MICHIGAN PHYSIOLOGICAL SOCIETY (MPS)


Valerie VanRyn (Secretary-Treasurer), Michigan State University
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As one high school teacher put it so powerfully, shortly after her students attended our annual meeting…

“They loved interacting with people who also love research. The students did not know “things like this existed” and it truly has opened their eyes into the field of research in physiology. To provide a setting like this for high school students to participate both in the meeting and in presenting “high school” research projects was such a good idea and it is making the highlight reels here at my high school. My principal is even going to have the students who came to the MPS meeting receive special recognition during her speech at graduation Thursday! GO MPS! Several of my students want to continue with the MPS and possibly mentor other high school students for the years to come. At my school, the word has spread to the students taking both AP Biology and Applied Medical Research next year. I’ve had ten students stop by and ask if we are doing MPS meeting next year. It created a social buzz! Imagine that…science chatter among teenagers!” Sue Speirs, Grosse Point North High School, Grosse Point, MI

Prior to receiving the comment above, the fourth Annual Meeting of the Michigan Physiological Society (MPS) began on June 8th, 2017 and was hosted by Alma College in Alma, MI. An additional event related to the conference, the inaugural Michigan Physiology Quiz (MiPQ), was held one day prior on Wednesday, June 7th (see addendum). The meeting hosted 142 attendees, representing 20 institutions of secondary and higher level education including: alma College, alma High School, Central Michigan University, Ferris State University, Grosse Point North High School, Hope College, Lumen Christi Catholic School, Michigan State University, Michigan Technological University, Michigan Youth Challenge Academy, Northern Michigan University, Northville High School, Oakland University, St. Clair County Community College, The University of Michigan-Ann Arbor, The University of Michigan-Flint, Western University (Ontario), Wayne County Community College District, Wayne State University and Western Michigan University. Five educators from the high schools mentioned above also participated in our second annual Life Sciences Teacher Workshop offered in conjunction with the annual meeting on Friday June 9th. 23 high school students also participated in programming from the Life Sciences Program, the Annual Meeting itself and activities programmed specifically for them.

Registration began Thursday afternoon, June 8th, and during the opening session Patrick Mueller, PhD (MPS President, Wayne State University) and Karen Ball, PhD (MPS President-Elect, Alma College) greeted MPS members, special attendees, and guests. On behalf of Alma College, Dr. Michael Selmon (Provost and Vice President for Academic Affairs, Alma College), welcomed the membership to the Alma College campus. To bring a close to the Welcome and Meeting Opening, Bruce McAttee, the Mid-Michigan Regional Director from the Honorable Gary Peters’ office (U.S. Senator, Michigan) discussed how his office views the public’s perceptions of research, research funding and how MPS members can advocate for research to help maintain or increase funding for research.

The Society then welcomed Keynote Speaker J. Kevin Shoemaker, PhD of Western University, School of Kinesiology in London, Ontario, Canada. Dr. Shoemaker’s keynote address was titled, “Forebrain Neurocircuity Associated with Autonomic Function in Humans.” A short question and answered period followed the Keynote Lecture, with Dr. Shoemaker kindly providing career advice specifically to trainees who were in attendance.

As in years past at annual meeting, trainees presented all of the other oral presentations. These trainees included high school, undergraduate, medical and graduate students as well as postdoctoral fellows.

Trainees gained valuable experience by taking advantage of opportunities to serve as session co-chairs,
introducing speakers and moderating discussion periods following each talk. The Awards Committee selected each presenter based on the quality of their abstract submission. Trainees gave approximately ten minute presentations followed by a five minute question and answer period. The question and answer sessions were guided by the trainee session co-chairs who encouraged trainees in the audience to ask questions rather than faculty who accommodated this opportunity. This format enabled trainees to practice asking questions similar to those occurring at national meetings. Each oral presentation was judged by volunteer faculty to help determine the awards for the top presentations. There were 19 total oral presentations over the two-day conference and included three research-oriented symposia and one education-based symposium.

The first oral session covered cardiovascular and renal physiology studies and was co-chaired by trainees Amelia Glazier (University of Michigan) and Guodong Pan (Henry Ford Hospital). The symposium featured four excellent talks by Enshe Jiang (Postdoctoral Fellow; Michigan Technological University); Janice Diaz-Otero (Graduate Student; Michigan State University); Timothy Bryson (Graduate Student; Wayne State University/Henry Ford Hospital); Keyona King-Medina (Graduate Student; Wayne State University/Henry Ford Hospital); and Melanie Flaherty (Undergraduate Student; Northern Michigan University).

The evening activities began with a strolling dinner allowing attendees to view trainee research projects during the first of two poster sessions. The first poster session included roughly half of the 66 total posters. Poster abstracts were selected in advance by the Awards Committee to determine which posters would be further judged at the meeting. Poster presentations were also scored by a panel of volunteer faculty. Following the poster session, a Welcome Reception was held on the Hogan Quad and featured lawn games and local music from the “10-¢centers”. Trainees were encouraged to network with attendees from other Michigan institutions are more informal basis.

On Friday June 9th, after the morning announcements the second oral session began. The session themed around Endocrinology and Physiological Genomics was co-chaired by trainees Ian M. Greenlund (Michigan Technological University) and Nguyen Truong (Michigan State University). The session featured excellent talks by six individuals: Leena Kadam (Postdoctoral Fellow, Wayne State University); Xingfa Han (Graduate student, University of Michigan); Naiomy Rios-Arce (Graduate student, Michigan State University); Anne Tonson (Postdoctoral Fellow; Michigan State University); Juliette Brown (Graduate Student; Michigan State University); Joseph Bires (Undergraduate student, Oakland University).

Three concurrent breakout sessions focused on trainee development were scheduled during mid-Friday morning. The highlighted topics were, “Joining a Professional Society” organized by Susan Barman (Michigan State University), “Elevator Pitches for Trainees: Implementing the 3 Minute Thesis in Our Department” organized by Charles Chung (Wayne State University) and “Searching for a “Postdoc” organized by Isola Brown (Michigan State University). Several trainees and students served on panels during these breakout sessions. Posters were available for further previewing during this period as well.

After the trainee breakout sessions, the third oral session contained talks about neurophysiology and respiratory physiology and was chaired by trainees Mohamad El Chami (Wayne State University) and Alexandra Cara (University of Michigan). Five excellent presentations were given by Cameron Kortes (Medical student, Central Michigan University); Ninotckska Delvalle (Graduate Student, Michigan State University); Yuan Fan (Graduate Student, Michigan Technological University); Vladimir Grubisic (Postdoctoral Fellow, Michigan State University); Isola Brown (Graduate Student, Michigan State University).

Following a lunch break, the fourth oral session began and was themed around Physiology Education. This session was co-chaired by trainee Ross Michaels (Michigan Technological University) and Trevor Gohl (Michigan State University). This session featured excellent talks by Christine Klingert (Medical Student, Wayne State University) and Valerie VanRyn (Post Baccalaureate, Michigan State University)
well as a particularly inspirational presentation given by Soumya Kulkarni (High School Student, Northville High School) who started her own High School Neuroscience Club. Keynote speaker, Steve Elmer rounded out the Symposium by presented a talk entitled "The two hour marathon: what do students think?" After the last oral session, attendees assembled on the front steps of the Heritage Center for a group photo (Figure 1).

In a parallel session on Friday, a Life Sciences Teacher Workshop was offered. The APS Chapter Program and APS staff partnered with the MPS for the second year in a row to host the model program Regional Professional Learning Communities (RPLC). The full-day workshop consisted of 6 Life Science teachers with interactions involving up to 23 of the high school students. Several sessions and panels were tailored specifically at the high school level including a separate keynote lecture by Dr. Shoemaker, breakout sessions, interactive demonstrations and exposure to APS-related activities e.g. K-12 outreach activities and the APS Frontiers program. The high school teachers were also encouraged to attend posters presented by the high school students occurring during the general meeting poster session. They also attended the educational symposium (see above). The MPS K12 Co-Chairs Sue Speirs (Grosse Pointe North High School) and Monica McCullough (Western Michigan University) coordinated these activities and sessions were moderated by Sue Speirs. Dr. Shoemaker gave a stimulating lecture entitled "Effect of Exercise Training on Brain Health" to both the teachers and the high school students in attendance. A number of MPS members served on a career panel and the Society thanks Travis Wakeman (Graduate Student, Michigan Technological University) and Naveen Sharma (Assistant Professor, Central Michigan University) for their time with the teachers in this capacity (Figure 2).

Additionally, two hands-on learning activities took place in the Human Performance Lab featuring blood flow dynamics and cardiovascular control during lower body negative pressure; forearm blood flow and blood pressure regulation and The Society thanks Steward Jensen (Associate Professor of Physics, Alma College) and John Davis (Professor of Integrative Physiology and Health Science, Alma College) for their time invested in educating the teachers in this capacity.

All members and guests reconvened for the Business Meeting on Friday afternoon. Secretary-Treasurer Valerie VanRyn (MSU) discussed the budget, expenses and donations from the previous year. Subsequently, MPS President Patrick Mueller announced the date of the next Annual Meeting at Michigan Technological University for the 14th and 15th of June, 2018. He then offered thanks to the outstanding members of the Executive Board who completed terms: Erica Wehrwein (MSU, Past-President) and Sue Barman (MSU, Membership and Fundraising Chair) (see Fig. 4). An electronic ballot was distributed at the meeting and a popular vote was taken to elect new members. The results were tallied and a current member of the Executive Board, John Durocher (MTU,) was chosen as President-Elect. The meeting concluded with the Awards Ceremony. Awards were funded by generous donations of participating institutions as well as a number of individual members. Of the 19 total oral presentations, four trainees were honored with an award certificate and a $250 check (Fig. 3). Of the 68 total poster presentations, six trainees were honored with an award certificate and a $100 check (Fig. 3).

The MPS was extremely pleased with the robust member turn-out for the 2017 Annual Meeting. In addition, for the first time the meeting:

- Hosted an undergraduate Michigan Physiology Quiz (MiPQ, see addendum).
- Included participation by the Michigan state legislation by welcoming Bruce McAttee, Regional Director from the Honorable Gary Peters’ office (U.S. Senator from Michigan).
- Invited its first international Keynote Speaker from Ontario, Canada.

We owe many thanks to the Planning and Executive Committee (Fig. 4) and local volunteers for the execution of this meeting. We are very grateful to The American Physiological Society for their continuous support. We also appreciate the financial support of our generous sponsors: Michigan State University College of Human Medicine (Dr. William D. Strampel-Dean), Office of the Vice President for Research (Dr. Stephen Lanier-Vice President), Henry Ford Health System (Dr. Margot LaPointe-Vice President for Research), Michigan State University College of Natural Sciences (Dr. R James Kirkpatrick-
Dean), Michigan Technological University Graduate School (Dr. Pushpa Murthy-Dean); Department of Kinesiology& Integrative Physiology (Dr. Jason Carter-Chair); and Department of Biological Sciences (Dr. Shekhar Joshi-Chair), Wayne State University, School of Medicine (Dean Jack Sobel), Wayne State University, School of Medicine, Department of Physiology (Dr. J.-P. Jin-Chair), Michigan State University, Graduate School (Dr. Judith Stoddart- Interim Dean), Michigan State University, Office of the Vice President for Research & Graduate Studies (Dr. Stephen Hsu-Dean), Wayne State University, School of Medicine, Research Office (Dr. Linda Hazlett-Interim Vice Dean), Wayne State University, School of Medicine, Graduate Programs (Dr. Dan Walz- Associate Dean), Wayne State University Graduate School (Dr. Ambika Mathur-Dean) and Mayo Graduate School Biomedical Engineering & Physiology Program (Dr. Carlos Mantilla-Program Consultant).

Figure 1. 2015-2016 MPS Annual Meeting Photo

Figure 2. Life Sciences Teacher Workshop Career Panel MPS members from left to right: Naveen Sharma, PhD - Assistant Professor, Central Michigan University and Travis Wakeham - Graduate Student in Biological Sciences from Michigan Technological University.
Figure 3. Oral and Poster Presentation Winners - MPS members from left to right: Mohamad El-Chami, Soumya Kulkarni, Naiomy Rios-Arce, Travis Wakeham, Vladimir Grubisic, Trevor Gohl, Christopher Occhiuto, and Isola Brown. Awardees not pictured: Ryan Mack and Mohammad Mustafa Ahmadzai.

Figure 4. MPS Executive Board: Kevin Gordish (Website Coordinator), John Durocher (Awards Chair), Isola Brown (Trainee Committee - Co-Chair), Karen Ball (President-Elect), Erica Wehrwein (Past President), Valerie VanRyn (Secretary-Treasurer), Sue Barman (Membership and Fundraising Chair), and Patrick Mueller (President). Not pictured: Monica McCullough (K-12 Outreach Co-Chair), Sue Speirs (K-12 Outreach Co-Chair) and Ankita Jaykumar (Trainee Committee - Co-Chair).
Addendum

Michigan Physiology Quiz (MiPQ)

The inaugural Michigan Physiology Quiz (MiPQ) was hosted on June 7th, 2017 at Alma College. The Quiz began in the early afternoon and lasted for roughly 4 hours. MiPQ was modeled after an international science Olympiad created by Dr. Hwee-Ming Cheng at the University of Malaysia called the Inter-Medical School Physiology Quiz (IMSPQ). Our very own Sue Barman had the honor of attending an IMSPQ as an instructor for a refresher course and as quiz judge for the 14th annual IMSPQ competition held last summer in Indonesia (see Barman SM. Physiology Quiz Show. The Physiologist 59: 347-348, 2016.).

Since she was astounded by the enthusiasm of the 350 student participants, she proposed to the American Physiological Society (APS) that the United States (US) begin a comparable event with the goal of eventually sending a US team to participate in the IMSPQ. The APS Council encouraged the MPS to be the first APS Chapter to include this event as part of their annual meeting. The hope is that other chapters will do the same and then the United States may set up a competition among chapter winners to send them to IMSPQ in some future year.

MPS put a call out to undergraduate institutions across the state of Michigan in order to assemble teams of students whom had successfully completed an undergraduate physiology course. Schools that participated included: Ferris State University, Michigan State University, Michigan Technological University, Oakland University and Wayne State University. The quiz was run by our very own Quizmaster, Sue Barman (Michigan State University), and the quiz was judged by local faculty including Adele Denison (Michigan State University), Naveen Sharma (Central Michigan University) and John Davis (Alma College).

The competition utilized a game show-style format with question and answer sessions showcasing physiology knowledge across a number of topics covered in Dr. Hwee-Ming Cheng’s book, Physiology Question-Based Learning (Springer, 2016). There was a grand total of 60 questions in the entire quiz, split between four rounds.

The results were as follows: First Place and an award of $75 per student – Wayne State University, Second Place and an award of $50 per student – Michigan State University, Third Place and an award of $25 per student – Oakland University. All undergraduate student participants received a complimentary copy of Ganong’s Review of Medical Physiology textbook. Textbooks and awards were generously donated by McGraw Hill and individual sponsors, respectively.

Quizmaster Sue Barman; Judges - Adele Denison, Naveen Sharma and John Davis
Wayne State University Team (1st place) and Michigan State University Team (2nd place)

Oakland University Team (3rd place) and Ferris State University Team

Michigan Technological University Team