President’s Message

Dear Friends and Colleagues,

It is my pleasure and honor to be serving you as the Physics, Instrumentation and Data Sciences Council (PIDSC) president. I would like to begin by thanking our previous president, Osama Mawlawi, who has now transitioned to the role of past-president. This last year has been one filled with many changes and restrictions as the world has struggled to deal with COVID pandemic. The council would like to express our deepest condolences to those of you who have lost loved ones or others that are close to you, and our sympathies to everyone as we struggle under the added stresses brought on by the changes in our work and home environments. As we look forward into 2022, I am optimistic. While COVID levels are still varying dramatically around the world, and the presence of Delta, Omicron and other variants increases the uncertainty about how and when restrictions may be relaxed, I remain hopeful that high vaccination rates and care regarding best practices will blunt its effect and lead us forward to recovery.

As with the previous year, the annual meeting in 2021 was again virtual. However, the content of the meeting was greatly increased. The PIDS council co-sponsored with the Cardiovascular Council a Categorical session on Nuclear Cardiology 2021: Important things to know. PIDSC also held a pre-meeting Drink and Think on long axial field-of-view PET scanners and ran two continuing education sessions, one on Personalized Dosimetry for Radiopharmaceutical Therapy and the second on Applications of AI to Brain Imaging (in collaboration with the Brain Imaging Council). We also hosted two scientific sessions highlighting some of the great work in our four sub-tracks of Instrumentation, Image Generation, Data Analysis, and Data Sciences; showcased the great work of our young scientists with the Young Investigator Award session; and gave an overview of the advances presented at the meeting with our Basic Science Summary session. I would like to extend our thanks to the PIDS vice-chairs and sub-chairs of the Scientific Program Committee for their hard work in helping to realize these excellent sessions. If you missed some of them, don’t worry, the sessions were recorded and will be available to registrants via the SNMMI website. In response to a request from the SNMMI COVID taskforce and the increased need for remote image review due to COVID, PIDSC developed a Remote-viewing document to help evaluate the performance requirements of equipment necessary for remote reading of nuclear medicine scans.
For the coming year, the PIDSC council will continue to work toward developing and delivering excellent educational content. The PIDSC welcomes your ideas and suggestions regarding both topics for future offerings and for programming and opportunities to serve you best. We had hoped that the mid-winter meeting might finally see a return to an in-person meeting. Unfortunately, the rising prevalence of the Omicron variant has led to the prudent course of converting this to a virtual meeting. To accommodate this change, the meeting has been delayed to Feb 25-27, 2022. In addition, it has been decided that the 2022 annual meeting in Vancouver will be offered in a hybrid format with authors having the option to present remotely or in person. In light of this change, the abstract deadline has been extended to Jan 25. We have been planning some fantastic sessions for the annual meeting, so please consider joining us either in person or remotely. Other active projects that we are pursuing this year are to develop online offerings of medical physics education and an AI challenge in brain imaging (in collaboration with the Brain Imaging Council and the Parkinson’s Progression Markers Initiative).

Finally, I would also like to welcome all of our newly elected members; it’s great to have you and I’m excited to work with you through 2022. To all members of the council, please consider volunteering for PIDSC activities; it’s a great opportunity to get involved, meet new people and support our community. And, if you have ideas on how the Council can help you, let us know – we’re always eager to hear from you!

Best wishes for a safe and productive year

Glenn Wells

2021 Mid-Winter Meeting PIDSC Sponsored Sessions

At the virtual 2021 mid-winter meeting, PIDSC sponsored the following CE sessions:

- **Artificial Intelligence in Nuclear Medicine**  
  January, 2021
- **Clinical Research Roles for PET Scanner Designs with Extended Axial Field of Views**  
  February, 2021
- **Instrumentation and Processing for SPECT Quantitation**  
  March, 2021

2021 Annual Meeting PIDSC Sponsored Sessions

The 2021 SNMMI Annual Meeting was forced to be a virtual program again this year due to the COVID-19 pandemic. This led to a reduction in number of categorical and continuing education sessions that could be offered. Nevertheless, the PIDSC was pleased to sponsor the following sessions as part of the 2021 SNMMI Annual Meeting program. Many thanks to all who were able to participate in the Science Pavilion Poster Hall at the meeting and to everyone who attending the meeting virtually.

PIDSC Categorical Seminar:  
Nuclear Cardiology 2021: Important Things to Know (co-sponsored with CVC)  
Friday, June 11, 2021, 10:00 am-2pm

PIDSC Continuing Education:

- **CE12: Personalized Dosimetry for Radiopharmaceutical Therapy: Practical Considerations and Recent Developments**  
  Sunday, June 13, 2021, 2:00 – 3:00 pm
- **CE24: Applications of AI to Brain PET and SPECT Imaging** (co-sponsored with BIC)  
  Monday, June 14, 2021, 11:30 – 12:30 pm

PIDSC Jan 2022
PIDS Young Investigator Awards:
Sunday, June 13, 2021, 4:00 – 5:00 pm

PIDS Basic Science Summary session:
Monday, June 14, 2021, 2:00 – 3:00 pm

Drink and Think Sessions:
- Axial extent of PET scanners: what is the optimal length and is it clinically viable?
  Tuesday June 8 from 7:00-8:00 pm

2021 Edward Hoffman Memorial Award
This award was established to honor the memory of Professor Edward J. Hoffman. It recognizes scientists in the field of nuclear medicine for their service and devotion to research and development of nuclear medicine instrumentation and to educating and training of the next generation of scientists. Learn more about the Hoffman Award HERE.

The 2021 Hoffman Award was presented to Ramsey Badawi, PhD., Chief of the Division of Nuclear Medicine, UC, Davis Medical Center, Sacramento. He is receiving the award for contributions to the Development of PET Instrumentation, Quantitative Methods, and Education of the Next Generation of Scientists.

Ramsey Badawi, recipient of the 2021 Edward Hoffman Memorial Award

2021 Tracy Lynn Faber Memorial Award
The award was established to honor the memory of Tracy Lynn Faber and is given each year to support advancement of women in medical imaging sciences. The award is given either to an individual who has promoted significantly advancement of women in medical imaging sciences, or to a woman in early- or mid-career who has made one or more significant contributions to medical imaging sciences. Learn more about the Faber Award HERE.

The 2021 Tracy Lynn Faber Memorial Award was presented to Shiva Abbaszadh, PhD. Dr. Abbaszadh is an Assistant Professor at US, Santa Cruz, Department of Electrical and Computer Engineering. She is receiving the award for outstanding contributions to her outstanding contributions to high-resolution direct conversion radiation detectors for medical imaging applications.

Shiva Abbaszadh, recipient of the 2021 Tracy Lynn Faber Award

2021 PIDSC Young Investigator Awards
The PIDSC Young Investigator Awards are presented to the authors of the best scientific abstracts on the topic of instrumentation, algorithm, or data analysis in nuclear medicine by young investigators. These

PIDSC Jan 2022
Awards were announced during the 2021 SNMMI Annual Meeting. Congratulations to everyone who have participated and especially to the following 2021 YIA winners.

1st Place

Elena Maria Zannoni: Design study of a high-resolution and ultrahigh-sensitivity brain SPECT system for imaging medically intractable epilepsy

2nd Place

Lalith K. Shiyam Sundar: Data-driven motion compensation using cGAN for total-body $[^{18}\text{F}]$FDG-PET imaging

3rd Place

Andy LaBella: 36-to-1 Multiplexing with Prism-PET for High Resolution TOF-DOI PET

Honorable Mentions (in alphabetical order):

Yanis Chemli: Super-resolution in brain PET Using a Real Time Motion Capture System

Ivan S. Klyuzhin: Unsupervised background removal by dual-modality PET/CT guidance: application to PSMA imaging of metastases

Da-ano Ronrick: Pre-selecting radiomic features based on their robustness to changes in imaging properties of multicentre data: impact on predictive modelling performance compared to ComBat harmonization of all available features

Si Young Yie: Self-supervised Bone Scan Denoising

2021 PIDSC Election Results

Congratulations to these newly elected Officers and Board Members!

Robert Miyaoka, PhD
Vice President-Elect

Jing Tang, PhD
Secretary

PIDSC Jan 2022
2022 SNMMI Mid-winter Meeting

Due to the recent COVID surge, the 2022 SNMMI Mid-winter meeting has been rescheduled to Feb 25-27, 2022 in virtual format. The meeting’s theme this year is focused on Cardiovascular Nuclear Medicine. Please mark your calendar and plan to attend. This year, PIDSC will be sponsoring one continuing education session:

Nuts and Bolts of Image Quantification and Associated AI Applications
February 27, 2022, from 10 – 11:30 am
Organizers and speakers: Glenn Wells and Chi Liu

Many of the PIDS council members will also be speaking in various sessions of the Cardiovascular Nuclear Medicine track.

PIDS Council Track for 2022 SNMMI Annual Meeting Abstract Submission

If you are planning to submit a scientific abstract to the 2022 SNMMI Annual Meeting, please note that the abstract site is now open and the abstract submission deadline is January 25, 2022. Please also note that accepted abstract authors will have the option to present their research in-person in Vancouver or virtually during the meeting.

There are four PIDSC abstract submission categories which reflect our core areas of expertise: Instrumentation, Data Analysis & Management, Image Generation, and Data Sciences. The Data Sciences category will be the home for abstracts in the areas of artificial intelligence, machine learning, data mining, radiomics and related data science areas.

The PIDSC plays an integral role in the abstract review process by selecting the PIDS track Vice-Chairs and Sub-Chairs, subject to approval by the Scientific Program Committee. The Vice-Chairs and Sub-Chairs manage the review process, including the selection of reviewers from among the council members. The Sub-Chairs are responsible for building the oral sessions and for presenting the highlights in their category area in the Basic Science Summary Session devoted to the PIDS track. The council appreciates the volunteer work of the chairs and reviewers to help make the annual meeting a success. For the 2022 SNMMI annual meeting, the PIDS track vice chairs are Timothy Turkington and Quanzheng Li. The Sub-Chairs for the various submission categories within PIDS are:

Irene Buvat, Sub-Chair, Data Analysis & Management
Georges El Fakhri, Sub-Chair, Image Generation
Suleman Surti, Sub-Chair, Instrumentation;
Arman Rahmim, Sub-Chair, Data Sciences
Adam Alessio, Sub-Chair, Young Investigator Award

PIDSC Jan 2022
**2022 Annual Meeting PIDSC Sponsored Sessions**

PIDSC has the following proposals tentatively approved by SNMMI for the 2022 annual meeting, including one categorical seminar and four CE sessions. The session organizers will reach out to council members and invite speakers to develop and finalize the sessions. Please stay tuned.

**PIDSC Categorical Seminar:**
Date: Saturday, June 11, 2022  
Time: 7:30 AM – 3:00 PM  
Title: Image Quantification and Dosimetry in Radiopharmaceutical Therapy  
Organizers: Phillip Kuo and Spencer Manwell

**PIDSC Continuing Education:**
- Quantitative PET for Liver Diseases (Organizer: Guobao Wang)  
- Evaluating AI algorithms in nuclear medicine: the road towards clinical translation (Organizer: Abhinav Jha)  
- SPECT imaging with CZT (Nuts and Bolts) (Organizer: Glenn Wells)  
- Business Meeting and Awards Ceremony

We look forward to your abstract submissions for the 2022 SNMMI Annual Meeting!

**2021-2022 PIDSC Board of Directors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. Glenn Wells, PhD</td>
<td>Council President</td>
</tr>
<tr>
<td>Chi Liu, PhD</td>
<td>Council Vice President</td>
</tr>
<tr>
<td>Robert S. Miyaoka, PhD</td>
<td>Council Vice President-Elect</td>
</tr>
<tr>
<td>Jing Tang, PhD</td>
<td>Council Secretary</td>
</tr>
<tr>
<td>Yong Du, PhD</td>
<td>Council Treasurer</td>
</tr>
<tr>
<td>Osama R. Mawlawi, PhD</td>
<td>Council Immediate Past President</td>
</tr>
<tr>
<td>Tyler J. Bradshaw, PhD</td>
<td>Council Board of Directors</td>
</tr>
<tr>
<td>Ciprian Catana, MD, PhD</td>
<td>Council Board of Directors</td>
</tr>
<tr>
<td>Abhinav K. Jha, PhD</td>
<td>Council Board of Directors</td>
</tr>
<tr>
<td>Summer Khairi</td>
<td>Council Board of Directors</td>
</tr>
<tr>
<td>Ran Klein, PhD</td>
<td>Council Board of Directors</td>
</tr>
<tr>
<td>Dustin Osborne, PhD</td>
<td>Council Board of Directors</td>
</tr>
<tr>
<td>Alan B. Packard, PhD, FSNMMI</td>
<td>Board Liaison</td>
</tr>
<tr>
<td>Benjamin Auer, PhD</td>
<td>Intern</td>
</tr>
</tbody>
</table>

You can follow the activities and announcements of PIDSC [HERE](#).

PIDSC Jan 2022