



Amelie Lutz

Assistant Professor of Radiology (Musculoskeletal Imaging) at the Stanford University Medical Center

CLINICAL OFFICES

- **Radiology Department**

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Bio

CLINICAL FOCUS

- Diagnostic Radiology
- Musculoskeletal Radiology
- Body Imaging

ACADEMIC APPOINTMENTS

- Assistant Professor - Med Center Line, Radiology
- Member, Bio-X

ADMINISTRATIVE APPOINTMENTS

- Co-chief, Division of Musculoskeletal Radiology, Department of Radiology, Stanford School of Medicine, (2018- present)

HONORS AND AWARDS

- Poster Award “summa cum laude” (co-author), Swiss Society of Radiology (2003)
- Top 50 papers, • European Society of Gastrointestinal Radiology (2004)
- “Jubiläumspreis” (award for the young researcher of the year), • 91. General Assembly of the Swiss Society of Radiology (2004)
- Postdoctoral Research Fellowship, Swiss National Science Foundation (2006)
- Research Scholarship, Holcim Foundation, Switzerland (2006)
- New Horizons Keynote Lecture “Cellular Imaging in Rheumatoid Arthritis”, ECR (2006)
- Postdoctoral Research Fellowship, Swiss National Science Foundation (2007)
- Bronze Award (co-author), European Society of Gastrointestinal Radiology (2008)
- Scholar Award, Marsha Rivkin Center for Ovarian Cancer Research (2009)
- GU Paper Presenter Award, Society of Abdominal Radiology (2013)

PROFESSIONAL EDUCATION

- Fellowship: Stanford University Radiology Fellowships (2009) CA
- Board Certification: Diagnostic Radiology, FMH Swiss Medical Association (2006)
- Medical Education: Albert Ludwigs Universitaet Freiburg (1998) Germany
- Fellowship: Kantonal Hospital Frauenfeld (2006) Switzerland
- Residency: University Hospital of Zurich (2005) Switzerland
- Internship: University Hospital Freiburg (2000) Germany

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Molecular imaging in oncology

Peripheral Nerve Imaging

Cellular imaging of musculoskeletal inflammatory diseases

Kinematic musculoskeletal imaging

Magnetic resonance imaging of hepatic disorders

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Neha Antil

Publications

PUBLICATIONS

- **Ultrasound and microbubble mediated therapeutic delivery: Underlying mechanisms and future outlook.** *Journal of controlled release : official journal of the Controlled Release Society*
Chowdhury, S. M., Abou-Elkacem, L., Lee, T., Dahl, J., Lutz, A. M.
2020
- **Efficacy of affibody-based ultrasound molecular imaging of vascular B7-H3 for breast cancer detection.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Bam, R., Lown, P. S., Stern, L. A., Sharma, K., Wilson, K. E., Bean, G. R., Lutz, A. M., Paulmurugan, R., Hackel, B. J., Dahl, J., Abou-Elkacem, L.
2020
- **Chronic Model of Inflammatory Bowel Disease in IL-10(-/-) Transgenic Mice: Evaluation with Ultrasound Molecular Imaging** *THERANOSTICS*
Wang, H., Vilches-Moure, J. G., Cherkaoui, S., Tardy, I., Alleaume, C., Bettinger, T., Lutz, A., Paulmurugan, R.
2019; 9 (21): 6031–46
- **Is it painful to be different? Sciatic nerve anatomical variants on MRI and their relationship to piriformis syndrome** *EUROPEAN RADIOLOGY*
Bartret, A. L., Beaulieu, C. F., Lutz, A. M.
2018; 28 (11): 4681–86
- **US Molecular Imaging of Acute Ileitis: Anti-Inflammatory Treatment Response Monitored with Targeted Microbubbles in a Preclinical Model** *RADIOLOGY*
Wang, H., Hyvelin, J., Felt, S. A., Guracar, I., Vilches-Moure, J. G., Cherkaoui, S., Bettinger, T., Tian, L., Lutz, A. M., Willmann, J. K.
2018; 289 (1): 90–100
- **Pharmacokinetic Modeling of Targeted Ultrasound Contrast Agents for Quantitative Assessment of Anti-Angiogenic Therapy: a Longitudinal Case-Control Study in Colon Cancer.** *Molecular imaging and biology : MIB : the official publication of the Academy of Molecular Imaging*

- Turco, S., El Kaffas, A., Zhou, J., Lutz, A. M., Wijkstra, H., Willmann, J. K., Mischi, M.
2018
- **Anatomical Road Mapping Using CT and MR Enterography for Ultrasound Molecular Imaging of Small Bowel Inflammation in Swine.** *European radiology*
Wang, H., Felt, S. A., Guracar, I., Taviani, V., Zhou, J., Sigrist, R. M., Zhang, H., Liao, J., Vilches-Moure, J. G., Tian, L., Saenz, Y., Bettinger, T., Hargreaves, et al
2018; 28 (5): 2068–76
 - **Early prediction of tumor response to bevacizumab treatment in murine colon cancer models using three-dimensional dynamic contrast-enhanced ultrasound imaging** *ANGIOGENESIS*
Zhou, J., Zhang, H., Wang, H., Lutz, A. M., El Kaffas, A., Tian, L., Hristov, D., Willmann, J. K.
2017; 20 (4): 547–55
 - **Detection and prevalence of variant sciatic nerve anatomy in relation to the piriformis muscle on MRI** *SKELETAL RADIOLOGY*
Varenika, V., Lutz, A. M., Beaulieu, C. F., Bucknor, M. D.
2017; 46 (6): 751-757
 - **A Model-Based Personalized Cancer Screening Strategy for Detecting Early-Stage Tumors Using Blood-Borne Biomarkers** *CANCER RESEARCH*
Hori, S. S., Lutz, A. M., Paulmurugan, R., Gambhir, S. S.
2017; 77 (10): 2570-2584
 - **Ultrasound Molecular Imaging With BR55 in Patients With Breast and Ovarian Lesions: First-in-Human Results.** *Journal of clinical oncology*
Willmann, J. K., Bonomo, L., Carla Testa, A., Rinaldi, P., Rindi, G., Valluru, K. S., Petrone, G., Martini, M., Lutz, A. M., Gambhir, S. S.
2017: JCO2016708594-?
 - **[Tumors of peripheral nerves].** *Der Radiologe*
Ho, M., Lutz, A. M.
2017; 57 (3): 204-212
 - **Intra-Animal Comparison between Three-dimensional Molecularly Targeted US and Three-dimensional Dynamic Contrast-enhanced US for Early Antiangiogenic Treatment Assessment in Colon Cancer.** *Radiology*
Wang, H., Lutz, A. M., Hristov, D., Tian, L., Willmann, J. K.
2017; 282 (2): 443-452
 - **Feasibility of 7T MRI for Imaging Fascicular Structures of Peripheral Nerves.** *Muscle & nerve*
Yoon, D., Biswal, S., Rutt, B., Lutz, A., Hargreaves, B.
2017
 - **VEGFR2-Targeted Three-Dimensional Ultrasound Imaging Can Predict Responses to Antiangiogenic Therapy in Preclinical Models of Colon Cancer.** *Cancer research*
Zhou, J., Wang, H., Zhang, H., Lutz, A. M., Tian, L., Hristov, D., Willmann, J. K.
2016; 76 (14): 4081-4089
 - **OVEREXERTION-RELATED FOCAL ULNAR NEUROPATHY** *MUSCLE & NERVE*
Muppidi, S., Orengo, J. P., Lutz, A.
2016; 53 (6): 989–91
 - **Quantitative Assessment of Inflammation in a Porcine Acute Terminal Ileitis Model: US with a Molecularly Targeted Contrast Agent** *RADIOLOGY*
Wang, H., Felt, S. A., Machtaler, S., Guracar, I., Luong, R., Bettinger, T., Tian, L., Lutz, A. M., Willmann, J. K.
2015; 276 (3): 809-817
 - **Breast Cancer Detection by B7-H3-Targeted Ultrasound Molecular Imaging.** *Cancer research*
Bachawal, S. V., Jensen, K. C., Wilson, K. E., Tian, L., Lutz, A. M., Willmann, J. K.
2015; 75 (12): 2501-2509
 - **Detection of Osseous Metastasis by 18F-NaF/18F-FDG PET/CT Versus CT Alone.** *Clinical nuclear medicine*
Sampath, S. C., Sampath, S. C., Mosci, C., Lutz, A. M., Willmann, J. K., Mitra, E. S., Gambhir, S. S., Iagaru, A.
2015; 40 (3): e173-7
 - **Correlation of plasma biomarker levels with early-stage tumor viability in an orthotopic ovarian cancer mouse model**
Hori, S. S., Lutz, A. M., Paulmurugan, R., Gambhir, S. S.

AMER ASSOC CANCER RESEARCH.2014

- **Ultrasound Molecular Imaging in a Human CD276 Expression-Modulated Murine Ovarian Cancer Model.** *Clinical cancer research*
Lutz, A. M., Bachawal, S. V., Drescher, C. W., Pysz, M. A., Willmann, J. K., Gambhir, S. S.
2014; 20 (5): 1313-1322
- **MR imaging of the brachial plexus.** *Neuroimaging clinics of North America*
Lutz, A. M., Gold, G., Beaulieu, C.
2014; 24 (1): 91-108
- **Detection of pancreatic ductal adenocarcinoma in mice by ultrasound imaging of thymocyte differentiation antigen 1.** *Gastroenterology*
Foygel, K., Wang, H., Machtaler, S., Lutz, A. M., Chen, R., Pysz, M., Lowe, A. W., Tian, L., Carrigan, T., Brentnall, T. A., Willmann, J. K.
2013; 145 (4): 885-894 e3
- **Molecular Imaging of Inflammation in Inflammatory Bowel Disease with a Clinically Translatable Dual-Selectin-targeted US Contrast Agent: Comparison with FDG PET/CT in a Mouse Model.** *Radiology*
Wang, H., Machtaler, S., Bettinger, T., Lutz, A. M., Luong, R., Bussat, P., Gambhir, S. S., Tranquart, F., Tian, L., Willmann, J. K.
2013; 267 (3): 818-829
- **Earlier Detection of Breast Cancer with Ultrasound Molecular Imaging in a Transgenic Mouse Model** *CANCER RESEARCH*
Bachawal, S. V., Jensen, K. C., Lutz, A. M., Gambhir, S. S., Tranquart, F., Tian, L., Willmann, J. K.
2013; 73 (6): 1689-1698
- **Antiangiogenic and Radiation Therapy Early Effects on In Vivo Computed Tomography Perfusion Parameters in Human Colon Cancer Xenografts in Mice** *INVESTIGATIVE RADIOLOGY*
Ren, Y., Fleischmann, D., Foygel, K., Molvin, L., Lutz, A. M., Koong, A. C., Jeffrey, R. B., Tian, L., Willmann, J. K.
2012; 47 (1): 25-32
- **Quantification and Monitoring of Inflammation in Murine Inflammatory Bowel Disease with Targeted Contrast-enhanced US** *RADIOLOGY*
Deshpande, N., Lutz, A. M., Ren, Y., Foygel, K., Tian, L., Schneider, M., Pai, R., Pasricha, P. J., Willmann, J. K.
2012; 262 (1): 172-180
- **Early Diagnosis of Ovarian Carcinoma: Is a Solution in Sight?** *RADIOLOGY*
Lutz, A. M., Willmann, J. K., Drescher, C. W., Ray, P., Cochran, F. V., Urban, N., Gambhir, S. S.
2011; 259 (2): 329-345
- **Targeted Contrast-Enhanced Ultrasound Imaging of Tumor Angiogenesis with Contrast Microbubbles Conjugated to Integrin-Binding Knottin Peptides** *JOURNAL OF NUCLEAR MEDICINE*
Willmann, J. K., Kimura, R. H., Deshpande, N., Lutz, A. M., Cochran, J. R., Gambhir, S. S.
2010; 51 (3): 433-440
- **Focal Liver Lesions: Detection and Characterization at Double-Contrast Liver MR Imaging with Ferucarbotran and Gadobutrol versus Single-Contrast Liver MR Imaging** *RADIOLOGY*
Heilmaier, C., Lutz, A. M., Bolog, N., Weishaupt, D., Seifert, B., Willmann, J. K.
2009; 253 (3): 724-733
- **MR angiography with parallel acquisition for assessment of the visceral arteries: comparison with conventional MR angiography and 64-detector-row computed tomography** *EUROPEAN RADIOLOGY*
Sutter, R., Heilmaier, C., Lutz, A. M., Weishaupt, D., Seifert, B., Willmann, J. K.
2009; 19 (11): 2679-2688
- **USPIO-enhanced magnetic resonance imaging of the knee in asymptomatic volunteers** *EUROPEAN RADIOLOGY*
Reiner, C. S., Lutz, A. M., Tschirch, F., Froehlich, J. M., Gaillard, S., Marincek, B., Weishaupt, D.
2009; 19 (7): 1715-1722
- **Imaging Gene Expression in Human Mesenchymal Stem Cells: From Small to Large Animals** *RADIOLOGY*
Willmann, J. K., Paulmurugan, R., Rodriguez-Porcel, M., Stein, W., Brinton, T. J., Connolly, A. J., Nielsen, C. H., Lutz, A. M., Lyons, J., Ikeno, F., Suzuki, Y., Rosenberg, J., Chen, et al
2009; 252 (1): 117-127
- **Targeted microbubbles for imaging tumor angiogenesis: Assessment of whole-body biodistribution with dynamic micro-PET in mice** *RADIOLOGY*

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- Willmann, J. K., Cheng, Z., Davis, C., Lutz, A. M., Schipper, M. L., Nielsen, C. H., Gambhir, S. S.
2008; 249 (1): 212-219
- **Dual-targeted contrast agent for US assessment of tumor angiogenesis in vivo** *RADIOLOGY*
Willmann, J. K., Lutz, A. M., Paulmurugan, R., Patel, M. R., Chu, P., Rosenberg, J., Gambhir, S. S.
2008; 248 (3): 936-944
 - **Cancer screening: A mathematical model relating secreted blood biomarker levels to tumor sizes** *PLOS MEDICINE*
Lutz, A. M., Willmann, J. K., Cochran, F. V., Ray, P., Gambhir, S. S.
2008; 5 (8): 1287-1297
 - **Dynamic MRI of the liver with parallel acquisition technique: characterization of focal liver lesions and analysis of the hepatic vasculature in a single MRI session** *ROFO-FORTSCHRITTE AUF DEM GEBIET DER RONTGENSTRAHLEN UND DER BILDGEBENDEN VERFAHREN*
Heilmaier, C., Sutter, R., Lutz, A. M., Seifert, B., Willmann, J. K.
2008; 180 (5): 440-448
 - **US imaging of tumor angiogenesis with microbubbles targeted to vascular endothelial growth factor receptor type 2 in mice** *RADIOLOGY*
Willmann, J. K., Paulmurugan, R., Chen, K., Gheysens, O., Rodriguez-Porcel, M., Lutz, A. M., Chen, I. Y., Chen, X., Gambhir, S. S.
2008; 246 (2): 508-518
 - **Mapping of hepatic vascular anatomy: Dynamic contrast-enhanced parallel MR Imaging compared with 64-detector row CT** *RADIOLOGY*
Heilmaier, C., Sutter, R., Lutz, A. M., Seifert, B., Weishaupt, D., Marincek, B., Willmann, J. K.
2007; 245 (3): 872-880
 - **Assessment of aortoiliac and renal arteries: MR angiography with parallel acquisition versus conventional MR angiography and digital subtraction angiography** *RADIOLOGY*
Sutter, R., Nanz, D., Lutz, A. M., Plammatter, T., Seifert, B., Struwe, A., Heilmaier, C., Weishaupt, D., Marincek, B., Willmann, J. K.
2007; 245 (1): 276-284
 - **2-Deoxy-2-[F-18]fluoro-D-glucose accumulation in ovarian carcinoma cell lines** *MOLECULAR IMAGING AND BIOLOGY*
Lutz, A. M., Ray, P., Willmann, J. K., Drescher, C., Gambhir, S. S.
2007; 9 (5): 260-266
 - **Assessment of the abdominal aorta and its visceral branches by contrast-enhanced dynamic volumetric hepatic parallel magnetic resonance imaging: feasibility, reliability and accuracy** *EUROPEAN RADIOLOGY*
Werder, R., Nanz, D., Lutz, A. M., Weishaupt, D., McCormack, L., Seifert, B., Marincek, B., Willmann, J. K.
2007; 17 (2): 541-551
 - **Prospective intraindividual comparison between respiratory-triggered balanced steady-state free precession and breath-hold gradient-echo and time-of-flight magnetic resonance imaging for assessment of portal and hepatic veins** *EUROPEAN RADIOLOGY*
Willmann, J. K., Goepfert, K., Lutz, A. M., Nanz, D., McCormack, L., Petrowsky, H., Seifert, B., Hervo, P., Marincek, B., Weishaupt, D.
2007; 17 (1): 229-240
 - **USPIO-enhanced MR imaging for visualization of synovial hyperperfusion and detection of synovial macrophages: Preliminary results in an experimental model of antigen-induced arthritis** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Lutz, A. M., Goepfert, K., Jochum, W., Nanz, D., Froehlich, J. M., Weishaupt, D.
2006; 24 (3): 657-666
 - **Characteristics of displaceable and nondisplaceable meniscal tears at kinematic MR imaging of the knee** *RADIOLOGY*
Boxheimer, L., Lutz, A. M., Zanetti, M., Treiber, K., Labler, L., Marincek, B., Weishaupt, D.
2006; 238 (1): 221-231
 - **Uptake of 18F-fluorocholine, 18F-fluoro-ethyl-L: -tyrosine and 18F-fluoro-2-deoxyglucose in F98 gliomas in the rat.** *Eur J Nucl Med Mol Imaging*
Spaeth N, Wyss MT, Pahnke J, Biollaz G, Lutz A, Goepfert K, Westera G, Treyer V, Weber B, Buck A
2006; 33 (6): 673-82
 - **Hepatocellular carcinoma in cirrhosis: Enhancement patterns at dynamic gadolinium-and superparamagnetic iron oxide-enhanced T1-weighted MR imaging** *RADIOLOGY*
Lutz, A. M., Willmann, J. K., Goepfert, K., Marincek, B., Weishaupt, D.
2005; 237 (2): 520-528
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- **Imaging of macrophages in soft-tissue infection in rats: Relationship between ultrasmall superparamagnetic iron oxide dose and MR signal characteristics** *RADIOLOGY*
Lutz, A. M., Weishaupt, D., Persohn, E., Goepfert, K., Froehlich, J., Sasse, B., Gottschalk, J., Marincek, B., Kaim, A. H.
2005; 234 (3): 765-775
 - **Detection of synovial macrophages in an experimental rabbit model of antigen-induced arthritis: Ultrasmall superparamagnetic iron oxide-enhanced MR imaging** *RADIOLOGY*
Lutz, A. M., Seemayer, C., Corot, C., GAY, R. E., Goepfert, K., Michel, B. A., Marincek, B., GAY, S., Weishaupt, D.
2004; 233 (1): 149-157
 - **Assessment of skeletal muscle perfusion by contrast medium first-pass magnetic resonance imaging: Technical feasibility and preliminary experience in healthy volunteers** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Lutz, A. M., Weishaupt, D., Amann-Vesti, B. R., Pfammatter, T., Goepfert, K., Marincek, B., Nanz, D.
2004; 20 (1): 111-121
 - **MR imaging of the knee: Position related changes of the menisci in asymptomatic volunteers** *INVESTIGATIVE RADIOLOGY*
Boxheimer, L., Lutz, A. M., Treiber, K., Goepfert, K., Crook, D. W., Marincek, B., Weishaupt, D.
2004; 39 (5): 254-263
 - **Resovist for imaging of hepatocellular carcinoma in the cirrhotic liver** *Schering Lunch Symposium on Resovist held at the ESGAR Congress*
Weishaupt, D., Willmann, J. K., Lutz, A. M., Marincek, B.
SPRINGER.2004: C5-C6
 - **Uptake of 18F-fluorocholine, 18F-fluoroethyl-L-tyrosine, and 18F-FDG in acute cerebral radiation injury in the rat: implications for separation of radiation necrosis from tumor recurrence** *J Nucl Med*
Spaeth N, Wyss MT, Weber B, Scheidegger S, Lutz A, Verwey J, Radovanovic I, Pahnke J, Wild D, Westera G, Weishaupt D, Hermann DM, Kaser-Hotz B, Aguzzi A, Buck A
2004; 45 (11): 1931-8
 - **Contrast-enhanced MR angiography for differentiation between perigastric and submucosal gastric fundal varices** *ROFO-FORTSCHRITTE AUF DEM GEBIET DER RONTGENSTRAHLEN UND DER BILDGEBENDEN VERFAHREN*
Willmann, J. K., Bauerfeind, P., Boehm, T., Lutz, A. M., Gopfert, K., Marincek, B., Weishaupt, D.
2003; 175 (4): 507-514
 - **Evaluation of aortoiliac aneurysm before endovascular repair: Comparison of contrast-enhanced magnetic resonance angiography with multidetector row computed tomographic angiography with an automated analysis software tool** *JOURNAL OF VASCULAR SURGERY*
Lutz, A. M., Willmann, J. K., Pfammatter, T., Lachat, M., Wildermuth, S., Marincek, B., Weishaupt, D.
2003; 37 (3): 619-627
 - **Bone mineral density and quantitative ultrasound in adults with cystic fibrosis** *EUROPEAN JOURNAL OF ENDOCRINOLOGY*
Flohr, F., Lutz, A., App, E. M., Matthys, H., Reincke, M.
2002; 146 (4): 531-536
 - **Adrenocortical function in patients with macrometastases of the adrenal gland** *EUROPEAN JOURNAL OF ENDOCRINOLOGY*
Lutz, A., Stojkovic, M., Schmidt, M., Arlt, W., Allolio, B., Reincke, M.
2000; 143 (1): 91-97
 - **Worsening enterocolitis in neonates: diagnosis by CT examination of urine after enteral administration of iohexol** *PEDIATRIC RADIOLOGY*
Patton, W. L., Willmann, J. K., Lutz, A. M., Rencken, I. O., Gooding, C. A.
1999; 29 (2): 95-99
 - **Systemic spread of meconium peritonitis** *PEDIATRIC RADIOLOGY*
Patton, W. L., Lutz, A. M., Willmann, J. K., Callen, P., Barkovich, A. J., Gooding, C. A.
1998; 28 (9): 714-716