Council Report to the SNMMI HOD
February 2021

PHYSICS, INSTRUMENTATION AND DATA SCIENCES

**Council Mission:** The Physics, Instrumentation and Data Sciences Council (PIDSC) is a group within The Society of Nuclear Medicine and Molecular Imaging, Inc., hereafter referred to as the Society, dedicated to the interchange of scientific and medical ideas among Society members who have interest in computers and instrumentation. The overall mission of the PIDSC is to:

(a) provide a forum for members with similar interests  
(b) provide expertise in the field of interest to the membership  
(c) foster research and education in the field of interest  
(d) provide outreach to other professionals and organizations  
(e) nurture new membership into the Society  
(f) serve as a resource to SNMMI Leadership

**Council Mission and SNMMI's Strategic Plan:** The work of the PIDSC applies to the following goals and objectives in SNMMI's Strategic Plan:

**Goal B:** SNMMI has advanced the development and approval of nuclear medicine and molecular imaging technologies.

**Objective 1:** Encourage and promote research in the field.

a. Increase the number of facilitated collaborative research efforts among academic sites with industry.

b. Reach out to experts in the field to involve them in work groups or coalitions that are producing new studies and papers.

c. Support and foster collaboration between academia and industry; academia looks to industry to translate initial discoveries in patient care into new technology.

**Objective 2:** Increase the number of initiatives targeting the discovery and validation of diagnostic radiopharmaceuticals, radiotherapeutics and instrumentation.

**PIDSC Contributions:**

1) PIDSC-sponsored CE and categorical sessions at the MWM and AM include talks that focus on physics, instrumentation and data sciences advances and their applications to clinical care.

PIDSC contributed to SNMMI Strategic Plan’s Research and Discovery (R&D) domain by identifying and elaborating on top 5 priorities.

PIDSC is also engaged in discussion with Domain 2 Value Initiative AI Task force to elaborate strategic plan on the deployment of AI in NM, and to collaborate with industry on AI. Discussions have been initiated with Progenics. Arman Rahmim has been nominated of the Domain 2 Value initiative AI task force and more nominations from PIDSC will follow.
Goal F: SNMMI has the organizational strength and sustainability to lead the field in a dynamic healthcare landscape.

Objective 1: Strengthen membership numbers.
   d. Ensure enthusiasm.
      iii. Create a sense of community and networking opportunities among our members.

**PIDSC Contributions:**
- The PIDSC has reached out to the more junior members of the council to involve them in the educational programs at the MWM and AM. This has been accomplished through e-mail messages to the entire PIDSC membership encouraging junior members to indicate to the PIDSC Program Committee topics that they could talk about and which could be incorporated into a categorical or CE session. At the PIDSC business meeting at the 2019 AM the YIA sub-chair encouraged younger investigators to consider giving an educational talk in their area of expertise.
- The PIDSC recognizes the council’s YIA winners and finalists at its business meeting at the SNMMI AM so that the winners receive recognition from a broad audience of the PIDSC. This supplements the formal award presentation with YIA winners from all councils and centers.
- Joyitta Dutta, PIDSC BOD member is mentoring an intern (Tyler Bradshaw) for 2019-2021, and together with the past intern (Nicolas Karakatsanis, 2017-2019). One of the goals is to have the interns work together towards an extensive resource of advanced image reconstruction and analysis software.
- The intern Tyler Bradshaw was also involved in the planning and elaboration of the AI Webinars that were presented in 2020.
- All PIDSC members are encouraged, through e-mail messages from the president of the council, to propose CE sessions for the AM and MWM to the PIDSC Program Committee.

**PIDSC Council President:** Osama Mawlawi, PhD

**PIDSC Intern/Mentor:** Tyler Bradshaw, PhD/Joyita Dutta, PhD

**Date of Last meeting:** January 12, 2021

**Date of Next meeting:** June 2021

**Update on Council Programs:**

**2021 SNMMI Virtual Mid-Winter Meeting CE sessions:**
- Artificial Intelligence in Nuclear Medicine
- Clinical Applications and Instrumentation Processing
- Clinical Research Roles for PET Scanner Designs with Extended Axial Field of Views

**2020 SNMMI Virtual Annual Meeting CE Sessions and Webinars:**
- Current Perspective on Total Body PET and Applications
- Hoffman/Faber Award Lecture
- PET/MR Advances Webinar
- Academic & Clinical Pathways to Physics Webinar
- YIA Award Recipients
- BSSS
- 2 Drink & Thinks


2021 PIDSC Awards:
- Edward J. Hoffman Award Lecture Award
  - Ramsey Badawi, PhD submitted by Simon Cherry, PhD
- Tracy Lynn Faber Award
  - Awardee to be announced in February 2021
- PIDSC Young Investigator Awards
  - Selection of finalists will begin once the 2021 AM abstracts are released to the YIA sub chair

Action Items Completed/in Progress/Pending:
- COVID19 Remote Viewing Station Guidance Document
- AI webinar series (6 sessions, Apr-May 2020) covering the basics aspects, implementation with hands-on sessions of AI and presentations by industry leaders
- Provide extensive online resource for members on advanced image reconstruction and analysis tools/software. A website currently accessible through the SNMMI/PIDS council website (https://nmmitools.org/) has been created. We are in progress to move this website to within SNMMI. This resource will be maintained by the PISDC intern in collaboration with Nicolas Karakatsanis, PIDS Council secretary and past intern, who initially setup the resource.
- We initiated discussions for a ‘Data Challenge’ on AI. A sub-committee within PIDSC has been formed and is looking into options. SNMMI Domain 2 has manifested an interest into promoting and sponsoring the event. The Brain Imaging Council is also supporting the challenge.
- We have initiated discussions with the EANM Physics Committee. The purpose will be to increase the visibility of SNMMI at EANM and vice-versa, and exchange ideas for collaborations. Already EANM Physics Committee have manifested interest in collaborating in the above Data Challenge. We are also having discussions with this Committee on the publication of joint SNMMI-EANM guidelines in Radiomics. Discussions on a more formal collaboration will be proceeding in early 2021. The exact format is to be determined.

Action Items Completed:  See above

Recommendations/Questions for the Board of Directors: N/A

Other Comments: N/A