

RADIOLOGY 2030: CREATING OUR FUTURE



14th Biennial International
Symposium of the
International Society
for Strategic Studies
in Radiology

IS3R 2022

Montreal/Canada
September 15–17, 2022

Scientific Program

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LETTER FROM THE PRESIDENTS



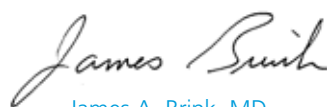
Dear Participants,

On behalf of the Executive Board of the International Society for Strategic Studies in Radiology, it is our great pleasure to welcome you to the 14th Biennial International Symposium of our Society, September 15-17, 2022, in Montreal, Canada. We were originally scheduled to meet one year ago, and after rescheduling on two occasions owing to the pandemic, we are so pleased to see us coming together in person for what promises to be a rich and rewarding experience. We are extremely pleased that the Executive Board of IS3R has chosen Montreal as the venue of our meeting as it ranks among the most interesting cities in North America. Our social events promise to provide many opportunities to catch up with each other after such a long hiatus.

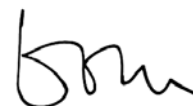
Very many thanks and congratulations to Michael Recht, our Program Committee Chair, and all the members of the Program Committee for producing a truly inspirational program. Since our last meeting, IS3R developed a strategic plan for promoting value-based radiology around the world. This was achieved with input from both academic and corporate members representing all facets of our profession. We look forward to hearing the thoughts and ideas from each of the group leaders that contributed to this plan. Unquestionably, the impact of the pandemic on health care at large has led to a “new world of imaging” for which new workflows and models must be carefully examined and embraced. We will discuss opportunities to leverage digital health platforms and AI to improve workflow productivity in this new world. Our ability to leverage new tools for such noble goals is paramount, and the promise of AI to promote health equity is within our reach. Novel methods for reducing bias in AI will be discussed including a federated approach to AI model development. Finally, we will examine new models for radiology training and ways in which we can increase the visibility and integration of radiologists with the clinical care teams and patients. Enhancing radiologists’ visibility to our patients and referring providers is now more important than ever owing to the drive to remote work inspired by the pandemic. The pandemic has also highlighted our vulnerability as residents of planet earth and has focused our attention on the impact we have on the environment. We are proud that we are also addressing this important issue.

We are pleased that the Executive Board decided to return to our normal schedule for in person meetings with our next meeting scheduled in Berlin, Germany, in August 2023. Although this is just one year from now, we hope that we can leverage the opportunity for another in person meeting in just 12 months to further reconnect and advance our strategic agenda. Many thanks to Katharina and Monika for their hard work to help our society run so smoothly during these uncertain times. They navigated highly uncertain waters during the pandemic and helped us maintain our preeminence through it all.

Sincerely,



James A. Brink, MD
IS3R President



Luis Donoso, MD
IS3R Past-President

LETTER FROM THE PROGRAM CHAIR



Dear Colleagues,

On behalf of the Program Committee, I am pleased to welcome you to our 14th Biennial International Symposium in beautiful Montreal Canada. Our program will cover several important challenges facing our discipline: the Covid pandemic, the ever growing integration of artificial intelligence and machine learning into our practices, our growing recognition of responsibility to global and planetary health, and the importance of demonstrating the value of imaging. I am pleased to present to you a brief overview of our program below.

Our first session focuses on Value Based Radiology (VBR) and its importance to the future of our discipline. The session will begin with a keynote lecture from our President, Dr. James Brink, and will be followed by reports from each of the breakout groups from our spring webinars on VBR as well as a presentation discussing industry's role in VBR. The focus of the second half of the session is global collaboration in health services research.

Our second session will concentrate on the question of what the radiology department of the future will look like, how radiologists can gain greater influence on future strategic directions of their health systems, and how industry can help radiology departments ensure their economic viability.

Session three will concentrate on leadership and will be highlighted by a talk by Dr. Robert I. Grossman. Dr. Grossman is the Dean & Chief Executive Officer of NYU Langone Health and is acknowledged as one of the most influential leaders in healthcare today.

Session four will open with our third keynote lecture addressing the question of whether radiology departments will remain independent or be integrated with other departments. Following the keynote, there will be several talks concerning artificial intelligence in radiology. After a short coffee break, we will address how radiology departments and industry can become more socially conscious and responsible for our effects on our environment and climate.

Session five will be an in depth look at the health economic analysis of cancer imaging, highlighted by a keynote lecture by our guest speaker, Dr. Rifat Atun. Dr. Atun is Professor of Global Health Systems at Harvard University and the Faculty Chair for the Harvard Ministerial Leadership Program.

Session six will concentrate on future horizons in research while session seven will concentrate on new models of radiology training, highlighted by a panel discussion with several members of our Emerging Leaders Club.

Our final session will feature discussions on how we can increase the visibility and integration of the radiologist with clinical care teams and patients. I want to thank the entire Program Committee for their extraordinary efforts in organizing this year's meeting, the IS3R office staff and the IS3R Executive Board for their support in preparing for the meeting, and all of the invited speakers, moderators and panelists for their valuable contributions.

Sincerely,



Michael Recht, MD

IS3R Program Committee Chair 2019-2021

ABOUT THE IS3R

Vision of the IS3R

The IS3R shapes and guides the future of diagnostic and therapeutic imaging for the benefit of patients, our discipline and society as a whole.

Mission of the IS3R

The mission of the IS3R is to actively shape the future of medical imaging and image-guided therapies by leveraging the knowledge and influence of world leaders in these disciplines and in related industries. By assessing the potential impact of disruptive innovations on global healthcare, the IS3R aims to inform and guide clinical practice, medical science and health-care policy.

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Administration

IS3R OFFICE

Monika Hierath & Katharina Krischak
Am Gestade 1, 1010 Vienna, AUSTRIA

Phone: +43-1-533-4064-20

Fax: +43-1-533-4064-448

E-mail: office@is3r.org

www.is3r.org

IS3R GOLD MEDAL



Christian J. Herold, MD

Prof. Christian J. Herold will be awarded the 2022 Alexander Margulis Gold Medal at the 14th IS3R Biennial Symposium.

Prof. Herold is currently Chairman of the Department of Biomedical Imaging and Image-guided Therapy at the Medical University of Vienna, Vienna General Hospital, Austria. He is also the Deputy Medical Director of the Vienna General Hospital, with a part-time Faculty position in the Department of Radiology at the Johns Hopkins Medical Institutions, Baltimore, Maryland, USA.

Prof. Herold was educated at the University of Vienna, Austria. After receiving his medical degree, his postdoctoral training continued in general medicine and radiology, and he is board-certified in both.

His research interests, focused on magnetic resonance imaging, chest radiology, and oncologic imaging, resulted in the publication of 212 papers in peer-reviewed journals, 238 abstracts, and 416 invited lectures. His awards include the Hounsfield Award of the Society of Computed Body Tomography, the Gold Medal Award from the European Society of Radiology (2012), the Gold Medal Award of the European Society for Emergency Radiology (2014) and the Gary Glazer Award from the Garmisch CT and MR Course 2020.

His scientific contributions have led to Honorary Memberships in several international societies including the RSNA, and to service as President of the Fleischner Society, the European Congress of Radiology, the European Society of Radiology, and the International Society for Strategic Studies in Radiology. He holds memberships in the National Academy of Medicine (US), the European Academy of Sciences and Arts, and Academia Europaea, and is in great demand internationally.

Prof. Herold continues to draw on his passion for leadership and administration — equal to his pursuit of clinical and research excellence — to build international partnerships for his university.

IS3R SAM GAMBHIR INNOVATION PRIZE



Prof. Dr. Thomas Flohr

The inaugural Sam Gambhir Prize for Innovation has been awarded to Prof. Dr. Thomas Flohr, Head of CT Physics, Application Predevelopment and Global Clinical Collaborations, Siemens Healthineers, and Adjunct Professor for Medical Physics, Eberhard-Karls-University Tuebingen, for his outstanding achievements in the field of Computed Tomography.

Prof. Flohr began his academic journey at the Friedrich-Alexander-University Erlangen-Nuremberg, successfully completing first his 'Diplom' and then, in 1989, earning the title Doctor with the completion of his PhD in Physics. He also received an honorary doctorate from the Faculty of Medicine of the University of Zurich in 2021.

Prof. Flohr began his research career in the computed tomography section at Siemens UB Med in Erlangen/Forchheim, Germany, progressing to become Head of CT physics department, computed tomography section in 2000 and Head of the CT physics, application predevelopment, and global clinical collaborations department in 2004. Since then, he has extended the scope of his department with CT application predevelopment and global clinical collaborations. Based on his activities he has built up strong relationships with many radiology departments globally and is a well-known expert and partner in the CT research community. In 2006, Prof. Flohr was awarded the title of Professor of Medical Physics, becoming adjunct Professor at Eberhard-Karls-University, Tuebingen in 2011.

Among his many notable achievements, Prof. Flohr was a founding member of the Society of Cardiovascular Computed Tomography; is a member of the Program Committee of the Physics of Medical Imaging Conference of the SPIE; member of the Scientific Committee of the Fully 3D Conference: International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine; and, in 2016-17 was Conference Chair of the Physics of Medical Imaging Conference of the SPIE. He has over 230 peer-reviewed publications in scientific journals, including 46 as the first or last author and is publisher/author of five books. His work is included in 'Citation Classics in Radiology Journals: The 100 Top-Cited Articles, 1945-2012'. Prof. Flohr also holds 19 patents as the sole inventor and is credited as co-inventor in 294 patents.

Prof. Flohr has been instrumental to the development of computed tomography over the past 25 years and, in just the last decade, his outstanding contributions to the field have been recognized many, many times: in his shortlisting for the German Innovation Prize for the Dual Source CT Scanner "SOMATOM Force" (2015), his winning of the Siemens "top+ award" in the category "Innovation" for the dual-source CT scanner "SOMATOM Flash" (2009), his appointment as "Siemens Top Innovator" (2007), his winning of the Siemens "top+ award" in the category "Innovation" for the 16-slice CT scanner "SOMATOM Sensation 16" (2003), and his shortlisting for the German Future Prize of the German Federal President, for "Photon-counting computed tomography scanner" (Thomas Flohr, Stefan Ulzheimer, Bjoern Kreisler) (2021).

Prof. Flohr's innovations define CT today: from the development of Cardiac-CT, Multislice-CT, and Dual-Source CT to, most recently, Photon-Counting CT. Over the past 25 years, his inventions have helped the modality of CT answer a wider range of clinical questions with a higher degree of precision and for more patient groups.

The IS3R Sam Gambhir Innovation Prize was established in 2021 to honor the groundbreaking accomplishments and visionary leadership of the late Prof. Sam Sanjiv Gambhir (1962-2020). It is awarded to outstanding innovators who made break-through innovations in the field of biomedical imaging with clear societal impact.

PROGRAM OVERVIEW

Thursday, September 15 Friday, September 16 Saturday, September 17

08:30 Opening and Welcome

8:40 **SESSION I:
VALUE-BASED RADIOLOGY**

KEYNOTE LECTURE 1

What does Value Based Radiology mean and why is it vital for the Future?

(J. Brink)

KEYNOTE LECTURE 2

It is possible to develop an Infrastructure that would Facilitate Global Collaboration on Health Services Research to help demonstrate the Value of Radiology?

(L. Martí-Bonmati)

PANEL DISCUSSION 1

What should be the Contribution of Industry to Health Services Research and Influencing Government Policy?

13:30 **SESSION II:
WHAT WILL THE RADIOLOGY
DEPARTMENT OF THE FUTURE
LOOK LIKE?**

16:00 **SESSION III:
LEADERSHIP**

16:40 **IS3R SAM GAMBHIR INNOVATION
PRIZE AWARD SESSION**

8:00 **SESSION IV:
WHAT WILL THE AVERAGE
DAY LOOK LIKE FOR THE
RADIOLOGISTS?**

KEYNOTE LECTURE 3

Will Radiology Departments stay independent or be combined and integrated with other Departments (e.g., Pathology)?

(C. Kuhl)

PANEL DISCUSSION 2

How can Imaging Companies and Radiology Departments work together to leverage Digital Health Platforms and AI to improve Workflow/Productivity in the "New World of Imaging"?

PANEL DISCUSSION 3

What steps can a Department and Industry take to help Departments become greener?

13:00 **SESSION V:
THE ROLE OF RADIOLOGY IN
THE GLOBAL PUBLIC HEALTH
AGENDA**

KEYNOTE LECTURE 4

Health Economic Analysis of Cancer Imaging

(R. Atun)

15:30 **SESSION VI:
FUTURE HORIZONS IN RESEARCH**

17:10 Adjourn

8:00 **SESSION VII:
EDUCATION AND MENTORSHIP**

PANEL DISCUSSION 4

New Models of Radiology Training: Practical Examples

10:40 **SESSION VIII:
HOW CAN WE INCREASE THE
VISIBILITY AND INTEGRATION
OF THE RADIOLOGIST WITH THE
CLINICAL CARE TEAMS AND
PATIENTS?**

PANEL DISCUSSION 5

How can Industry enhance the Radiologists' Visibility?

12:45 Closing

SCIENTIFIC PROGRAM SCHEDULE

Thursday, September 15

08:30 Opening and Welcome

SESSION I: VALUE-BASED RADIOLOGY

Moderator: M. Recht

- 8:40 **KEYNOTE LECTURE 1**
What does Value Based Radiology mean and why is it vital for the Future?
J. Brink
- 9:00 Report from Breakout Group 1
J. Brink
- 9:10 Report from Breakout Group 2
E. Pisano
- 9:20 Report from Breakout Group 3
A. Brady
- 9:30 Report from Breakout Group 4
G. McGinty
- 9:40 Report from Breakout Group 5
D. Akata
- 9:50 What Role should Industry play in VBR?
A. Hartung
- 10:10 Open Discussion

10:30 Coffee Break

SESSION I (CONT.)

Moderator: B. Brkljacic

- 11:00 **KEYNOTE LECTURE 2**
It is possible to develop an Infrastructure that would facilitate Global Collaboration on Health Services Research to help demonstrate the Value of Radiology?
L. Marti-Bonmati
- 11:20 **PANEL DISCUSSION 1**
What should be the Contribution of Industry to Health Services Research and Influencing Government Policy?
Moderators: N. Beauchamp, B. Brkljacic
Panelists: B. Hamm, L. Marti-Bonmati, A. Roncacci, F. Tedoldi

11:55 Open Discussion

12:30 Lunch

SESSION II: WHAT WILL THE RADIOLOGY DEPARTMENT OF THE FUTURE LOOK LIKE?

Moderators: K. Riklund, C. Hess

- 13:30 What role will the radiology department play within a hospital/ for the patient journey in the future (gatekeeper, ensuring the infrastructure, service center)?
C. Herold
- 13:45 How pervasive will corporatization/ aggregation of radiology practices be in 2030? What effect will that have on education, research, radiologists' satisfaction, and quality of care?
D. Enzmann
- 14:00 What is the future role of "teleradiology" given the lessons learned from COVID-19?
G. Boland

14:15 Open Discussion

14:35 Coffee Break

SESSION II (CONT.)

Moderators: K. Soyebi, G. von Schulthess

- 15:05 How can the radiology department gain influence and influence the strategic direction of the hospital/ health system?
S. Schönberg
- 15:20 How can industry help a radiology department ensure its economic viability (incl. different strategies in different parts of the world)?
I. Gipp
- 15:40 Open Discussion

SESSION III: LEADERSHIP

Moderator: T. Grist

- 16:00 Leaders and Leadership
*B. Grossman**
- 16:20 Fireside chat with Dr. Grossman
T. Grist

16:40 IS3R SAM GAMBHIR INNOVATION PRIZE AWARD SESSION

AWARD LECTURE
New horizons for CT imaging
T. Flohr

17:40 Adjourn

SCIENTIFIC PROGRAM SCHEDULE

Friday, September 16

SESSION IV: WHAT WILL THE AVERAGE DAY LOOK LIKE FOR THE RADIOLOGISTS?

Moderators: G. Gold, E. Morris

- 8:00 **KEYNOTE LECTURE 3**
Will Radiology Departments stay independent or be combined and integrated with other Departments (e.g., Pathology)?
C. Kuhl
- 8:20 What is the current status of regulations in radiology AI?
K. Dreyer
- 8:35 Will AI make the general radiologist more or less important?
*G. Rubin**
- 8:50 Will AI increase the role of "non-radiologists" in imaging?
R. Kubik
- 9:05 What will the AI business model be? Will we ask patients to pay an extra fee? Will insurance companies pay less if you don't use AI? Will you be judged negligent if you don't use AI?
F. Djeridane

- 9:25 **PANEL DISCUSSION 2**
How can imaging companies and radiology departments work together to leverage digital health platforms and AI to improve workflow/productivity in the "new world of imaging"?
Moderators: U. Attenberger, A. Norbash Panelists: J. Makela, N. Stefani, C. Austin, M. Mahoney, R. Abramson*

10:10 **Open Discussion**

10:30 Coffee Break

SESSION IV (CONT.)

Moderators: J. Sosna, R. Ehman

- 10:50 Why is it important to address the "greenness" of a radiology department?
S. Miller
- 11:10 EPA and the Energy Star program
R. Fogle, M. Egea Casaldue
- 11:30 **PANEL DISCUSSION 3**
What steps can a Department and Industry take to help Departments become greener?
Moderators: J. Sosna, R. Ehman Panelists: Q.Y. Ma, A. Eble, M. Ferreira, Ph. Fischer, F. Gilbert

12:20 Lunch

SESSION V: THE ROLE OF RADIOLOGY IN THE GLOBAL PUBLIC HEALTH AGENDA

Moderators: F. Lubinus, E. Arleo

- 13:20 **KEYNOTE LECTURE 4**
Health Economic Analysis of Cancer Imaging
R. Atun
- 13:50 Lancet Oncology Commission Imaging and Nuclear Medicine: Overview and recommendations
H. Hricak
- 14:10 What role should industry play in supporting global health efforts in radiology?
R. Mather

- 14:30 Mapping current imaging capabilities: Addressing gaps & barriers
A. Scott
- 14:40 Research, education, and training
*P.-L. Khong, G. Ogbole**
- 14:50 What tangible actions can IS3R members do to help in LMIC countries?
*B. Jankharia**

15:00 **Open Discussion**

15:20 Coffee Break

SESSION VI: FUTURE HORIZONS IN RESEARCH

Moderators: L. Martí-Bonmatí, R. Pettigrew

- 15:50 Biomedical imaging research in the next decade
F. Gallagher
- 16:10 Infrastructures for data sharing and AI model development: the federated approach
W. Niessen
- 16:30 Integrated Diagnostics
R. Bryan
- 16:50 Clinical trials of the future: What transformations are required to ensure global research readiness and response before the next pandemic?
M. Schnall

17:10 **Open Discussion**

17:30 Adjourn

SCIENTIFIC PROGRAM SCHEDULE

Saturday, September 17

SESSION VII: EDUCATION AND MENTORSHIP

9:00 **PANEL DISCUSSION 4**
**New Models of Radiology Training:
Practical Examples**
Moderators: M. Prokop, O. Ratib
*Panelists: H. Chandarana,
M. Bredella, M. Mayerhoefer,
J. Mackay*

9:40 **Open Discussion**

10:10 Coffee Break

SESSION VIII: HOW CAN WE INCREASE THE VISIBILITY AND INTEGRATION OF THE RADIOLOGIST WITH THE CLINICAL CARE TEAMS AND PATIENTS?

Moderators: O. Clément, S. Solomon

10:40 **Lessons from the US**
M. Recht

10:55 **Lessons from Europe**
L. Donoso

11:10 **Lessons from Asia**
*Z. Jin**

11:25 **PANEL DISCUSSION 5**
**How can Industry enhance the
Radiologists' Visibility?**
*Moderators: N. Tomiyama,
B. Hargreaves*
*Panelists: M. McHugh, F. Djeridane,
M. Fuchsjäger*

12:05 **Open Discussion**

12:45 Closing

13:00 Farewell Lunch



Hotel Information

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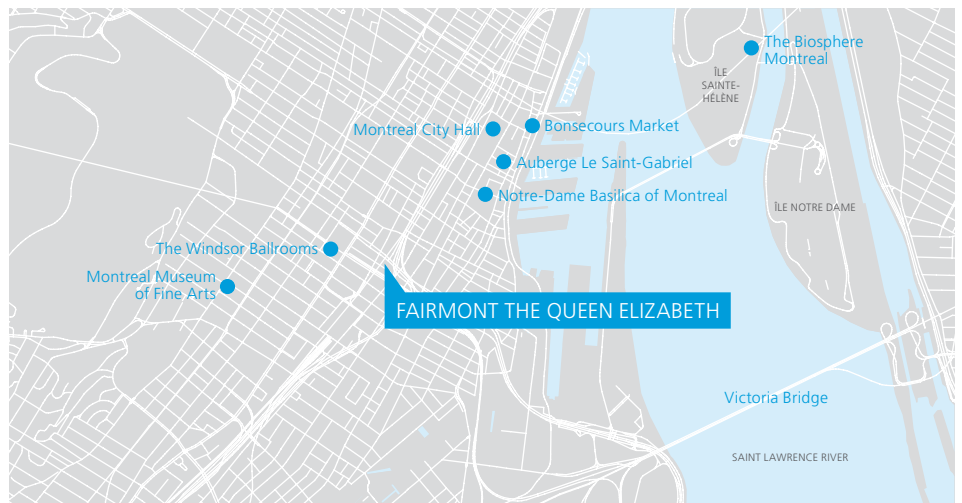
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Ideally located in downtown Montreal, Fairmont The Queen Elizabeth is the best place to start your journey in this vibrant city. With the legendary Sainte-Catherine Street a block away, the hotel is only a short walk away from galleries, theaters, sporting and shopping venues and the storied cobbled streets of Old Montreal. The hotel offers fabulous facilities to its guests, including a wellness centre, spa, and indoor swimming pool. Or guests can kick back and enjoy a live jazz trio in the in-house restaurant, with its signature seafood dishes. The Fairmont Queen Elizabeth delivers all the 21st-century comforts that travelers expect and more.



PRACTICAL INFORMATION

Certificate of Attendance

Participants who would like to receive a certificate certifying their attendance at the symposium are encouraged to request one from the registration desk (located outside the main lecture hall) before adjournment.

Credit Cards/Currency Exchange

Major Credit Cards are accepted. The closest ATM is located at the TD Canada Trust Branch at 800 Rene Levesque Blvd. The building can be accessed directly from the hotel through the lobby level.

Insurance

Neither the IS3R nor the symposium organizers can accept liability for personal injury, or loss/damage to property, personal or otherwise, belonging to meeting participants or accompanying persons, either during or as a result of the symposium or during all tours or their stay in Montreal. Participants and accompanying persons should ensure that their own personal health, accident and/or travel insurance are up-to-date and valid for use in Canada.

Meals

Buffet breakfast and business lunch buffet for all Symposium participants will be provided in Dorchester Square on the convention floor during the symposium (September 15-17). Coffee breaks will be provided in Foyer C outside the main lecture hall. Thank you for your understanding that the IS3R does not provide breakfast, lunch, and coffee breaks for accompanying persons.

Official Language

English (no translation of the meeting will be provided).

Recording

Audio or video recording any part of the symposium without prior express permission is prohibited.

Registration Desk

Staff at the symposium registration desk will be available on Wednesday evening from 16:00–18:00, as well as during the symposium hours from Thursday to Saturday. The registration desk is located in Foyer C outside the main lecture hall (Avenue Laurier). Upon registration, participants are moreover asked to complete a conflict-of-interest form and sign a presentation release consent form for archiving purposes and use in pdf format in the protected members area on the IS3R website.

Smoking Policy

The meeting venue and hotel rooms are fully non-smoking. Smoking is only permitted in one block away from the building.

Speaker Ready Room

Speakers are kindly requested to upload their presentation at the Speaker Ready Room located in Room Rue Mansfield on the convention floor at least 90 minutes before the session starts.

Tourist Information

The Queen Elizabeth team will be happy to assist you with local information for sight-seeing in Montreal, booking optional tours or taxi rides, making dinner reservations or any questions regarding your accommodations. Please contact the concierge desk.

SOCIAL EVENTS

WEDNESDAY 7:00–8:30 p.m.

Welcome reception at the Fairmont Queen Elizabeth. Drinks and light hors d'oeuvres will be served in the Square Victoria on the convention floor.

Dress code: Smart casual



THURSDAY at 7:00 p.m.

Cocktails and dinner will be held at the Auberge Saint-Gabriel restaurant. Located in the beautiful old port area (ca. 2 km from the Queen Elizabeth hotel) the Auberge Saint-Gabriel, founded in 1754, is the oldest inn in North America. Its fine French and Québec cuisine is prepared with the best available market ingredients, served in a charming atmosphere reminiscent of yesteryear.

Dress code: Business casual attire, jacket not required

Meeting point for bus transport is in the hotel foyer on the ground floor at 6:00 p.m.



FRIDAY at 6:30 p.m.

The IS3R Gold Medal Dinner will be held at the Windsor Ballrooms. The Windsor Ballrooms (1170 Peel Street) are located within walking distance from the Fairmont Queen Elisabeth Hotel. With lofty ceilings, suspending rows of extravagant crystal chandeliers which accentuate the historic fireplace, cocktails will be served in the Peacock Alley. This will be followed by the banquet dinner and the award ceremony, which will be held in the exquisite Salon Versailles, an awe-inspiring ballroom lined with Corinthian columns to accent the gilded ceilings with a magnificent crystal chandelier centrepiece, all in inspiring French Renaissance style.

Dress code: Dinner attire, jacket required

The restaurant is located in walking distance from the hotel. Meeting point is in the hotel foyer on the ground floor at 6:15 p.m.





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Nuance Communications, Inc.
Quibim
Sectra AB

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HealthCare

Guerbet | 

 **NUANCE**

 **Quibim**

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LIST OF PARTICIPANTS

[Rick Abramson](#)

Chief Medical Officer
Annalise-AI Inc.
Nashville, TN/US

[Anjum Ahmed](#)

Global Chief Medical Officer
Agfa HealthCare
Mississauga, ON/CA

[Deniz Akata](#)

Professor, Department of Radiology
Hacettepe University
Ankara/TR

[Erin Angel](#)

VP, Strategic Research
GE Healthcare
San Clemente, CA/US

[Peter Arduini](#)

President and Chief Executive Officer
GE Healthcare
Chicago, IL/US

[Elizabeth K. Arleo](#)

Professor of Radiology
Weill Cornell Medicine
New York, NY/US

[Ulrike Attenberger](#)

*Professor and Chair, Department of
Diagnostic and Interventional Radiology*
University Hospital Bonn
Bonn/DE

[Rifat Atun](#)

Professor of Global Health Systems
Harvard University
Boston, MA/US

[Christopher Austin](#)

*Physician Lead, Academic Medicine and
Diagnostics*
Amazon Web Services
Seattle, WA/US

[Peter Baierl](#)

Executive Director
European Society of Radiology
Vienna/AT

[Norman Beauchamp](#)

Executive Vice President
Michigan State University
East Lansing, MI/US

[Jacqueline Bello](#)

Chair, Board of Chancellors
American College of Radiology
New York, NY/US

[Giles Boland](#)

President BWPO
Brigham and Women's Hospital
Boston, MA/US

[Philippe Bourrinet](#)

*VP Development, Medical & Regulatory
Affairs*
Guerbet
Roissy CDG/FR

[Adrian Brady](#)

Consultant Radiologist
Mercy University Hospital
Clinical Professor of Radiology
University College Cork
Cork/IE

[Miriam Bredella](#)

Professor of Radiology, Vice Chair
Department of Radiology
Harvard Medical School and Massachusetts
General Hospital
Boston, MA/US

[James Brink](#)

*Professor and Chair, Departments of
Radiology*
Massachusetts General Hospital,
Brigham and Women's Hospital,
Harvard Medical School
Boston, MA/US

[Boris Brkljacic](#)

Professor of Radiology and Vice-Dean
University of Zagreb School of Medicine
Zagreb/HR

[Philipp Bruners](#)

*Full Professor of Interventional Radiology,
Diagnostic and Interventional Radiology*
University Hospital RWTH Aachen
Aachen/DE

[R. Nick Bryan](#)

Professor of Radiology
University of Pennsylvania
Philadelphia, PA/US

LIST OF PARTICIPANTS

Luis Campos

President

Colegio Interamericano de Radiología
Mexico/MX

Hersh Chandarana

Associate Chair for Clinical & Translational Research

NYU Langone Health
New York, NY/US

Mark Chapman

International Chief Executive Officer

Life Healthcare Group
Warwickshire/UK

Christine Chung

Professor, Executive Vice Chair, Vice Chair Academic Personnel

University of California San Diego
San Diego, CA/US

Olivier Clément

Chief of Radiology Department

APHP-Centre Université Paris Cité
Paris/FR

Konstanze Diefenbach

Head of Radiology R&D

Bayer AG
Berlin/DE

Faycal Djeridane

President

Olea Medical
La Ciotat/FR

Julia Dmitrieva

Clinical Portfolio and KOL Engagement Leader

Philips Healthcare
Bothell, WA/US

Lluís Donoso-Bach

Director

Clinical Advanced Technologies Institute
Barcelona/ES

Keith Dreyer

Chief Data Science Officer

Mass General Brigham
Boston, MA/US

Axel Eble

SVP Head of Global Strategic Marketing Radiology

Bayer AG
Berlin/DE

Mariana Egea-Casaldue

Science, Technology, and Policy Fellow

U.S. Department of Energy
Washington, DC/US

Richard Ehman

Professor of Radiology

Mayo Clinic
Rochester, MN/US

Dieter Enzmann

Chair, Department of Radiological Sciences

UCLA Health
Los Angeles, CA/US

Mark Ferreira

Group Chief Medical Officer

Life Healthcare Group
Warwickshire/UK

Philipp Fischer

Executive Vice President of Computed Tomography

Siemens Healthcare GmbH
Forchheim/DE

Howard Fleishon

President

American College of Radiology
Reston, VA/US

Thomas Flohr

Senior Principal Key Expert

Siemens Healthineers
Forchheim/DE

Ryan Fogle

ENERGY STAR Product Development and Marketing Manager

US Environmental Protection Agency
Washington, DC/US

Laure Fournier

Professor

Université Paris Cité, APHP
Paris/FR

Matthias Froelich

Head of Research Group for Data-Driven Image Analytics, Department of Radiology and Nuclear Medicine

University Hospital Mannheim
Mannheim/DE

LIST OF PARTICIPANTS

Michael Fuchsjäger

Chair of Department of Radiology
Medical University of Graz
Graz/AT

Ferdia Gallagher

Professor of Translational Imaging
University of Cambridge
Cambridge/UK

Michael Gee

Deputy Chair of Radiology
Massachusetts General Hospital/Harvard
Medical School
Boston, MA/US

Judy Gichoya

Assistant Professor
Emory University
Atlanta, GA/US

Catherine Giess

Deputy Chair
Brigham and Women's Hospital
Boston, MA/US

Fiona Gilbert

Professor and Chair of Radiology
University of Cambridge
Cambridge/UK

Ilya Gipp

Medical Officer
Philips
Atlanta, GA/US

Franck Girard

Vice President, Product Development
Olea Medical
La Ciotat/FR

Robert I. Grossman*

Dean & Chief Executive Officer
NYU Langone Health
New York, NY/US

Garry Gold

Professor and Chair of Radiology
Stanford University
Stanford, CA/US

Alexandra Goncalves

Chief Medical Officer
Philips
Cambridge, MA/US

Wataru Gono

Deputy General Manager
The University of Tokyo Hospital
Tokyo/JP

Thomas Grist

Professor and Chair
UW Hospital School of Medicine and Public
Health
Madison, WI/US

Ajay Gupta

*Vice Chair for Research, Professor of
Radiology and Neuroscience*
Weill Cornell Medicine
New York, NY/US

Bernd Hamm

Professor and Chair
Charité University Hospital
Berlin/DE

Brian Hargreaves

Professor
Stanford Radiology
Stanford, CA/US

André Hartung

President Diagnostic Imaging
Siemens Healthineers
Forchheim/DE

Frederic Henaff

Chief Operating Officer
Olea Medical
La Ciotat/FR

Christian Herold

*Professor and Chair, Department of
Biomedical Imaging and Image Guided
Therapy*
Medical University of Vienna
Vienna/AT

Christopher Hess

*Professor and Chair, Department of
Radiology & Biomedical Imaging*
University of California, San Francisco
San Francisco, CA/US

Hedvig Hricak

Chair, Department of Radiology
Memorial Sloan Kettering Cancer Center
New York, NY/US

LIST OF PARTICIPANTS

Bhavin Jankharia*

Consultant Radiologist and Partner
Picture This
Mumbai/IN

Zhengyu Jin

Professor and Chair, Department of
Radiology
Peking Union Medical College Hospital
Beijing/CN

Arthur Kaindl

Executive Vice President, Magnetic
Resonance
Siemens Healthcare GmbH
Erlangen/DE

Kader Karli Oguz

Professor, Department of Radiology
Hacettepe University
Ankara/TR

Pek-Lan Khong

Professor and Head of Department
National University Hospital, National
University of Singapore
Singapore/SG

Nathalie Kieusseyan

Clinical Solutions Owner
Olea Medical
La Ciotat/FR

Torbjörn Kronander

President & Chief Executive Officer
Sectra AB
Linköping/SE

Rahel Kubik

Director Department of Medical Services,
Head Institute of Radiology
Kantonsspital Baden AG
Baden-Dättwil/CH

Christiane Kuhl

Chair, Department of Radiology
RWTH Aachen
Aachen/DE

Georg Langs

Professor
Medical University of Vienna
Vienna/AT

Federico Lubinus

Professor and Chair
Autonomous University of Bucaramanga
Bucaramanga/CO

Qiyuan Ma

Chief Executive Officer
Time Medical
Burlingame, CA/US

Jamie MacKay

Director of Clinical Imaging
AstraZeneca
Cambridge/UK

Mary C. Mahoney*

Benjamin Felson Endowed Chair & Professor
of Radiology
University of Cincinnati Medical Center
Cincinnati, OH/US

Jan Makela

President, Chief Executive Officer, Imaging
GE Healthcare
London/UK

Luis Marti-Bonmati

Director Medical Imaging Department
Hospital UP La Fe
Valencia/ES

Rich Mather

President
Canon Medical Research USA
Vernon Hills, IL/US

Marius Mayerhoefer

Attending, Professor of Radiology
Memorial Sloan Kettering Cancer Center
New York, NY/US

Geraldine McGinty

Senior Associate Dean for Clinical Affairs
Weill Cornell Medicine
New York, NY/US

Maryanne McHugh

Global Strategic Advisor
Canon Medical
Ottawa/JP

Scott Miller

Chief Marketing Officer, Global Imaging
GE Healthcare
Waukesha, WI/US

Elizabeth Morris

Professor and Chair
UC Davis
Sacramento, CA/US

Linda Moy

Professor of Radiology
New York University
New York, NY/US

LIST OF PARTICIPANTS

Wiro Niessen

Professor Medical Image Analysis
Erasmus MC & Delft University of Technology
Rotterdam/NL

Alexander Norbash

Professor and Chair
UC San Diego
San Diego, CA/US

Godwin Ogbale*

Associate Professor of Radiology
University of Ibadan
Ibadan/NG

Salvador Pedraza

Director Medical Imaging Department
Hospital Clinic de Barcelona
Barcelona/ES

Tobias Penzkofer

Senior Consultant
Charité Universitätsmedizin Berlin
Berlin/DE

Roderic Pettigrew

Chief Executive Officer, Dean
TAMU and Houston Methodist
Houston, TX/US

Etta Pisano

Chief Research Officer
American College of Radiology
Philadelphia, PA/US

Mathias Prokop

Head of Department Medical Imaging
Radiology
Nijmegen/NL

Osman Ratib

Professor and CEO Agora Care SA
University of Geneva
Geneva/CH

Michael Recht

Chair
NYU Langone Health
New York, NY/US

Scott Reeder

Professor
University of Wisconsin
Madison, WI/US

Caroline Reinhold

Professor and Associate Chair
McGill University Health Center
Montreal, QC/CA

Katrine Riklund

Professor, Pro vice Chancellor
Umeå University
Umeå/SE

Andrea Rockall

Clinical Chair in Radiology
Imperial College London
London/UK

Alessandro Roncacci

Senior Vice President, Chief Medical Officer
Affidea
The Hague/NL

Geoffrey D. Rubin*

Professor and Chair, Department of Medical
Imaging
College of Medicine, University of Arizona
Tucson, AZ/US

Mitchell Schnall

Chair of Radiology
University of Pennsylvania
Philadelphia, PA/US

Heiko Schoder

Chief, Molecular Imaging and Therapy
Memorial Sloan Kettering Cancer Center
New York, NY/US

Stefan Schönberg

Professor and Chair of the Department of
Clinical Radiology and Nuclear Medicine
University Medical Centre Mannheim,
Medical Faculty Mannheim – University of
Heidelberg
Mannheim/DE

Andrew Scott

Director, Department of Molecular Imaging
and Therapy
Austin Health
Melbourne/AU

Travis Smith

Executive Director, US Sales
Bracco Diagnostics Inc.
Cranbury, NJ/US

Stephen Solomon

Chief of Interventional Radiology
Memorial Sloan Kettering Cancer Center
New York, NY/US

Jacob Sosna

Professor and Chair
Hadassah Hebrew University Medical Center
Jerusalem/IL

LIST OF PARTICIPANTS

Kofo Soyebi

Chair, Diagnostic Radiology
Lagos University Teaching Hospital
Lagos/NG

Niccolo Stefani

Head of Clinical Strategy
Philips Healthcare
Miami, FL/US

Hisashi Tachizaki

Senior Vice President
Canon Medical Systems Corporation
Otawara/JP

Toshio Takiguchi

President and Chief Executive Officer
Canon Medical Systems Corporation
Otawara/JP

Fabio Tedoldi

Head of Global Research and Development
Bracco Imaging Spa
Milano/IT

Noriyuki Tomiyama

Professor and Chair
Osaka University
Osaka/JP

Dimitry Tran

Founder & Board Director
Annalise-AI Inc.
Sydney, NSW/AU

Alberto Vargas

Chief, Body Imaging Service
Memorial Sloan Kettering Cancer Center
New York, NY/US

Gustav von Schulthess

Professor emeritus
University Hospital Zurich
Zurich/CH

Yuri Wedmid

VP – Global Marketing & Business Development
Time Medical
Burlingame, CA/US

James Williams

Chief Executive Officer
Siemens Molecular Imaging
Knoxville, TN/US

Eric Williamson

Diagnostic Radiologist
Mayo Clinic
Rochester, MN/US

Mark Wittenberg

Head of North America
Quibim, S.L.
San Diego, CA/US

Christian Zapf

Executive Vice President Digital & Automation
Siemens Healthineers
Forchheim/DE







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