Alan P Koretsky

List of Publications by Citations

220 papers	16,855 citations	64 h-index	126 g-index
233 ext. papers	18,386 ext. citations	7 avg, IF	6.41 L-index

#	Paper	IF	Citations
220	Perfusion imaging. *Magnetic Resonance in Medicine*, **1992**, 23, 37-45	4.4	1391
219	Magnetic resonance imaging of perfusion using spin inversion of arterial water. *Proceedings of the National Academy of Sciences of the United States of America*, **1992**, 89, 212-6	11.5	1242
218	In vivo detection of single cells by MRI. *Magnetic Resonance in Medicine*, **2006**, 55, 242-9	4.4	732
217	Dilated cardiomyopathy in transgenic mice with cardiac-specific overexpression of tumor necrosis factor-alpha. *Circulation Research*, **1997**, 81, 627-35	15.7	586
216	High-field MRI of brain cortical substructure based on signal phase. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 11796-801	11.5	541
215	Induction and apoptotic regression of lung adenocarcinomas by regulation of a K-Ras transgene in the presence and absence of tumor suppressor genes. *Genes and Development*, **2001**, 15, 3249-62	12.6	476
214	MRI detection of single particles for cellular imaging. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 10901-6	11.5	422
213	Manganese-enhanced magnetic resonance imaging (MEMRI): methodological and practical considerations. *NMR in Biomedicine*, **2004**, 17, 532-43	4.4	414
212	Manganese ion enhances T1-weighted MRI during brain activation: an approach to direct imaging of brain function. *Magnetic Resonance in Medicine*, **1997**, 38, 378-88	4.4	411
211	In vivo neuronal tract tracing using manganese-enhanced magnetic resonance imaging. *Magnetic Resonance in Medicine*, **1998**, 40, 740-8	4.4	388
210	Highly efficient endosomal labeling of progenitor and stem cells with large magnetic particles allows magnetic resonance imaging of single cells. *Blood*, **2003**, 102, 867-72	2.2	382
209	Transcranial amelioration of inflammation and cell death after brain injury. *Nature*, **2014**, 505, 223-8	50.4	334
208	Tissue specific perfusion imaging using arterial spin labeling. *NMR in Biomedicine*, **1994**, 7, 75-82	4.4	278
207	Sizing it up: cellular MRI using micron-sized iron oxide particles. *Magnetic Resonance in Medicine*, **2005**, 53, 329-38	4.4	257
206	Detection of single mammalian cells by high-resolution magnetic resonance imaging. *Biophysical Journal*, **1999**, 76, 103-9	2.9	242
205	In vivo detection of neuroarchitecture in the rodent brain using manganese-enhanced MRI. *NeuroImage*, **2004**, 22, 1046-59	7.9	230
204	Laminar specificity of functional MRI onset times during somatosensory stimulation in rat. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 15182-7	11.5	207

203	Microvascular Injury in the Brains of Patients with Covid-19. *New England Journal of Medicine*, **2021**, 384, 481-483	59.2	207
202	Tracing odor-induced activation in the olfactory bulbs of mice using manganese-enhanced magnetic resonance imaging. *NeuroImage*, **2002**, 16, 441-8	7.9	203
201	The role of creatine kinase in inhibition of mitochondrial permeability transition. *FEBS Letters*, **1997**, 414, 253-7	3.8	192
200	Functional reactivity of cerebral capillaries. *Journal of Cerebral Blood Flow and Metabolism*, **2008**, 28, 961-72	7.3	168
199	Manganese-enhanced magnetic resonance imaging of mouse brain after systemic administration of MnCl2: dose-dependent and temporal evolution of T1 contrast. *Magnetic Resonance in Medicine*, **2005**, 53, 640-8	4.4	148
198	NMR measurement of perfusion using arterial spin labeling without saturation of macromolecular spins. *Magnetic Resonance in Medicine*, **1995**, 33, 370-6	4.4	138
197	Multi-slice MRI of rat brain perfusion during amphetamine stimulation using arterial spin labeling. *Magnetic Resonance in Medicine*, **1995**, 33, 209-14	4.4	137
196	Effects of fatiguing exercise on high-energy phosphates, force, and EMG: evidence for three phases of recovery. *Muscle and Nerve*, **1987**, 10, 810-21	3.4	137
195	Imaging cortical anatomy by high-resolution MR at 3.0T: detection of the stripe of Gennari in visual area 17. *Magnetic Resonance in Medicine*, **2002**, 48, 735-8	4.4	131
194	Detecting response of rat C6 glioma tumors to radiotherapy using hyperpolarized [1- 13C]pyruvate and 13C magnetic resonance spectroscopic imaging. *Magnetic Resonance in Medicine*, **2011**, 65, 557-63	4.4	130
193	Magnetic resonance imaging of the migration of neuronal precursors generated in the adult rodent brain. *NeuroImage*, **2006**, 32, 1150-7	7.9	129
192	Measurement of rat brain perfusion by NMR using spin labeling of arterial water: in vivo determination of the degree of spin labeling. *Magnetic Resonance in Medicine*, **1993**, 29, 416-21	4.4	127
191	NMR detection of creatine kinase expressed in liver of transgenic mice: determination of free ADP levels. *Proceedings of the National Academy of Sciences of the United States of America*, **1990**, 87, 3112-6	11.5	127
190	High-resolution mapping of tumor redox status by magnetic resonance imaging using nitroxides as redox-sensitive contrast agents. *Clinical Cancer Research*, **2006**, 12, 2455-62	12.9	124
189	Extensive heterogeneity in white matter intensity in high-resolution T2*-weighted MRI of the human brain at 7.0 T. *NeuroImage*, **2006**, 32, 1032-40	7.9	120
188	Dynamic activity-induced manganese-dependent contrast magnetic resonance imaging (DAIM MRI). *Magnetic Resonance in Medicine*, **2002**, 48, 927-33	4.4	120
187	Respiratory control in the glucose perfused heart. A 31P NMR and NADH fluorescence study. *FEBS Letters*, **1987**, 221, 270-6	3.8	119
186	Measurement of brain perfusion by volume-localized NMR spectroscopy using inversion of arterial water spins: accounting for transit time and cross-relaxation. *Magnetic Resonance in Medicine*, **1992**, 25, 362-71	4.4	117

185	Manganese-enhanced MRI of mouse heart during changes in inotropy. *Magnetic Resonance in Medicine*, **2001**, 46, 884-90	4.4	113
184	31P NMR spectroscopy of rat organs, in situ, using chronically implanted radiofrequency coils. *Proceedings of the National Academy of Sciences of the United States of America*, **1983**, 80, 7491-5	11.5	110
183	Spatial flow-volume dissociation of the cerebral microcirculatory response to mild hypercapnia. *NeuroImage*, **2006**, 32, 520-30	7.9	108
182	Micro-engineered local field control for high-sensitivity multispectral MRI. *Nature*, **2008**, 453, 1058-63	50.4	104
181	Near-simultaneous hemoglobin saturation and oxygen tension maps in mouse brain using an AOTF microscope. *Biophysical Journal*, **1997**, 73, 1223-31	2.9	96
180	Functional MRI impulse response for BOLD and CBV contrast in rat somatosensory cortex. *Magnetic Resonance in Medicine*, **2007**, 57, 1110-8	4.4	96
179	Deciphering laminar-specific neural inputs with line-scanning fMRI. *Nature Methods*, **2014**, 11, 55-8	21.6	95
178	Cardiac MRI of the normal and hypertrophied mouse heart. *Magnetic Resonance in Medicine*, **1998**, 39, 980-7	4.4	95
177	Mapping resting-state functional connectivity using perfusion MRI. *NeuroImage*, **2008**, 40, 1595-605	7.9	95
176	Estimation of water extraction fractions in rat brain using magnetic resonance measurement of perfusion with arterial spin labeling. *Magnetic Resonance in Medicine*, **1997**, 37, 58-68	4.4	93
175	Temporal dynamics of the BOLD fMRI impulse response. *NeuroImage*, **2005**, 24, 667-77	7.9	87
174	Targeting neural precursors in the adult brain rescues injured dopamine neurons. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 13570-5	11.5	85
173	Functional MRI of the rodent somatosensory pathway using multislice echo planar imaging. *Magnetic Resonance in Medicine*, **2004**, 52, 89-99	4.4	84
172	Evidence for the exchange of arterial spin-labeled water with tissue water in rat brain from diffusion-sensitized measurements of perfusion. *Magnetic Resonance in Medicine*, **1997**, 38, 232-7	4.4	83
171	Changes in pyridine nucleotide levels alter oxygen consumption and extra-mitochondrial phosphates in isolated mitochondria: a 31P-NMR and NAD(P)H fluorescence study. *Biochimica Et Biophysica Acta - Bioenergetics*, **1987**, 893, 398-408	4.6	82
170	Magnetic resonance imaging of perfusion in the isolated rat heart using spin inversion of arterial water. *Magnetic Resonance in Medicine*, **1993**, 30, 361-5	4.4	81
169	MRI of the basement membrane using charged nanoparticles as contrast agents. *Magnetic Resonance in Medicine*, **2008**, 60, 564-74	4.4	78
168	Imaging transgenic animals. *Annual Review of Biomedical Engineering*, **1999**, 1, 611-48	12	78

167	Brain redox imaging using blood-brain barrier-permeable nitroxide MRI contrast agent. *Journal of Cerebral Blood Flow and Metabolism*, **2008**, 28, 1165-74	7.3	76
166	Improved neuronal tract tracing using manganese enhanced magnetic resonance imaging with fast T(1) mapping. *Magnetic Resonance in Medicine*, **2006**, 55, 604-11	4.4	74
165	Direct imaging of macrovascular and microvascular contributions to BOLD fMRI in layers IV-V of the rat whisker-barrel cortex. *NeuroImage*, **2012**, 59, 1451-60	7.9	73
164	Cell labeling for magnetic resonance imaging with the T1 agent manganese chloride. *NMR in Biomedicine*, **2006**, 19, 50-9	4.4	73
163	Opportunities in Interventional and Diagnostic Imaging by Using High-Performance Low-Field-Strength MRI. *Radiology*, **2019**, 293, 384-393	20.5	72
162	Octameric mitochondrial creatine kinase induces and stabilizes contact sites between the inner and outer membrane. *Biochemical Journal*, **2005**, 385, 445-50	3.8	68
161	Characterization of T(2)* heterogeneity in human brain white matter. *Magnetic Resonance in Medicine*, **2009**, 62, 1652-7	4.4	67
160	BOLD and CBV-weighted functional magnetic resonance imaging of the rat somatosensory system. *Magnetic Resonance in Medicine*, **2006**, 55, 316-24	4.4	66
159	In vivo labeling of adult neural progenitors for MRI with micron sized particles of iron oxide: quantification of labeled cell phenotype. *NeuroImage*, **2009**, 44, 671-8	7.9	65
158	Detection of cortical laminar architecture using manganese-enhanced MRI. *Journal of Neuroscience Methods*, **2008**, 167, 246-57	3	64
157	Perfusion imaging using dynamic arterial spin labeling (DASL). *Magnetic Resonance in Medicine*, **2001**, 45, 1021-9	4.4	64
156	Functional MRI detection of bilateral cortical reorganization in the rodent brain following peripheral nerve deafferentation. *NeuroImage*, **2007**, 37, 262-73	7.9	63
155	Sensory and optogenetically driven single-vessel fMRI. *Nature Methods*, **2016**, 13, 337-40	21.6	62
154	Orientation-specific responses to sustained uniaxial stretching in focal adhesion growth and turnover. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, E2352-61	11.5	62
153	Thalamocortical inputs show post-critical-period plasticity. *Neuron*, **2012**, 74, 731-42	13.9	59
152	Ipsilateral cortical fMRI responses after peripheral nerve damage in rats reflect increased interneuron activity. *Proceedings of the National Academy of Sciences of the United States of America* , **2009**, 106, 14114-9	11.5	57
151	Antibody-mediated cell labeling of peripheral T cells with micron-sized iron oxide particles (MPIOs) allows single cell detection by MRI. *Contrast Media and Molecular Imaging*, **2007**, 2, 147-53	3.2	57
150	31P NMR saturation transfer measurements of phosphorus exchange reactions in rat heart and kidney in situ. *Biochemistry*, **1986**, 25, 77-84	3.2	56

149	Temporal changes in the T1 and T2 relaxation rates (DeltaR1 and DeltaR2) in the rat brain are consistent with the tissue-clearance rates of elemental manganese. *Magnetic Resonance in Medicine* , **2009**, 61, 1528-32	4.4	55
148	MRI detection of ferritin iron overload and associated neuronal pathology in iron regulatory protein-2 knockout mice. *Brain Research*, **2003**, 971, 95-106	3.7	54
147	Manganese enhanced MRI reveals functional circuitry in response to odorant stimuli. *NeuroImage*, **2009**, 44, 363-72	7.9	51
146	Convertible manganese contrast for molecular and cellular MRI. *Magnetic Resonance in Medicine*, **2008**, 60, 265-9	4.4	50
145	alpha-Adrenergic response and myofilament activity in mouse hearts lacking PKC phosphorylation sites on cardiac TnI. *American Journal of Physiology - Heart and Circulatory Physiology*, **2002**, 282, H2397-405	5.2	49
144	Fluorescence measurement of calcium transients in perfused rabbit heart using rhod 2. *American Journal of Physiology - Heart and Circulatory Physiology*, **1998**, 274, H728-41	5.2	49
143	The use of silica coated MnO nanoparticles to control MRI relaxivity in response to specific physiological changes. *Biomaterials*, **2012**, 33, 3560-7	15.6	47
142	Cocaine increases the intracellular calcium concentration in brain independently of its cerebrovascular effects. *Journal of Neuroscience*, **2006**, 26, 11522-31	6.6	47
141	Detection of inflammation following renal ischemia by magnetic resonance imaging. *Kidney International*, **2003**, 64, 43-51	9.9	47
140	Changes in the mitochondrial proteome from mouse hearts deficient in creatine kinase. *Physiological Genomics*, **2001**, 6, 117-28	3.6	45
139	Role of oxygen vs. glucose in energy metabolism in a mammary carcinoma perfused ex vivo: direct measurement by 31P NMR. *Proceedings of the National Academy of Sciences of the United States of America*, **1993**, 90, 2646-50	11.5	45
138	Controlled aggregation of ferritin to modulate MRI relaxivity. *Biophysical Journal*, **2008**, 95, 342-51	2.9	43
137	Detection of exchange reactions involving small metabolite pools using NMR magnetization transfer techniques: relevance to subcellular compartmentation of creatine kinase. *Magnetic Resonance in Medicine*, **1985**, 2, 586-94	4.4	43
136	Manganese enhanced magnetic resonance imaging. *Current Pharmaceutical Biotechnology*, **2004**, 5, 529-37	2.6	43
135	Shape-changing magnetic assemblies as high-sensitivity NMR-readable nanoprobes. *Nature*, **2015**, 520, 73-7	50.4	42
134	Magnetic Nanoclusters with Hydrophilic Spacing for Dual Drug Delivery and Sensitive Magnetic Resonance Imaging. *Journal of Materials Chemistry B*, **2013**, 1, 1142-1149	7.3	42
133	Noninvasive imaging of the functional effects of anti-VEGF therapy on tumor cell extravasation and regional blood volume in an experimental brain metastasis model. *Clinical and Experimental Metastasis*, **2009**, 26, 403-14	4.7	42
132	Layer specific tracing of corticocortical and thalamocortical connectivity in the rodent using manganese enhanced MRI. *NeuroImage*, **2009**, 44, 923-31	7.9	42

131	Contrast-enhanced in vivo imaging of breast and prostate cancer cells by MRI. *Cell Cycle*, **2006**, 5, 113-9	4.7	42
130	Perfusion imaging of the rat kidney with MR. *Radiology*, **1994**, 190, 813-8	20.5	41
129	Creatine and cyclocreatine treatment of human colon adenocarcinoma xenografts: 31P and 1H magnetic resonance spectroscopic studies. *British Journal of Cancer*, **1999**, 79, 278-85	8.7	40
128	Controlled transport of magnetic particles using soft magnetic patterns. *Applied Physics Letters*, **2008**, 93, 203901	3.4	39
127	Ischemic dysfunction in transgenic mice expressing troponin I lacking protein kinase C phosphorylation sites. *American Journal of Physiology - Heart and Circulatory Physiology*, **2001**, 280, H835-43	5.2	39
126	Perfusion analysis using dynamic arterial spin labeling (DASL). *Magnetic Resonance in Medicine*, **1999**, 41, 299-308	4.4	38
125	In situ 31P nuclear magnetic resonance for observation of polyphosphate and catabolite responses of chemostat-cultivated Saccharomyces cerevisiae after alkalinization. *Applied and Environmental Microbiology*, **1995**, 61, 4448-53	4.8	38
124	Low-frequency calcium oscillations accompany deoxyhemoglobin oscillations in rat somatosensory cortex. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, E4677-86	11.5	37
123	EPR oxygen imaging and hyperpolarized 13C MRI of pyruvate metabolism as noninvasive biomarkers of tumor treatment response to a glycolysis inhibitor 3-bromopyruvate. *Magnetic Resonance in Medicine*, **2013**, 69, 1443-50	4.4	37
122	Accounting for nonspecific enhancement in neuronal tract tracing using manganese enhanced magnetic resonance imaging. *Magnetic Resonance Imaging*, **2009**, 27, 594-600	3.3	37
121	Calibration of the calcium dissociation constant of Rhod(2)in the perfused mouse heart using manganese quenching. *Cell Calcium*, **2001**, 29, 217-27	4	37
120	Interpretation of □□P NMR saturation transfer experiments: what you can□t see might confuse you. Focus on "Standard magnetic resonance-based measurements of the Pi-□ATP rate do not index the rate of oxidative phosphorylation in cardiac and skeletal muscles". *American Journal of Physiology - Cell Physiology*, **2011**, 301, C12-5	5.4	35
119	The fabrication of uniform cylindrical nanoshells and their use as spectrally tunable MRI contrast agents. *Nanotechnology*, **2009**, 20, 385301	3.4	34
118	Combined myofibrillar and mitochondrial creatine kinase deficiency impairs mouse diaphragm isotonic function. *Journal of Applied Physiology*, **1997**, 82, 1416-23	3.7	33
117	Synchronized Astrocytic Ca Responses in Neurovascular Coupling during Somatosensory Stimulation and for the Resting State. *Cell Reports*, **2018**, 23, 3878-3890	10.6	33
116	3D mapping of somatotopic reorganization with small animal functional MRI. *NeuroImage*, **2010**, 49, 1667-76	7.9	32
115	Transgenic livers expressing mitochondrial and cytosolic CK: mitochondrial CK modulates free ADP levels. *American Journal of Physiology - Cell Physiology*, **2002**, 282, C338-46	5.4	31
114	Noninvasive evaluation of liver repopulation by transplanted hepatocytes using 31P MRS imaging in mice. *Hepatology*, **2006**, 44, 1250-8	11.2	29

113	Wireless amplified nuclear MR detector (WAND) for high-spatial-resolution MR imaging of internal organs: preclinical demonstration in a rodent model. *Radiology*, **2013**, 268, 228-36	20.5	28
112	Differential effects of anesthetics on cocaine's pharmacokinetic and pharmacodynamic effects in brain. *European Journal of Neuroscience*, **2009**, 30, 1565-75	3.5	28
111	Manganese enhanced magnetic resonance imaging of normal and ischemic canine heart. *Magnetic Resonance in Medicine*, **2005**, 54, 196-200	4.4	28
110	In vivo detection of individual glomeruli in the rodent olfactory bulb using manganese enhanced MRI. *NeuroImage*, **2010**, 49, 1350-6	7.9	27
109	Early development of arterial spin labeling to measure regional brain blood flow by MRI. *NeuroImage*, **2012**, 62, 602-7	7.9	26
108	NMR-Observed phosphate trafficking and polyphosphate dynamics in wild-type and vph1-1 mutant Saccharomyces cerevisae in response to stresses. *Biotechnology Progress*, **1999**, 15, 65-73	2.8	26
107	Functional equivalence of creatine kinase isoforms in mouse skeletal muscle. *Journal of Biological Chemistry*, **1997**, 272, 17790-4	5.4	25
106	BOLD fMRI and somatosensory evoked potentials are well correlated over a broad range of frequency content of somatosensory stimulation of the rat forepaw. *Brain Research*, **2008**, 1195, 67-76	3.7	25
105	Mapping prefrontal circuits in vivo with manganese-enhanced magnetic resonance imaging in monkeys. *Journal of Neuroscience*, **2008**, 28, 7637-47	6.6	25
104	Simultaneous detection of blood volume, oxygenation, and intracellular calcium changes during cerebral ischemia and reperfusion in vivo using diffuse reflectance and fluorescence. *Journal of Cerebral Blood Flow and Metabolism*, **2005**, 25, 1078-92	7.3	25
103	Is there a path beyond BOLD? Molecular imaging of brain function. *NeuroImage*, **2012**, 62, 1208-15	7.9	24
102	Technological advances in MRI measurement of brain perfusion. *Journal of Magnetic Resonance Imaging*, **2005**, 22, 751-3	5.6	24
101	Rhod-2 based measurements of intracellular calcium in the perfused mouse heart: cellular and subcellular localization and response to positive inotropy. *Journal of Biomedical Optics*, **2001**, 6, 23-30	3.5	24
100	Nuclear magnetic resonance determination of flow, lactate, and phosphate metabolites during amphetamine stimulation of the rat brain. *NMR in Biomedicine*, **1990**, 3, 272-8	4.4	24
99	Determination of renal molar concentrations of phosphorus-containing metabolites in vivo using 31P NMR. *Magnetic Resonance in Medicine*, **1987**, 4, 244-51	4.4	23
98	B1 homogenization in MRI by multilayer coupled coils. *IEEE Transactions on Medical Imaging*, **2009**, 28, 551-4	11.7	22
97	A model of blood-brain barrier permeability to water: accounting for blood inflow and longitudinal relaxation effects. *Magnetic Resonance in Medicine*, **2002**, 47, 1100-9	4.4	22
96	Anatomy, Functionality, and Neuronal Connectivity with Manganese Radiotracers for Positron Emission Tomography. *Molecular Imaging and Biology*, **2018**, 20, 562-574	3.8	21

95	Cultivator for NMR studies of suspended cell cultures. *Biotechnology and Bioengineering*, **1992**, 40, 1359-66	4.9	21
94	Sensitivity enhancement of remotely coupled NMR detectors using wirelessly powered parametric amplification. *Magnetic Resonance in Medicine*, **2012**, 68, 989-96	4.4	20
93	Development of a MR-visible compound for tracing neuroanatomical connections in vivo. *Neuron*, **2011**, 70, 229-43	13.9	20
92	Troponin I protein kinase C phosphorylation sites and ventricular function. *Cardiovascular Research*, **2004**, 63, 245-55	9.9	20
91	Calcium measurements in perfused mouse heart: quantitating fluorescence and absorbance of Rhod-2 by application of photon migration theory. *Biophysical Journal*, **2001**, 80, 549-61	2.9	20
90	The B isozyme of creatine kinase is active as a fusion protein in Escherichia coli: in vivo detection by 31P NMR. *FEBS Letters*, **1989**, 243, 8-12	3.8	20
89	Absence of myofibrillar creatine kinase and diaphragm isometric function during repetitive activation. *Journal of Applied Physiology*, **1998**, 84, 1166-73	3.7	19
88	Laminar specific detection of APP induced neurodegeneration and recovery using MEMRI in an olfactory based Alzheimer's disease mouse model. *NeuroImage*, **2015**, 118, 183-92	7.9	18
87	Catheter confocal fluorescence imaging and functional magnetic resonance imaging of local and systems level recovery in the regenerating rodent sciatic nerve. *NeuroImage*, **2006**, 30, 847-56	7.9	18
86	Contractile and metabolic effects of increased creatine kinase activity in mouse skeletal muscle. *American Journal of Physiology - Cell Physiology*, **1996**, 270, C1236-45	5.4	18
85	Long-term optical imaging of neurovascular coupling in mouse cortex using GCaMP6f and intrinsic hemodynamic signals. *NeuroImage*, **2018**, 165, 251-264	7.9	17
84	Peripheral Sensory Deprivation Restores Critical-Period-like Plasticity to Adult Somatosensory Thalamocortical Inputs. *Cell Reports*, **2017**, 19, 2707-2717	10.6	17
83	Application of localized in vivo NMR to whole organ physiology in the animal. *Annual Review of Physiology*, **1992**, 54, 799-826	23.1	17
82	New developments in magnetic resonance imaging of the brain. *NeuroRx*, **2004**, 1, 155-64		16
81	Identification of mucosal injury in the murine nasal airways by magnetic resonance imaging: site-specific lesions induced by 3-methylindole. *Toxicology and Applied Pharmacology*, **2001**, 175, 68-75	4.6	16
80	Myofibrillar or mitochondrial creatine kinase deficiency alone does not impair mouse diaphragm isotonic function. *Journal of Applied Physiology*, **2000**, 88, 973-80	3.7	16
79	Live nephron imaging by MRI. *American Journal of Physiology - Renal Physiology*, **2014**, 307, F1162-8	4.3	15
78	Manganese cell labeling of murine hepatocytes using manganese(III)-transferrin. *Contrast Media and Molecular Imaging*, **2008**, 3, 95-105	3.2	15

77	Delivery of fluorescent probes using iron oxide particles as carriers enables in-vivo labeling of migrating neural precursors for magnetic resonance imaging and optical imaging. *Journal of Biomedical Optics*, **2007**, 12, 051504	3.5	15
76	Simultaneous glutamate and perfusion fMRI responses to regional brain stimulation. *Journal of Cerebral Blood Flow and Metabolism*, **1998**, 18, 1064-70	7.3	14
75	Radial echo-planar imaging. *Journal of Magnetic Resonance*, **1998**, 135, 242-7	3	14
74	Manganese-Enhanced MRI of the Brain in Healthy Volunteers. *American Journal of Neuroradiology*, **2019**, 40, 1309-1316	4.4	13
73	Novel frontiers in ultra-structural and molecular MRI of the brain. *Current Opinion in Neurology*, **2011**, 24, 386-93	7.1	13
72	Transmit B1-field correction at 7 T using actively tuned coupled inner elements. *Magnetic Resonance in Medicine*, **2011**, 66, 901-10	4.4	13
71	Design and fabrication of a micromachined multispectral magnetic resonance imaging agent. *Journal of Micromechanics and Microengineering*, **2009**, 19, 025020	2	13
70	Manganese Enhanced MRI for Use in Studying Neurodegenerative Diseases. *Frontiers in Neural Circuits*, **2018**, 12, 114	3.5	12
69	Interhemispheric plasticity protects the deafferented somatosensory cortex from functional takeover after nerve injury. *Brain Connectivity*, **2014**, 4, 709-17	2.7	12
68	Relationship between blood and myocardium manganese levels during manganese-enhanced MRI (MEMRI) with T1 mapping in rats. *NMR in Biomedicine*, **2011**, 24, 46-53	4.4	12
67	Microfabricated high-moment micrometer-sized MRI contrast agents. *Magnetic Resonance in Medicine*, **2011**, 65, 645-55	4.4	12
66	Differential effects of creatine kinase isoenzymes and substrates on regeneration in livers of transgenic mice. *American Journal of Physiology - Cell Physiology*, **1997**, 273, C741-6	5.4	12
65	Manganese graft ionomer complexes (MaGICs) for dual imaging and chemotherapy. *Journal of Materials Chemistry B*, **2014**, 2, 1087-1099	7.3	11
64	Transverse relaxation of cerebrospinal fluid depends on glucose concentration. *Magnetic Resonance Imaging*, **2017**, 44, 72-81	3.3	11
63	Mapping cortical representations of the rodent forepaw and hindpaw with BOLD fMRI reveals two spatial boundaries. *NeuroImage*, **2011**, 57, 526-38	7.9	11
62	Sub-millimeter imaging of brain-free water for rapid volume assessment in atrophic brains. *NeuroImage*, **2014**, 100, 370-8	7.9	10
61	Magnetic resonance imaging of neural circuits. *Nature Clinical Practice Cardiovascular Medicine*, **2008**, 5 Suppl 2, S71-8		10
60	Inotropic and energetic effects of altering the force-calcium relationship: Mechanisms, experimental results, and potential molecular targets. *Journal of Cardiac Failure*, **2000**, 6, 144-156	3.3	10

59	Performance trade-offs in in situ chemostat NMR. *Biotechnology Progress*, **1999**, 15, 185-95	2.8	10
58	The unfolded protein response is activated in the olfactory system in Alzheimer's disease. *Acta Neuropathologica Communications*, **2020**, 8, 109	7.3	10
57	Engineering novel detectors and sensors for MRI. *Journal of Magnetic Resonance*, **2013**, 229, 67-74	3	9
56	Lambda exonuclease digestion of CGG trinucleotide repeats. *European Biophysics Journal*, **2010**, 39, 337-43	1.9	9
55	Functional assessment of tissues with magnetic resonance imaging. *Annals of the New York Academy of Sciences*, **2002**, 961, 203-5	6.5	9
54	Comparison of the effects of ORG 30029, dobutamine and high perfusate calcium on function and metabolism in rat heart. *Journal of Molecular and Cellular Cardiology*, **1998**, 30, 2605-12	5.8	9
53	An in Vivo NMR probe circuit for improved sensitivity. *Journal of Magnetic Resonance*, **1983**, 54, 526-532		9
52	Measuring collective cell movement and extracellular matrix interactions using magnetic resonance imaging. *Scientific Reports*, **2013**, 3, 1879	4.9	8
51	Transcranial manganese delivery for neuronal tract tracing using MEMRI. *NeuroImage*, **2017**, 156, 146-154	7.9	7
50	Interhemispheric plasticity is mediated by maximal potentiation of callosal inputs. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 6391-6396	11.5	7
49	Interactions between stimuli-evoked cortical activity and spontaneous low frequency oscillations measured with neuronal calcium. *NeuroImage*, **2020**, 210, 116554	7.9	7
48	Ellipsoidal microcavities: electromagnetic properties, fabrication, and use as multispectral MRI agents. *Small*, **2014**, 10, 1902-7	11	7
47	Compensatory changes in Ca(2+) and myocardial O(2) consumption in beta-tropomyosin transgenic hearts. *American Journal of Physiology - Heart and Circulatory Physiology*, **2001**, 281, H2539-48	5.2	7
46	Manipulating creatine kinase activity in transgenic mice to study control of energy metabolism. *Biochemical Society Transactions*, **1991**, 19, 1010-4	5.1	7
45	NMR investigations of cellular energy metabolism. *Annals of the New York Academy of Sciences*, **1987**, 508, 48-53	6.5	7
44	Comparison of 31P NMR spectra of in Vivo rat brain using convolution difference and saturation with a surface coil. Source of the broad component in the brain spectrum. *Journal of Magnetic Resonance*, **1984**, 57, 526-533		7
43	Mapping the Brain-Wide Network Effects by Optogenetic Activation of the Corpus Callosum. *Cerebral Cortex*, **2020**, 30, 5885-5898	5.1	6
42	Endosphenoidal coil for intraoperative magnetic resonance imaging of the pituitary gland during transsphenoidal surgery. *Journal of Neurosurgery*, **2016**, 125, 1451-1459	3.2	6

41	Magnetic resonance imaging of odorant activity-dependent migration of neural precursor cells and olfactory bulb growth. *NeuroImage*, **2017**, 158, 232-241	7.9	6
40	Expression of myoglobin in the transgenic mouse brain. *Advances in Experimental Medicine and Biology*, **2003**, 530, 331-45	3.6	6
39	Sensitivity Enhancement of an Inductively Coupled Local Detector Using a HEMT-Based Current Amplifier. *Magnetic Resonance in Medicine*, **2016**, 75, 2573-8	4.4	5
38	Micron-Sized Iron Oxide Particles (MPIOs) for Cellular Imaging: More Bang for the Buck **2008**, 141-161		5
37	Near-simultaneous hemoglobin saturation and oxygen tension maps in the mouse cortex during amphetamine stimulation. *Advances in Experimental Medicine and Biology*, **1998**, 454, 149-58	3.6	5
36	Self-organized Mn-Block Copolymer Complexes and Their Use for MR Imaging of Biological Processes. *Journal of Materials Chemistry B*, **2014**, 2, 7055-7064	7.3	4
35	Magnetic manipulation of actin orientation, polymerization, and gliding on myosin using superparamagnetic iron oxide particles. *Nanotechnology*, **2011**, 22, 065101	3.4	4
34	High calcium and dobutamine positive inotropy in the perfused mouse heart: myofilament calcium responsiveness, energetic economy, and effects of protein kinase C inhibition. *BMC Physiology*, **2001**, 1, 12	0	4
33	Response of normal and reperfused livers to glucagon stimulation: NMR detection of blood flow and high-energy phosphates. *Biochimica Et Biophysica Acta - Molecular Basis of Disease*, **1993**, 1181, 7-14	6.9	4
32	Optical imaging of stimulation-evoked cortical activity using GCaMP6f and jRGECO1a. *Quantitative Imaging in Medicine and Surgery*, **2021**, 11, 998-1009	3.6	4
31	Circuit-Specific Plasticity of Callosal Inputs Underlies Cortical Takeover. *Journal of Neuroscience*, **2020**, 40, 7714-7723	6.6	4
30	Magnetocaloric materials as switchable high contrast ratio MRI labels. *Magnetic Resonance in Medicine*, **2019**, 81, 2238-2246	4.4	4
29	Arterial spin labeling demonstrates that focal amygdalar glutamatergic agonist infusion leads to rapid diffuse cerebral activation. *Acta Neurologica Scandinavica*, **2010**, 121, 209-16	3.8	3
28	Tracking the effects of crusher gradients on gradient-echo BOLD signal in space and time during rat sensory stimulation. *Magnetic Resonance in Medicine*, **2008**, 60, 548-54	4.4	3
27	Wireless implantable coil with parametric amplification for in vivo electron paramagnetic resonance oximetric applications. *Magnetic Resonance in Medicine*, **2018**, 80, 2288-2298	4.4	2
26	Neural precursor cells form integrated brain-like tissue when implanted into rat cerebrospinal fluid. *Communications Biology*, **2018**, 1, 114	6.7	2
25	Observation of two distinct spatial-temporal BOLD clusters during sensory stimulation in rats. *NeuroImage*, **2007**, 34, 1220-6	7.9	2
24	Decreasing motion artifacts in calcium-dependent fluorescence transients from the perfused mouse heart using frequency filtering. *Cell Calcium*, **2004**, 35, 141-53	4	2

23	An open transverse z-gradient coil design for magnetic resonance imaging. *Review of Scientific Instruments*, **2002**, 73, 2208-2210	1.7	2
22	Lamina-specific immunohistochemical signatures in the olfactory bulb of healthy, Alzheimer's and Parkinson's disease patients.. *Communications Biology*, **2022**, 5, 88	6.7	2
21	Ex vivo MR microscopy of a human brain with multiple sclerosis: Visualizing individual cells in tissue using intrinsic iron. *NeuroImage*, **2020**, 223, 117285	7.9	2
20	Manganese-Enhanced MRI in Patients with Multiple Sclerosis. *American Journal of Neuroradiology*, **2020**, 41, 1569-1576	4.4	2
19	Outlier detection in multimodal MRI identifies rare individual phenotypes among more than 15,000 brains.. *Human Brain Mapping*, **2021**,	5.9	2
18	Improved cardiac manganese-enhanced MRI (MEMRI) with T1 mapping in rodent **2007**,		1
17	In vivo detection of neuroarchitecture in the rodent brain using manganese-enhanced MRI. *NeuroImage*, **2004**, 22, 1046-1046	7.9	1
16	Radiofrequency magnetic field gradient echoes have reduced sensitivity to susceptibility gradients. *Magnetic Resonance Imaging*, **1995**, 13, 791-7	3.3	1
15	Hepatic High Energy Phosphate Metabolism in Transgenic Livers Expressing Creatine Kinase as Revealed by 31P NMR. *Advances in Molecular and Cell Biology*, **1995**, 233-255		1
14	Optimization of pseudo-continuous arterial spin labeling using off-resonance compensation strategies at 7T. *Magnetic Resonance in Medicine*, **2021**, 87, 1720	4.4	1
13	Multifield and inverse-contrast switching of magnetocaloric high contrast ratio MRI labels. *Magnetic Resonance in Medicine*, **2021**, 85, 506-517	4.4	1
12	A hierarchy of manganese competition and entry in organotypic hippocampal slice cultures. *NMR in Biomedicine*, **2021**, 34, e4476	4.4	1
11	Perfusion analysis using dynamic arterial spin labeling (DASL) **1999**, 41, 299		1
10	High-resolution MEMRI characterizes laminar specific ascending and descending spinal cord pathways in rats. *Journal of Neuroscience Methods*, **2020**, 340, 108748	3	
9	MRI Agents: Ellipsoidal Microcavities: Electromagnetic Properties, Fabrication, and Use as Multispectral MRI Agents (Small 10/2014). *Small*, **2014**, 10, 1878-1878	11	
8	Microfabricated Multispectral MRI Contrast Agents **2011**, 375-397		
7	Detection of regional blood flow using arterial spin labeling94-112		
6	MRI detection of regional blood flow using arterial spin labeling **2004**, 119-140		

5 Koretsky, A.P.: Contributions to Functional, Cellular, and Molecular Imaging with MRI **1996**, 1-4

4 New developments in magnetic resonance imaging of the brain. *Neurotherapeutics*, **2004**, 1, 155-164 6.4

3 The misunderstood meander: Redesigning MRI meander-line surface coils to reduce noise, increase uniformity, and eliminate image artifacts. *Journal of Magnetic Resonance*, **2021**, 333, 107100 3

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1 Functional information from magnetic resonance imaging. *Proceedings Annual Meeting Electron Microscopy Society of America*, **1995**, 53, 84-85 ve **1995**, 463-473