

36TH INTERNATIONAL MEETING

The Society for Magnetic
Resonance Angiography



SMRA

2024

"The ever changing
landscape of MRA"



Santiago, Chile

NOVEMBER 12-15, 2024

Conference Co Chairs:
Claudia Prieto
Vasquez/Rene Botnar

SMRA President:
Oliver Wieben



UC | Chile

TABLE OF CONTENTS



Program at a Glance	1
Conference Venue	3
Welcome Letters	4
SMRA Committees	8
Abstract Reviewers	12
Scientific Program	14
Junior Fellowship Award Winners	27
MICCAI Grand Challenge	29
Evening Events	30
Guest Day Program	31
Acknowledgment of Sponsors	32
Meeting Endorsement	37
Code of Conduct	38
Announcement of Next Meeting	39



PROGRAM AT A GLANCE

1

Tuesday, November 12

Registration 8:00 – 9:00

Plenary Session I: Opportunities, Challenges, and Threats of MRA in the Clinic 9:00 – 10:30

Moderators: **Paul Finn** (UCLA) and **Jeffrey Maki** (University of Colorado Anschutz Medical Campus)

Coffee Break: 10:30 – 10:50

Scientific Session I: Head and Neck MRA 10:50 – 12:35

Moderators: **Mahmud Mossa-Basha** (University of Washington) and **Jae Song** (University of Pennsylvania)

Lunch: 12:35 – 14:00

Scientific Session II: Cardiac and Quantitative MRI 14:00 – 15:45

Moderators: **Anthony Christoudolou** (UCLA) and **Claudia Prieto** (Pontificia Universidad Católica de Chile)

Coffee Break: 15:45 – 16:15

Scientific Session III: Advances in Vessel Wall Imaging 16:15 – 18:00

Moderators: **Judit Csőre** (Semmelweis University) and **Chengcheng Zhu** (University of Washington)

Welcome Reception 18:00 – 20:00

Club Manquehue

Wednesday, November 13

Plenary Session II & Martin Prince Lecture: Towards More Accessible and Affordable MRA and CMR 9:00 – 10:30

Moderators: **René Botnar** (Pontificia Universidad Católica de Chile) and **Suvai Gunasekaran** (Cedars Sinai)

Coffee Break: 10:30 – 10:50 AM

Scientific Session IV: Coronary MRA & Plaque Imaging 10:50 – 12:35

Moderators: **René Botnar** (Pontificia Universidad Católica de Chile) and **Felicia Seemann** (National Institutes of Health)

Lunch: 12:35 – 14:00

Scientific Session V: Flow, Modeling, and Processing 14:00 – 15:45

Moderators: **James Carr** (Northwestern University) and **Oliver Wieben** (University of Wisconsin-Madison)

Coffee Break: 15:45 – 16:15 (and ECR Networking in the Elbe Room)

Scientific Session VI: Abdominal, Thoracic, and Peripheral 16:15 – 18:00

Moderators: **Kevin Demarco** (WRNMMC) and **Elizabeth Hecht** (Weill Cornell Medicine)

Evening Event: Dinner at Piso 18 19:00 – 22:00

Double Tree by Hilton

PROGRAM AT A GLANCE

2

Thursday, November 14

Plenary Session III: ECC – Early Career Committee Session 9:00 – 10:30

Moderators: **Nicolás Garrido** (iHEALTH Millenium Institute/Pontificia Universidad Católica de Chile) and **Liliana Ma** (Stanford University)

Coffee Break: 10:30 – 10:50

Scientific Session VII: New Technologies and AI in MRA 10:50 – 12:35

Moderator: **Trisha Roy** (Houston Methodist DeBakey Heart and Vascular Institute) and **Bob Hu** (Stanford University)

Lunch: 12:35 – 14:00

Plenary Session IV: The Potential and Current Role of AI in MRA and CMR, AI Challenge

14:00 – 15:45

Moderators: **Mehmet Akcakaya** (University of Minnesota) and **Huijun Chen** (Tsinghua University)

Coffee Break: 15:45 – 16:15

Scientific Session VIII: Non-enhanced MRA 16:15 – 18:00

Moderators: **Qin Qin** (Johns Hopkins Medicine) and **Aleksandra Radjenovic** (University of Glasgow)

Evening Event: Dinner at Restaurant Mestizo 18:00 – 22:00

Friday, November 15

Plenary Session V: Interventional MRI: Value, Promises and Future Prospects 9:00 – 10:30

Moderators: **Thorsten Bley** (Universität Wuerzburg) and **Graham Wright** (Sunnybrook Research Institute)

Coffee Break: 10:30 – 10:50

Closing Plenary and Sadamoto Lecture: New Horizons and the Future of MRA and CMR

10:50 – 12:35

Moderators: **Hideki Ota** (Tohoku University Hospital) and **Xihai Zhao** (Tsinghua University)

Award Presentations & Announcement of 2025 Meeting

- Award presentations: **Jeremy Collins** (Mayo Clinic) and **Oliver Wieben** (University of Wisconsin-Madison)
- Presentation of SMRA 2025 and Closing Remarks: **Jeremy Collins** (Mayo Clinic) and **Oliver Wieben** (University of Wisconsin-Madison)

Optional Post-conference Activity (Extra Cost) 12:35 – 18:00

Winery visit, lunch, and tour at Viña Casas del Bosque

CONFERENCE VENUE

3

Club Manquehue

We look forward to enjoying SMRA 2024 at the beautiful Club Manquehue in the heart of the Vitacura district.

Take a look at: <https://clubmanquehue.cl>

Club Manquehue Events Center features a beautiful conference setting as well as outside spaces for you to enjoy on your breaks. It is conveniently located in Vitacura, near our recommended accommodations.

Club Manquehue address and contact information:

Av Vitacura 5841, Vitacura, Región Metropolitana, Chile

(+56 2) 2445 6500



Welcome to SMRA 2024 from the Program Chairs

Welcome to Santiago and to the 36th Annual Meeting of the Society for Magnetic Resonance in Angiography (SMRA)! This year marks a significant milestone as we host the conference for the first time in South America. Over the past three decades, SMRA has become the leading scientific meeting for showcasing the latest advances and collaborations in the field of MRA. Whether you are a scientist, clinician, corporate partner, or trainee, this meeting offers a unique opportunity to learn about the cutting-edge in MRA research, discuss with experts in the field in a relaxed atmosphere and explore the future of MRA.

We extend a particularly warm welcome to those attending their first SMRA meeting. We encourage you to actively participate in discussions during the scientific sessions, workshops, and networking events. We invite you to take full advantage of the opportunities to connect with fellow attendees, engage with our exhibitors, and explore new ideas in both formal and informal settings.

Santiago is nestled between the Andes mountains and the Pacific coast, and offers a beautiful natural landscape for our event. We hope this inspires exciting discussions and collaborations throughout this year's meeting.

This year's program is packed with exceptional content and new opportunities for learning and interaction. Key plenary sessions will address the current opportunities, challenges, and future directions in MRA research. The path toward more accessible and affordable MRA and CMR will be a focus in our plenary talks, alongside discussions on the potential and current role of AI in these advancements. Additionally, we have included a plenary on interventional MRI to explore the evolving role of MRA and CMR in this field and its future prospects. The program also features notable lectures, including the Martin Prince and Sadamoto Lectures, which will highlight strategies for breaking barriers to enhance access to MR angiography and explore the future of MRA and CMR.

A series of educational talks will cover a wide range of clinical applications, from head and neck to cardiac, abdominal, thoracic, and peripheral regions. These sessions will also spotlight cutting-edge technologies in MRA and CMR, including quantitative imaging, AI, flow imaging, modeling and processing, as well as contrast-enhanced and non-contrast-enhanced MRA techniques.

We are especially excited to see strong participation from early career scientists and trainees, with more than 100 abstracts presentations as oral talks or power pitch presentations to showcase the latest developments in the field. The top scored abstracts will be competing for the prestigious Potchen and Passariello Awards.

This year's Early Career Development session, organized jointly with the SMRA Early Career Committee, will feature plenary talks highlighting the value of interdisciplinary research and training, as well as the importance of team management, scientific innovation, and clinical practice in medical education. The session will also introduce the new SMRA Fellow Award, honoring outstanding contributions to the SMRA society in both basic science and clinical categories.

Our corporate sponsors are instrumental to the continued success of SMRA. During the plenaries, corporate partners will also present their latest technologies, products, and solutions that drive advancements in the MRA and CMR field. We encourage you to visit their exhibits and thank them for their generous support. Without their contributions, this meeting would not be possible.

Before or after the conference, we encourage you to explore the many different regions of Chile. Stretching 4,270 km from north to south, Chile is home to a wide variety of landscapes—from the driest desert in the world to the well known Torres del Paine National Park. These diverse terrains shape and enrich the country's culture (and its wine!), much like how the interdisciplinary nature of our SMRA community fosters collaboration and drives cutting-edge research.

We hope you find the conference to be an enriching and inspiring experience. Enjoy your time in Santiago and we look forward to your continued engagement with SMRA.

Warm regards,

René Botnar
Pontificia Universidad Católica de Chile



Claudia Prieto
Pontificia Universidad Católica de Chile



Welcome to SMRA 2024 – from our President



It is with the greatest pleasure that I welcome you to our annual SMRA meeting. Thank you for making the trip to the first Latin American and the second southernmost location that SMRA has been held at in its 36 year history.

The last year was another successful period in the SMRA history. Last year's meeting in Sendai was particularly noteworthy, drawing high global attendance from scientists, clinicians, and industry and included large numbers of attendees, including trainees, from Asia. The education committee under the leadership of Mahmud Mossa-Basha hosted 2 webinars and continued contributions to statement papers in MR Angiography. I am particularly encouraged about the future of our field when I see the remarkable energy and commitment of the Early Career Committee

under the leadership of Calder Sheagren and Yin Guo. The ECC organized their first webinar, a dedicated session as well as several additional activities at this meeting, and was instrumental in establishing the newly formed SMRA junior fellowships awards.

I would like to express my deepest gratitude to Drs. Claudia Prieto and René Botnar who not only brought the meeting to Santiago but also left no stone unturned to ensure that attendees have the best possible experience, both scientifically and beyond. With remarkable patience and effort, they have crafted a thoughtful and timely program, attracting an exceptional lineup of speakers whose topics promise to educate, broaden our perspectives, and provoke meaningful discussions. Claudia and René, you have made this meeting in Santiago a reality, and on behalf of the SMRA and all attendees, I want to express my deepest gratitude for your outstanding efforts. Your hard work is truly appreciated.

Our annual meeting is truly unique among scientific conferences, holding a special place in my heart and on my calendar. The vibrant energy of our diverse attendees—ranging from enthusiastic trainees to seasoned leaders, clinicians, basic scientists, and industry partners—creates an inspiring atmosphere. Everyone is united by a shared commitment to educate and advance our field.

This single-track format fosters plentiful opportunities for engaging discussions about MRA, broadening our horizons, and forging new connections during and after sessions. Many of my closest 'MRI friends' were first met at SMRA meetings, and I encourage all of you, especially trainees and newcomers, to take advantage of this opportunity to build new relationships.

I am confident that by the end of this year's meeting, you will leave with renewed energy, fresh ideas, and valuable acquaintances. I hope you enjoy your time here, and I look forward to connecting with you in **Santiago!**

Introduction of our Incoming President – Jeremy Collins

I am pleased to introduce our incoming president, Jeremy Collins, from the Mayo Clinic in Rochester, Minnesota, USA. Jeremy has been a dedicated member of our Society, actively participating in our events and playing a key role in organizing the 2016 meeting in Chicago, IL. Most recently, he has contributed his expertise as a member of our Advisory Board.

A few words from Jeremy: I am very excited to the SMRA membership, board, committee members, and our management company to continue to promote the clinical use of cardiovascular magnetic resonance angiography across the world. The SMRA has a special place in my heart, as my first oral presentation was delivered at the former MR Angio Club meeting in 2001 hosted in Madison, Wisconsin, USA while I was a medical student. Our society membership continues to advance the clinical evidence supporting the use of MR angiography while introducing novel methods and translating them into clinical practice. Cardiovascular MRA is an accurate technique for morphologic assessment of the arterial, venous, and lymphatic systems. Combining morphologic imaging with functional imaging is a unique feature of MR imaging, yielding novel measures of health and disease. This feature is well represented in the theme of the 2024 annual meeting "The ever-changing landscape of MRA" hosted in Santiago, Chile by co-chairs Drs. Claudia Prieto and René Botnar. I am thrilled to share that we have confirmed that the 2025 annual meeting will be held in Budapest, Hungary August 21-24, 2025 co-hosted by Drs. Judit Csőre and Csaba Csobay-Novak from Semmelweis University. I am looking forward to connecting with you in Santiago in 2024 and welcoming you to Budapest in 2025!



Warm regards,

Oliver Wieben, President, SMRA

Jeremy Collins, Incoming President

The Society for Magnetic Resonance Angiography (SMRA) was founded in 1989 as the MR Angio Club to bring together scientists, clinicians and industry with a common interest in MR Angiography (MRA). The MR Angio Club formally Incorporated as the nonprofit Society for Magnetic Resonance Angiography (SMRA) in 2015. The society's annual conference is widely recognized as the sole international conference exclusively devoted to MR angiography. Each year, prominent researchers and clinicians come from all over the world to attend this event, present their most up to date research results, exchange ideas, and educate each other and trainees in a diverse and inclusive environment to further develop MRA technology and translate it into clinical practice. MR-related vendors also showcase their state-of-the-art products, technical advances, and clinical applications in an engaging environment intended to foster new connections and collaborations.

Executive Committee

President	Oliver Wieben , PhD (University of Wisconsin – Madison, USA)
President Elect	Jeremy Collins , MD (Mayo Clinic, USA)
Past President	Xihai Zhao , MD, PhD (Tsinghua University, China)
Past Past President	Chun Yuan , PhD (University of Washington, USA)
Secretary	Aleksandra Radjenovic , PhD (University of Glasgow, Scotland)
Treasurer	Anthony Christodoulou , PhD (University of California – Los Angeles, USA)
Members	Susanne Schnell , PhD (University of Greifswald, Germany)
	Monica Sigovan , PhD (Creatis Medical Imaging Research Center, France)
	Hideki Ota , MD, PhD (Tohoku University Hospital, Japan)
	Claudia Prieto , PhD (Pontificia Universidad Católica de Chile, Chile)

Early Career Committee (ECC)

Co-Chairs	Yin Guo , PhD cand. (University of Washington, USA)
	Calder Sheagren , PhD cand. (University of Toronto, Canada)
Faculty Advisors	Susanne Schnell , PhD (University of Greifswald, Germany)
	Xihai Zhao , MD, PhD (Tsinghua University, China)
Committee Liaisons	<i>Education:</i> Judit Csőre , MD, PhD (Semmelweis University, Hungary)
	<i>Social Media:</i> Lexiaozi Fan , PhD (Northwestern University, USA)

Members

Nicolás Garrido, PhD (Pontificia Universidad Católica de Chile, Chile)

Fatemeh Rastegar Jooybari, PhD cand. (University of Toronto, Canada)

Mahmud Mossa-Basha, MD (University of Washington, USA)

Tarun Naren, PhD cand. (University of Wisconsin – Madison, USA)

Carlos Castillo Passi, PhD (Pontificia Universidad Católica de Chile, Chile
& King's College London, UK)

Diego Pedraza, PhD cand. (Pontificia Universidad Católica de Chile, Chile)

Huiyu Qiao, MD (Capital Medical University, Beijing, China)

Moujan Saderi, PhD cand. (University of Toronto, Canada)

Chaowei Wu, PhD cand. (Cedars Sinai Medical Center, USA)

Education Committee

Chair

Mahmud Mossa-Basha, MD (University of Washington, USA)

Members

Niranjan Balu, PhD (University of Washington, USA)

Hediyeh Baradaran, MD (University of Utah Health, USA)

Noah Briller, RT – Technologist (University of Washington , USA)

Myriam Edjlali, MD (Saint Anne Paris, France)

Laura Eisenmenger, MD (University of Wisconsin, USA)

Zhaoyang Fan, PhD (University of Southern California, USA)

Rui Li, PhD (Tshinghua University, China)

Javier Romero, MD (Massachusetts General Hospital, USA)

Ye Qiao, PhD (Johns Hopkins University, USA)

Qin Qin, PhD (Johns Hopkins University, USA)

Prabhakar Rajiah, MD (Mayo Clinic, USA)

Tirsha Roy, MD (UT Southwestern, USA)

Aaron Rutman, MD (University of Washington/KP, USA)

Bhagya Sannananja (Emory University, USA)

Calder Sheagren, PhD cand. (University of Toronto, Canada)

Binbin Sui (Beijing Tiantan Hospital, China)

Nanda Thimmappa, MD (University of Missouri, USA)

Justin Vranic, MD (Massachusetts General Hospital, USA)

Vivek Yedavalli (Johns Hopkins University, USA)

Chengcheng Zhu, PhD (University of Washington, USA)

Communications Committee

Chair Aleksandra Radjenovic, PhD (University of Glasgow, Scotland)

Members Maria Aristova, MD (Northwestern University's Feinberg School of Medicine, USA)
Mahmud Mossa-Basha, MD (University of Washington, USA)
Giles Roditi, MD (University of Glasgow, Scotland)
Monica Sigovan, PhD (Centre National de Recherche Scientifique, Lyon, France)
Nan Wang, PhD (Stanford University, USA)

SMRA Administrative Liaison Officer Anna Van Vliet

Technical Support Member Silvina Re

SMRA 2024 Committee

Chairs Claudia Prieto, PhD (Pontificia Universidad Católica de Chile, Chile & King's College London, UK)
René Botnar, PhD (Pontificia Universidad Católica de Chile, Chile & King's College London, UK)

Organizing Committee Anthony Christodoulou, PhD (University of California – Los Angeles, USA)
Jeremy Collins, MD (Mayo Clinic, USA)
Aleksandra Radjenovic, PhD (University of Glasgow, Scotland)
Oliver Wieben, PhD (University of Wisconsin – Madison, USA)
Xihai Zhao, MD, PhD (Tsinghua University, China)

Abstract Chair Mahmud Mossa-Basha, MD (University of Washington, USA)

Program Committee Aurélien Bustin, PhD (Bordeaux University, France)
René Botnar, PhD (Pontificia Universidad Católica de Chile, Chile & King's College London, UK)
Anthony Christoudolou, PhD (University of California – Los Angeles, USA)
Jeremy Collins, MD (Mayo Clinic, USA)
Yin Guo, PhD cand. (University of Washington, USA)
Elisabeth Hecht, MD (Weill Cornell Medical College, USA)

Mahmud Mossa-Basha, MD (University of Washington, USA)
Aleksandra Radjenovic, PhD (University of Glasgow, Scotland)
Hideki Ota, MD, PhD (Tohoku University, Japan)
Haikun Qi, PhD (Shanghai Tech University, China)
Susanne Schnell, PhD (University of Greifswald, Germany)
Monica Sigovan, PhD (Creatis Medical Imaging Research Center, France)
Oliver Wieben, PhD (University of Wisconsin – Madison, USA)
Xihai Zhao, MD, PhD (Tsinghua University, China)

SMRA Secretariat

Jessica Guillemette
Johanne Langford
Anna Van Vliet
Janette Wallace

Administrative Support

María E Gonzalez, Executive Director iHEALTH
Dabne Barrera, MSc student, UC Chile

Local Volunteers

Tabita Catalán
Nicolas Garrido
Diego Pedraza
Matias Paredes
Pablo Pino
Carlota Rivera
Rafael de la Sotta

The scientific program was made possible with the help of our team of abstract reviewers and their rigorous selection.

Aleksandra Radjenovic, University of Glasgow, Scotland
Anastasia Fotaki, King's College London, UK
Anthony Christodoulou, University of California – Los Angeles, USA
Aurélien Bustin, Bordeaux University, France
Binbin Sui, Beijing Tiantan Hospital, China
Calder Sheagren, University of Toronto, Canada
Carlos Castillo Passi, Pontificia Universidad Católica de Chile, Chile
Chaowei Wu, Cedars Sinai Medical Center, USA
Charles Dumoulin, Cincinnati Children's Hospital Medical Center, USA
Chengcheng Zhu, University of Washington, USA
Chun Yuan, University of Washington, USA
Claudia Prieto, Pontificia Universidad Católica de Chile, Chile
Dana Peters, Yale University, USA
David Saloner, University of California – San Francisco, USA
Elizabeth Hecht, Weill Cornell Medicine, USA
Giles Roditi, University of Glasgow, USA
Graham Wright, Sunnybrook Research Institute, Canada
Haikun Qi, Shanghai Tech University, China
Hediyeh Baradaran, University of Utah Health, USA
Hideki Ota, Tohoku University Hospital, Japan
Huiyu Qiao, Capital Medical University, Beijing, China
Ioannis Koktzoglou, NorthShore – Edward-Elmhurst Health, USA
James Carr, Northwestern University, USA
Jeffrey Maki, University of Colorado Anschutz Medical Campus, USA
Jeremy Collins, Mayo Clinic, USA
Jessica Bastiensen, University of Bern, Switzerland
Jing Liu, University of California – San Francisco, USA
John Huston, Mayo Clinic, USA
Joseph Leach, University of California – San Francisco, USA
Judit Csőre, Semmelweis University, Hungary
Justin Baraboo, Northwestern University, USA
Kim Lien Nguyen, University of California – Los Angeles, USA



Laura Eisenmenger, University of Wisconsin, USA
Lexiaozi Fan, Northwestern University, USA
Liliana Ma, Stanford University, USA
Louisa Fay, University Hospital Tuebingen, Germany
Mahmud Mossa-Basha, University of Washington, USA
Manuela Aschauer, Medical University of Graz, Austria
Mark Schiebler, University of Wisconsin – Madison, USA
Masaki Ishida, Mie University Hospital, China
Michael Markl, Northwestern University, USA
Mitsue Miyazaki, University of California – San Diego, USA
Monica Sigovan, Creatis Medical Imaging Research Center, France
Nan Wang, Stanford University, USA
Niranjan Balu, University of Washington, USA
Oliver Wieben, University of Wisconsin – Madison, USA
Pauline Hall Barrientos, University of Glasgow, Scotland
Peng Hu, Shanghai Tech University, China
Petter Byverfeldt, Linköping University, Sweden
Philippe Douek, Université Claude Bernard Lyon, France
Pim van Ooij, Amsterdam UMC, Netherlands
Qin Qin, Johns Hopkins Medicine, USA
René Botnar, Pontificia Universidad Católica de Chile, Chile
Robert Edelman, NorthShore University Health System, USA
Ruud van Heeswijk, Lausanne University Hospital (CHUV), Switzerland
Susanne Schnell, University of Greifswald, Germany
Suvai Gunasekaran, Cedars Sinai, USA
Trisha Roy, Houston Methodist DeBakey Heart and Vascular Institute, USA
Vivek Yedavalli, Johns Hopkins University, USA
Winfried Willinek, University of Bonn, Germany
Xiaodong Ma, University of Utah, USA
Xinyi Leng, The Chinese University of Hong Kong, China
Yibin Xie, Cedars Sinai Medical Center, USA
Yin Guo, University of Washington, USA
Zhaoyang Fan, University of Southern California, USA



Tuesday, November 12

Opening Plenary: Opportunities, Challenges, and Threats of MRA in the Clinic

Time: 9:00 – 10:30

Moderators: *Paul Finn* (UCLA) and *Jeffrey Maki* (University of Colorado Anschutz Medical Campus)

Time	Topic
9:00 – 9:15	Opening remarks: René Botnar (Pontificia Universidad Católica de Chile), Claudia Prieto (Pontificia Universidad Católica de Chile), Oliver Wieben (University of Washington)
9:15 – 9:30	Emerging opportunities for growth in MRA: Jeremy Collins (Mayo Clinic)
9:30 – 9:45	Can Ferumoxytol overcome the current challenges of Gd-based MRA?: Kim-Lien Nguyen (UCLA)
9:45 – 10:00	Photocounting CT: threat to MRA?: Philippe Douek (Université Claude Bernard Lyon)
10:00 – 10:15	<i>Industry Talk: United Imaging</i> - Ultra-High Field 5T MR Angiography: Comprehensive Vascular Imaging from Head to Toe: Jian Xu
10:15 – 10:30	Discussion I

10:30 – 10:50 **Coffee Break**

Scientific Session I: Head and Neck MRA

Time: 10:50 – 12:35

Moderators: *Mahmud Mossa-Basha* (University of Washington) and *Jae Song* (University of Pennsylvania)

Time	Topic
10:51 – 11:03	The past and future of carotid MRI: Chun Yuan (University of Utah)
11:04 – 11:16	MRA/MRI in vascular trauma: Laura Eisenmenger (University of Wisconsin)
11:17 – 11:29	Alternative contrast agents for carotid vascular imaging: David Saloner (University of California, San Francisco)

11:30 – 12:10 Proffered Abstracts: **Oral Presentations I**

Orals

- Hybrid 4D MRA and perfusion imaging using Hadamard encoded arterial spin labeling with stack-of-stars golden-angle radial acquisition: **Tianrui Zhao** (Northwestern University)
- The Severity of White Matter Hyperintensity in CSVD Correlates with Stronger Blood Flow Pulsatility in Lenticulostriate Arteries: A 7T MRI Study: **Tong Chen** (Beijing Tiantan Hospital)
- 4D Flow MRI in Elucidating Physiology and Disease Progression in the Cerebral Vasculature: **Jonas Schollenberger** (University of California, San Francisco)
- Isolated affection of the occipital artery in Giant Cell Arteritis: MRI is essential for diagnosis: **Thorsten Bley** (Universität Würzburg)
- Brain arterial remodeling and incident dementia: the Atherosclerosis Risk in Communities (ARIC) Study: **Sile Wang** (Johns Hopkins Hospital)

Tuesday, November 12 (Continued)

12:10 – 12:35

Proffered Abstracts: **Power Pitch Presentations I**

Pitches

1. Super-resolution Approach for Improving In Vivo 4D Flow MRI of Cerebral Arteries using CFD Simulation: **Yan Wang** (University of California, San Francisco)
2. Evaluation of quantitative MRA in patients with aneurysmal subarachnoid hemorrhage and its complications: **Mohamad Mosi** (University of Washington)
3. Impact of ageing on intracranial artery geometry: Analysis of time-of-flight MRA data in a subset of the SHIP-Study: **Dennis Wilk** (University of Greifswald)
4. Severe Perivascular Space Enlargement Correlates with Pulsatile Hemodynamics and Morphology of Lenticulostriate Artery using 7T MRI: **Xue Zhang** (Beijing Tiantan Hospital, Capital Medical University)
5. Explore the Correlation between Lenticulostriate Artery Morphology and White Matter Hyperintensities in Cerebral Small Vessel Disease using 7T MR: **Xun Pei** (Beijing Tiantan Hospital, Capital Medical University, Beijing Neurosurgical Institute)
6. Ferumoxytol Enhanced MRI/MRA for the Detection of Brain Arteriovenous Malformations in Patients with Hereditary Hemorrhagic Telangiectasia: **David Saloner** (University of California, San Francisco)
7. Promises and Pitfalls in Vasculitis MR Imaging: **Thorsten Bley** (Universität Wuerzburg)
8. Realtime imaging of neurofluid dynamics using interleaved dual-Venc PC-MRI: **Leonardo Rivera-Rivera** (University of Wisconsin-Madison)

12:35 – 14:00 **Lunch**

Scientific Session II: Cardiac and Quantitative Imaging

Time: 14:00 – 15:45

Moderators: *Anthony Christodoulou* (UCLA) and *Claudia Prieto* (Pontificia Universidad Católica de Chile)

Time	Topic
14:01 – 14:13	Multidimensional and multiparametric CMR: what is needed for clinical translation?: Sebastian Weingartner (TU Delft)
14:14 – 14:26	Novel contrasts for cardiac MRI: promises and challenges: Ruud B. van Heeswijk (Lausanne University Hospital (CHUV))
14:27 – 14:39	The future of cardiac MRI: Nicole Seiberlich (University of Michigan)

14:40 – 15:20

Proffered Abstracts: **Oral Presentations II**

Orals

1. Validation of myocardial perfusion measurement with deep learning-assisted myocardial arterial spin labeling (DeepMASL) MRI: **Jie Zheng** (Washington University in St. Louis)
2. 3D whole-heart joint T1/T1p/T2 mapping and water-fat imaging for contrast-agent free myocardial tissue characterization at 0.55T: **Michael Crabb** (King's College London)
3. Implicit Pharmacokinetic Modeling for First-Pass Myocardial Perfusion Image Reconstruction: **Xi Chen** (UCLA)
4. Reproducibility of Global and Regional Myocardial Strain Using Cine DENSE MRI with Gadolinium Administration in Patients with Heart Diseases: **Siyue Li** (University of California, Los Angeles)
5. Multiparametric free-breathing 3D whole-heart CMR for bright- and black-blood imaging with co-registered T1/T2 myocardial tissue mapping at 0.55T: **Ivan Kokhanovskyi** (Klinikum rechts der Isar, Technische Universität München)

SCIENTIFIC PROGRAM

16

Tuesday, November 12 (Continued)

15:20 – 15:45

Proffered Abstracts: **Power Pitch Presentations II**

Pitches

1. Quantitative Fibrosis Analysis using Wideband Post-Gd T1* Mapping in Pigs with CIEDs: **Calder Sheagren** (University of Toronto)
2. Automatic segmentation of spatially isotropic free-running 4D whole-heart MR images: **Augustin Ogier** (Lausanne University Hospital (CHUV) and University of Lausanne (UNIL))
3. Free-breathing 3D whole heart joint T1/T2 mapping and water/fat imaging at 0.55T: **Dongyue Si** (King's College London)
4. Isotropic 3D whole-heart SAVA T1 mapping at 0.55T with iNAV-based motion-correction: **Rafael De la Sotta** (Universidad de Chile)
5. Free-breathing black-blood myocardial scar imaging in patients with cardiac implantable devices: **Pauline Gut** (CHUV-UNIL)
6. Technical Developments for coronary MRA: **Michael Schär** (Johns Hopkins University School of Medicine)
7. Quantitative flow: **Jie Xiang** (Yale University)
8. Non-Contrast Myocardium Perfusion using Time-SLIP Stacks-of-Stars: **Mitsue Miyazaki** (University of California, San Diego)

15:45 – 16:15

Coffee Break

Scientific Session III: Advances in Vessel Wall Imaging

Time: 16:15 – 18:00

Moderators: *Judit Csőre* (Semmelweis University) and *Chengcheng Zhu* (University of Washington)

Time	Topic
16:16 – 16:28	Advances in head-neck joint MR vessel wall imaging techniques: Niranjan Balu (University of Washington)
16:29 – 16:41	Population based studies utilizing vessel wall imaging: Ye Qiao (Johns Hopkins University)
16:42 – 16:54	Cross-talk of atherosclerosis among different vascular beds: The view of vessel wall imaging: Binbin Sui , (Beijing Tiantian Hospital)
16:55 – 17:10	<i>ECC talk:</i> The value of interdisciplinary research and training: Roderic Pettigrew (Texas A&M University)

17:10 – 17:42

Proffered Abstracts: **Oral Presentations III**

Orals

1. Free-running T1 mapping of the carotid vessel wall with correction of B1+ and respiratory motion: **Isabel Montón Quesada** (CHUV-UNIL)
2. A randomized controlled trial of statins to reduce inflammation in vertebrobasilar dissecting aneurysms (VBDA) using high resolution vessel wall MRI: **Chengcheng Zhu** (University of Washington)
3. Relationship of Thrombus Signal on T1-Weighted Black-blood Thrombus Imaging to Acute Pulmonary Embolism in Lower-extremity Deep Vein Thrombosis: **Xinya Wang** (Beijing Chao-yang Hospital, Capital Medical University)
4. Feasibility of Cerebral Vessel Compliance Measurement Using 4D Radial-MERGE MRI: **Xiaodong Ma** (University of Utah)

Tuesday, November 12 (Continued)

17:42 – 18:00

Proffered Abstracts: **Power Pitch Presentations III**

Pitches

1. Efficient iT2prep-BOOST for simultaneous contrast-free 3D vascular lumen and wall imaging at 0.55T: Comparison to 1.5T:
Anastasia Fotaki (King's College London)
2. Detecting and Characterizing Non-stenotic Intracranial Atherosclerotic Disease and Carotid Plaques in ESUS Population Using Vessel Wall Imaging: **Javid Azadbakht** (Tabesh Radiology and Sonography)
3. Simultaneous 3D Aortic Lumen and Vessel Wall Systolic and Diastolic Imaging at 0.55T: **Matias Paredes** (Pontificia Universidad Católica de Chile)
4. Technique Review and Case Presentation: Imaging Vessel Wall Pathology with Magnetic Resonance Angiography:
Nanda Thimmappa (University of Missouri Hospital)
5. Cardiac Magnetic Resonance T2 Mapping Early Detects the Increased Myocardial Inflammatory Change in Experimental Diabetic Pigs: **Lu Zhang**
6. Performance of ChatGPT in Detecting Mismatches Between Findings and Impressions in Complex Cardiac MRI Reports:
Soheil Kooraki (University of California, Los Angeles)



Wednesday, November 13

Plenary Session II and Martin Prince Lecture: Towards more accessible and affordable MRA and CMR

Joint Session with SCMR

Time: 9:00 – 10:30

Moderators: *René Botnar* (Pontificia Universidad Católica de Chile) and *Suvai Gunasekaran* (Cedars Sinai)

Time	Topic
9:00 – 9:15	<i>Martin Prince Lecture:</i> Breaking barriers: Enhancing MR angiography access: Mitsue Miyazaki (University of California, San Diego)
9:15 – 9:30	Efficiency and value: Balancing cost and performance in cardiac MR imaging: Jeanette Schulz Menger (Charité)
9:30 – 9:45	Low-Field MRI: Bridging gaps in healthcare accessibility?: Orlando Simonetti (The Ohio State University)
9:45 – 10:00	Navigating Challenges: Maximizing impact of MRA and CMR in Latin America: Carlos Rochitte (InCor)
10:00 – 10:15	<i>Industry Talk:</i> Bayer – Gadobutrol: Our Clinical Experience After More Than 100 Million Administrations: Laura Schöckel
10:15 – 10:30	Discussion II

10:30 – 10:50 **Coffee Break**

Scientific Session IV: Coronary MRA and Plaque Imaging

Time: 10:50 – 12:35

Moderators: *René Botnar* (Pontificia Universidad Católica de Chile) and *Felicia Seemann* (National Institutes of Health)

Time	Topic
	Technical advances in Coronary MRA: what is still missing?: Matthias Stuber (CIBM/CHUV/UNIL)
10:51 – 11:03	The role of coronary MRA in the era of coronary CTA: Masaki Ishida (Mie University Hospital)
11:04 – 11:16	High intensity coronary plaque imaging: do we have a new biomarker?: Yibin Xie (Cedars Sinai Medical Center)
11:17 – 11:29	

11:30 – 12:10 Proffered Abstracts: **Oral Presentations IV**

Orals

1. High-Resolution Non-Contrast Magnetic Resonance Coronary Angiography for Coronary Artery Assessment: **Simon Littlewood** (King's College London)
2. Highly Accelerated, Dixon-based Ferumoxytol-enhanced Coronary MR Angiography at 3.0T: **Yuehong Liu** (Beijing Chaoyang Hospital, Capital Medical University)
3. Ferumoxytol-Enhanced Coronary MRA and Steady-State Myocardial Vasoreactivity Testing: **Kim-Lien Nguyen** (UCLA)
4. Conical readouts in free-running 3D bSSFP CMRA: **Martin Nicoletti** (Lausanne University Hospital)
5. Change in carotid IPH volume over time is related to measures of carotid vasa vasorum: **Gabor Canton** (University of Washington)

SCIENTIFIC PROGRAM

19

Wednesday, November 13 (Continued)

12:10 – 12:35

Proffered Abstracts: **Power Pitch Presentations IV**

Pitches

1. The discrepancy in the optimal cardiac phases between free-running 5D coronary MRA and RCA motion monitoring by free-breathing trans-axial cine: **Masafumi Takafuji** (Mie University Hospital)
2. Image quality of whole-heart coronary MRA: comparison between 3.0T and 1.5T: **Shinichi Takase** (Mie University Hospital)
3. Centric Zigzag ky-kz Trajectory Coronary MR Angiography using High-Resolution Deep Learning Reconstruction: **Mitsue Miyazaki** (University of California, San Diego)
4. Highly Accelerated 4D Flow Imaging with Ferumoxytol: Initial Results in Adult Congenital Heart Disease: **Paul Finn** (UCLA)
5. First application of a similarity-driven reconstruction to accelerate free-running whole-heart imaging on low-field MRI: **Marco Mueller** (Siemens Healthineers)
6. Model-based Deep Image Prior Reconstruction for iNAV-based 3D whole-heart T2 mapping: **Alberto Di Biase** (Millennium Institute for Intelligent Healthcare Engineering)
7. Accelerated Cardiac Cine Image Reconstruction via an Iterative coil-encoded Algorithm: **Zhuocheng Xie** (ShanghaiTech University)
8. Chest MRA derived median LV volume: **Mark Schiebler** (UW Health)

12:35 – 14:00 **Lunch**

Scientific Session V: Flow, Modeling, and Processing

Time: 14:00 – 15:45

Moderators: *James Carr* (Northwestern University) and *Oliver Wieben* (University of Wisconsin-Madison)

Time	Topic
14:01 – 14:13	Towards 5D flow: how to measure blood flow with phase-contrast MRI: Liliana Ma (Stanford University)
14:14 – 14:26	From Error correction to visualization: how to extract quantitative results from phase-contrast MRI data: Julio Sotelo (Universidad Técnica Federico Santa María)
14:27 – 14:39	Blood flow modeling, digital twins and image based modeling: Alejandro Roldan Alzate (UW-Madison)

14:40 – 15:20

Proffered Abstracts: **Oral Presentations V**

Orals

1. 5D Flow MRI captures respiration-driven alterations in flow energetics in congenital heart disease: **Thara Nallamotheu** (Northwestern University)
2. Deep learning for temporal super-resolution and denoising of 4D Flow MRI: **Pia Callmer** (Karolinska Institutet)
3. AI-Derived Aorta Hemodynamics from Contrast Enhanced MRA Accurately Quantifies Systolic Peak Velocities and Areas of Elevated Wall Shear Stress: **David Dushfunian** (Northwestern University)
4. Machine-Learning 3D Segmentation of Carotid Arteries in 4D Flow MRI: **Ethan Johnson** (Northwestern University)
5. Arrhythmia Resolved 5D Flow Imaging of Atrial Fibrillation Patients: **Justin Baraboo** (Northwestern University)

SCIENTIFIC PROGRAM

20

Wednesday, November 13 (Continued)

15:20 – 15:45

Proffered Abstracts: **Power Pitch Presentations V**

Pitches

1. Deep-Learning based Highly Accelerated 2-point velocity encoding 4D flow MRI: **Haben Berhan** (Northwestern University)
2. Prediction of peak-to-peak pressure gradient using PINNs and Magnetic Resonance: **Sebastian Jara Cifuentes** (Universidad Técnica Federico Santa María)
3. Relationships between central hemodynamics, aortic geometry, and arterial hypertension in patients with repaired aortic coarctation: **Cristian Velásquez** (Millennium Institute for Intelligent Healthcare Engineering, iHEALTH)
4. Enhancing Hemodynamic Parameter Estimations: Nonlinear Blood Behavior in 4D Flow MRI: **Hernán Mella** (Pontificia Universidad Católica de Valparaíso)
5. AI-Driven Automated Multi-Site Assessment of Aortic Hemodynamics in 399 Subjects: **Ethan Johnson** (Northwestern University)
6. 4D flow MRI data processing automation: **Aaron Ponce Sandoval** (Universidad de Valparaíso)
7. Hemodynamic differences between ruptured and unruptured cerebral arteriovenous malformations: A 4D flow MRI study: **Yuanbin Zhao** (Beijing Tiantin Hospital, Capital Medical University)
8. 4D Flow MRI Velocity Enhancement and Anti-Aliasing Using Divergence Free Potential in Neural Networks: **Javier Bisbal** (Pontificia Universidad Católica de Chile)

15:45 – 16:15

Coffee Break (and ECR Networking in the Elbe Room)

Scientific Session VI: Abdominal, Thoracic, and Peripheral MRA

Time: 16:15 – 18:00

Moderators: *Kevin Demarco* (WRNMMC) and *Elizabeth Hecht* (Weill Cornell Medicine)

Time	Topic
16:16 – 16:28	Thoracic MRA: Chris Francois (Mayo Clinic)
16:29 – 16:41	MRA in perforator FLAP surgeries: Nanda Thimmappa (University of Missouri Hospital)
16:42 – 16:54	Uterine fibroid embolization and pelvic congestion?: Nicole Lamparello (Weill Cornell Medicine)

16:55 – 17:35

Proffered Abstracts: **Oral Presentations VI**

Orals

1. Free Breathing Respiratory Resolved 3D Lung Imaging at 0.55T: **Pablo Pino** (Pontificia Universidad Católica de Chile)
2. Transforming Chronic Limb-Threatening Ischemia Care with Pre-procedural Magnetic Resonance Histology in Peripheral Vascular Interventions: **Judit Csőre** (Semmelweis University)
3. Validation of a custom variational autoencoder artificial intelligence algorithm through histology for classifying ex vivo MRI images of peripheral arteries: **Judit Csőre** (Semmelweis University)
4. Automatic 3D Deep-Learning Segmentation of Aortic Lumen MR images obtained with the iT2Prep-BOOST Sequence: **Matteo Cesario** (King's College London)
5. Deep Learning-Based Adaptive-Compressed Sense (CS)-Net Reconstruction of CS Accelerated REACT Imaging of Heart and Great Vessels: **Sukran Erdem** (UT Southwestern Medical Center)

Wednesday, November 13 (Continued)

17:35 – 18:00

Proffered Abstracts: **Power Pitch Presentations VI**

Pitches

1. Combined Blood Flow and Blood Volume Assessment of the Placenta with Ferumoxytol MRA: **Ruo-Yu Liu** (University of Wisconsin-Madison)
2. Deciphering MRI of ex vivo DVT using quantitative relaxation times and histology: **Caroline Jordon** (Houston Methodist)
3. Fully Automated Segmentation Using Artificial Intelligence for Post-Analysis in 4D Flow MRI of the Portal Vein: **Ryota Hyodo** (Nagoya University)
4. How Low is Too Low: Dual-VENC 4D Flow MRI for the Portal Venous System: **Tarun Naren** (University of Wisconsin-Madison)
5. 4D-flow MRI: **Akio Inage** (Japanese Red Cross Medical Center)
6. Free breathing self-navigated 3D iNAV joint T1-T2 and fat fraction mapping for whole-liver tissue characterization at 0.55T: **Nicolás Garrido** (iHEALTH Millenium Institute, Pontificia Universidad Católica de Chile)
7. Advanced Imaging Techniques: Exploring Peripheral MRA Sequences and Clinical Cases: **Nanda Thimmappa** (University of Missouri Hospital)
8. Single-phase steady-state ferumoxytol-enhanced MR angiography of neck, chest, abdomen, and pelvis: A feasibility study: **Soheil Kooraki** (University of California, Los Angeles)



Thursday, November 14

Plenary Session III: Early Career Development

Joint Session with Early Career Committee

Time: 9:00 – 10:30

Moderators: *Nicolás Garrido* (iHEALTH Millenium Institute/Pontificia Universidad Católica de Chile) and *Liliana Ma* (Stanford University)

Time	Topic
9:00 – 9:05	Introduction to ECC and Junior Fellow Awards: Calder Sheagren (University of Toronto), Oliver Wieben (Mayo Clinic)
9:05 – 9:15	Junior Fellow Clinical Award Talk 1: Anastasia Fotaki (King's College London)
9:15 – 9:25	Junior Fellow Clinical Award Talk 2: Judit Csőre (Semmelweis University)
9:25 – 9:35	Discussion Q&A (Junior Fellows)
9:35 – 9:50	Cultivating Future Leaders: The Role of Team Management, Scientific Innovation, and Clinical Practice in Medical Education, Yingkun Guo (West China Second Hospital, Sichuan University)
9:50 – 10:00	Discussion Q&A (Plenary Speakers)
10:00 – 10:30	Fireside Chat (Moderators: Tarun Naren (University of Wisconsin-Madison) and Pauline Gut (CHUV-UNIL) Panelists: Debiao Li (Cedars-Sinai Medical Center), Mitsue Miyazaki (University of California, San Diego), Pablo Irarrazaval

10:30 – 10:50 **Coffee Break**

Scientific Session VII: New Technologies and AI in MRA

Time: 10:50 – 12:35

Moderators: *Trisha Roy* (Houston Methodist DeBakey Heart and Vascular Institute) and *Bob Hu* (Stanford University)

Time	Topic
10:51 – 11:03	Non-Contrast MR Angiography: New developments: Robert R. Edelman (North Shore University Health System)
11:04 – 11:16	How can AI transform MRA?: James Carr (Northwestern University)
11:17 – 11:29	Opportunities of ultrahigh-field scanners and AI in intracranial MRA: Lirong Yan (Northwestern University)

SCIENTIFIC PROGRAM

23

Thursday, November 14 (Continued)

11:30 – 12:10

Proffered Abstracts: **Oral Presentations VII**

Orals

1. Data-consistent super resolution for 3D whole-heart MRI using a motion-corrected deep-learning reconstruction framework: **Andrew Phair** (King's College London)
2. Accelerated cardiac cine MRI using Implicit Neural Representations Unsupervised Reconstruction: **Tabita Catalán** (Universidad de Chile)
3. An End-to-End Motion Estimation and Motion-Corrected Model-Based Deep-Learning Approach for Single-Heartbeat Cine: **Thomas Fletcher** (King's College London)
4. Automatic Labeling of Intracranial Arteries: A Deep Learning Approach for Streamlining Post-Processing of 4D Flow MRI Data: **Sebastián Jofré** (University of Greifswald and Universidad Técnica Federico Santa María)
5. T1, T2 and fat-fraction Cardiac Magnetic Resonance Fingerprinting at 0.55T: **Diego Pedraza** (Pontificia Universidad Católica de Chile)

12:10 – 12:35

Proffered Abstracts: **Power Pitch Presentations VII**

Pitches

1. Physics-informed neural network for cardiac cine MR strain estimation considering fiber contractility: **Francisco Sahli Costabal** (Pontificia Universidad Católica de Chile)
2. Towards real-time cine-MRI reconstruction using meta-learning: **Vicente Castro** (Pontificia Universidad Católica de Chile)
3. Respiratory motion-compensated ROCK-MUSIC with cardiac phased array RF focusing for imaging pediatric congenital heart disease: **Zheyuan Hu** (UCLA)
4. 3D Myocardial Segmentation in Whole-Heart Joint T1/T2 mapping: nnU-Net vs. MA-SAM: **Carlota Rivera** (Impact)
5. Improved Cardiovascular MRI Using Equilibrium Phase bT1RESS MR Angiography: **Robert Edelman** (NorthShore University Health System)
6. Test-retest reproducibility of DL-based super resolution of cerebrovascular dual-venic 4D Flow MRI data: **Patrick Winter** (University of Greifswald)
7. Extravascular lung water MRI using dual contrast extracellular volume maps: **Felicia Seemann** (National Institutes of Health)
8. Relaxivity Measurements of the Contrast Agent Gadopichlenol in Human Blood and Human Plasma: Implications for CE-MRA: **Jeffrey Maki** (University of Colorado Anschutz Medical Campus)

12:35 – 14:00 **Lunch**

Thursday, November 14 (Continued)

Plenary Session IV: The Potential and Current Role of AI in MRA and CMR

Joint Session with MICCAI

Time: 14:00 – 15:45

Moderators: *Mehmet Akcakaya* (University of Minnesota) and *Huijun Chen* (Tsinghua University)

Time	Topic
14:00 – 14:15	AI for cardiac imaging pipeline: from referral to reporting: Tim Leiner (Mayo Clinic)
14:15 – 14:30	AI-based prediction of disease progression and outcome: Reza Nezafat (Harvard University)
14:30 – 14:45	<i>Industry Talk: Siemens Healthineers</i> - From research to clinical practice: How collaborative approaches foster translation of new MRI technologies: Karl Kunze
14:45 – 15:00	Discussion
15:00 – 15:08	Introduction to AI Challenge and Announcement of Awards: Huijun Chen (Tsinghua University)
15:08 – 15:16	AI challenge <i>Team MIC</i> : Andrés Martínez Mora (German Cancer Research Center (DKFZ))
15:16 – 15:24	AI challenge <i>Team HNPH</i> : Song Tian (CTS, Philips)
15:24 – 15:32	AI challenge <i>Team BriBra</i> : Xiongjie Shen (Anke High-tech Co., Ltd.)
15:32 – 15:40	AI challenge <i>Team VdHi</i> : Jesus David Gonzalez Riveros (Vall d'Hebron Institut de Recerca (VHIR))
15:40 – 15:45	Challenge Industry Sponsor Talk: Neusoft Medical Systems

15:45 – 16:15 **Coffee Break**

Scientific Session VIII: Contrast and Non-contrast Enhanced MRA

Time: 16:15 – 18:00

Moderators: *Qin Qin* (Johns Hopkins Medicine) and *Aleksandra Radjenovic* (University of Glasgow)

Time	Topic
16:16 – 16:28	Current Status of contrast enhanced MRA: Paul Finn (UCLA)
16:29 – 16:41	Current Status of non-contrast enhanced MRA: Giles Roditi (NHS GGC)
16:42 – 16:54	Current Status of CE and non-CE MRA for CHD: Anastasia Fotaki (King's College London)

16:55 – 17:35 Proffered Abstracts: **Oral Presentations VIII**

Orals

1. Vessel Segmentation of Non-Contrast Enhanced Time-Resolved 4-Dimensional MRA with a Parallel Spatio-Temporal 3D U-net: **Sang Hun Chung** (Northwestern University)
2. Understanding Age-related Vascular Changes in the Choroid Plexus: Non-contrast and Contrast-enhanced Imaging: **Yulin Ge** (NYU Grossman School of Medicine)
3. Multi-tag Time-SLIP Simulation Extending General Kinetic Model: **Vadim Malis** (UC San Diego)
4. Rapid Large-Coverage 3D MRA Using Velocity-Selective Pulse Train and T2 preparation: **Dan Zhu** (Kennedy Krieger Institute)

Thursday, November 14 (Continued)

17:35 – 18:00

Proffered Abstracts: **Power Pitch Presentations VIII**

Pitches

1. Adiabatic and Non-adiabatic Pulses for Outer Volume Suppression: Application to Non-contrast Coronary Magnetic Resonance Angiography: **Ayda Arami** (TU Delft)
2. Non-contrast Time-SLIP Renal Perfusion Imaging using Stack-of-Stars with ASL: **Vadim Malis** (UC San Diego)
3. Conjugate Gradient Iteration with Deep Learning Reconstruction for Ultrashort TE Time-Spatial Labeling Inversion Pulse MRA of Visceral Arteries: **Hideki Ota** (Tohoku University Hospital)
4. Simultaneous high-temporal-resolution non-contrast dynamic MRA and B1+-corrected T1 mapping using 2D ASL MR Multitasking: **Fardad Serry** (Cedars-Sinai Medical Center)
5. Non-contrast-enhanced MR angiography: **Mitsue Miyazaki** (University of California, San Diego)
6. The influence of spatiotemporal interpolation on hemodynamic parameters in cerebral 2D flow MRI: **Julian Wollenberg** (Universitätsmedizin Greifswald)
7. Characterization of cerebral perforating arteries using submillimeter-resolution dual-VENC PC-MRI at 3T: **Jianing Tang** (Northwestern University)
8. A Deep Cascade of Variational Neural Networks (VarNet) for Time-Resolved 4D MRA Reconstruction: **Zhitao Li** (Northwestern University)



Friday, November 15

Plenary Session V: Interventional MRI: Value, Promises, and Future Prospects

Time: 9:00 – 10:30

Moderators: *Thorsten Bley* (Universität Wuerzburg) and *Graham Wright* (Sunnybrook Research Institute)

Time	Topic
9:00 – 9:15	Interventional MR angiography: Charles Dumoulin (Cincinnati Children's Hospital Medical Center)
9:15 – 9:30	Interventional MRI in congenital heart disease: current practice and future prospects: Franz Gerald Greil (University of Texas Southwestern)
9:30 – 9:45	Value and future prospects of MRA in neurological interventions: José Guilherme M. P. Caldas (University of Sao Paulo - Clinicas Hospital)
9:45 – 10:00	Advancements in real-time imaging techniques for interventional MRI: Dana Peters (Yale University)
10:00 – 10:15	<i>Industry Talk: Guerbet</i> - Analyzing and Optimizing Contrast Usage for CE-MRA: Jeffrey Maki (University of Colorado Anschutz Medical Campus)
10:15 – 10:30	Discussion V

10:30 – 10:50 **Coffee Break**

Closing Plenary and Sadamoto Lecture: New Horizons and the Future of MRA and CMR

Time: 10:50 – 12:35

Moderators: *Hideki Ota* (Tohoku University Hospital) and *Xihai Zhao* (Tsinghua University)

Time	Topic
10:50 – 11:05	<i>Sadamoto Lecture:</i> The future of MRA and CMR: Debiao Li (Cedars-Sinai Medical Center)
11:05 – 11:20	Automation to improve workflow efficiency/imaging in MRA and CMR: Michael Markl (Northwestern University)
11:20 – 11:35	Early experience with Gadopiclenol for MRA: Deja-Vu and more!: Tom Grist
11:35 – 11:50	AI-based personalized disease prediction and the role of medical imaging: Domingo Mery
11:50 – 12:05	Discussion VI
12:05 – 12:20	Award Presentations: Jeremy Collins (Mayo Clinic), Oliver Wieben (University of Wisconsin-Madison)
12:20 – 12:35	Presentation of SMRA 2025 and Closing Remarks: Jeremy Collins (Mayo Clinic), Oliver Wieben (University of Wisconsin-Madison)

JUNIOR FELLOWSHIP AWARD WINNERS

Judit Csőre, MD, PhD (Semmelweis University, Budapest)



Dr. Judit Csőre graduated from the Faculty of Medicine at Semmelweis University, Budapest, Hungary, in 2018. Her research journey began in her third year, under Professor Krisztina Kádár, focusing on multimodal imaging of Kawasaki Disease. During her studies, she received several awards, presented her work at national and international conferences, and published multiple first- and co-author papers. As a founding member of the Council on Kawasaki Disease of the Hungarian Society of Cardiology, she played a key role in establishing the Hungarian Kawasaki Registry. In September 2018, Dr. Csőre began her radiology residency at the Department of Radiology, Heart and Vascular Center, Semmelweis University.

Early in her training, she worked with the Cardiovascular Imaging Research Group on cardiac CT studies. Since 2019, her focus has been on advanced MR angiographic techniques for lower extremity arterial diseases, mentored by Dr. Csaba Csobay-Novák. In 2022, she moved to the US and joined Dr. Trisha Roy's team at Houston Methodist Hospital as a postdoctoral fellow, focusing on translating novel MRI techniques and endovascular devices into clinical practice. Her work involved studies using human cadaveric models and AI-based software development for peripheral vascular disease. This collaboration attracted over \$3.6 million in NIH and American Heart Association funding, resulting in over 60 conference presentations and 8 publications. Alongside her research, Dr. Csőre mentors students in both Hungary and the US. She has presented her research globally, earning awards for her presentations and was named Postdoctoral Fellow of the Year at Houston Methodist in 2024. Dr. Csőre recently completed her PhD on advanced MRI techniques for peripheral arterial disease and is now building a vascular MRI lab at Semmelweis University while finishing her radiology residency. She actively participates in the Society for Magnetic Resonance Angiography as the educational liaison of the early career committee and will co-chair the society's annual meeting in Budapest in 2025.

Lexiaozi Fan, PhD (Northwestern University, Chicago)



Lexiaozi Fan, PhD, is a second-year postdoctoral fellow in the Radiology Department at Northwestern University, working with Dr. Daniel Kim. Her research is centered on advancing the application of cardiovascular magnetic resonance by integrating cutting-edge techniques, including novel pulse sequences, advanced image reconstruction and analysis methods, and deep learning.

JUNIOR FELLOWSHIP AWARD WINNERS

Anastasia Fotaki, MD, PhD (Royal Brompton Hospital, Guy's and St Thomas's London)



Anastasia Fotaki graduated from the University of Crete in 2012. Since then, her clinical and research work has focused on applying and advancing imaging techniques, to optimise outcomes for patients with Congenital Heart Disease. She started training in Fetal and Paediatric Cardiology in Royal Brompton Hospital in London. During this time her research concentrated on advanced echocardiographic applications to study cardiac morphology in fetal life. Following that she undertook a PhD at King's College London, under the auspices of Professors Claudia Prieto and René Botnar. She examined novel approaches to enable 3D, contrast-agent free, whole-heart techniques in cardiac MRI and the potential for deep-learning approaches to accelerate imaging in patients with Congenital Heart Disease. These datasets have also formed the basis of multiple ongoing projects designing, testing and utilising deep-learning based algorithms. Subsequent to this, Anastasia conducted research investigating novel techniques for clinical imaging at 0.55T CMR system, to improve accessibility and clinical care of patients with congenital heart disease.

Anastasia is currently a consultant paediatric cardiologist with expertise in Cardiovascular Imaging, at Royal Brompton Hospital, Guy's and St Thomas's London. Her current focus is on continuing to improve the use of cardiovascular MRI for better patient treatment and outcomes in congenital heart disease. She is dedicated to the development of international research collaborations to maximise impact and dissemination of clinical research developments. Training of undergraduates, graduate and post-graduate students and researchers, technicians and junior doctors is an essential part of her academic and clinical work, as well as collaboration with scientists, and industrial partners.

Junior Fellowship Award Committee

Xihai Zhao, MD, PhD (Tsinghua University)

Graham Wright, PhD (University of Toronto)

Anthony Christodoulou, PhD (University of California – Los Angeles)

Sasha Radjenovic, PhD (University of Glasgow)

Calder Sheagren, PhD cand. (University of Toronto)

Yin Guo, PhD cand. (University of Washington)

SMRA Intracranial Aneurysm and Intracranial Artery Stenosis Detection and Segmentation Challenge (INSTED2024)

The objective of this challenge is to detect and segment lesions on 3D TOF-MRA images acquired from a cohort of healthy volunteers and patients with intracranial artery stenosis or intracranial aneurysms.

The official website of the challenge is <https://www.codabench.org/competitions/2139/>

Grand Challenge Committee

Organizers

Huijun Chen, Tsinghua University, Beijing, China
Xihai Zhao, Tsinghua University, Beijing, China
Rui Li, Tsinghua University, Beijing, China
Haokun Li, Tsinghua University, Beijing, China
Haozhong Sun, Tsinghua University, Beijing, China
Ziming Xu, Tsinghua University, Beijing, China
Haining Wei, Tsinghua University, Beijing, China
Yan Li, Tsinghua University, Beijing, China
Jiaqi Dou, Tsinghua University, Beijing, China
Xueyan Li, Tsinghua University, Beijing, China
Xiaoming Liu, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China

Winners

First place **Team MIC**, German Cancer Research Center (DKFZ), Germany
Second place **Team HNPH**, CTS, Philips, China
Third place **Team BriBra**, Anke High-tech Co., Ltd., China
Fourth place **Team VdHi**, Vall d'Hebron Institut de Recerca (VHIR), Spain

Endorsed by:



Tuesday, November 12th to Friday, November 15th

Aside from tremendous scientific and educational content, we look forward to offering a wonderful optional evening program.

Welcome Reception: Tuesday, November 12th

- *Location:* Club Manquehue (Conference Venue)
- *Address:* Av Vitacura 5841
- *Time:* 18:30
- *Transportation:* Not needed

Dinner: Wednesday, November 13th

- *Location:* Piso 18, Hotel Doubletree Vitacura
- *Address:* Av. Vitacura 2727
- *Time:* 19:00
- *Transportation:* Not provided as the venue is nearby

Dinner: Thursday, November 14th

- *Location:* Mestizo Restaurant
- *Address:* Bicentennial Avenue 4050, Vitacura
- *Time:* 19:00
- *Website:* www.mestizorestaurant.cl

Optional Post Conference Activity (extra payment required): Friday, November 15th

For those planning to stay after the conference and looking to enjoy the afternoon in a group activity, see our post conference activity offering below. Note this activity is not included in your registration fee and requires an extra payment.

Winery visit, lunch, and tour

- *Location:* Viña Casas del Bosque
- *Address:* Camino Padre Hurtado 695, Buin
- *Time:* 12:45 (departure from venue)
- *Transportation:* buses provided
- *Activities:* lunch, (1) winery tour and tasting or (2) ride and visit to lake and viewpoint and wine tasting

Cost: 80 USD per person



GUEST DAY PROGRAM

31

Per usual– families, friends, partners welcome! We look forward to connecting those traveling with conference attendees for exploration and enjoyment in Santiago.

We look forward to welcoming all those travelling with conference attendees to join us for the Guest Day Program. The Guest Program is intended for anyone who may be travelling with conference attendees and wishes to explore Santiago with a group while delegates enjoy the conference proceedings.

We have organized a beautiful week to include significant historical sites, city exploration, and of course we couldn't miss the Chilean wineries. We've outlined the details below to the best of our ability, but please note plans are subject to change.

Cost: 180 USD per person

Day 1: Tuesday, November 12th

Private City Tour of Santiago. The day will include a bilingual guide who will accompany you and tell you about the icons of the city. Tour will include visits to: Los Dominicos Village, Plaza de la Constitución, Parque Bicentenario, Plaza de Armas, Palacio La Moneda, among others. In Plaza de Armas, there will be a special visit to the bell towers of the Cathedral of Santiago. You'll explore the hidden corners of the Metropolitan Cathedral, such as inner courtyards, the old bell tower, and viewpoints with beautiful views. Lunch at restaurant Mestizo (at the guest's expense).

Pick up: 10:00, Return: 16:00

Day 2: Wednesday, November 13th

Tour to Santa Rita winery with wine maker experience. You'll experience a unique tasting experience that includes much more than a sampling! During your visit to Santa Rita, you'll get to design, bottle, cork, label your wine. Each guest will take home a 750-cc. bottle of wine made by you! While there, you will also taste 2 varieties of wine and be led on a guided tour through the varietal gardens and vineyard. You will visit Museo Andino Santa Rita and enjoy lunch at la Panadería (at the guest's expense).

Pick up: 10:00, Return: 16:00

Day 3: Thursday, November 14th

Cerro San Cristobal tour program with lunch at Divertimento Chileno restaurant. Guests will start by arriving at Pio Nono – Bellavista station. There will be a beautiful ascent by funicular to the Cumbre station. From there you'll visit the Tudor heritage hall and a scenic viewing area. Your guide will continue with you to Virgen de la Inmaculada Concepción sector, among others.

Snack provided: homemade ice cream and drink.

You'll finish the day with a cable car ride down to Tupahue station to visit Torreón Victoria and enjoy the panoramic views, then down to the final station Oasis. Visit to the machine room of the cable car.

Lunch will be at restaurant Meson Nerudiano (at the guest's expense).

Pick up: 10:00, Return: 16:00

ACKNOWLEDGEMENT OF SPONSORS

The Society for Magnetic Resonance Angiography would like to express its sincere gratitude to all 2024 sponsors, without whom this year's event would genuinely not have been possible.

Platinum Sponsors

Bayer - Platinum Sponsor

Bayer offers a leading portfolio of contrast media for CT and MRI, with devices, informatics solutions, and a medical imaging platform delivering access to applications, including those enabled by AI.

<https://www.bayer.com/en/>



Guerbet - Platinum Sponsor

Guerbet is a pioneer in contrast media, with over 90 years' experience, and a leader in medical imaging worldwide. Offering products, devices, and services to help improve diagnosis and treatment.

<https://www.guerbet.com/en-gb/healthcare-professionals>



ACKNOWLEDGEMENT OF SPONSORS

Platinum Sponsors (Continued)

Siemens Healthineers - Platinum Sponsor

We pioneer breakthroughs in healthcare. For everyone. Everywhere. Sustainably. The innovative healthcare solutions offered by Siemens Healthineers are crucial for making high-quality healthcare accessible for everyone, for clinical decision-making, and for treatment pathways. We are a team of more than 71,000 Healthineers in over 70 countries passionately pushing the boundaries of what is possible in healthcare to help improve the lives of people around the world.

<https://www.siemens-healthineers.com/magnetic-resonance-imaging/clinical-specialities/cardiovascular-mri>



Gold Sponsors

United Imaging Healthcare - Gold Sponsor

Shanghai United Imaging Healthcare Co., Ltd. ("UIH") is a member of the United Imaging Healthcare Technology Group Co., Ltd., which is dedicated to providing, developing and producing high-performance advanced medical imaging, radiotherapy equipment, life science instruments and offering intelligent digital solutions to customers worldwide. UIH was founded in 2011 and headquartered in Shanghai, and has subsidiaries and R&D centers across China, the United States, Malaysia, United Arab Emirates, Poland and other parts of the world.

UIH has launched over 120 ground-breaking products, including Total-Body PET/CT, HD TOF PET/MR, Whole-body UHF 5T MR, 75cm Ultra-Wide Bore 3.0T MR, 640-Slice CT Scanner, and Fully Integrated CT-linac. All core technologies are developed inhouse and have been globally or nationally recognized for world-leading performance.

<https://www.united-imaging.com/>



ACKNOWLEDGEMENT OF SPONSORS

Silver Sponsors

GE Healthcare - Silver Sponsor

At GE HealthCare, we're reshaping healthcare around people, from providers to clinicians to patients, to improve the experience for everyone personally. The tools we invent transform and humanize care, so our solutions not only lead to increasingly better outcomes for patients but also ease workloads for caregivers and give them better, more precise patient data to work with. As we advance what's possible in healthcare, clinicians find greater confidence and satisfaction in their work, communities can serve more people, and patients see an optimistic future as they live their healthiest possible lives.

<https://www.gehealthcare.com/>



Philips - Silver Sponsor

At Philips, our purpose is to improve people's health and well-being through meaningful innovation. We aim to improve 2.5 billion lives per year by 2030, including 400 million in underserved communities. As a technology company, we – and our brand licensees – innovate for people with one consistent belief: there's always a way to make life better.

<https://www.philips.ca/>

The Philips logo, consisting of the word "PHILIPS" in a bold, blue, sans-serif font.

ACKNOWLEDGEMENT OF SPONSORS

Bronze Sponsors

Bracco - Bronze Sponsor

The Bracco Group is a world-leading diagnostic imaging provider. It develops, manufactures, and markets diagnostic imaging agents and solutions. It offers a product and solution portfolio for all key diagnostic imaging modalities: X-ray imaging (including Computed Tomography-CT, Interventional Radiology, and Cardiac Catheterization), Magnetic Resonance Imaging (MRI), Contrast Enhanced Ultrasound (CEUS), and Nuclear Medicine through radioactive tracers and novel PET imaging agents to inform clinical management and guide care for cancer patients in areas of unmet medical need.

<https://www.bracco.com>



LIFE FROM INSIDE

Canon Medical Systems - Bronze Sponsor

Canon Medical offers a full range of diagnostic medical imaging solutions including CT, MR, X-Ray, Ultrasound and Healthcare Informatics across the globe.

<https://global.medical.canon/>



iHEALTH - Bronze Sponsor

iHEALTH is a cutting-edge Chilean research center, bringing together academics and early career researchers from Pontificia Universidad Católica de Chile, Universidad de Chile, and Universidad de Valparaíso. We develop innovative methods integrating physics, engineering, and AI to improve medical imaging-based healthcare, with the aim of making it more efficient, accessible, and affordable for all.

<https://i-health.cl/>



ACKNOWLEDGEMENT OF SPONSORS

Bronze Sponsors (Continued)

Center of Interventional Medicine for Precise and Advanced Cell Therapies (IMPACT) - Bronze Sponsor

IMPACT is a Basal Center funded by the National Agency for Research and Development of Chile (ANID) that seeks to quickly and efficiently transfer new treatments and advanced therapies in clinical trials that improve the quality of life and human health with state-of-the-art clinical solutions for four areas: Cancer, Musculoskeletal, Mental Health, and Perinatal.

<https://centerimpact.cl/>



Martin R Prince Charitable Foundation - Bronze Sponsor

We thank the Martin Prince Foundation for the generous support of trainee travel stipends for SMRA 2024.

Neusoft Medical Systems - Bronze Sponsor

Neusoft Medical provides innovative medical imaging equipment and solutions, focusing on advanced technologies in CT, MRI, and Xray ,DSA , aiming to enhance healthcare services worldwide.

<http://www.neusoftmedical.com/en/>



Society for Cardiovascular Magnetic Resonance

The principle international, independent organization committed to the future development of CMR through education, quality control, research, and training.

scmr.org



The Medical Image Computing and Computer Assisted Intervention Society (MICCAI)

The Medical Image Computing and Computer Assisted Intervention Society (the MICCAI Society) is dedicated to the promotion, preservation and facilitation of research, education and practice in the field of medical image computing and computer assisted medical interventions including biomedical imaging and medical robotics.

miccai.org



Safeguarding Diversity and Inclusion Policy

The Society of Magnetic Resonance for Angiography embraces and values the diversity of all its community regardless of age, race, ethnicity, nationality, culture, gender, gender identity, sexual orientation, physical or mental ability, religion or socioeconomic status. We strive for excellence in education, research and patient care and recognize that our differences make us stronger. We aim to provide an environment where scientists and clinicians have fair and equal opportunities to contribute to the field of MR Angiography. The SMRA supports multiple approaches and points of view because we believe diversity drives innovation.

We value equity, inclusion and dignity for all. We stand together against harassment and discrimination. We insist on a culture of respect and believe in the freedom of speech, and encourage the civil and respectful expression of ideas and opinions. All members are responsible for making the Society a safe, inclusive environment where every individual feels valued, respected and able to do their best work. Every member of our community should feel empowered to speak up without fear if they experience or observe behavior that betrays our Society's core values.

All individuals participating in activities of the Society must comply with these standards of behaviour.

If you experience or witness Code of Conduct violations or have any other concerns, please contact **Anna Van Vliet** (vanvliet0709@gmail.com) or **Claudia Prieto** (claudia.prieto@kcl.ac.uk)

Announcement of 2025 Meeting: Budapest, Hungary



SMRA
2025



SEMMELWEIS
UNIVERSITY 1769



*"MRA innovations
flowing through
time"*

**The Society for Magnetic
Resonance Angiography**

37th International Meeting



Budapest, Hungary
August 21-24, 2025

SMRA 2025 President:
Jeremy Collins

Local organizers:
Judit Csőre
Csaba Csobay-Novák