

# Angel R. Pineda

Curriculum Vitae

Updated October 1, 2023

Department of Mathematics

Manhattan College, Riverdale, NY

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github: <https://github.com/MoMI-Manhattan-College>

## 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 Machine Learning

## Honors

Featured in Lathisms Hispanic Heritage Month Calendar of Latinx Mathematicians	2020	
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’s All Academic Team (Honorable Mention)		1995
Volunteer of the Year, Lafayette College		1995
Phi Beta Kappa		1995
Tau Beta Pi		1994
Sigma Xi		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 university, funding sources<sup>1</sup> and dates)

### Graduate

Joshua Herman	Manhattan College	NIH-MC	Summer 2020 - present
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

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

## Selected Presentations by Mentored Graduate Students in Research and Class Projects

1. *Herman J*, et. al., "Evaluation of Neural Network Reconstruction of Undersampled Data using a Human Observer Model of Signal Detection", Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), London, UK, 2022.
2. *Herman J*, et. al., "Task-Based Assessment for Neural Networks: Evaluating Undersampled MRI Reconstructions based on Signal Detection", Poster at Virtual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), virtual, 2021.
3. *Scarinci M, Encarnacion K, Italiano N*, "3D Visualization of Growth Pattern of *Artemisia tridentata*

<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.

(Sagebrush)”, *Talk at an SIAM e-poster Session at the Annual Meeting of the Society of Industrial and Applied Mathematics (SIAM)*, Boston, MA, 2016.

4. *Bice EK*, “Cramér-Rao Bound for Estimating Non-linear Parameters in a Model for Chemical Species Separation using MRI”, *Talk at an AMS Special Session on Interactions of Inverse Problems, Signal Processing, and Imaging at the Joint Mathematics Meetings*, San Francisco, CA, 2010.
5. *Sarcon A, Abbasi N*, et. al. “The Mathematics of Imaging Blood Flow”, *Mathematics Colloquium*, CSU, Fullerton, CA, 2008.

#### **Selected Presentations by Mentored Undergraduate Students in Research and Class Projects**

1. *Mehta R, Kawakita, TA*, “Modeling human observer detection for varying data acquisition in under-sampled magnetic resonance imaging (MRI)”, *National Conference on Undergraduate Research*, Eau Claire, WI, 2023.
2. *O’Neill AG*, et. al., “Evaluation of Multicoil SENSE Reconstruction of Undersampled Data using a Human Observer Model of Signal Detection ” *Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM)*, London, UK, 2022.
3. *O’Neill AG, Valdez EL*, et. al., “Modeling human observer detection in undersampled magnetic resonance imaging (MRI)”, *SPIE Medical Imaging 2021*, Talk, virtual. (Finalist for the Robert F. Wagner All Conference Best Student Paper Award)
4. *Roca RE*, et. al., “Task Performance or Artifact Reduction? Evaluating the Number of Channels and Dropout based on Signal Detection on a U-Net with SSIM Loss”, *Poster at Virtual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM)*, 2021.
5. *Roca RE*, “U-Net Neural Network Reconstructions of Under-sampled Magnetic Resonance Imaging (MRI)”, poster presentation at the Undergraduate Research Poster Session of the Joint Mathematics Meetings, virtual, 2021. (Outstanding Poster Award)
6. *O’Neill AG and Valdez EL*, “Modeling Signal Detection in Magnetic Resonance Imaging (MRI) Using Human Observer Models”, poster presentation at the Undergraduate Research Poster Session of the Joint Mathematics Meetings, virtual, 2021. (Honorable Mention)
7. *Torres QQ*, “Optimizing data acquisition for deep learning in magnetic resonance imaging”, poster presentation at the Undergraduate Research Poster Session of the Joint Mathematics Meetings, Denver, CO, 2020. (Honorable Mention)
8. *Wong ML*, “Optimizing network architecture for deep learning in magnetic resonance imaging”, poster presentation at the Undergraduate Research Poster Session of the Joint Mathematics Meetings, Denver, CO, 2020. (Honorable Mention)
9. *Kang C and O’Neill A*, “Can we predict the way you vote?”, *Talk at the NYC Metro Mathematical Association of America Section Meeting at the New York City College of Technology*, Brooklyn, NY, NY, 2019.
10. *Kemp T*, “Do Multiple Head Injuries Increase the Likelihood of PTSD and Depression?”, *Talk at the NYC Metro Mathematical Association of America Section Meeting at the New York City College of Technology*, Brooklyn, NY, NY, 2019.
11. *Friedman K, Albano D*, “Animation in MATLAB for Visualizing Linear Transformations”, *Talk at the Spuyten Duyvil Undergraduate Mathematics Conference at Southern Connecticut State University*,

New Haven, CT, 2018.

12. *Altat S, Brenner M*, “Statistical Binary Classification of Magnetic Resonance Imaging (MRI) Data”, *Poster at the NYC Metro Mathematical Association of America Section Meeting at Hostos Community College*, NY, NY, 2017.
13. *Miedema H*, “Classification of Magnetic Resonance Imaging (MRI) Data Using Small Sample Sizes”, *Poster at the NYC Metro Mathematical Association of America Section Meeting at Hostos Community College*, NY, NY, 2017.
14. *Ortega E, Saenz RV*, “Importance of Sampling Pattern and Regularization in Under-Sampled Magnetic Resonance Imaging (MRI)”, *Talk at the Pacific Coast Undergraduate Math Conference (PCUMC)*, Thousand Oaks, CA, 2015.
15. *Gruebele CL*, “Comparison of Two Models for Fat/Water Separation in Magnetic Resonance Imaging (MRI)”, *Undergraduate Poster at the Joint Mathematics Meetings*, San Diego, CA, 2013 (Outstanding Presentation Award).
16. *Chatouphonexay J*, “Maximum Likelihood Estimation of the Fat Fraction Using Magnetic Resonance Imaging at High Signal-to-Noise Ratio”, *Undergraduate Poster at the SACNAS National Meeting*, Seattle, WA, 2012.
17. *Calder AM, Ellis EA*, “Monte Carlo Methods to Understand the Statistical Estimation of the Fat Fraction in Magnetic Resonance Imaging (MRI)”, *Talk at the Center for Undergraduate Research in Mathematics (CURM) Conference*, Provo, UT, 2011.
18. *Huang LH, Park K*, “Analytical Methods to Understand the Statistical Estimation of the Fat Fraction in Magnetic Resonance Imaging (MRI)”, *Talk at the Pacific Coast Undergraduate Math Conference (PCUMC)*, Los Angeles, CA, 2011.
19. *Laidlaw M*, “Image Compression using Singular Value Decomposition”, *Talk at the Pacific Coast Undergraduate Mathematics Conference*, Pepperdine University, Malibu, CA, 2010.
20. *Park K*, “Noise Analysis of Accelerated Magnetic Resonance Imaging (MRI) Using Multiple Coils”, *Undergraduate Poster at the Joint Mathematics Meetings*, San Francisco, CA, 2010.
21. *Hoff P*, “Structure of Error in Iterative Methods”, *Talk at the Southern California Conference on Undergraduate Research*, CSU, Pomona, CA, 2008.

#### **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.

#### **Theses by Mentored Undergraduate Students**

1. *Chatouphonexay, J*, “Maximum Likelihood Estimation of the Fat Fraction Using Magnetic Resonance Imaging”, *Minority Access to Research Careers (MARC) Scholars Program*, 2013.
2. *Park K*, “Noise Analysis of Accelerated Magnetic Resonance Imaging (MRI) Using Multiple Coils”, *McNair Scholars Program*, 2010.

#### **Theses Committees:**

1. *Comer, P.*, Master's Thesis Committee Member, "Data Driven Modeling of Piezoelectric Based River Current Energy Harvester.", Mechanical Engineering Department (Advisor: Masoumi, M), Manhattan College, 2023.

#### **Proceedings Publications by Mentored Graduate Students**

1. *Encarnacion K, Scarinci M* , "Visualization of Xylary Rings of Stems of *Artemisia tridentata* spp. *Wyomingensis*", *The Manhattan Scientist*, 2015, 157-164.

#### **Proceedings Publications by Mentored Undergraduate Students**

1. *Torres QQ, Wong ML*, "Optimizing data acquisition for deep learning in magnetic resonance imaging", *Manhattan Scientist* 2019, 233-240.
2. *Wong ML, Torres QQ*, "Optimizing network architecture for deep learning in magnetic resonance imaging", *Manhattan Scientist* 2019, 241-248.
3. *Altaf S, Brenner M* , "Statistical binary classification of magnetic resonance imaging (MRI) data", *The Manhattan Scientist*, 2017, 215-224.
4. *Miedema H*, "Classification of magnetic resonance imaging (MRI) data using small sample sizes", *The Manhattan Scientist*, 2017, 235-242.
5. *Ortega E, Saenz RV*, "Importance of Sampling Pattern and Regularization in Under-Sampled Magnetic Resonance Imaging (MRI)", *DIMENSIONS: The Journal of Undergraduate Research in Natural Sciences & Mathematics at CSUF*, 2015, 101-112.
6. *Gruebele CL*, "Comparison of Two Models for Fat/Water Separation in Magnetic Resonance Imaging (MRI)", *DIMENSIONS: The Journal of Undergraduate Research in Natural Sciences & Mathematics at CSUF*, 2013, 94-98.
7. *Chatouphonexay, J*, "Maximum Likelihood Estimation of the Fat Fraction Using Magnetic Resonance Imaging at High Signal-to-Noise Ratio", *DIMENSIONS: The Journal of Undergraduate Research in Natural Sciences & Mathematics at CSUF*, 2012, 37-44.
8. *Calder AM, Ellis EA, Huang LH, Park K*, "Statistical Modeling of the Fat Fraction in Magnetic Resonance Imaging (MRI)", *DIMENSIONS: The Journal of Undergraduate Research in Natural Sciences & Mathematics at CSUF*, 2011, 114-123.
9. *Kumar A*, "Effect of Lesion Size on the Detection and Size Estimation of Lung Nodules", *Proceedings of the National Conference on Undergraduate Research*, 2006, 2885-2892.

#### **Team-based Consulting**

Data Consulting Project Role: Co-Mentor (with L. Evans)	Project Topic: Visualizing Sagebrush Growth Manhattan College	2015
Applied Math Project Role: Co-Mentor (with J. Grace)	Project Topic: Hurricane Modeling CSU, Fullerton & Earth Science Associates	2015
Applied Math Project Role: Co-Mentor (with W. Gearhart)	Project Topic: Magnetic Resonance Imaging CSU, Fullerton & GE Healthcare	2008
Math Modeling in Industry Role: Participant	Project Topic: Computed Tomography Institute for Mathematics and its Applications	2000

Technology Clinic  
Role: Participant

Project Topic: Queuing of Sleep Apnea Patients 1994-1995  
Lafayette College

### Visiting Graduate Student Research Position

Summer Research Program	Theoretical Biology and Biophysics Group	1997
	Los Alamos National Laboratory	

### Professional Service at National or International Level

Secretary for Graduate Research Assistantships in Developing Countries (GRAID) of the Committee for Developing Countries (CDC)	2018 - present
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MAA Project NExT consultant and mentor	2016 - present
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Advisory Board for GRAM: Graduate Readiness and Access in Mathematics (NSF funded grant at CSU, Fullerton)	2015 - 2021
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Reviewer for MAA	Dolciani (DMEG) Grants	2019
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Co-Organizer for Invited Paper Session	Joint Mathematics Meetings	2021
<i>with M. Dorff and Neudauer N.A., "Supporting Mathematics in the Developing World"</i>		

International Mathematical Union (IMU) Committee for Developing Countries (CDC)	2014 - 2018
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Moderator and chair of organizing committee	ICM, Rio de Janeiro, Brazil	2018
for IMU CDC Panel and Poster Session, <i>"Strengthening Mathematics in the Developing World"</i>		

MAA Subcommittee on Research by Undergraduates (SCRU)	2011 - 2017
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Orientation for judges at the Undergraduate Poster Session at the JMM	2013 - 2015
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Co-organizer for MAA SCRUI Panel	Joint Mathematics Meetings	2015
<i>with Herbert Medina, "Undergraduate Research: View Points From the Student Side"</i>		

Regional Coordinator for Central America of IMU Report on Mathematics in Latin America and the Caribbean	2011-2014
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Co-organizer for MAA SCRUI Panel	Joint Mathematics Meetings	2012
<i>with Sarah S. Adams, "Successful and Diverse Models for Mentoring Research by Undergraduates"</i>		

Volunteer Lecturer in Numerical Analysis	Royal University of Phnom Penh,	2009, 2010
U.S. National Committee for Mathematics	Cambodia	

Co-coordinator for Project NExT Sessions	MathFest, Portland	2009
<i>with J. Schaefer, coordinated 6 sessions (with 24 organizers and 22 panelists)</i>		

### Service Related Publications

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.

“President’s Message: Mathematicians Without Borders”, *MAA Focus*, Dec/Jan 2020. Pages 26-28.  
with Dorff M, Neudauer NA.

“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

“Undergraduate Research: Viewpoints from the Student Side”, *Math Horizons*, Sept. 2016, 23-25.  
with Alejandro Camacho, Jeffrey Layton Davis, Sarah Klett, Herbert Medina, Samantha VanSchalkwyk

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/>

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>

Teaching Numerical Analysis in Cambodia *SIAM News* March 2010  
<http://www.siam.org/news/news.php?id=1720>

Selected Television Interviews: “Math in the Movies” and “The Science of Beer Bubbles”  
(in Spanish, for Discoveries and Breakthroughs in Science)

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:  
ISMRM

### Professional Service at Regional Level

Organizer of the Career Panel Garden State Undergraduate Mathematics Conference, 2019

### College and University Service

President’s Core Values Focus Group	Manhattan College	2023 - present
KSoS Career Development Committee	Manhattan College	2023 - present
Senate	Manhattan College	2019 - 2021
CFA Summer Grant Committee	Manhattan College	2016-2017, 2018 - 2021
Advisory Board for Center for the	Manhattan College	2017 - 2021
Study of the Future of Education (CSFE)	Manhattan College	2017 - 2021
Coordinated visit by William I. Velez to CSFE and Math Dept.		Spring 2018
NSM Assistant Dean Search	CSUF	2013
MARC Scholar Selection Committee	CSUF	2012, 2015
Reviewer for FDC Grants	CSUF	2011



## Departmental Service

Internship Coordinator	Manhattan College	2017 - 2022, 2023 - present
Website Committee	Manhattan College	2023 - present
Data Science Major Committee	Manhattan College	2023 - present
Calculus III Course Coordinator	Manhattan College	2023 - present
Graduate Committee (Graduate Director 2018 - 2022)	Manhattan College	2015 - 2022
Elementary Statistics Coordinator	Manhattan College	2018 - 2020, 2021-2022
Fall Open House	Manhattan College	2015, 2020, 2021
TT Faculty Search Committee	Manhattan College	2021 - 2022
Technology in the Classroom	Manhattan College	2020 - 2021
VAP Search Committee	Manhattan College	2017 - 2018
Prob & Stats Committee (Chair)	Manhattan College	2016 - 2017
Computer Science in Math	Manhattan College	2015 - 2017
Department Personnel Committee	CSU, Fullerton	2014 - 2015
Applied Math Graduate Committee	CSU, Fullerton	2007 - 2013, 2014 - 2015
Math Club Adviser	CSU, Fullerton	2008 - 2013
Internship Coordinator	CSU, Fullerton	2010 - 2013, 2014 - 2015
Chair, Social Activities Committee	CSU, Fullerton	2012 - 2013
Website Committee	CSU, Fullerton	2012 - 2013
Applied Math Search Committee	CSU, Fullerton	2012 - 2013
Colloquium Organizer	CSU, Fullerton	2007 - 2010
Chair, Happy Hour Committee	Stanford University	2004

## Selected Service in Panels

El Posgrado: Un Asunto Familiar	CSU, Fullerton	2013
<i>Panel in Spanish to help families understand the graduate school experience</i>		
MARC-RCP Family Day	CSU, Fullerton	2013
<i>The graduate school experience, Spanish translation of welcoming remarks</i>		
New Faculty Orientation	CSU, Fullerton	2012
<i>Life and Teaching at CSUF</i>		
PEERS (Science Mentoring Program) UCLA		2011
<i>Life as a Professor</i>		

## 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)

## Community Leadership

Counselor	Camp Wildcat	1997-1999
<i>Program which took underprivileged grade school children backpacking.</i>		
Co-coordinator	Alternative Spring Break (Honduras)	1992-1995
<i>Program for undergraduates to do community service in Honduras during Spring break.</i>		
Co-founder	Spanish Floor	1994
<i>Living environment for native speakers and students wanting to learn Spanish.</i>		

## Programs to Support All Students

LGBT Safe Zone Program	CSUF	2012 - 2015
AB540 Safe Zone Program	CSUF	2012 - 2015

## Selected Invited Talks

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. *Mathematics Seminar*, Augusta University, Augusta, GA, 2019.  
"The Mathematics of Medical Imaging: What is Essential Is Invisible to the Eyes"
7. *Honors Convocation (Faculty Address)*, Manhattan College, NY, NY, 2019.  
"You got this! Productive Persistence: Challenges are Opportunities for Growth"
8. *GRAM Culminating Ceremony (Keynote Speaker)*, CSU, Fullerton, CA, 2017.  
"NIH-Funded Research to GRAM: How My CSUF Students Changed Me?"
9. *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"
10. *Primer Congreso de Modelación Matemática*, San Salvador, El Salvador, 2014.  
"Reporte de la IMU sobre las Matemáticas en América Latina y el Caribe"  
"Colaboracion entre la Industria y la Matemática Aplicada"
11. *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 "
12. *Mathematicians and School Mathematics Education: a Pan-American Workshop*, Canada, 2014.  
"Mathematics in Latin America and the Caribbean: A Report for the IMU"
13. *Biomedical Engineering Seminar*, Johns Hopkins University, Baltimore, MD, 2014.  
"Task-Based Optimization in CT and MRI "
14. *MAA SCRUI Panel*, Joint Mathematics Meetings, Baltimore, MD, 2014.  
"Directing Undergraduate Research: How to Get Started"
15. *Escuela de Matemática de América Latina y el Caribe (EMALCA)*, Tegucigalpa, Honduras, 2013.  
"Oportunidades de Estudio de Postgrado Para Centroamericanos en EUA y México".
16. *Meeting of the IMU Committee for Developing Countries*, Berlin, Germany, 2013.  
"Mathematics in Latin America and the Caribbean: Challenges and Opportunities"
17. *Trends in Undergraduate Research in the Mathematical Sciences*, Rosemont, IL, 2012.  
"Center for Undergraduate Research in Mathematics (CURM) Projects at CSUF"

18. *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”.
19. *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”
20. *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)”.
21. *Centro de Investigacion en Matematica (CIMAT)*, Guanajuato, Mexico, 2011.  
“Cramér-Rao Bounds for Chemical Species Separation in Magnetic Resonance Imaging (MRI)”.
22. *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.
23. *International Congress of Mathematicians*, Hyderabad, India, 2010.  
Panel hosted by the London Mathematical Society (LMS) on Mechanisms for Strengthening Mathematics in Developing Countries.
24. *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”.

### **Selected Talks and Panels**

1. *Magnetic Resonance Research Facility Seminar*, University of Iowa, Iowa City, IA, 2023.
2. *SPIE Medical Imaging Conference*, San Diego, CA, 2023.
3. *Lathisms Cafe con Leche*, virtual, 2023.
4. *ISMRM Workshop on Data Sampling & Image Reconstruction*, Sedona, AZ, 2023.
5. *SPIE Medical Imaging Conference*, San Diego, CA, 2022.
6. *Deep Learning in MRI Group Meeting*, NYU Radiology Department, NY, NY, 2021.
7. *Mathematics Colloquium*, Manhattan College, Riverdale, NY, 2021.
8. *Joint Mathematics Meetings*, Denver, CO, 2020.
9. *Mathematics Colloquium*, Marist College, Poughkeepsie, NY, 2019.
10. *Mathematics Colloquium*, Hofstra University, NY, NY, 2019.
11. *SPIE Medical Imaging Conference*, San Diego, CA, 2019.
12. *SPIE Medical Imaging Conference*, Houston, TX, 2018.
13. *Statistical Assessment Methodology for Diagnostics and Biomarkers Meeting*, FDA, MD, 2017.
14. *Business School Seminar*, Manhattan College, Riverdale, NY, 2017.
15. *Mathematics Colloquium*, Monmouth University, West Long Branch, NJ, 2015.
16. *AMS Fall Western Meeting*, CSU, Fullerton, CA, 2015.
17. *Mathematics Colloquium*, Manhattan College, Riverdale, NY, 2015.
18. *Problem Solving Seminar (Putnam)*, CSU, Fullerton, CA, 2014.
19. *International Congress of Mathematicians*, Seul, Korea, 2014.
20. *Magnetic Resonance Imaging Seminar*, University of Wisconsin, Madison, WI, 2014.
21. *35th Anniversary of the Applied Mathematics Program*, University of Arizona, Tucson, AZ, 2014.
22. *MBI Workshop on Analysis of Large Collections of Imaging Data*, Columbus, OH, 2014.
23. *Magnetic Resonance Imaging Research Group*, University of California, Los Angeles, CA, 2013.
24. *Medical Imaging Seminar Series*, University of Southern California, 2013.
25. *Mathematical Congress of the Americas*, Guanajuato, Mexico, 2013.
26. *SIAM Conference on Uncertainty Quantification*, Raleigh, NC, 2012.
27. *Mathematics Colloquium*, CSU, Long Beach, CA, 2011.
28. *Problem Solving Seminar (Putnam)*, CSU, Fullerton, CA, 2011.

29. *Graduate Mathematics Seminar*, CSU, Channel Islands, CA, 2011.
30. *Johns Hopkins University Center for Talented Youth*, CSU, Fullerton, CA, 2011.
31. *Problem Solving Seminar (Putnam)*, CSU, Fullerton, CA, 2010.
32. *CNSM Colleagues Colloquium*, Fullerton, CA, 2010.
33. *Image Science for the New X-ray Consortium Meeting*, San Diego, CA, 2010.
34. *Joint Mathematics Meetings*, San Francisco, CA, 2010.
35. *Mathematics Colloquium*, Fullerton College, CA, 2009.
36. *Mathematics Colloquium*, CSU, Fullerton, CA, 2009.
37. *Math Club Meeting*, Cypress College, CA, 2009.
38. *Annual Meeting of the American Association of Physicists in Medicine*, Anaheim, CA, 2009.
39. *Kids to College Presentation*, CSU, Fullerton, CA, 2009.
40. *Exito Universitario: Como Lograrlo en Familia?*, CSU, Fullerton, CA, 2009.
41. *Center for Devices and Radiological Health*, Food and Drug Administration, Rockville, MD, 2009.
42. *Statistics Colloquium*, CSU, Fullerton, CA, 2008.
43. *Mathematics Colloquium*, CSU, Los Angeles, CA, 2008.
44. *Mathematics Colloquium*, CSU, Long Beach, CA, 2008.
45. *Kids to College Presentation*, CSU, Fullerton, CA, 2008.
46. *SPIE Medical Imaging Conference*, San Diego, CA, 2008.
47. *Mathematics Colloquium*, Cal Poly, Pomona, CA, 2007.
48. *Mathematics Colloquium*, CSU, Fullerton, CA, 2007.
49. *SIAM Conference on Mathematics for Industry*, Philadelphia, PA, 2007.
50. *Medical Physics Seminar*, UW, Madison, WI, 2007.
51. *Computational and Applied Mathematics Seminar*, UC, Irvine, CA, 2007.
52. *Symposium on Science in the Media*, CSU, Fullerton, CA, 2007.
53. *Magnetic Resonance Engineering Seminar*, USC, Los Angeles, CA, 2007.
54. *Workgroup on Acquisition, Reconstruction and Processing*, UCSF, San Francisco, CA, 2006.
55. *Special Colloquium*, Marquette University, Milwaukee, WI, 2006.
56. *Special Colloquium*, CSU, Fullerton, CA, 2006.
57. *Special Colloquium*, Harvey Mudd College, Claremont, CA, 2006.
58. *Mathematical Adventures and Diversions (MAAD) Seminar*, Lafayette College, Easton, PA, 2005.
59. *Modeling and Computation Seminar*, University of Arizona, Tucson, AZ, 2005.
60. *Radiological Society of North America Meeting*, Chicago, IL, 2004.
61. *Workshop on Inverse Problems and Medical Imaging*, PIMS, Vancouver, CA, 2003.
62. *SPIE Medical Imaging Conference*, San Diego, CA, 2001.
63. *SPIE Medical Imaging Conference*, San Diego, CA, 2000.
64. *Center for Nonlinear Studies*, Los Alamos, NM, 2000.
65. *Centre for Medical Image Computing Seminar*, University College, London, UK, 2000.
66. *Center for Devices and Radiological Health*, Food and Drug Administration, Rockville, MD, 2000.
67. *Center for Nonlinear Studies*, Los Alamos, NM, 1997.
68. *Joint Mathematics Meetings*, San Francisco, CA, 1995.
69. *National Conference on Undergraduate Research*, Salt Lake City, UT, 1993.

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

NIH NIBIB 2R15EB029172-02 Funding: \$434,531	Role: PI <i>R15: Optimizing Acquisition and Reconstruction of Under-sampled MRI for Signal Detection</i> Research grant involving undergraduate student using human detection of tumors to improve magnetic resonance imaging using neural networks.	2023 - present
NIH NIBIB 1R15EB029172-01	Role: PI (Sajan G. Lingala Co-I)	2020 - 2023

Funding: \$395,210	<i>R15: Optimizing Acquisition and Reconstruction of Under-sampled MRI for Signal Detection</i> Research grant involving undergraduate and graduate students using data science and statistics to improve magnetic resonance imaging.
NSF DMS 1345012 Funding: \$600,146	Role: PI (with S. Annin) 2014 - 2015 <i>MCTP: Graduate Readiness and Access in Mathematics (GRAM)</i> Comprehensive mentoring program to prepare underrepresented math students to be successful in graduate studies.
NSF (through CURM at BYU) Funding: \$14,250	Role: PI 2010-2011 <i>Separating Chemical Species in Magnetic Resonance Imaging</i> The grant funded research with four undergraduates at CSUF and faculty development as a research mentor.
NIH 1R01CA112163 Total Funding: \$916,164 CSUF Funding: \$92,180	Role: Consortium PI at CSUF 2007-2010 <i>Image Science for the New X-ray: Taking NEQ to Task</i> PI: Jeffrey H. Siewerdsen at Johns Hopkins University
GE Healthcare Technologies Funding: \$20,000 Co-PI: William Gearhart	Role: PI Summer 2008 <i>Understanding the Mathematics of HYPR-type Algorithms</i> The grant funds the work of students in the Applied Math Project.
<b>Internal Funding</b>	
Manhattan College Funding: 3 Teaching Units Per Year	Role: PI Fall 2023 - 2026 Faculty Development Plan: <i>Optimizing acquisition and reconstruction of under-sampled MRI for signal detection</i>
Manhattan College Funding: 2/3 Salary for a Year	Role: PI Fall 2022 - Spring 2023 <i>Sabbatical: Optimizing acquisition and reconstruction of under-sampled MRI for signal detection</i>
Manhattan College Funding: 3 Teaching Units Per Year	Role: PI Fall 2019 - 2022 Faculty Development Plan: <i>Optimizing acquisition and reconstruction of under-sampled MRI for signal detection</i>
Manhattan College Funding: \$3000	Role: PI Summer 2020 Summer Research Grant: <i>Optimization of constrained reconstruction using human observer models in magnetic resonance imaging (MRI)</i>
Manhattan College Funding: 3 Teaching Units Per Year	Role: PI Fall 2016 - Spring 2019 Faculty Development Plan: <i>Task-Based Optimization of Accelerated Magnetic Resonance Imaging</i>
Manhattan College Funding: \$3000	Role: PI Summer 2016 Summer Research Grant: <i>Statistical Learning in Medical Imaging</i>

CSU, Fullerton ASC Funding: \$2500 and 3 Teaching Units	Role: PI <i>Task-Based Optimization of MRI</i>	Fall 2014
CSU, Fullerton CNSM Funding: 3 Teaching Units (each)	Role: PI (with S. Annin) <i>Center for Access to Research in Mathematics (CARM)</i> Assigned time to write NSF grant proposal.	Spring 2012
CSU, Fullerton FDC Funding: 3 Teaching Units	Role: PI Faculty Enhancement and Instructional Development (FEID) grant <i>Strengthening the Industrial Connection in the Applied Mathematics Graduate Project</i>	Fall 2011
CSU, Fullerton CNSM Funding: \$4,000	Role: PI <i>Online Course Development for Graduate Course in Probability and Statistics</i>	Summer - Fall 2010

### Patents

U.S. Patent #7,176,683 (Co-inventor: Reeder SB)	<i>Iterative Decomposition of Water and Fat with Echo Asymmetry and Least-Squares (IDEAL) Estimation in MRI.</i>
U.S. Patent #7,468,605 (Pelc NJ, Reeder SB, Wen Z, Yu H)	<i>Simultaneous Chemical Species Separation and T2* Measurement Using MRI</i>
U.S. Patent #7,508,211 (Pelc NJ, Reeder SB, Wen Z and Yu H)	<i>IDEAL MRI: Regularized Water-Fat Separation</i>
U.S. Patent #7,592,807 (Yu H, McKenzie CA, Reeder SB)	<i>Maximum Likelihood Estimator in the Presence of Non-Identically Distributed Noise for Decomposition of Chemical Species in MRI</i>

### Publications in Peer-Reviewed Journals<sup>2</sup>

(students in italics)

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. 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.
3. **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.
4. Scarinci M, Encarnacion M, **Pineda AR**, Evans LS, “Visualization of Xylary Rings of Stems of *Artemisia tridentata* spp. *Wyomingensis*.”, *Universal Journal of Applied Mathematics*, **5**, 2017, 28-33.
5. 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.

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<sup>2</sup>The 70 peer-reviewed journal articles, conference papers, patents and refereed abstracts archived in Google Scholar have been cited 3594 times before October 1, 2023. Twenty one works have been cited 21 or more times (h-index of 21).

6. Kwembe TA, Leonard K, **Pineda AR**, "Academic Year Undergraduate Research: the CURM Model", *Involve*, **7**, 2014, 383-394.
7. 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.
8. **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.
9. 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.
10. 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.
11. 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.
12. 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.
13. Wen Z, Reeder SB, **Pineda AR**, Pelc NJ, "Noise Considerations of Three-Point Water-Fat Separation Imaging Methods", *Medical Physics*, **35**, 2008, 3597-3606.
14. 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.
15. 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.
16. 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.
17. **Pineda AR**, Barrett HH, Arridge SR, Schweiger M, "Information Content of Data Types in Time-Domain Optical Tomography", *Journal of the Optical Society of America A*, **23**, 2006, 2989-2996.
18. **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.
19. **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.
20. 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.

21. 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.
22. **Pineda AR**, Barrett HH, “Figures of Merit for Detectors in Digital Radiography. I. Flat Background and Deterministic Blurring”, *Medical Physics*, **31**, 2004, 348-358.
23. **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.
24. 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.
25. 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.
26. **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 undersampled 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.
13. Hu J, Ingrassia C, Lowitzsch S, Park J, **Pineda AR**, Reynolds D, Valdivia N, “Second Order Solution of Fritz John’s Ultrahyperbolic PDE for Volumetric Computed Tomography ”, *IMA preprint*, 1752-4, 2001.
14. **Pineda AR**, Barrett HH, Arridge SR, “Spatially Varying Detectability for Optical Tomography”, *Proc. of SPIE Medical Imaging 2000*, **3977**, 77-83.
15. **Pineda AR**, Tavakoli J, “A Detailed Mechanism for the Pyrolysis of Methylene Chloride in a Methane/Argon Bath”, *Proc. Int. Cong. on Comp. in Eng.*, **2**, 1993, 389-396.
16. **Pineda AR**, “Development of a Detailed Reaction Model for Pyrolysis of Chlorinated Hydrocarbons”, *Proc. NCUR*, **2**, 1993, 606-610.

#### Published Refereed Abstracts

*(students in italics)*

1. **Pineda AR**, Lingala SG , “Task-Based Assessment of Image Quality for Magnetic Resonance Imaging”, ISMRM Workshop on Data Sampling & Image Reconstruction 2023.
2. *Herman J*, *Wong ML*, Lingala SG, **Pineda AR** , “Evaluation of Neural Network Reconstruction of Undersampled Data using a Human Observer Model of Signal Detection”, ISMRM 2022, No. 0847.
3. *O’Neill AG*, *Kemp TM*, Lingala SG, **Pineda AR**, “Evaluation of Multicoil SENSE Reconstruction of Undersampled Data using a Human Observer Model of Signal Detection ”, ISMRM 2022, No. 1746.
4. *Roca RE*, *Herman JD*, *O’Neill AG*, Lingala SG, **Pineda AR**, “Task Performance or Artifact Reduction? Evaluating the Number of Channels and Dropout based on Signal Detection on a U-Net with SSIM Loss”, ISMRM 2021, No. 2402.
5. *Herman JD*, *Roca RE*, *O’Neill AG*, Lingala SG, **Pineda AR**, “Task-Based Assessment for Neural Networks: Evaluating Undersampled MRI Reconstructions based on Signal Detection”, ISMRM 2021, No. 2404.
6. Chebrolu VV, Yu H, **Pineda AR**, McKenzie C, Brittain JH, and Reeder SB, “Noise Analysis for Chemical Shift Based Water-Fat Separation with Independent T2\* Correction for Water and Fat”, ISMRM 2010, Stockholm, Sweden, pg. 2908.
7. Wiens CN, Kisch SJ, Hines CDG, Yu H, **Pineda AR**, Robson PM, Brittain JH, Reeder SB, McKenzie CA, “Noise weighted T2\*-IDEAL Reconstruction for non-uniformly under-sampled k-space acquisitions”, ISMRM 2010, Stockholm, Sweden, pg. 2886.
8. Wiens CN, Kisch SJ, Hines CDG, Yu H, **Pineda AR**, Robson PM, Brittain JH, Reeder SB, McKenzie CA, “G-factor weighted T2\*-IDEAL Reconstruction for non-uniformly under-sampled k-space acquisitions”, PMRI 2009, Santa Cruz, CA, No. 19.

9. **Pineda AR**, Sarcon A, Abbasi N, Stang D, Jalal S, Jacklin K, Busse RF and Brittain JH, “The Mathematics of HYPR”, ISMRM 2009, Hawaii, pg. 1930.
10. Busse RF, **Pineda AR**, Wang K, Holmes JH, Brittain JH, and Korosec FR, “Time-Resolved Imaging with Multiplicative Algebraic Reconstruction Technique (MART): An Application of HYPR Principles for Variable Density Cartesian Acquisitions”, ISMRM 2009, Hawaii, pg. 2091.
11. Chebrolu VV, Yu H, **Pineda AR**, McKenzie C, Brittain JH, and Reeder SB, “Noise Analysis for 3-pt Chemical Shift Based Water-Fat Separation with Accurate Spectral Modeling”, ISMRM 2009, Hawaii, pg. 376.
12. Chebrolu VV, Hines CD, Yu H, **Pineda AR**, Shimakawa A, McKenzie C, Brittain JH, and Reeder SB, “Independent Estimation of T2\* for Water and Fat for Improved Accuracy of Fat Quantification”, ISMRM 2009, Hawaii, pg. 375.
13. Yu H, Reeder SB, Shimakawa A, McKenzie CA, Vu AT, Brau AC, Beatty PJ, **Pineda AR**, Brittain JH, “Multi-Echo IDEAL/T2\*-IDEAL Liver Imaging: Simultaneous Assessment of Fatty Infiltration and Iron Overload in a Single Breath-hold”, ISMRM 2007, Berlin, pg. 3358.
14. **Pineda AR**, Lew CD, Bammer R, “The Geometry Factor as a Cramér-Rao Bound of Magnitude and Phase”, ISMRM 2006, Seattle, pg. 2469.
15. **Pineda AR**, Reeder SB, Wen Z, Pelc NJ, “Optimization of Echo Time Shifts for 3-Pt Fat/Water Separation”, ISMRM 2005, Miami, pg. 1972.
16. Reeder SB, **Pineda AR**, Yu H, McKenzie CA, Brau AC, Gold GE, Johnson JA, Pelc NJ, Brittain JH, “Water-Fat Separation with IDEAL-SPGR”, ISMRM 2005, Miami, pg. 105.
17. Yu H, McKenzie CA, Shimakawa A, Brau AC, **Pineda AR**, Pelc NJ, Brittain JH, Reeder SB, “Parallel Imaging Accelerated Single Acquisition Water-Fat Separation for Dynamic Imaging”, ISMRM 2005, Miami, pg. 2390.
18. **Pineda AR**, Pelc NJ, “To Bin or Not to Bin? A Question Regarding the Noise Properties of CT Reconstructions with or without Binned Projections”, RSNA 2004, Chicago.
19. Reeder SB, **Pineda AR**, Yu H, Wen Z, Shimakawa A, Pelc NJ, “Asymmetric Echoes for Optimal SNR Performance of “Dixon” Water-Fat Separation with Fast Spin-Echo Imaging”, RSNA 2004, Chicago. (RSNA Research Fellow Award, Physics: Reeder SB)
20. **Pineda AR**, Wen Z, Reeder SB, Yu H, Pelc NJ, “Cramér-Rao Bounds in 3-Point Dixon Imaging”, ISMRM 2004, Kyoto, pg. 2107.
21. Reeder SB, **Pineda AR**, Wen Z, Yu H, Pelc NJ, “Asymmetric Echoes for Robust Fast Spin-Echo “Dixon” Water-Fat Separation”, ISMRM 2004, Kyoto, pg. 696.
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23. Alley MT, **Pineda AR**, Bammer R, Markl M, Pelc NJ, “A Method for MR Eddy Current Characterization and Compensation”, ISMRM 2003, Toronto, pg. 2495.