

# Angel R. Pineda

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## Professional Experience

|                   |                                    |                |
|-------------------|------------------------------------|----------------|
| Manhattan College | Professor of Mathematics           | 2021 - present |
| Manhattan College | Associate Professor of Mathematics | 2015 - 2021    |
| CSU, Fullerton    | Associate Professor of Mathematics | 2013 - 2015    |
| CSU, Fullerton    | Assistant Professor of Mathematics | 2007 - 2013    |

## Sabbatical Visiting Positions

|                                   |   |             |
|-----------------------------------|---|-------------|
| New York University               | FRN Scholar in Residence                  | 2022 - 2023 |
| University of Southern California | Magnetic Resonance Engineering Laboratory | 2013 - 2014 |

## Education

|                     |                                      |             |
|---------------------|--------------------------------------|-------------|
| Stanford University | Postdoctoral Fellowship in Radiology | 2002 - 2006 |
| Advisers:           | Norbert J. Pelc and Rebecca Fahrig   |             |

|                       |  |             |
|-----------------------|--|-------------|
| University of Arizona | Ph.D. in Applied Mathematics   | 1995 - 2002 |
| Adviser:              | Harrison H. Barrett  |             |
| Dissertation:         | Detection-Theoretic Evaluation in Digital Radiography and Optical Tomography |             |

|                   |                                   |             |
|-------------------|-----------------------------------|-------------|
| Lafayette College | B.S. in Chemical Engineering      | 1991 - 1995 |
| Advisers:         | Robert G. Root and Javad Tavakoli |             |

## Research Interests

|                 |   |
|-----------------|---|
| General:        | Applied Mathematics, Statistical Inference, Medical Imaging   |
| Specialization: | Detection-Theoretic Optimization in MRI using Neural Networks |

## Honors

|   |  |             |
|---|--|-------------|
| American Mathematical Society   | Award for Distinguished Public Service                       | 2024        |
| Inclusion in Testimonios: Stories of Latinx & Hispanic Mathematicians       |  | 2021        |
| Co-authored article "Water-fat separation with IDEAL gradient-echo imaging" |  | 2016        |
| chosen as one of the 25 most important papers in the first 25 years of JMRI |  |             |
| CSU, Fullerton  | Teacher Scholar Award for Mentoring Student                  | 2011        |
|   | Research, awarded by the College of Science and Mathematics  |             |
| CSU, Fullerton  | Outstanding Educator of the Year, received one               | 2011        |
|   | of two awards given in math by the Associated Students, Inc. |             |
| Mathematical Association of America   | Dolciani-Halloran Project NExT Fellow                        | 2008 - 2009 |
| American Lung Association   | Senior Research Training Fellowship                          | 2004 - 2006 |
| University of Arizona   | Michael A. Cusanovich Research Fellowship                    | 1998 - 1999 |
| USA Today   | All Academic Team (Honorable Mention)                        | 1995        |
| Lafayette College   | Volunteer of the Year  | 1995        |
| Lafayette College   | Charles A. Dana Scholar                                      | 1992        |
| Lafayette College   | McLean-Tau Beta Pi Engineering Prize                         | 1992        |

**Teaching Experience**

Manhattan College

*Undergraduate Courses:*

Introduction to Mathematical Computation (MATH 158)  
Calculus II (MATH 186)  
Elementary Statistics (MATH 230)  
Calculus III (MATH 285)  
Probability (MATH 331)  
Applied Statistics (MATH 336)  
Undergraduate Research (MATH 499)

*Graduate Courses:*

Computational Methods for Analytics (MATG 511)  
Machine Learning (MATG 557)  
Probability and Statistics for Analytics (MATG 630)  
Advanced Statistical Inference (MATG 633)  
Probabilistic Methods (MATG 635)  
Statistical Learning (MATG 639)  
Topics in Applied Mathematics (MATG 691)  
Internship (MATG 698)  
Graduate Research (MATG 699)

CSU, Fullerton

*Undergraduate Courses:*

Business Calculus (Math 135)  
Differential Equations with Linear Algebra (Math 250B)  
Problem Solving (Math 281)  
Linear Algebra (Math 307)  
Introduction to Mathematical Computation (Math 320)  
Mathematical Probability (Math 335)  
Statistics for the Natural Sciences (Math 338)  
Numerical Analysis (Math 340)  
Mathematical Statistics (Math 435)  
Internship (Math 495)  
Undergraduate Research (Math 497)  
Independent Study (Math 499)

*Graduate Courses:*

Numerical Analysis I,II (Math 501 A,B)  
Probability and Statistics I,II (Math 502 A,B)  
Mathematical Modeling I,II (Math 503 A,B)  
Stochastic Modeling and Inverse Problems I,II (Math 504 A,B)  
Applied Mathematics Project (Math 597)

**Mentored Research Students** (including funding sources<sup>1</sup>)*Graduate*

|                       |                   |           |                           |
|-----------------------|-------------------|-----------|---------------------------|
| Joshua Herman         | Manhattan College | NIH-MC    | Summer 2020 - Spring 2023 |
| Marcus Wong           | Manhattan College | NIH-MC    | Fall 2021 - Spring 2022   |
| Katherine Encarnacion | Manhattan College | MC,CRFEC  | Fall 2015 - Spring 2016   |
| Nicholas Italiano     | Manhattan College | MC,CRFEC  | Fall 2015 - Spring 2016   |
| Michael Scarinci      | Manhattan College | MC,CRFEC  | Fall 2015 - Spring 2016   |
| Emily K. Bice         | CSU, Fullerton    | GE & CSUF | Spring 2009 - Summer 2010 |
| Antonio Gonzalez      | CSU, Fullerton    | NIH-CSUF  | Spring 2008 - Fall 2008   |

*Undergraduate*

|                      |                     |                       |                           |
|----------------------|---------------------|-----------------------|---------------------------|
| Aliaa Eldakhakhny    | Manhattan College   | NIH-MC                | Spring 2024 - present     |
| Aurora Shahu         | Manhattan College   | NIH-MC                | Spring 2024 - present     |
| Rehan Mehta          | Manhattan College   | NIH-MC                | Summer 2022 - present     |
| Tetsuya Kawakita     | Manhattan College   | NIH-MC                | Summer 2022 - Spring 2023 |
| Tavianne Kemp        | Manhattan College   | NIH-MC                | Fall 2021 - Spring 2022   |
| Alexandra O'Neill    | Manhattan College   | NIH-MC                | Summer 2020 - Spring 2022 |
| Rachel Roca          | Manhattan College   | NIH-MC                | Summer 2020 - Spring 2021 |
| Emely Valdez         | Manhattan College   | NIH-MC                | Summer 2020               |
| Quinn Torres         | Manhattan College   | MC                    | Summer 2019               |
| Marcus Wong          | Manhattan College   | MC                    | Summer 2019               |
| Hope Miedema         | Manhattan College   | MC                    | Spring 2017               |
| Melissa Brenner      | Manhattan College   | MC                    | Fall 2016                 |
| Sana Altaf           | Manhattan College   | MC                    | Fall 2016                 |
| Erick Ortega         | CSU, Fullerton      | LSAMP                 | Fall 2014 - Spring 2015   |
| Rudolph Saenz        | CSU, Fullerton      | LSAMP                 | Fall 2014 - Spring 2015   |
| Cody Gruebele        | CSU, Fullerton      | CSUF                  | Fall 2012 - Spring 2013   |
| Jorly Chatouphonexay | CSU, Fullerton      | MARC                  | Summer 2010 - Spring 2013 |
| Anne Calder          | CSU, Fullerton      | CURM                  | Fall 2010 - Spring 2011   |
| Li-Hsuan Huang       | CSU, Fullerton      | CURM & LSAMP          | Fall 2010 - Spring 2011   |
| Eden Ellis           | CSU, Fullerton      | CURM & CSUF           | Summer 2010 - Spring 2011 |
| Kevin Park           | CSU, Fullerton      | CURM & LSAMP & McNair | Summer 2009 - Spring 2011 |
| Daniel Jewell        | CSU, Fullerton      | NIH-CSUF              | Spring 2008 - Summer 2008 |
| Joaquin Alvarado     | CSU, Fullerton      | Start-up funds        | Summer 2008               |
| Victor Ying          | CSU, Fullerton      | Start-up funds        | Summer 2008               |
| Abhik Kumar          | Stanford University | AAPM                  | Summer 2005               |

**Peer-Reviewed Journal Publications by Mentored Undergraduate Students**

1. Calder AM, Ellis EA, Huang LH, Park K, “Statistical Modeling through Analytical and Monte Carlo Methods of the Fat Fraction in Magnetic Resonance Imaging (MRI)”, *SIAM Undergraduate Research Online*, **5**, 2012, 116-127.

<sup>1</sup>NIH-MC: NIH National Institute of Biomedical Imaging and Bioengineering (NIBIB) 1R15EB029172-01 and 2R15EB029172-02, MC: Manhattan College, CRFEC: Catherine and Robert Fenton Endowed Chair (Lance Evans), GE: General Electric, CSUF: California State University, Fullerton, NIH-CSUF: National Institutes of Health 1R01CA112163, MARC: Minority Access to Research Careers, CURM: Center for Undergraduate Research in Mathematics, LSAMP: Louis Stokes Alliance for Minority Participation, McNair: McNair Scholars Program and AAPM: American Association of Physicists in Medicine.

**Team-based Consulting**

|  |  |           |
|--|--|-----------|
| Data Consulting Project<br>Role: Co-Mentor (with L. Evans) | Project Topic: Visualizing Sagebrush Growth<br>Manhattan College                     | 2015      |
| Applied Math Project<br>Role: Co-Mentor (with J. Grace)    | Project Topic: Hurricane Modeling<br>CSU, Fullerton & Earth Science Associates       | 2015      |
| Applied Math Project<br>Role: Co-Mentor (with W. Gearhart) | Project Topic: Magnetic Resonance Imaging<br>CSU, Fullerton & GE Healthcare          | 2008      |
| Math Modeling in Industry<br>Role: Participant             | Project Topic: Computed Tomography<br>Institute for Mathematics and its Applications | 2000      |
| Technology Clinic<br>Role: Participant                     | Project Topic: Queuing of Sleep Apnea Patients<br>Lafayette College                  | 1994-1995 |

**Visiting Graduate Student Research Position**

|                         |  |      |
|-------------------------|--|------|
| Summer Research Program | Theoretical Biology and Biophysics Group<br>Los Alamos National Laboratory | 1997 |
|-------------------------|--|------|

**Professional Service at National or International Level<sup>2</sup>**

|   |   |                |
|---|---|----------------|
| Secretary for Graduate Research Assistantships in Developing Countries (GRAID)<br>of the Committee for Developing Countries (CDC) |   | 2018 - present |
| Advisory Board for GRAM: Graduate Readiness and Access in Mathematics<br>(NSF funded grant at CSU, Fullerton)                     |   | 2015 - 2021    |
| Reviewer for MAA  | Dolciani (DMEG) Grants                      | 2019           |
| International Mathematical Union (IMU) Committee for Developing Countries (CDC)   |   | 2015 - 2018    |
| MAA Subcommittee on Research by Undergraduates (SCRU)   |   | 2011 - 2017    |
| Regional Coordinator for Central America of IMU Report on Mathematics<br>in Latin America and the Caribbean                       |   | 2011-2014      |
| Volunteer Lecturer in Numerical Analysis<br>U.S. National Committee for Mathematics   | Royal University of Phnom Penh,<br>Cambodia | 2009, 2010     |

**Journal Reviewer:**

Medical Physics Journal, Magnetic Resonance in Medicine, IEEE Transactions on Medical Imaging, Journal of the Optical Society of America A, Applied Optics, SIAM Journal on Imaging Sciences, UMAP Journal: Undergraduate Mathematics and Its Applications, Optics Express.

**Grant Reviewer:**

National Science Foundation

**Conference Abstract Reviewer:**

International Society for Magnetic Resonance in Medicine (ISMRM)

<sup>2</sup>Service at the college and department level available by request.

### Service Related Publications<sup>3</sup>

1. Balmaceda JM, Clemens CH, Daubechies I, **Pineda AR**, Rusu G, Waldschmidt M, “Graduate Assistantships in Developing Countries (GRAID): Supporting Mathematics Graduate Students in the Countries that Need it Most”, *Notices of the American Mathematical Society*, **70**, 2023, 1281-1284.
2. Chapter in AMS/MAA Classroom Teaching Materials, “Testimonios: Stories of Latinx and Hispanic Mathematicians”, Eds. Pamela E. Harris, Alicia Prieto-Langarica, Vanessa Rivera Quiñones, Luis Sordo Vieira, Rosaura Uscanga, Andrés R. Vindas Meléndez, AMS-MAA Press, 2021.
3. “President’s Message: Mathematicians Without Borders”, *MAA Focus*, Dec/Jan 2020. Pages 26-28. *with Dorff M, Neudauer NA*.
4. “Strengthening Mathematics in the Developing World”, *ICM 2018 Proceedings*, Pages 1049-1064 (2019). *with Jose Maria P. Balmaceda, Nouzha El Yacoubi, Mama Foupouagnigni, Alejandro Jofré, Lena Koch, Wandera Ogana, Paolo Piccione, Polly W. Psy, Marie-Françoise Roy, and Yuri Tschinkel*
5. “Undergraduate Research: Viewpoints from the Student Side”, *Math Horizons*, Sept. 2016, 23-25. *with Alejandro Camacho, Jeffrey Laylon Davis, Sarah Klett, Herbert Medina, Samantha VanSchalkwyk*
6. Caceres L, de la Peña JA, **Pineda AR**, Di Prisco C, Solotar, A, “Mathematics in Latin America and the Caribbean: So Much Happening, So Much to Do”, *Notices of the American Mathematical Society*, **61**, 2014, 1052-1055.
7. IMU Report on Mathematics in Latin America and the Caribbean 2014 *with Jose Antonio de la Peña, Luis Caceres, Carlos Di Prisco and Andrea Solotar*  
<http://www.mathunion.org/cdc/research-and-useful-links/>
8. Mentoring and Judging at the Undergraduate Poster Session of the JMM 2013 *with James P. Solazzo*  
<http://www.maa.org/programs/students/undergraduate-research/jmm-poster-session/judging-criteria>
9. Teaching Numerical Analysis in Cambodia *SIAM News* March 2010  
<http://www.siam.org/news/news.php?id=1720>

### Mentoring Programs

Minority Access to Research Careers (MARC) at CSUF  
 Howard Hughes Medical Institute (HHMI) Scholars Program at CSUF  
 Louis Stokes Alliance for Minority Participation (LSAMP) at CSUF  
 McNair Scholars Program at CSUF  
 Enhancing Postbaccalaureate Opportunities at Cal State Fullerton for Hispanic Students (EPOCHS)  
 National Alliance for Doctoral Studies in the Mathematical Sciences

### Professional Memberships

Society of Industrial and Applied Mathematics (SIAM)  
 Mathematical Association of America (MAA)  
 American Mathematical Society (AMS)  
 Association for Women in Mathematics (AWM)  
 International Society of Magnetic Resonance in Medicine (ISMRM)  
 International Society for Optics and Photonics (SPIE)

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<sup>3</sup>Authorship order in mathematical publications is typically alphabetical.

**Selected Invited Talks<sup>4</sup>**

1. *Applied and Computational Mathematics Seminar*, Tulane University, New Orleans, LA 2023  
"Optimizing Acquisition and Reconstruction of Under-Sampled MRI for Signal Detection"
2. *Metro NExT Workshop*, virtual, 2022  
"Guiding students to become the teachers: the nuts and bolts of student-driven class projects"
3. *Latinx in the Mathematical Sciences*, UCLA, 2022  
"Optimizing Acquisition of Under-Sampled Magnetic Resonance Imaging (MRI) for Signal Detection"
4. *FDA Division of Imaging, Diagnostics and Software Reliability*, Virtual, 2021  
"Optimizing Acquisition and Reconstruction of Under-Sampled MRI for Signal Detection"
5. *Stanford Radiological Sciences Laboratory*, Virtual, 2021  
"Optimizing Acquisition and Reconstruction of Under-Sampled MRI for Signal Detection"
6. *Honors Convocation (Faculty Address)*, Manhattan College, NY, NY, 2019.  
"You got this! Productive Persistence: Challenges are Opportunities for Growth"
7. *GRAM Culminating Ceremony (Keynote Speaker)*, CSU, Fullerton, CA, 2017.  
"NIH-Funded Research to GRAM: How My CSUF Students Changed Me?"
8. *Segundo Congreso de Modelación Matemática*, San Salvador, El Salvador, 2016.  
"Optimización de Sistemas Radiológicos Modelando la Detección de Tumores"  
"Modelo Cinético de Reacción Bio-molecular Dependiendo en Difusión y Flujo"
9. *Pi Mu Epsilon Mathematics Conference (Keynote Speaker)*, Sonoma State University, CA, 2014.  
"The Mathematics of Medical Imaging: What is Essential Is Invisible to the Eyes "
10. *Mathematicians and School Mathematics Education: a Pan-American Workshop*, Canada, 2014.  
"Mathematics in Latin America and the Caribbean: A Report for the IMU"
11. *Biomedical Engineering Seminar*, Johns Hopkins University, Baltimore, MD, 2014.  
"Task-Based Optimization in CT and MRI "
12. *MAA SCRUI Panel*, Joint Mathematics Meetings, Baltimore, MD, 2014.  
"Directing Undergraduate Research: How to Get Started"
13. *Escuela de Matemática de América Latina y el Caribe (EMALCA)*, Tegucigalpa, Honduras, 2013.  
"Oportunidades de Estudio de Postgrado Para Centroamericanos en EUA y México".
14. *Meeting of the IMU Committee for Developing Countries*, Berlin, Germany, 2013.  
"Mathematics in Latin America and the Caribbean: Challenges and Opportunities"
15. *International Society for Magnetic Resonance in Medicine (ISMRM) Scientific Workshop on Fat-Water Separation: Insights, Applications and Progress in MRI*, Long Beach, CA, 2012.  
"Noise, Cramér-Rao Bound and NSA".
16. *Matemáticos en la Educación Matemática Escolar: En la búsqueda de impacto en nuestra realidad educacional*, Santiago, Chile, 2012.  
"IMU Volunteer Lecturer Program: Math Education as a Tool for International Development"
17. *SACNAS National Meeting*, San Jose, CA, 2011.  
Session on Mathematical Modeling as a Collaborative Discipline:  
"Statistical Modeling of Chemical Species Separation in Magnetic Resonance Imaging (MRI)".
18. *U.S. National Committee for Mathematics*, Irvine, CA, 2010.  
Report given to the USNCM on the LMS panel at the ICM and mentoring the first graduate student (Emily Bice) in the Volunteer Lecturer Program in Cambodia.
19. *International Congress of Mathematicians*, Hyderabad, India, 2010.  
Panel hosted by the London Mathematical Society (LMS) on Mechanisms for Strengthening Mathematics in Developing Countries.
20. *American Association of Physicists in Medicine (AAPM) Focused Research Meeting on Model Observers for Tomosynthesis and CT of the Breast*, University of Chicago, Chicago, IL, 2009.  
"Spatial and Fourier Analysis of Non-stationarity in 3D Computed Tomography".

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<sup>4</sup>A list of an additional 74 invited and contributed presentations is available by request.

**External Funding (total: \$1,556,317)**

|  |  |                |
|--|--|----------------|
| NIH NIBIB 2R15EB029172-02<br>Funding: \$434,531                            | Role: PI<br><i>R15: Optimizing Acquisition and Reconstruction of Under-sampled MRI for Signal Detection</i><br>Research grant involving undergraduate student using human detection of tumors to improve magnetic resonance imaging using neural networks.                   | 2023 - present |
| NIH NIBIB 1R15EB029172-01<br>Funding: \$395,210                            | Role: PI (Sajan G. Lingala Co-I)<br><i>R15: Optimizing Acquisition and Reconstruction of Under-sampled MRI for Signal Detection</i><br>Research grant involving undergraduate and graduate students using data science and statistics to improve magnetic resonance imaging. | 2020 - 2023    |
| NSF DMS 1345012<br>Funding: \$600,146                                      | Role: PI (with S. Annin)<br><i>MCTP: Graduate Readiness and Access in Mathematics (GRAM)</i><br>Comprehensive mentoring program to prepare underrepresented math students to be successful in graduate studies.  | 2014 - 2015    |
| NSF (through CURM at BYU)<br>Funding: \$14,250                             | Role: PI<br><i>Separating Chemical Species in Magnetic Resonance Imaging</i><br>The grant funded research with four undergraduates at CSUF and faculty development as a research mentor.   | 2010-2011      |
| NIH 1R01CA112163<br>Total Funding: \$916,164<br>CSUF Funding: \$92,180     | Role: Consortium PI at CSUF<br><i>Image Science for the New X-ray: Taking NEQ to Task</i><br>PI: Jeffrey H. Siewerdsen at Johns Hopkins University   | 2007-2010      |
| GE Healthcare Technologies<br>Funding: \$20,000<br>Co-PI: William Gearhart | Role: PI<br><i>Understanding the Mathematics of HYPR-type Algorithms</i><br>The grant funds the work of students in the Applied Math Project.  | Summer 2008    |

**Patents**

1. S.B. Reeder, **A.R. Pineda**, U.S. Patent #7,176,683, *Iterative Decomposition of Water and Fat with Echo Asymmetry and Least-Squares (IDEAL) Estimation in MRI*.
2. H. Yu, S.B. Reeder, C.A. McKenzie, **A.R. Pineda**, U.S. Patent #7,468,605 *Simultaneous Chemical Species Separation and T2\* Measurement*.
3. Z. Wen, **A.R. Pineda**, H. Yu, S.B. Reeder, N.J. Pelc, U.S. Patent #7,508,211, *IDEAL MRI: Regularized Water-Fat Separation*.
4. **A.R. Pineda**, C.A. McKenzie, H. Yu, S.B. Reeder, U.S. Patent #7,592,807, *Maximum Likelihood Estimator in the Presence of Non-Identically Distributed Noise for Decomposition of Chemical Species in MRI*.

**Publications in Peer-Reviewed Journals<sup>5</sup>***(students in italics)*

1. O'Neill AG, Valdez EL, Lingala SG, **Pineda AR**, "Modeling human observer detection in under-sampled magnetic resonance imaging reconstruction with total variation and wavelet sparsity regularization," *J. Med. Imag.*, **10**, 2023, 015502.
2. **Pineda AR**, Miedema H, Lingala SG, Nayak KS, "Optimizing constrained reconstruction in magnetic resonance imaging for signal detection", *Physics in Medicine and Biology*, **66**, 2021, 145014.
3. Kwembe TA, Leonard K, **Pineda AR**, "Academic Year Undergraduate Research: the CURM Model", *Involve*, **7**, 2014, 383-394.
4. Baek J, **Pineda AR**, Pelc NJ, "To Bin or Not to Bin?, The Effect of CT System Limiting Resolution in Noise and Detectability", *Physics in Medicine and Biology*, **58**, 2013, 1433-1446.
5. **Pineda AR**, Tward DJ, Gonzalez A, Siewerdsen JH "Beyond Noise-Power in 3D Computed Tomography: The Local NPS and Off-Diagonal Elements of the Fourier Covariance Matrix", *Medical Physics*, **39**, 2012, 3240-3252.
6. Reeder SB, Bice EK, Yu H, Hernando D, **Pineda AR**, "On the Performance of T2\* Correction Methods for Quantification of Hepatic Fat Content", *Magnetic Resonance in Medicine*. **67**, 2012, 389-404.
7. Chebrolu VV, Yu H, **Pineda AR**, McKenzie CA, Brittain JH, Reeder SB, "Noise Analysis for 3-point Chemical Shift based Water-Fat Separation with Spectral Modeling of Fat", *Journal of Magnetic Resonance Imaging*, **32**, 2010, 493-500.
8. Yoon S, **Pineda AR**, Fahrig R, "Simultaneous Segmentation and Reconstruction: A Level Set Method Approach for Limited View Computed Tomography", *Medical Physics*, **37**, 2010, 2329-2340.
9. Chebrolu VV, Hines CDG, Yu H, **Pineda AR**, Shimakawa A, McKenzie CA, Samsonov A, Brittain JH, Reeder SB, "Independent Estimation of T2\* for Water and Fat for Improved Accuracy of Fat Quantification", *Magnetic Resonance in Medicine*, **63**, 2010, 849-857.
10. Wen Z, Reeder SB, **Pineda AR**, Pelc NJ, "Noise Considerations of Three-Point Water-Fat Separation Imaging Methods", *Medical Physics*, **35**, 2008, 3597-3606.
11. Yu H, McKenzie CA, Shimikawa A, Vu AT, Brau ACS, Beatty PJ, **Pineda AR**, Brittain JH, Reeder SB, "Multi-echo Reconstruction for Simultaneous Water-Fat Decomposition and T2\* Estimation", *Journal of Magnetic Resonance Imaging*, **26**, 2007, 1153-1161.
12. Lew CD, **Pineda AR**, Clayton D, Spielman D, Chan F, Bammer R, "SENSE Phase-Constrained Magnitude Reconstruction with Iterative Phase Refinement", *Magnetic Resonance in Medicine*, **58**, 2007, 910-921.
13. Reeder SB, McKenzie CA, **Pineda AR**, Yu H, Brau AC, Shimakawa A, Hargreaves BA, Gold GE, Brittain JH, "Water-Fat Separation with IDEAL Gradient Echo Imaging", *Journal of Magnetic Resonance Imaging*, **25**, 2007, 644-652.
14. **Pineda AR**, Barrett HH, Arridge SR, Schweiger M, "Information Content of Data Types in Time-

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<sup>5</sup>The 71 peer-reviewed journal articles, conference papers, patents and refereed abstracts archived in Google Scholar have **3668 citations** before January 21, 2024. Twenty one works have been cited 21 or more times (h-index of 21).



- Domain Optical Tomography”, *Journal of the Optical Society of America A*, **23**, 2006, 2989-2996.
15. **Pineda AR**, Yoon S, Paik DS, Fahrig R, “Optimization of a Tomosynthesis System for the Detection of Lung Nodules”, *Medical Physics*, **33**, 2006, 1372-1379.
  16. **Pineda AR**, Reeder SB, Wen Z, Pelc NJ, “Cramér-Rao Bounds in 3-Point Decomposition of Water and Fat”, *Magnetic Resonance in Medicine*, **54**, 2005, 625-635.
  17. Reeder SB, **Pineda AR**, Wen Z, Shimakawa A, Yu H, Gold GE, Beaulieu CH, Pelc NJ, “Iterative Decomposition of Water and Fat with Echo Asymmetry and Least Squares Estimation (IDEAL): Application with Fast-Spin Echo Imaging”, *Magnetic Resonance in Medicine*, **54**, 2005, 636-644.
  18. Reeder SB, Wen Z, Yu H, **Pineda AR**, Gold GE, Markl M, Pelc NJ, “Multicoil Dixon Chemical Species Separation With an Iterative Least-Squares Estimation Method”, *Magnetic Resonance in Medicine*, **51**, 2004, 35-45.
  19. **Pineda AR**, Barrett HH, “Figures of Merit for Detectors in Digital Radiography. I. Flat Background and Deterministic Blurring”, *Medical Physics*, **31**, 2004, 348-358.
  20. **Pineda AR**, Barrett HH, “Figures of Merit for Detectors in Digital Radiography. II. Finite Number of Secondaries and Structured Backgrounds”, *Medical Physics*, **31**, 2004, 359-367.
  21. Mason T, **Pineda AR**, Wofsy C, Goldstein B, “Effective Rate Models for the Analysis of Transport-Dependent Biosensor Data”, *Mathematical Biosciences*, **159**, 1999, 123-144.
  22. Goldstein B, Coombs D, He X, **Pineda AR** and Wofsy C, “The Influence of Transport on the Kinetics of Binding to Surface Receptors: Application to Cells and BIAcore”, *Journal of Molecular Recognition*, **12**, 1999, 293-299.
  23. **Pineda AR**, Root RG, “Mathematical Modeling of a Radially Inhomogeneous Plate under Load and Tension”, *Journal of Applied Mechanics*, **64**, 1997, 233-237.

### Publications in Refereed Conference Proceedings

*(students in italics)*

1. *Kemp TM, Kawakita TA, Mehta R, Pineda AR*, “Optimizing data acquisition in undersampled magnetic resonance imaging (MRI) using two alternative forced choice (2-AFC) and search tasks”, Proc. of SPIE Medical Imaging 2023, **12467**, 124670U.
2. *O’Neill AG, Lingala SG, Pineda AR*, “Predicting human detection performance in magnetic resonance imaging (MRI) with total variation and wavelet sparsity regularizers”, Proc. of SPIE Medical Imaging 2022, **12035**, 203511.
3. *O’Neill AG, Valdez EL, Lingala SG, Pineda AR*, “Modeling human observer detection in under-sampled magnetic resonance imaging (MRI)”, Proc. of SPIE Medical Imaging 2021, **11599**, 11599H.
4. **Pineda AR**, “Laguerre-Gauss and sparse difference-of-Gaussians observer models for signal detection using constrained reconstruction in magnetic resonance imaging”, *Proc. of SPIE Medical Imaging 2019*, **10952**. 10952A.
5. **Pineda AR**, *Miedema H, Brenner M, Altaf S*, “Reducing the number of reconstructions needed for estimating channelized observer performance”, *Proc. of SPIE Medical Imaging 2018*, **10577**. 10577OU.

6. **Pineda AR**, Siewerdsen JH, Tward DJ, “Analysis of Image Noise in 3D Cone-Beam CT: Spatial and Fourier Domain Approaches under Conditions of Varying Stationarity”, *Proc. of SPIE Medical Imaging 2008*, **6913**, 69131Q.
7. Tward DJ, Siewerdsen JH, Fahrig R, **Pineda AR**, “Cascaded Systems Analysis of the 3D NEQ for Cone-Beam CT and Tomosynthesis”, *Proc. of SPIE Medical Imaging 2008*, **6913**, 69131S.
8. Yoon SW, **Pineda AR**, Fahrig R, “Level Set Reconstruction for Sparse Angularly Sampled Data”, *IEEE Medical Imaging Conference 2006*.
9. Yoon SW, **Pineda AR**, Solomon EG, Star-Lack S, Fahrig R, “A Fast and Accurate Tomosynthesis Simulation Model”, *IEEE Medical Imaging Conference 2004*.
10. Fahrig R, **Pineda AR**, Solomon EG, Leung AN, Pelc NJ, “Fast Tomosynthesis for Lung Cancer Detection Using the SBDX Geometry”, *Proc. of SPIE Medical Imaging 2003*, **5030**, 371-378.
11. **Pineda AR**, Barrett HH, “What Does DQE Say About Lesion Detectability in Digital Radiography?”, *Proc. of SPIE Medical Imaging 2001*, **4320**, 561-569.
12. Clarkson E, **Pineda AR**, Barrett HH, “Analytic Approximations to the Hotelling Trace for Digital X-ray Detectors”, *Proc. of SPIE Medical Imaging 2001*, **4320**, 339-349.
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