

Diana SITARCIKOVA, PhD. (née Bencikova)

Curriculum Vitae

Department of Biomedical Imaging
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Education

- 2018–2026 **Doctor of Philosophy: Medical physics**, *Medical University of Vienna, Vienna*.
Thesis: Multi-parametric non-invasive liver evaluation
- 2016–2018 : **Master: Biomedical physics**, *Faculty of mathematics, physics and informatics, Comenius University, Bratislava*.
Thesis: Multi-parametric non-invasive monitoring of hepatobiliary system with magnetic resonance imaging
- 2013–2016 : **Bachelor: Biomedical physics**, *Faculty of mathematics, physics and informatics, Comenius University, Bratislava*.
Thesis: In vivo phosphorus magnetic resonance spectroscopic imaging of the brain with 23channel head coil at 7T – comparison of the quality between 3T vs 7T and 1 receive channel vs 23 receive channels

Scholarships

- 2018 **Aktion Austria-Slovakia**, *Medical University of Vienna, Austria*, supported by OeAD-GmbH/ICM and SAIA, n.o. on behalf of and financed by the Aktion Austria-Slovakia.
Jan 2018–Apr 2018

Publications

Journal Articles

- 2025 **Diana Sitarcikova**, Veronika Janacova, Malina Gologan, Barbara Hristoska, Martijn A Cloos, Pavol Szomolanyi, Siegfried Trattnig, and Vladimir Juras. Magnetic resonance fingerprinting for the whole knee articular cartilage assessment using automated pipeline. ***European Radiology***, pages 1–11. Springer, 2025.
- 2025 Veronika Janacova, Pavol Szomolanyi, **Diana Sitarcikova**, Alexandra Kirner, Siegfried Trattnig, and Vladimir Juras. Texture analysis of cartilage repair tissue maturation: comparison of two cartilage repair methods and correlation with mocart 2.0. ***Cartilage***, page 19476035241313047. SAGE Publications Sage CA: Los Angeles, CA, 2025.
- 2024 **Diana Sitarcikova**, Sarah Poetter-Lang, Nina Bastati, Sami Ba-Ssalamah, Siegfried Trattnig, Ulrike Attenberger, Ahmed Ba-Ssalamah, and Martin Krššák. Diagnostic accuracy of texture analysis applied to t1- and t2-relaxation maps for liver fibrosis classification via machine-learning algorithms with liver histology as reference standard. ***European Journal of Radiology***, page 111887. Elsevier, 2024.
- 2021 **Diana Bencikova**, Fei Han, Stephan Kannengieser, Marcus Raudner, Sarah Poetter-Lang, Nina Bastati, Gert Reiter, Raphael Ambros, Ahmed Ba-Ssalamah, Siegfried Trattnig, and Martin Krššák. Evaluation of a single-breath-hold radial turbo-spin-echo sequence for t2 mapping of the liver at 3t. ***European Radiology***, volume 32, pages 3388–3397. Springer, 2021.

- 2021 Lorenz Pflieger, Emina Halilbasic, Martin Gajdošík, **Diana Benčíková**, Marek Chmelík, Thomas Scherer, Siegfried Trattnig, Michael Krebs, Michael Trauner, and Martin Krššák. Concentration of gallbladder phosphatidylcholine in cholangiopathies: A phosphorus-31 magnetic resonance spectroscopy pilot study. *Journal of Magnetic Resonance Imaging*, volume 55, pages 530–540. Wiley, 2021.

In Conference Proceedings

- 2025 **Diana Sitarcikova**, Veronika Janacova, Barbara Hristoska, Malina Gologan, Martijn A Cloos, Pavol Szomolanyi, Siegfried Trattnig, and Vladimir Juras. Feasibility of mr fingerprinting in a longitudinal study of knee articular cartilage. *Osteoarthritis and Cartilage*, volume 33, pages S303–S304. Elsevier, 2025.
- 2024 **Diana Sitarcikova**, Veronika Janacova, Barbara Hristoska, Malina Gologan, Martijn A Cloos, Siegfried Trattnig, and Vladimir Juras. T2 magnetic resonance fingerprinting in global and focal knee cartilage. *Osteoarthritis and Cartilage*, volume 32, pages S345–S346. Elsevier, 2024.
- 2023 **Diana Bencikova**, Sarah Poetter-Lang, Markus Raudner, Siegfried Trattnig, Martin Krššák, and Ahmed Ba-Ssalamah. Additional value of t2 mapping and texture analysis for the improvement to mr elastography based liver fibrosis machine learning classification. In *Proc. Intl. Soc. Mag. Reson. Med.* 31, number 1482. ISMRM, 2023.
- 2023 **Diana Bencikova**, Martijn A. Cloos, Veronika Janacova, Siegfried Trattnig, and Vladimir Juras. Magnetic resonance fingerprinting in the knee cartilage compared to conventional methods using automated cartilage segmentation. *Osteoarthritis and Cartilage*, volume 31, pages S284–S285. Elsevier, 2023.
- 2022 **Diana Bencikova**, Veronika Janacova, Marcus Raudner, Ahmed Ba-Ssalamah, Siegfried Trattnig, and Martin Krššák. Optimization of glm texture analysis settings in liver radial t2 maps: Fibrotic vs healthy liver. In *Proc. Intl. Soc. Mag. Reson. Med.* 30, number 1332. ISMRM, 2022.
- 2021 **Diana Bencikova**, Marcus Raudner, Sarah Poetter-Lang, Nina Bastati, Ahmed Ba-Ssalamah, Siegfried Trattnig, and Martin Krššák. The effect of hepatic fat on t2 of water signal in single voxel multi-echo mrs and fat-suppressed radial tse t2 mapping. In *Proc. Intl. Soc. Mag. Reson. Med.* 29, number 1873. ISMRM, 2021.
- 2020 **Diana Bencikova**, Stephan Kannengiesser, Gert Reiter, Ahmed Ba-Ssalamah, Siegfried Trattnig, and Martin Krššák. Fast radial t2 mapping of the liver. In *Proc. Intl. Soc. Mag. Reson. Med.* 28, number 3428. ISMRM, 2020.
- 2019 **Diana Bencikova**, Stephan Kannengiesser, Yutaka Natsuaki, Gert Reiter, Ahmed Ba-Ssalamah, Siegfried Trattnig, and Martin Krššák. In vitro and in vivo evaluation of radial turbo-spinecho-based t2 mapping of the liver. In *ESMRMB 2019 Congress, 36th Annual Scientific Meeting, Rotterdam, NL, October 3–October 5: Abstracts, Saturday*, pages S263–S264. ESMRMB, 2019.
- 2016 Marek Chmelik, **Diana Bencikova**, Christian Mirkes, Christopher T Rodgers, Gunamony Shajan, Klaus Scheffler, Siegfried Trattnig, and Wolfgang Bogner. 31p mrs signal-to-noise ratio in human brain at 3, 7, and 9.4 tesla using dual tuned head rf coils. In *24th Annual Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine (ISMRM 2016)*, 2016.

Book chapters

- 2023 Marcos Wolf, **Diana Bencikova**, and Ewald Moser. T2 mapping of the kidney. In *Advanced Clinical MRI of the Kidney: Methods and Protocols*, pages 125–132. Springer, 2023.

Conferences and other scientific meetings

- 2025 **Joint Annual Meeting ISMRM-ESMRMB& ISMRT 34th Annual Meeting.**
10–15 May, Honolulu, Hawai'i
- 2025 **OARSI 2025 World Congress on Osteoarthritis.**
24–27 April, Incheon, South Korea

- 2024 **Joint Annual Meeting ISMRM-ESMRMB& ISMRT 33rd Annual Meeting.**
4–9 May, Singapore, Republic of Singapore
- 2023 **Czech-Austrian Workshop on Magnetic Resonance Imaging and Spectroscopy.**
23–25 October, Znojmo, Czech Republic
- 2023 **Joint Annual Meeting ISMRM-ESMRMB& ISMRT 32nd Annual Meeting.**
3–8 June, Toronto, Canada
- 2023 **OARSI 2023 World Congress on Osteoarthritis.**
17–20 March, Denver, Colorado
- 2022 **Joint Annual Meeting ISMRM-ESMRMB& ISMRT 31st Annual Meeting.**
7–12 May, London, UK
- 2021 **Joint Annual Meeting ISMRM-ESMRMB& ISMRT 30th Annual Meeting.**
15–20 May, Vancouver, Canada → virtual
- 2021 **Czech-Austrian Workshop on Magnetic Resonance Imaging and Spectroscopy.**
13–15 September, Pozlovice, Czech Republic
- 2020 **Joint Annual Meeting ISMRM-ESMRMB& ISMRT 29th Annual Meeting.**
08–14 August, Sydney, Australia/Paris, France → virtual
- 2019 **ESMRMB 2019 Congress.**
3–5 October, Rotterdam, Netherlands
- 2019 **Czech-Austrian Magnetic Resonance Workshop 2019.**
18–20 September, Frein an der Mürz, Austria
- 2019 **15th YSA PhD-Symposium.**
13–14 June, Vienna, Austria

Research Experience

MRI Methods and Quantitative Imaging

Quantitative MRI	T1 and T2/T2* mapping, proton density fat fraction (PDFF), MR elastography, and MR fingerprinting for tissue characterization
MR spectroscopy	single-voxel ^1H spectroscopy of the liver, ^{31}P spectroscopy of the brain, including spectral fitting and interpretation using jMRUI
Image processing	segmentation, registration, parametric map generation, and parameter extraction using Python, MATLAB, and 3D Slicer
Advanced techniques	texture analysis and feature-extraction workflows for quantitative tissue characterization
Machine learning	application of supervised and unsupervised methods to quantitative imaging data for classification tasks

Computer skills

Programming & Data Analysis	Python: data cleaning and manipulation (pandas, NumPy), statistical analysis, machine learning (scikit-learn), data visualization (matplotlib, seaborn, plotly), MATLAB: implementation and application of GLCM-based texture features; preprocessing, analysis, and visualization of MR imaging data
Data Visualization	Python: publication-quality figures, 3D Slicer: medical image visualization, segmentation, co-registration, and analysis, MATLAB: visualisation of MRI data
Statistical Analysis	Python, R, SPSS, StatsDirect: univariate and multivariate statistical analysis, including hypothesis testing, correlation analysis, and regression models

Machine learning Python: supervised and unsupervised learning, model evaluation, feature engineering, dimensionality reduction

Reproducible Research & Tools $\LaTeX$, Jupyter Notebook

Workflow automation

Languages

Slovak mother language

English advanced

German intermediate