



Matthew Joseph Middione

Physical Science Research Scientist, Rad/Radiological Sciences Laboratory

Bio

BIO

Matt started his MR journey as a Ph.D. student at UCLA under the tutelage of Dr. Ennis. There his research focused on the implementation of new pulse sequence techniques for 2D Phase Contrast MRI for faster and more accurate imaging. Following his PhD, he spent four years working at GE Healthcare as a scientist on the neuro applications and workflow team. Through collaboration with Stanford Psychology at the Center for Neurobiological Imaging, the team developed and commercialized a faster EPI imaging technique through the use of simultaneous multi-slice (HyperBand). Matt returns to Stanford as a research scientist looking to apply his experience as an MRI pulse sequence programmer, on both the Siemens and GE platforms, to bring the professional aspects of industry into the academic world of research.

INSTITUTE AFFILIATIONS

- Member (Staff), Cardiovascular Institute

HONORS AND AWARDS

- Leadership Training, GE Healthcare (2016)
- Above & Beyond Award, GE Healthcare (2015 (3x), 2016 (2x) and 2017)
- W.S. Moore Young Investigator Award, ISMRM (2012)
- Biomedical Physics Travel Stipend, UCLA (2011-2012)
- Student Travel Stipend, ISMRM (2011-2012)
- Biomedical Physics Research Colloquium Top Speaker Prize, UCLA (2011)
- Outstanding Undergraduate Physics Student, CSU Fresno (2008)
- Ward & Oma T Miles Memorial Scholarship, CSU Fresno (2006-2008)
- Dean's List, CSU Fresno (2005-2008)
- Undergraduate Research Scholarship, CSU Fresno (2005-2008)

EDUCATION AND CERTIFICATIONS

- Ph.D., University of California, Los Angeles , Biomedical Physics (2013)
- M.S., University of California, Los Angeles , Biomedical Physics (2010)
- B.S., California State University, Fresno , Biomedical Physics (2008)

SERVICE, VOLUNTEER, AND COMMUNITY WORK

- Board Member (5/1/2017)

- Volunteer (6/1/2018)

PATENTS

- Daniel B. Ennis, Matthew J. Middione, Julio A. Oscanoa Aida, Shreyas S. Vasawala. "United States Patent 11550014 Artificial intelligence based reconstruction for phase contrast magnetic resonance imaging", The Board of Trustees of the Leland Stanford Junior University, The United States of America as represented by The Department Of Veterans Affairs, Jan 10, 2023

LINKS

- UCLA Dissertation: <https://escholarship.org/uc/item/9j31218p>

Professional

WORK EXPERIENCE

- Scientist, MR Applications & Workflow - GE Healthcare (9/9/2013 - 9/22/2017)

Publications

PUBLICATIONS

- **Multishot Diffusion-Weighted MRI of the Breasts in the Supine vs. Prone Position.** *Journal of magnetic resonance imaging : JMRI*
Moran, C. J., Middione, M. J., Mazzoli, V., McKay-Nault, J. A., Guidon, A., Waheed, U., Rosen, E. L., Poplack, S. P., Rosenberg, J., Ennis, D. B., Hargreaves, B. A., Daniel, B. L.
2022
- **Accelerated two-dimensional phase-contrast for cardiovascular MRI using deep learning-based reconstruction with complex difference estimation.** *Magnetic resonance in medicine*
Oscanoa, J. A., Middione, M. J., Syed, A. B., Sandino, C. M., Vasawala, S. S., Ennis, D. B.
2022
- **A gradient optimization toolbox for general purpose time-optimal MRI gradient waveform design.** *Magnetic resonance in medicine*
Loecher, M., Middione, M. J., Ennis, D. B.
2020; 84 (6): 3234-3245
- **A gradient optimization toolbox for general purpose time-optimal MRI gradient waveform design** *MAGNETIC RESONANCE IN MEDICINE*
Loecher, M., Middione, M. J., Ennis, D. B.
2020
- **Optimization methods for magnetic resonance imaging gradient waveform design.** *NMR in biomedicine*
Middione, M. J., Loecher, M. n., Moulin, K. n., Ennis, D. B.
2020: e4308
- **Advantages of Short Repetition Time Resting-State Functional MRI Enabled by Simultaneous Multi-slice Imaging.** *Journal of neuroscience methods*
Jahanian, H., Holdsworth, S., Christen, T., Wu, H., Zhu, K., Kerr, A. B., Middione, M. J., Dougherty, R. F., Moseley, M., Zaharchuk, G.
2018
- **Toward personalised diffusion MRI in psychiatry: improved delineation of fibre bundles with the highest-ever angular resolution in vivo tractography.** *Translational psychiatry*
Callaghan, F., Maller, J. J., Welton, T., Middione, M. J., Shankaranarayanan, A., Grieve, S. M.
2018; 8 (1): 91
- **Hybrid-Space SENSE Reconstruction for Simultaneous Multi-Slice MRI** *IEEE TRANSACTIONS ON MEDICAL IMAGING*
Zhu, K., Dougherty, R. F., Wu, H., Middione, M. J., Takahashi, A. M., Zhang, T., Pauly, J. M., Kerr, A. B.
2016; 35 (8): 1824-1836
- **Phase Contrast MRI with Flow Compensation View Sharing** *MAGNETIC RESONANCE IN MEDICINE*
Wang, D., Shao, J., Rapacchi, S., Middione, M. J., Ennis, D. B., Hu, P.
2015; 73 (2): 505-513

- **Convex Gradient Optimization for Increased Spatiotemporal Resolution and Improved Accuracy in Phase Contrast MRI** *MAGNETIC RESONANCE IN MEDICINE*
Middione, M. J., Wu, H. H., Ennis, D. B.
2014; 72 (6): 1552-1564
- **Velocity Encoding with the Slice Select Refocusing Gradient for Faster Imaging and Reduced Chemical Shift-Induced Phase Errors** *MAGNETIC RESONANCE IN MEDICINE*
Middione, M. J., Thompson, R. B., Ennis, D. B.
2014; 71 (6): 2014-2023
- **Chemical shift-induced phase errors in phase-contrast MRI** *MAGNETIC RESONANCE IN MEDICINE*
Middione, M. J., Ennis, D. B.
2013; 69 (2): 391-401