



Dwight Nishimura

Addie and AI Macovski Professor, Emeritus
Electrical Engineering

Bio

BIO

Nishimura develops new acquisition and processing techniques for improved medical imaging.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Electrical Engineering
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute

LINKS

- Lab: <http://mrsrl.stanford.edu>
- Personal: <http://www-ee.stanford.edu/~dwight>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

medical imaging, magnetic resonance imaging

Teaching

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Alex Toews, Mahmut Yurt

Doctoral (Program)

Renesmee Kuo, Ridvan Yesiloglu

Publications

PUBLICATIONS

- **High-resolution, respiratory-resolved coronary MRA using a Phyllotaxis-reordered variable-density 3D cones trajectory.** *Magnetic resonance imaging*
Koundinyan, S. P., Baron, C. A., Malavé, M. O., Ong, F., Addy, N. O., Cheng, J. Y., Yang, P. C., Hu, B. S., Nishimura, D. G.

2023

- **Reconstruction of undersampled 3D non-Cartesian image-based navigators for coronary MRA using an unrolled deep learning model.** *Magnetic resonance in medicine*

Malave, M. O., Baron, C. A., Koundinyan, S. P., Sandino, C. M., Ong, F., Cheng, J. Y., Nishimura, D. G.

2020

- **Combined T2 -preparation and multidimensional outer volume suppression for coronary artery imaging with 3D cones trajectories.** *Magnetic resonance in medicine*

Zeng, D. Y., Baron, C. A., Malave, M. O., Kerr, A. B., Yang, P. C., Hu, B. S., Nishimura, D. G.

2019

- **Banding-free balanced SSFP cardiac cine using frequency modulation and phase cycle redundancy.** *Magnetic resonance in medicine*

Datta, A., Nishimura, D. G., Baron, C. A.

2019

- **Whole-heart coronary MR angiography using a 3D cones phyllotaxis trajectory** *MAGNETIC RESONANCE IN MEDICINE*

Malave, M. O., Baron, C. A., Addy, N., Cheng, J. Y., Yang, P. C., Hu, B. S., Nishimura, D. G.

2019; 81 (2): 1092–1103

- **Deep residual network for off-resonance artifact correction with application to pediatric body MRA with 3D cones.** *Magnetic resonance in medicine*

Zeng, D. Y., Shaikh, J. n., Holmes, S. n., Brunsing, R. L., Pauly, J. M., Nishimura, D. G., Vasawala, S. S., Cheng, J. Y.

2019

- **Whole-heart coronary MR angiography using a 3D cones phyllotaxis trajectory.** *Magnetic resonance in medicine*

Malave, M. O., Baron, C. A., Addy, N. O., Cheng, J. Y., Yang, P. C., Hu, B. S., Nishimura, D. G.

2018

- **Rapid compressed sensing reconstruction of 3D non-Cartesian MRI** *MAGNETIC RESONANCE IN MEDICINE*

Baron, C. A., Dwork, N., Pauly, J. M., Nishimura, D. G.

2018; 79 (5): 2685–92

- **Mitigation of near-band balanced steady-state free precession through-plane flow artifacts using partial dephasing.** *Magnetic resonance in medicine*

Datta, A. n., Cheng, J. Y., Hargreaves, B. A., Baron, C. A., Nishimura, D. G.

2018; 79 (6): 2944–53

- **3D image-based navigators for coronary MR angiography** *MAGNETIC RESONANCE IN MEDICINE*

Addy, N. O., Ingle, R. R., Luo, J., Baron, C. A., Yang, P. C., Hu, B. S., Nishimura, D. G.

2017; 77 (5): 1874-1883

- **Nonrigid Motion Correction With 3D Image-Based Navigators for Coronary MR Angiography** *MAGNETIC RESONANCE IN MEDICINE*

Luo, J., Addy, N. O., Ingle, R. R., Baron, C. A., Cheng, J. Y., Hu, B. S., Nishimura, D. G.

2017; 77 (5): 1884-1893

- **Measuring B-1 distributions by B-1 phase encoding** *MAGNETIC RESONANCE IN MEDICINE*

Jordanova, K. V., Nishimura, D. G., Kerr, A. B.

2017; 77 (1): 229-236

- **High-resolution diffusion-weighted imaging of the breast with multiband 2D radiofrequency pulses and a generalized parallel imaging reconstruction** *MAGNETIC RESONANCE IN MEDICINE*

Taviani, V., Alley, M. T., Banerjee, S., Nishimura, D. G., Daniel, B. L., Vasawala, S. S., Hargreaves, B. A.

2017; 77 (1): 209-220

- **Reduced Field-of-View DWI with Robust Fat Suppression and Unrestricted Slice Coverage Using Tilted 2D RF Excitation** *MAGNETIC RESONANCE IN MEDICINE*

Banerjee, S., Nishimura, D. G., Shankaranarayanan, A., Saritas, E. U.

2016; 76 (6): 1668-1676

- **B0 mapping using rewinding trajectories (BMART).** *Magnetic resonance in medicine*

Baron, C. A., Nishimura, D. G.
2016

- **Robust self-navigated body MRI using dense coil arrays.** *Magnetic resonance in medicine*
Zhang, T., Cheng, J. Y., Chen, Y., Nishimura, D. G., Pauly, J. M., Vasanawala, S. S.
2016; 76 (1): 197-205
- **3D image-based navigators for coronary MR angiography.** *Magnetic resonance in medicine*
Addy, N. O., Ingle, R. R., Luo, J., Baron, C. A., Yang, P. C., Hu, B. S., Nishimura, D. G.
2016
- **Nonrigid motion correction with 3D image-based navigators for coronary MR angiography.** *Magnetic resonance in medicine*
Luo, J., Addy, N. O., Ingle, R. R., Baron, C. A., Cheng, J. Y., Hu, B. S., Nishimura, D. G.
2016
- **Lowering the B1 threshold for improved BEAR B1 mapping.** *Magnetic resonance in medicine*
Jordanova, K. V., Nishimura, D. G., Kerr, A. B.
2016; 75 (3): 1262-1268
- **Measuring B1 distributions by B1 phase encoding.** *Magnetic resonance in medicine*
Jordanova, K. V., Nishimura, D. G., Kerr, A. B.
2016
- **High-resolution diffusion-weighted imaging of the breast with multiband 2D radiofrequency pulses and a generalized parallel imaging reconstruction.** *Magnetic resonance in medicine*
Taviani, V., Alley, M. T., Banerjee, S., Nishimura, D. G., Daniel, B. L., Vasanawala, S. S., Hargreaves, B. A.
2016
- **Combined Outer Volume Suppression and T-2 Preparation Sequence for Coronary Angiography** *MAGNETIC RESONANCE IN MEDICINE*
Luo, J., Addy, N. O., Ingle, R. R., Hargreaves, B. A., Hu, B. S., Nishimura, D. G., Shin, T.
2015; 74 (6): 1632-1639
- **Combined outer volume suppression and T2 preparation sequence for coronary angiography.** *Magnetic resonance in medicine*
Luo, J., Addy, N. O., Ingle, R. R., Hargreaves, B. A., Hu, B. S., Nishimura, D. G., Shin, T.
2015; 74 (6): 1632-9
- **Non-contrast-enhanced peripheral angiography using a sliding interleaved cylinder acquisition** *MAGNETIC RESONANCE IN MEDICINE*
Kwon, K. T., Kerr, A. B., Wu, H. H., Hu, B. S., Brittain, J. H., Nishimura, D. G.
2015; 74 (3): 727-738
- **High-resolution variable-density 3D cones coronary MRA.** *Magnetic resonance in medicine*
Addy, N. O., Ingle, R. R., Wu, H. H., Hu, B. S., Nishimura, D. G.
2015; 74 (3): 614-621
- **Non-contrast-enhanced peripheral angiography using a sliding interleaved cylinder acquisition.** *Magnetic resonance in medicine*
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2015; 74 (3): 727-738
- **High-resolution variable-density 3D cones coronary MRA** *MAGNETIC RESONANCE IN MEDICINE*
Addy, N. O., Ingle, R. R., Wu, H. H., Hu, B. S., Nishimura, D. G.
2015; 74 (3): 614-621
- **Self-Gated Fat-Suppressed Cardiac Cine MRI** *MAGNETIC RESONANCE IN MEDICINE*
Ingle, R. R., Santos, J. M., Overall, W. R., McConnell, M. V., Hu, B. S., Nishimura, D. G.
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- **Rapid Single-Breath-Hold 3D Late Gadolinium Enhancement Cardiac MRI Using a Stack-of-Spirals Acquisition** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Shin, T., Lustig, M., Nishimura, D. G., Hu, B. S.
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- **Rapid single-breath-hold 3D late gadolinium enhancement cardiac MRI using a stack-of-spirals acquisition.** *Journal of magnetic resonance imaging*
Shin, T., Lustig, M., Nishimura, D. G., Hu, B. S.
2014; 40 (6): 1496-1502
- **Hadamard Slice Encoding for Reduced-FOV Diffusion-Weighted Imaging** *MAGNETIC RESONANCE IN MEDICINE*
Saritas, E. U., Lee, D., Cukur, T., Shankaranarayanan, A., Nishimura, D. G.
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- **B1 estimation using adiabatic refocusing: BEAR.** *Magnetic resonance in medicine*
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- **B-1 Estimation Using Adiabatic Refocusing: BEAR** *MAGNETIC RESONANCE IN MEDICINE*
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- **The feasibility of assessing branched-chain amino acid metabolism in cellular models of prostate cancer with hyperpolarized [1-(13)C]-ketoisocaproate.** *Magnetic resonance imaging*
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- **Nonrigid autofocus motion correction for coronary MR angiography with a 3D cones trajectory.** *Magnetic resonance in medicine*
Ingle, R. R., Wu, H. H., Addy, N. O., Cheng, J. Y., Yang, P. C., Hu, B. S., Nishimura, D. G.
2014; 72 (2): 347-361
- **Three-Dimensional Magnetization-Prepared Imaging Using a Concentric Cylinders Trajectory** *MAGNETIC RESONANCE IN MEDICINE*
Kwon, K. T., Wu, H. H., Shin, T., Cukur, T., Lustig, M., Nishimura, D. G.
2014; 71 (5): 1700-1710
- **Collectivity evolution in the neutron-rich Pd isotopes toward the N=82 shell closure** *PHYSICAL REVIEW C*
Wang, H., Aoi, N., Takeuchi, S., Matsushita, M., Doornenbal, P., Motobayashi, T., Steppenbeck, D., Yoneda, K., Baba, H., Caceres, L., Dombradi, Z., Kobayashi, K., Kondo, et al
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- **Off-resonance-robust velocity-selective magnetization preparation for non-contrast-enhanced peripheral MR angiography.** *Magnetic resonance in medicine*
Shin, T., Hu, B. S., Nishimura, D. G.
2013; 70 (5): 1229-1240
- **Noncontrast-enhanced renal angiography using multiple inversion recovery and alternating TR balanced steady-state free precession** *MAGNETIC RESONANCE IN MEDICINE*
Dong, H. Z., Worters, P. W., Wu, H. H., Ingle, R. R., Vasanawala, S. S., Nishimura, D. G.
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- **Non-contrast-enhanced renal and abdominal MR angiography using velocity-selective inversion preparation.** *Magnetic resonance in medicine*
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- **Reproducibility study for free-breathing measurements of pyruvate metabolism using hyperpolarized 13C in the heart** *MAGNETIC RESONANCE IN MEDICINE*
Wu, H. H., Gurney, P. T., Hu, B. S., Nishimura, D. G., McConnell, M. V.

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- **Free-breathing multiphase whole-heart coronary MR angiography using image-based navigators and three-dimensional cones imaging.** *Magnetic resonance in medicine : official journal of the Society of Magnetic Resonance in Medicine / Society of Magnetic Resonance in Medicine*
Wu, H. H., Gurney, P. T., Hu, B. S., Nishimura, D. G., McConnell, M. V.
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Shin, T., Nayak, K. S., Santos, J. M., Nishimura, D. G., Hu, B. S., McConnell, M. V.
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Andre, J. B., Zaharchuk, G., Saritas, E., Komakula, S., Shankaranarayan, A., Banerjee, S., Rosenberg, J., Nishimura, D. G., Fischbein, N. J.
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Addy, N. O., Wu, H. H., Nishimura, D. G.
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- **The central signal singularity phenomenon in balanced SSFP and its application to positive-contrast imaging** *MAGNETIC RESONANCE IN MEDICINE*
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- **High-resolution Diffusion-weighted Magnetic Resonance Imaging in Patients with Locally Advanced Breast Cancer** *ACADEMIC RADIOLOGY*
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- **A k-space analysis of small-tip-angle excitation. 1989.** *Journal of magnetic resonance*
Pauly, J., Nishimura, D., Macovski, A.
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- **Initial Experience with Five-Dimensional Cardiac-Respiratory Ventricular Function Evaluation Using a Novel Magnetic Resonance Imaging Technique** *Scientific Sessions of the American-Heart-Association/Resuscitation Science Symposium*
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- **A Molecular MRI Probe to Detect Treatment of Cardiac Apoptosis In Vivo** *MAGNETIC RESONANCE IN MEDICINE*
Dash, R., Chung, J., Chan, T., Yamada, M., Barral, J., Nishimura, D., Yang, P. C., Simpson, P. C.
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 - **Real-Time Motion Correction for High-Resolution Larynx Imaging** *MAGNETIC RESONANCE IN MEDICINE*
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 - **FeCo/Graphite Nanocrystals for Multi-Modality Imaging of Experimental Vascular Inflammation** *PLOS ONE*
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