

Fysisk institutt

v/Lars Bernhardsen

her

Date: 10 November 2015

Ad. fornyelse av Atle Bjørnerud's engasjement som Professor II ved Fysisk institutt, UiO.

Atle Bjørnerud har siden 2005 vært ansatt som [Professor II ved seksjonen for Biofysikk og Medisinsk fysikk \(BMF\)](#) ved Fysisk institutt. Det nåværende engasjementet utløper 31.12-2015. Lønnskostnadene for denne stillingen har i sin helhet vært dekket av arbeidsgiveren. Bjørnerud er ansatt i 100% stilling som seniorforsker og avdelingsleder ved [MR-fysikkavdelingen ved Intervensjons-senteret, Oslo Universitetssykehus](#). Siden 2010 har han hatt betydelig lederansvar ved denne avdelingen. Bjørnerud har i denne perioden ved Fysisk institutt hatt ansvar for opprettelsen og undervisningen av kurset FYS-KJM4740/9740 - *MR-teori og medisinsk diagnostikk*, et kurs som inngår i masterkursporteføljen til BMF seksjonen (kurset har en FYS-KJM kode idet Professor Eddy W. Hansen ved Kjemisk institutt foreleser den klassiske delen av NMR spektroskopi i emnet. Emnet kan således også tas av kjemistudenter, med det har de siste årene ikke vært mange kjemikere som faktisk har fulgt det. Denne forbindelsen til kjemi er imidlertid nyttig i flere sammenhenger). Alle masterstudenter ved seksjonen siden 2005 har tatt dette kurset (antall med avlagt eksamen er i snitt >7 pr. år siden 2009, i tillegg kommer flere PhD studenter og personer som har fulgt kurset uten å ta eksamen). Dette emnet er viktig for alle som søker seg en jobb innenfor helsevesenet (spesielt medisinsk fysikk) etter endt mastereksamen. Bjørnerud har også hatt delansvar for PhD kurset FYS 4750/9750 - *Medisinsk avbildning*. Dette er et intensivkurs som følges av master- og PhD studenter ved Fysisk institutt og ved MedFak, og er godkjent som kurs for PhD graden på MedFak. Dette kurset er komplementært til FYS-KJM4740/9740 idet det har en sterkere klinisk-praktisk innretning enn det grunnleggende, teoretiske emnet 4740/9740. 24 studenter fulgte 4750/9750 forrige gang det ble gitt, det skal gis påny høsten 2016.

Bjørnerud er/har vært hovedveileder/medveileder for 9 masterstudenter og er/har vært hovedveileder/medveileder for 6 PhD studenter. Han har også veiledet en rekke PhD kandidater på MedFak, en del av disse masterkandidater fra Fysisk institutt. Grunnet manglende kapasitet ved UV-Fakultetet har Bjørnerud ikke tatt Pedagogikk-kurs for Universitetsansatte, men han søker om dette igjen ved første anledning.

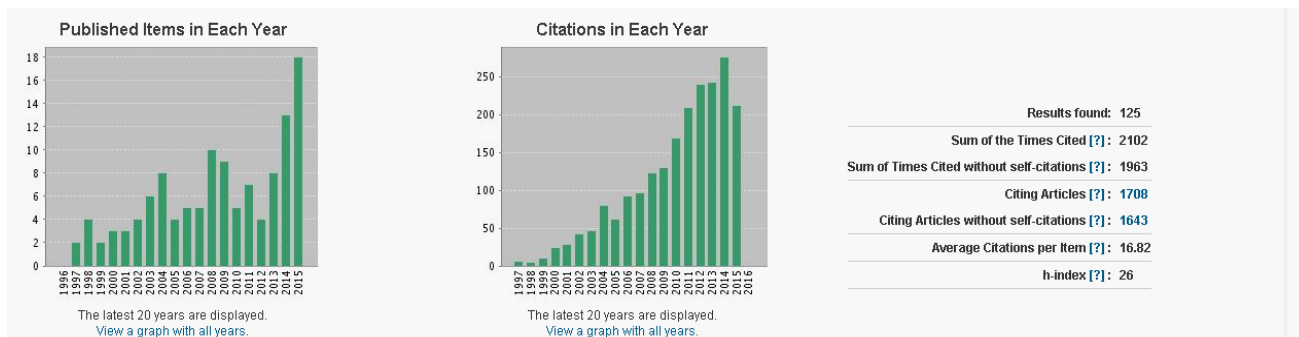
Atle Bjørnerud har utgjort et viktig kontaktledd mellom UiO og OUS, og han har gjentatte ganger fremmet Fysisk institutts interesser i forbindelse med utdanning og



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forskning innen medisinsk fysikk. Han er opptatt av at fysikere som tar sin PhD i hans forskningsavdeling skal registreres ved Fysisk institutt, men det er/har vært en del tilfelle hvor formelle utfordringer ikke har latt seg forene med dette ønsket.



Som illustrert over (ifra ISI Web of Science) har Bjørnerud, utover aktivitetene ved Fysisk institutt, en usedvanlig høy og velsitert forskningsaktivitet (h=26, over 200 siteringer/år de siste 5 årene, bare i 2015 har han til nå 18 publiserte arbeider). Han har også betydelig internasjonal utdanningsvirksomhet. Han er styremedlem for den NFR-finansierte forskerskolen MedIm (<https://www.ntnu.edu/medicalimaging/org>) der UiO er en av konsortiedeltakerne. FYS9750 er oppført som et av Forskerskolens kurstilbud. Bjørnerud underviser også i den Europeiske MR forskerskolen (School of MRI). Bjørneruds CV/publikasjonsliste er vedlagt denne søknaden. En kan bl.a. notere seg et NATURE-paper fra 2013, der Fysisk institutt står som hjemmeinstitusjon sammen med OUS. Han har flere patenter, og er mye utnyttet som invitert foredragsholder ved konferanser. Generelt har Bjørnerud en høy internasjonal synlighet, også gjennom internasjonale organisasjoner i fagområdet.

Atle Bjørnerud har vært en meget verdifull kollega og samarbeidspartner for BMF seksjonen og instituttet i de årene han har hatt II-engasjement hos oss. Hans rolle som kontaktperson mellom oss og Oslo Universitetssykehus er av uvurderlig betydning. BMF-seksjonen ber derfor om at Bjørnerud ansettes for en ny 5-årsperiode som professor II ved Fysisk institutt. Når det gjelder finansieringen av dette engasjementet har OUS i e-post til undertegnede (vedlagt) forpliktet seg på å fullfinansiere stillingen. Kontaktperson for en eventuell kontraktsutforming vil være Seksjonsleder Anne Catrine Trægde Martinsen (e-post: uxneti@ous-hf.no)

Det skal nevnes at OUS er bevisst på at undervisningstilbudet ved UiO skal være robust og fortrinnsvis ikke kritisk avhengig en enkelt person. Når det gjelder kurset FYS4740/9740 vil de, i tillegg til å fullfinansiere Atle Bjørnerud, stille opp med seniorforsker Øystein Bech Gadmar (Master og PhD i fysikk fra UiO) som team-medlem for kursutvikling og forelesningsvikar for Bjørnerud hvis dette skulle være nødvendig. Gadmar er tidligere også benyttet som sensor for masterkurs ved BMF-seksjonen og han bisto med undervisningen i

FYS4740/9740 våren 2015 da Bjørnerud hadde delvis forskningsfri fra OUS. Vi er meget tilfredse med dette forslaget.

Med vennlig hilsen

A handwritten signature in black ink, appearing to read 'E. Sagstuen'. The signature is fluid and cursive, with the first letter 'E' being particularly large and stylized.

Seksjonsleder

Einar Sagstuen

From: Anne Catrine T. Martinsen <uxnet@ous-hf.no>
Sent: 22. oktober 2015 21:35
To: Einar Sagstuen
Subject: Atles professorat

Hei,
Erik Fosse har gitt klarsignal til å videreføre Atles professorat. Han har permisjon, men kommer innom jobb torsdag neste uke. Han kan signere da, hvis dere sender over kontrakt i begynnelsen av neste uke.

Hilsen Anne Catrine Martinsen
Seksjonsleder,
Seksjon for diagnostisk fysikk,
Intervensjonsenteret
Oslo universitetssykehus

Sendt fra min iPhone
Ikke sensitivt

Atle Bjørnerud (born 1962)



Current main position	Researcher and research group leader. MR Physics group, Intervention Centre, Oslo University Hospital
Secondary position	Professor II, MR Physics, Dept of Physics, University of Oslo (20% position)
E-mail	atle.bjornerud@fys.uio.no
Education and degrees	BSc (1987), MSc (1988) PhD Uppsala (2002).
Research activities	MR image analysis and sequence optimization

As leader of the MR physics and analysis group at the Intervention Centre, my research interest spans a broad area of MRI-related topics from MR physics and modelling to image processing and software development for image analysis. One active area of research relates to the development of novel diagnostic methods for primary brain tumours. By combining multiple imaging modalities with advanced image processing techniques we are able to predict tumour grade and patient outcome with higher accuracy than when using conventional methods. We are also actively pursuing new methods for improved quantification of physiological and functional processes using relaxometry and dynamic MR methods, including contrast enhanced perfusion MRI and non-invasive arterial spin labelling (ASL) techniques. The MR physics group at OUS also serves 15 hospitals and radiological institutions in the Norwegian South-Eastern Health Region, providing regular control and cross-institutional comparison of image quality and MR system stability. For this purpose, we have developed comprehensive automated MR quality assurance methods for easy and user-independent assessment of MR image quality and stability – essential tests when performing longitudinal and multi-centre MR studies. As imaging work-package leader for several ongoing multi-centre projects in dementia research, I have extensive experience in MR sequence optimization and standardization. In terms of teaching experience, I have been responsible for the masters/PhD course ‘Physics of MRI’ at Dept of Physics, Section for Biophysics at UiO for the last 10 years and have further extensive teaching experience in national and international meetings.

Employment history

2010-present	Research group leader. MR analysis group. Intervention Centre, Oslo University Hospital (OUS)
2010-present	Section leader. MR Physics section. Intervention Centre, OUS
2000-present	Researcher. OUS.
2004-present	Co-founder and board member, NordicNeuroLab AS, Bergen
2003-present	Docent. Dept of Radiology, Uppsala University Hospital
2005-present	Professor II, Dept of physics, University of Oslo
1997-2001	Senior Scientist MR/ Imaging, Medical Biology, Nycomed Amersham.
1993-1997	Technology advisor: Nycomed R&D, Nycomed Imaging.
1992 -1993	International product manager MRI, Nycomed Imaging.
1989-1992	Product manager MRI and Ultrasound. Philips Medical Systems, Norway.
1988	Research assistant; MR image processing - Dept. of Radiological Sciences, Guy’s Hospital London.

Education and degrees

2002	PhD in MRI, University of Uppsala. Thesis title: Proton relaxation properties of a particulate iron oxide MR contrast agent in different tissue systems; implications for imaging. Supervisor: professor Hakan Ahlström
1988	MSc in medical physics. University of Surrey / Guys Hospital, London, UK

1987 BSc in Electrical and electronic engineering. University of Manchester, Institute of Science and Technology (UMIST), Manchester, UK

Guest researcher

1996 Guest researcher, MR Physics group (Prof Jurgen Hennig), Freiburg, Germany (9 months).

Supervision and teaching experience

Supervised completed PhDs: Karen Sæbø (2006), Kyrre E Emblem (2009), Arvid Morell (2010), Tuva R Hope (2014). Co-supervised completed PhDs: Lars Johansson, Per Selnes, Vidar Stenseth, Lars Frick, Benjamin Garzon). Current main PhD supervisor: Endre Grøvik, Christopher Larsson, Jonas Vardal, Magne Kleppestø. Post docs, current/ past Kyrre Emblem, Tuva Hope, Sandra Tecelao. Experience with teaching and supervision at master's degree level in MR physics related topics. Main supervisor for 8 Master students (Dept of Physics, UiO).

Editorial duties and review assignments

Faculty staff member: School of MRI (European Society of Magnetic Resonance in Medicine)

Board member: Norwegian research school for medical imaging

EU Review panel member FP7: Alternative testing strategies (2007), Imaging of mental disorders (2013).

Reviewer for: MRM, JMRI, AJNR, Acta Radiologica, Applied Physics Letters, Biomaterials, Journal of Cerebral Flow and Metabolism,

Served as review panel member (2014-15) for Norwegian Agency for Quality Assurance in Education (NOKUT)

Committee member for professor positions (2), University of Trondheim (1), University of Oslo (1).

Opponent of doctoral committee (9): Copenhagen (1), Amsterdam (1), Oslo (2), Bergen (3), Trondheim (2).

Grants as PI:

2014-2017 MRI-derived Cellularity Index as a Potential Non-invasive Imaging Biomarker for Prostate Cancer (PostDoc grant, South-Eastern Health Authority)

2012-2014 Magnetic Resonance Imaging: A Novel Method for Improved Morphologic and Functional Assessment of Breast Tumors (PhD grant, Norwegian Cancer Society)

2013 Advancing Neuro-Oncological Diagnostic Evaluation (ANODE): Ultra High Field MRI of gliomas (running costs, Norwegian Cancer Society)

2009-2013 Evaluation of functional Magnetic Resonance in the Diagnosis of Brain Tumors for Assessment of Clinical Efficacy (NFR - FRIMED)

2009-2012 Combined structural, microvascular and functional mapping of brain tumors for improved diagnosis and treatment planning (NFR - FRIMED)

Publication history

Papers in peer reviewed international journals: 102

Papers in peer reviewed international journals last 5 years: 47

Number of citations/ h-index (Scopus, May 21st-2015): = 1995/ 25

Number of papers > 100 citations: 3

Granted Patents

1. wo/2014/138726 System and method for vessel architectural imaging
2. 20090191131 Use of particulate contrast agents in diagnostic imaging for studying physiological parameters
3. 20030125617 Method of magnetic resonance imaging
4. 20020102214 Paramagnetic material-containing magnetic resonance external marker or calibration composition
5. 1212102 Method of tumor imaging
6. 1181570 Method of magnetic resonance imaging
7. 2581904 Tumor grading from blood volume maps

Organisation of international conferences

ESMRMB - School of MRI in perfusion and diffusion MRI (Oslo, 2011)

Invited presentations at international meetings

ESMRMB - School of MRI (2011-2014). MedViz – from vision to decision (2012,2014). NevroNor (2012) - From research to commercialization in neuroimaging.

Major contributions to the careers of excellent researchers

Supervised completed PhDs: Karen B Sæbø (2006), Kyrre E Emblem (2009), Tuva R Hope (2014). Co-supervised completed PhDs: Per Selnes, Lars Johansson, Vidar Stenseth, Lars Frick, Benjamin Garzon, all of these currently hold positions contributing actively in research and clinical settings.

Examples of leadership in industrial innovation or design

Co-founder and board member /consultant for NordicNeuroLab AS (www.fmri.no). NNL is a Norwegian company developing hardware and software for functional MRI analysis. My main contribution has been to the software development where I have been the main developer of the software package nordicICE, which is now established as a diagnostic imaging tool for clinical use and research world-wide.

Publications last 10 years

- Odland A, Server A, Saxhaug C, Breivik B, Groote R, et al. Volumetric glioma quantification: comparison of manual and semi-automatic tumor segmentation for the quantification of tumor growth. *Acta Radiol.* 2015 Nov;56(11):1396-403. PubMed PMID: 25338837.
- Krogsrud SK, Fjell AM, Tamnes CK, Grydeland H, Mork L, et al. Changes in white matter microstructure in the developing brain-A longitudinal diffusion tensor imaging study of children from 4 to 11years of age. *Neuroimage.* 2015 Sep 12;124(Pt A):473-486. PubMed PMID: 26375208.
- Sowa P, Bjørnerud A, Nygaard GO, Damangir S, Spulber G, et al. Reduced perfusion in white matter lesions in multiple sclerosis. *Eur J Radiol.* 2015 Sep 10;PubMed PMID: 26391230.
- Walhovd KB, Tamnes CK, Bjørnerud A, Due-Tønnessen P, Holland D, et al. Maturation of Cortico-Subcortical Structural Networks-Segregation and Overlap of Medial Temporal and Frontostriatal Systems in Development. *Cereb Cortex.* 2015 Jul;25(7):1835-41. PubMed PMID: 24436319.
- Grøvik E, Bjørnerud A, Kurz KD, Kingsrød M, Sandhaug M, et al. Single bolus split dynamic MRI: Is the combination of high spatial and dual-echo high temporal resolution interleaved

sequences useful in the differential diagnosis of breast masses?. *J Magn Reson Imaging*. 2015 Jul;42(1):180-7. PubMed PMID: 25211038.

- Larsson C, Kleppestø M, Grothe I, Vardal J, Bjørnerud A. T1 in high-grade glioma and the influence of different measurement strategies on parameter estimations in DCE-MRI. *J Magn Reson Imaging*. 2015 Jul;42(1):97-104. PubMed PMID: 25350816.
- Selnes P, Grambaite R, Rincon M, Bjørnerud A, Gjerstad L, et al. Hippocampal complex atrophy in poststroke and mild cognitive impairment. *J Cereb Blood Flow Metab*. 2015 Jun 3;PubMed PMID: 26036934.
- Mutsaerts HJ, van Osch MJ, Zelaya FO, Wang DJ, Nordhøy W, et al. Multi-vendor reliability of arterial spin labeling perfusion MRI using a near-identical sequence: implications for multi-center studies. *Neuroimage*. 2015 Jun;113:143-52. PubMed PMID: 25818685.
- Jafari-Khouzani K, Emblem KE, Kalpathy-Cramer J, Bjørnerud A, Vangel MG, et al. Repeatability of Cerebral Perfusion Using Dynamic Susceptibility Contrast MRI in Glioblastoma Patients. *Transl Oncol*. 2015 Jun;8(3):137-46. PubMed PMID: 26055170; PubMed Central PMCID: PMC4486737.
- Morell A, Lennmyr F, Jonsson O, Tovedal T, Pettersson J, et al. Influence of blood/tissue differences in contrast agent relaxivity on tracer-based MR perfusion measurements. *MAGMA*. 2015 Apr;28(2):135-47. PubMed PMID: 24973020.
- Nygaard GO, Walhovd KB, Sowa P, Chepkoech JL, Bjørnerud A, et al. Cortical thickness and surface area relate to specific symptoms in early relapsing-remitting multiple sclerosis. *Mult Scler*. 2015 Apr;21(4):402-14. PubMed PMID: 25139946.
- Emblem KE, Pinho MC, Zöllner FG, Due-Tonnessen P, Hald JK, et al. A generic support vector machine model for preoperative glioma survival associations. *Radiology*. 2015 Apr;275(1):228-34. PubMed PMID: 25486589.
- Walhovd KB, Bjørnebekk A, Haabrekke K, Siqveland T, Slinning K, et al. Child neuroanatomical, neurocognitive, and visual acuity outcomes with maternal opioid and polysubstance detoxification. *Pediatr Neurol*. 2015 Mar;52(3):326-32.e1-3. PubMed PMID: 25595574.
- Hope TR, Vardal J, Bjørnerud A, Larsson C, Arnesen MR, et al. Serial diffusion tensor imaging for early detection of radiation-induced injuries to normal-appearing white matter in high-grade glioma patients. *J Magn Reson Imaging*. 2015 Feb;41(2):414-23. PubMed PMID: 24399480.
- Auning E, Selnes P, Grambaite R, Šaltyté Bentš J, Haram A, et al. Neurobiological correlates of depressive symptoms in people with subjective and mild cognitive impairment. *Acta Psychiatr Scand*. 2015 Feb;131(2):139-47. PubMed PMID: 25346330.
- Strømme K, Blakstad EW, Moltu SJ, Almaas AN, Westerberg AC, et al. Enhanced nutrient supply to very low birth weight infants is associated with improved white matter maturation and head growth. *Neonatology*. 2015;107(1):68-75. PubMed PMID: 25401387.
- Elvsåshagen T, Norbom LB, Pedersen PØ, Quraishi SH, Bjørnerud A, et al. Widespread changes in white matter microstructure after a day of waking and sleep deprivation. *PLoS One*. 2015;10(5):e0127351. PubMed PMID: 26020651; PubMed Central PMCID: PMC4447359.
- Skurdal MJ, Bjørnerud A, van Osch MJ, Nordhøy W, Lagopoulos J, et al. Voxel-Wise Perfusion Assessment in Cerebral White Matter with PCASL at 3T; Is It Possible and How Long Does It Take?. *PLoS One*. 2015;10(8):e0135596. PubMed PMID: 26267661; PubMed Central PMCID: PMC4534420.
- Krogsrud SK, Tamnes CK, Fjell AM, Amlien I, Grydeland H, et al. Development of hippocampal subfield volumes from 4 to 22 years. *Hum Brain Mapp*. 2014 Nov;35(11):5646-57. PubMed PMID: 24976170.
- White NS, McDonald C, Farid N, Kuperman J, Karow D, et al. Diffusion-weighted imaging in cancer: physical foundations and applications of restriction spectrum imaging. *Cancer Res*. 2014 Sep 1;74(17):4638-52. PubMed PMID: 25183788; NIHMSID: NIHMS614077; PubMed Central PMCID: PMC4155409.

- Emblem KE, Due-Tonnessen P, Hald JK, Bjørnerud A, Pinho MC, et al. Machine learning in preoperative glioma MRI: survival associations by perfusion-based support vector machine outperforms traditional MRI. *J Magn Reson Imaging*. 2014 Jul;40(1):47-54. PubMed PMID: 24753371.
- Kleppestø M, Larsson C, Groote I, Salo R, Vardal J, et al. T2*-correction in dynamic contrast-enhanced MRI from double-echo acquisitions. *J Magn Reson Imaging*. 2014 May;39(5):1314-9. PubMed PMID: 24123598.
- Grøvik E, Bjørnerud A, Storås TH, Gjesdal KI. Split dynamic MRI: single bolus high spatial-temporal resolution and multi contrast evaluation of breast lesions. *J Magn Reson Imaging*. 2014 Mar;39(3):673-82. PubMed PMID: 23913511.
- Vardal J, Salo RA, Larsson C, Dale AM, Holland D, et al. Correction of B0-distortions in echo-planar-imaging-based perfusion-weighted MRI. *J Magn Reson Imaging*. 2014 Mar;39(3):722-8. PubMed PMID: 24123663.
- Auning E, Kjærvik VK, Selnes P, Aarsland D, Haram A, et al. White matter integrity and cognition in Parkinson's disease: a cross-sectional study. *BMJ Open*. 2014 Jan 21;4(1):e003976. PubMed PMID: 24448846; PubMed Central PMCID: PMC3902504.
- Due-Tonnessen P, Rasmussen I, Berntsen EM, Bjørnerud A, Emblem KE. Identifying the central sulcus in patients with intra-axial lesions: a multicenter study comparing conventional presurgical MRI to topographical analysis and BOLD-fMRI. *J Comput Assist Tomogr*. 2014 Jan-Feb;38(1):1-8. PubMed PMID: 24378889.
- Emblem KE, Mouridsen K, Bjørnerud A, Farrar CT, Jennings D, et al. Vessel architectural imaging identifies cancer patient responders to anti-angiogenic therapy. *Nat Med*. 2013 Sep;19(9):1178-83. PubMed PMID: 23955713; NIHMSID: NIHMS436751; PubMed Central PMCID: PMC3769525.
- Korsnes MS, Lövdahl H, Andersson S, Bjørnerud A, Due-Tønnesen P, et al. Working memory in recurrent brief depression: an fMRI pilot study. *J Affect Disord*. 2013 Jul;149(1-3):383-92. PubMed PMID: 23510545.
- Hopp E, Bjørnerud A, Lunde K, Solheim S, Aakhus S, et al. Perfusion MRI at rest in subacute and chronic myocardial infarct. *Acta Radiol*. 2013 May;54(4):401-11. PubMed PMID: 23401603.
- Larsson C, Kleppestø M, Rasmussen I Jr, Salo R, Vardal J, et al. Sampling requirements in DCE-MRI based analysis of high grade gliomas: simulations and clinical results. *J Magn Reson Imaging*. 2013 Apr;37(4):818-29. PubMed PMID: 23086710.
- Amlien IK, Fjell AM, Walhovd KB, Selnes P, Stenset V, et al. Mild cognitive impairment: cerebrospinal fluid tau biomarker pathologic levels and longitudinal changes in white matter integrity. *Radiology*. 2013 Jan;266(1):295-303. PubMed PMID: 23151827.
- Selnes P, Aarsland D, Bjørnerud A, Gjerstad L, Wallin A, et al. Diffusion tensor imaging surpasses cerebrospinal fluid as predictor of cognitive decline and medial temporal lobe atrophy in subjective cognitive impairment and mild cognitive impairment. *J Alzheimers Dis*. 2013;33(3):723-36. PubMed PMID: 23186987.
- Selnes P, Fjell AM, Gjerstad L, Bjørnerud A, Wallin A, et al. White matter imaging changes in subjective and mild cognitive impairment. *Alzheimers Dement*. 2012 Oct;8(5 Suppl):S112-21. PubMed PMID: 23021621.
- Ringstad GA, Emblem KE, Holland D, Dale AM, Bjørnerud A, et al. Assessment of pituitary adenoma volumetric change using longitudinal MR image registration. *Neuroradiology*. 2012 May;54(5):435-43. PubMed PMID: 21647587.
- Hope T, Westlye LT, Bjørnerud A. The effect of gradient sampling schemes on diffusion metrics derived from probabilistic analysis and tract-based spatial statistics. *Magn Reson Imaging*. 2012 Apr;30(3):402-12. PubMed PMID: 22244542.

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- Garzón B, Emblem KE, Mouridsen K, Nedregård B, Due-Tønnessen P, et al. Multiparametric analysis of magnetic resonance images for glioma grading and patient survival time prediction. *Acta Radiol.* 2011 Nov 1;52(9):1052-60. PubMed PMID: 21969702.
- Emblem KE, Bjornerud A, Mouridsen K, Borra RJ, Batchelor TT, et al. T(1)- and T(2)(*)-dominant extravasation correction in DSC-MRI: part II-predicting patient outcome after a single dose of cediranib in recurrent glioblastoma patients. *J Cereb Blood Flow Metab.* 2011 Oct;31(10):2054-64. PubMed PMID: 21505476; PubMed Central PMCID: PMC3208147.
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- Jonsson O, Morell A, Zemgulis V, Lundström E, Tovedal T, et al. Minimal safe arterial blood flow during selective antegrade cerebral perfusion at 20° centigrade. *Ann Thorac Surg.* 2011 Apr;91(4):1198-205. PubMed PMID: 21353198.
- Westlye LT, Walhovd KB, Dale AM, Bjørnerud A, Due-Tønnessen P, et al. Life-span changes of the human brain white matter: diffusion tensor imaging (DTI) and volumetry. *Cereb Cortex.* 2010 Sep;20(9):2055-68. PubMed PMID: 20032062.
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- Bjørnerud A, Emblem KE. A fully automated method for quantitative cerebral hemodynamic analysis using DSC-MRI. *J Cereb Blood Flow Metab.* 2010 May;30(5):1066-78. PubMed PMID: 20087370; PubMed Central PMCID: PMC2949177.
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- Emblem KE, Bjornerud A. An automatic procedure for normalization of cerebral blood volume maps in dynamic susceptibility contrast-based glioma imaging. *AJNR Am J Neuroradiol.* 2009 Nov;30(10):1929-32. PubMed PMID: 19628627.
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