, Melbourne, Australia
7. Bagga P and Patel AB (2012) Increased Astroglial Metabolism during Postnatal Development in Rat Brain, *Proc Intl Soc Magn Reson Med* 20:939, Melbourne, Australia
 8. Patel AB, Feyter H de, Rothman DL, Behar L, Bagga P (2012) Evidence for Plasma Glutamine Uptake by Brain: Implications for Metabolic Modeling of ^{13}C NMR data, *Proc Intl Soc Magn Reson Med* 20:1770, Melbourne, Australia
 9. Bagga P, Chugani AN, Suresh MK and Patel AB (2012) Dietary Restriction as a Strategy of Neuroprotection in Pitx3 knockout Mouse model of Parkinson's Disease: an NMR Investigation, *Annual Meeting of Indian Biophysical Society*, Chennai, India
 10. Bagga P, Chugani AN, Suresh MK and Patel AB (2012) *In vivo* NMR studies on evaluation of neuroprotective effects of dietary restriction in Pitx3 knockout mouse model of Parkinson's Disease, Symposium on New Developments in NMR and 18th National Magnetic Resonance Society Meeting, IISc Bangalore, India
 11. Patel AB, Chugani AN, Voleti R and Bagga P (2013) ^1H - ^{13}C -NMR Study to evaluate the efficacy of Levodopa treatment in MPTP mouse model of Parkinson's Disease, *Proc Intl Soc Magn Reson Med* 21:1980, Salt Lake, USA
 12. Bagga P, Chugani AN, Kumar MS, Patel AB (2013) Dietary Restriction recovers cerebral activity in Pitx3 knockout mouse model of Parkinson's Disease, *Proc Intl Soc Magn Reson Med* 21:1976, Salt Lake, USA
 13. Bagga P, Chugani AN and Patel AB. (2013) Assessment of the efficacy of Levodopa for the treatment of Parkinson's Disease in MPTP model of the disease, 19th National Magnetic Resonance Society Meeting, IIT Bombay, India (Oral Presentation)
 14. Patel AB, Komanduri VS, Bagga P, Chugani AN (2014) Chronic exposure to lead impairs neuronal metabolism in mouse brain: A ^1H - ^{13}C -NMR study, *Proc Intl Soc Magn Reson Med* 22:2969, Milan, Italy
 15. Bagga P, Mandal KK and Patel AB, (2015) Activity of pentose phosphate pathway and pyruvate dehydrogenase is decreased in MPTP Model of Parkinson's Disease: A ^{13}C NMR Study, *Proc Intl Soc Magn Reson Med* 23:4616, Toronto, Canada
 16. Bagga P, Chugani AN, Kumar MS and Patel AB, (2015) Regional cerebral metabolic activity in genetic mouse model of Parkinson's Disease: an NMR investigation for biomarkers, *Proc Intl Soc Magn Reson Med* 23:4622, Toronto, Canada
 17. Bagga P, Crescenzi R, Krishnamoorthy G, Nanga RP, Garimall S, D'Aquilla K, Reddy D, Greenberg JH, Detre JA, Hariharan H and Reddy R, (2015) Glutamate CEST MRI in MPTP mouse model of Parkinson's Disease, *Proc Intl Soc Magn Reson Med* 23:1765, Toronto, Canada
 18. Krishnamoorthy G, Bagga P, Nanga RPR, Hariharan H, Kneeland B, Reddy R, (2015) A new 3D isotropic T1 mapping technique for in vivo human knee cartilage at 7T, *Proc Intl Soc Magn Reson Med* 22:4168, Toronto, Canada
 19. Bagga P, Crescenzi R, Krishnamoorthy G, Nanga RP, Greenberg JH, Detre JA, Hariharan H and Reddy R, (2016) Glutamate Chemical Exchange Saturation Transfer (GluCEST) MRI as a biomarker to study localized glial function derangements in MPTP mouse model, *World Molecular Imaging Congress* SS 047, New York, USA (Oral Presentation)
 20. Bagga P, Crescenzi R, Krishnamoorthy G, Nanga RP, Garimall S, D'Aquilla K, Reddy D, Greenberg JH, Detre JA, Hariharan H and Reddy R, (2016) Mapping glutamate changes in the brain: GluCEST as a biomarker to study localized glial function derangements, *Proc Intl Soc Magn Reson Med* 24:4436, Singapore
 21. Zhou R, Bagga P, Nath K, Mankoff D, Hariharan H and Reddy R. (2016) GluCEST MRI: A Biomarker for Glutamine Metabolism in Cancer, *Proc Intl Soc Magn Reson Med* 24:4763, Singapore
 22. Bagga P, Srisha S, Reddy H, Reddy R, Sudini A, Hariharan H, Reddy R, (2016) In vitro imaging of Alanine: Application of CEST MRI, *Proc Intl Soc Magn Reson Med* 24:2659, Singapore
 23. Krishnamoorthy G, Nanga RPR, Bagga P, Hariharan H, Reddy R, (2016) A new high-resolution 3D GagCEST imaging method for in vivo human knee cartilage at 7T, *Proc Intl Soc Magn Reson Med* 24:540, Singapore (Oral Presentation)
 24. DeBrosse C, Nanga R, Bagga P, Haris M, Hariharan H, Reddy R, (2016) In vivo application of lactate chemical exchange saturation transfer imaging: human exercise study, *Proc Intl Soc Magn Reson Med* 24:1507, Singapore
 25. Bagga P, D'Aquilla K, Haris M, Hariharan H and Reddy R, (2016) Imaging of nicotinamide adenine dinucleotide (NAD^+) in vitro using CEST, *Proc Intl Soc Magn Reson Med* 24:4093, Singapore
 26. Bagga P, Hariharan H, D'Aquilla K, Nanga RPR, Haris M and Reddy R, (2017) A new pulse sequence for single-voxel ^1H MRS measurement of cerebral nicotinamide adenine dinucleotide (NAD^+) in humans at 7T using 32-channel volume coil, *Proc Intl Soc Magn Reson Med* 25:1057, Honolulu, HI, USA (Oral Presentation)

27. [Bagga P](#), Haris M, D'Aquila K, Marincola FM, Hariharan H and Reddy R, (2017) CEST MRI using sugar alcohol, Maltitol, to detect cancer: Study on rat glioma model, *Proc Intl Soc Magn Reson Med* 25:3574, Honolulu, HI, USA
28. [Bagga P](#), Haris M, D'Aquila K, Marincola FM, Hariharan H and Reddy R, (2017) Extracellular-extravascular accumulation of non-caloric sweetener (sucralose) provides CEST contrast for cancer detection, *Proc Intl Soc Magn Reson Med* 25:4502, Honolulu, HI, USA
29. [Bagga P](#), Haris M, Jain P, Bheemreddy A, Marincola FM, Hariharan H and Reddy R, (2017) Probing tumor metabolism using dynamic Lactate Chemical Exchange Saturation Transfer MRI, *Proc Intl Soc Magn Reson Med* 25:4471, Honolulu, HI, USA
30. Nanga RPR, Roalf D, D'Aquila K, Debrosse C, [Bagga P](#), Wilson N, Kumar D, Borthakur A, Elliott M, Reddy D, Hariharan H, Epperson N, Reddy R, (2017) Reproducibility and age dependence of GluCEST contrast in healthy adults, *Proc Intl Soc Magn Reson Med* 25:2580, Honolulu, HI, USA
31. [Bagga P](#), D'Aquila K, Wilson N, Haris M, Nanga RPR, Detre John, Hariharan H and Reddy R, (2018) Detection of cerebral nicotinamide adenine dinucleotide (NAD⁺) and its decline with healthy aging in humans, *World Molecular Imaging Congress* 465, Seattle, WA, USA (Oral Presentation)
32. [Bagga P](#), Pickup S, Martinez D, Crescenzi R, Borthakur R, Verma G, Greenberg JH, Detre JA, Hariharan H and Reddy R, (2018) GluCEST MRI: Reproducibility, background contribution and source of glutamate changes in the MPTP mouse model of Parkinson's disease, *Proc Intl Soc Magn Reson Med* 26:5518, Paris, France
33. [Bagga P](#), Reddy D, Talos D, Sansalone K, Jacobs L, Verma G, Hariharan H and Reddy R, (2018) Imaging the effect of high-protein diet on the brain Glutaryl-CoA dehydrogenase deficient mice using GluCEST MRI, *Proc Intl Soc Magn Reson Med* 26:3148, Paris, France
34. Singh A, Haris M, Debnath A, Cai K, Hariharan H, [Bagga P](#), Reddy R, (2018) Evaluating feasibility of creatine-weighted CEST MRI in human brain at 7T using z-spectral fitting approach, *Proc Intl Soc Magn Reson Med* 26:560, Paris, France (Oral Presentation)
35. Kumar D, Nanga R, [Bagga P](#), Nath K, Ittyerah R, Reddy D, Hariharan H, Reddy R, (2018) Feasibility of ACIDOCEST using Iodixanol in rat glioma model, *Proc Intl Soc Magn Reson Med* 27:2235, Paris, France
36. [Bagga P](#), Wilson N, DeBrosse C, Hariharan H and Reddy R, (2018) In vivo detection of NAD⁺ in human calf muscle at 7T using 28-channel knee volume coil, *Proc Intl Soc Magn Reson Med* 26:1296, Paris, France
37. Wilson N, [Bagga P](#), D'Aquila K, Hariharan H, Reddy R, (2018) Myocardial Creatine CEST in human heart using a segmented pseudo steady state acquisition over multiple short breatholds, *Proc Intl Soc Magn Reson Med* 26:2225, Paris, France
38. [Bagga P](#), Roalf D, Hariharan H, Anderson S, Coulter D, Gur R, and Reddy R, (2019) Imaging hippocampal glutamate alterations in a 22q11.2 deletion syndrome mouse model of schizophrenia. *Proc Intl Soc Magn Reson Med* 27:184, Montreal, Canada (Oral Presentation)
39. [Bagga P](#), Pickup S, Flament J, Detre J, Hariharan H and Reddy R, (2019) Mapping astroglial glutamine synthetase activity in vivo in a preclinical model of epilepsy using glutamate-weighted CEST (GluCEST) MRI. *Proc Intl Soc Magn Reson Med* 27:3121, Montreal, Canada
40. Debnath A, Hariharan H, Nanga RPR, [Bagga P](#), Sasi D, Reddy R, Singh A, (2019) Optimization of saturation frequency offset step size for CEST asymmetry contrast of human brain at 7T MRI, *Proc Intl Soc Magn Reson Med* 27:4361, Montreal, Canada
41. [Bagga P](#), Mohammad H, Hariharan H, and Reddy R, (2019) Lactate chemical exchange saturation transfer MRI as a biomarker for differentiating lactate dehydrogenase activity in 9L and F98 glioma. *Proc Intl Soc Magn Reson Med* 27:2321, Montreal, Canada
42. Cember A, [Bagga P](#), Hariharan H, Reddy R, (2020) Age-dependent variation in CEST signal at low B1 may reflect decline of lipids in older brain tissue. *Proc Intl Soc Magn Reson Med* 28:190, Virtual Meeting (Oral Presentation)
43. Thakuri D, [Bagga P](#), Kumar D, Reddy R, (2020) Investigating relationship between creatine kinase kinetics and total NAD levels in human skeletal muscle in vivo using ³¹P MRS at 7.0T. *Proc Intl Soc Magn Reson Med* 28:2836, Virtual Meeting
44. [Bagga P](#), Rich L, Wilson N, Elliott M, Schnall M, Haris M, Detre J, Reddy R, (2020) Investigating cerebral energetics and neurotransmission using in vivo ¹H MRS and [6,6'-²H₂]glucose in a preclinical model. *Proc Intl Soc Magn Reson Med* 28:903, Virtual Meeting (Oral Presentation)
45. [Bagga P](#), Pickup S, Migliorini D, Wilson N, Haris M, Mohan S, Posey A, Reddy R, (2020) Imaging blood-brain barrier disruption caused by CD19 based CAR-T cell immunotherapy. *Proc Intl Soc Magn Reson Med* 28:146, Virtual Meeting (Oral Presentation)
46. Rich L, [Bagga P](#), Mizsei G, Schnall M, Detre J, Haris M, Reddy R, (2020) Detecting glycolytic metabolism in glioblastoma using a new ¹H MRS and [6,6'-²H₂]glucose infusion-based approach. *Proc Intl Soc Magn Reson Med* 28:127, Virtual Meeting (Oral Presentation)

47. Rich L, [Bagga P](#), Mizsei G, Schnall M, Detre J, Haris M, Reddy R, (2020) Combining ^1H MRS with deuterium labeled glucose: A new strategy to assess dynamics of neural metabolism *in vivo*. *Proc Intl Soc Magn Reson Med* 28:476, Virtual Meeting (Oral Presentation)
48. Bagga P, Rich L, Wilson N, Elliott M, Schnall M, Detre J, Haris M, Reddy R, (2020) A new approach involving combination of ^1H MRS and $[2,2,2\text{-}^2\text{H}_3]$ acetate administration to assess cerebral neurotransmission *in vivo*. *Proc Intl Soc Magn Reson Med* 28:2999, Virtual Meeting
49. [Bagga P](#), Rich L, Cember A, Nanga RP, Thakuri D, Elliott M, Haris M, Detre J, Reddy R, (2020) Assessing gray and white matter glutamatergic turnover in human brain non-invasively using ^1H MRS and deuterated glucose. *Proc Intl Soc Magn Reson Med* 28:1803, Virtual Meeting
50. [Bagga P](#), Hariharan H, Witschey WR, Reddy R, (2020) 3D CSI downfield ^1H MR spectroscopy using EBURP1 spectrally selective excitation pulse. *Proc Intl Soc Magn Reson Med* 28:2912, Virtual Meeting
51. [Bagga P](#), Rich L, Haris M, Wilson N, Schnall M, Detre J, Patay Z, Gajjar A, Akers W, Steinberg W, Krenciute G, Baker S, Reddy R, (2021) *In vivo* monitoring of LDHA expression in glioblastoma using quantitative exchanged-label turnover ^1H MRS technique. *SNO/NCI Joint Symposium: Targeting CNS Tumor Metabolism*, Virtual Meeting
52. [Bagga P](#), Steinberg J, Akers W, Patay Z, McCarville C, Subramanian C, Rock C, and Jackowski S. (2021) Cerebral metabolic derangements as translatable biomarkers in pantothenate kinase-associated neurodegeneration mouse model via ^1H MRS. *Proc Intl Soc Magn Reson Med* 29:1211, Virtual Meeting
53. [Bagga P](#), Steinberg J, Akers W, Scoggins M, Patay Z, McCarville C, Hoeckendorf B, Khairy K, Dyer M, Stewart B. (2021) Multimodal MRI/MRS evaluation of treatment response in a patient-derived xenograft model of Ewing sarcoma. *Proc Intl Soc Magn Reson Med* 29:2357, Virtual Meeting
54. Rich L, [Bagga P](#), Cember A, Wilson N, Nanga R, Thakuri D, Elliott M, Schnall M, Detre J, Reddy R, (2021) Combining ^1H MRS with deuterium labeled glucose for mapping of neural metabolism in humans. *Proc Intl Soc Magn Reson Med* 29:3718, Virtual Meeting (Oral Presentation)
55. Cember A, Nanga R, Hariharan H, Wilson N, [Bagga P](#), Reddy R, (2021) Volumetric glutamate-weighted MR imaging (gluCEST) enables *in vivo* detection of metabolic differences between human hippocampal subfields. *Proc Intl Soc Magn Reson Med* 29:4450, Virtual Meeting
56. Swago S, Cember A, Moon B, [Bagga P](#), Wilson N, Elliott M, Hariharan H, Reddy R, Witschey W, (2021) Characterization of cross-relaxation in human skeletal muscle using downfield ^1H MRS at 7T. *Proc Intl Soc Magn Reson Med* 29:4580, Virtual Meeting
57. Wilson NE, Cember A, Rich L, [Bagga P](#), Nanga RPR, Swago S, Thakuri D, Elliot M, Schnall M, Detre J, Reddy R. Prior knowledge fitting of ^2H -labeled glutamate in the ^1H MRS spectrum to map neural metabolism following ingestion of deuterated glucose. *Proc Intl Soc Magn Reson Med* 30:1356, London UK
58. Coleman Z, Khan A, Wang S, Hanby P, Wallace D, Patay Z, [Bagga P](#). Creatine chemical exchange saturation transfer (CrCEST)MRI reproducibility in healthy adults at 3T. *Proc Intl Soc Magn Reson Med* 30:1134, London UK
59. Swago S, Cember A, [Bagga P](#), Wilson N, Elliot M, Nanga RPR, Reddy R, Witschey W. Quantification of cross-relaxation in human skeletal muscle using downfield ^1H MRS at 7T. *Proc Intl Soc Magn Reson Med* 30:0058, London UK

8. Other Creative Products

Editor for Scientific Journals

1. Associate Editor: Journal of Translational Medicine
2. Associate Editor: Translational Medicine Communications

Reviewer for Scientific Journals

1. Journal of Translational Medicine
2. Neuroimage: Clinical
3. Aging-US (Albany NY)
4. Journal of Neurology
5. Neuroradiology
6. Translational Psychiatry
7. Journal of Alzheimer's Disease
8. Neural Regeneration Research
9. International Society for Magnetic Resonance in Medicine
10. Molecular Imaging and Biology
11. Neurochemical Research
12. Neurochemistry International

13. Journal of Cerebral Blood Flow and Metabolism
14. Journal of Magnetic Resonance
15. ACS Chemical Neuroscience
16. Frontiers in Neuroscience
17. Brain Sciences

Invited Lectures and Talks

Delivered Talks at 18 th and 19 th National Magnetic Resonance Society Meetings in India	2013,14
Delivered Talk at the PENN-CEST Chemical Exchange Saturation Transfer Symposium	2015
Lectures at the Summer Program Classes at the CMROI, Department of Radiology, UPenn	2014,17
Invited talk at CSIR-Centre for Cellular and Molecular Biology, Hyderabad, India	2016
Delivered Talk at World Molecular Imaging Congress, New York, USA	2016
Invited Talk at Music City CEST conference, Nashville, TN, USA	2017
Delivered Talk at 25 th Annual meeting of the ISMRM, Honolulu, HI, USA	2017
Talk at Annual meeting of World Molecular Imaging Congress, Seattle, WA, USA	2018
Invited Talk at Symposium on Experimental Imaging of Infectious Diseases, NIH, Bethesda, MD, USA	2019
Delivered Talk at 27 th Annual meeting of the ISMRM, Montreal, Canada	2019
Delivered Talks at 28 th Annual meeting of the ISMRM, Virtual Meeting	2020
Delivered Talk at the Department of Diagnostic Imaging	2020
Delivered Talk at the Developmental Biology and Solid Tumor Program	2020
Delivered Talk at the Neurobiology and Brain Tumor Program	2020
Delivered Talk at SNO/NCI Joint Symposium: Targeting CNS Tumor Metabolism	2021
Invited talk at the High-grade glioma working group meeting	2022
Invited talk at the St. Jude Data Sciences Symposium in Research Image Analysis	2022
Invited talk at the educational session in the 31 st annual meeting of the ISMRM	2022