Action Items: The Committee has no action items at this time.

This report provides summaries of Physiologists in Industry (PIC) activities during 2014-2015:

A. EB2015 PIC Symposium
Background: PIC sponsors an EB symposium each year, focusing on translational research. The 2015 symposium, entitled "Targeting Gut Microbiome in Human Diseases and as Novel Therapeutics" was organized by Carol Moreno Quinn, Ph.D. and Suttira Intrapad, Ph.D. (Post-doctoral recipient of 2014 PIC Novel Disease Award), but chaired by Shaila Basavappa, Ph.D. as Dr Quinn was unable to attend. Both Dr. Basavappa and Dr. Quinn are active PIC committee members. The session abstract is provided below.

**Abstract:** Increasing evidence suggests that environmental factors play a role in the dramatic rise in the incidence of many human diseases specifically associated with residence in industrialized nations. Together with functional studies in animal models, the characterization of the human microbiome in various disease states suggests that our microbial environment plays a critical role in both the maintenance of health and the pathogenesis of disease. As the most densely populated and diverse of the microbial communities, the intestinal microbiome may be particularly important. The gut microbiome can significantly affect the metabolism of the host. In fact, gut microbes represent an extended reservoir of metabolic capabilities providing the host with a wide range of otherwise inaccessible metabolic capabilities. Advances in DNA sequencing and bioinformatics have revolutionized our understanding of the microorganisms that inhabit the gut. This genomic revolution offers an exceptional opportunity to identify the molecular mechanisms governing commensal host–bacterial relationships. This new knowledge helps us understand how these interactions contribute to normal physiology and provides the foundation to formulate novel therapeutic strategies. This symposium covers the spectrum of intestinal microbiome research, from basic concepts in mammalian gut microbiome to disease associations and therapeutic implications. In this symposium, speakers will describe specific and potential therapeutic applications of the targeting gut microbiome.

**Update/Outcome:** The symposium was held on Sunday, March 29th at 10:30 am–12:30 pm in the Boston Convention Center, Room 205B. All scheduled speakers were able to present. Feedback from PIC attendees as well as others indicates that the topics were well-received and well-attended with standing room only at the start of the symposium

B. EB2015 Novel Disease Awards
Background: The Novel Disease Awards sponsored by Novo Nordisk Research Centre China recognizes one postdoctoral and one predoctoral trainee who submit the best abstracts describing a disease model at Experimental Biology. While the model may be cellular or in vivo, the applicant must clearly emphasize the novelty of the model and the potential utility of the system for future research related to a disease process. Applicants do not have to be APS members and there are no restrictions on how the award is spent. Awardees can only receive the Novel Disease Model Award once as a postdoctoral fellow and once as a predoctoral student. Awardees are recognized at the APS Business Meeting. The award is $500 for the pre-doctoral student and $800 for the post-doctoral fellow.
**Update/Outcome:** The Committee received a record number of applications in 2014 (39 applications spanning over 9 sections with 17 predoctoral and 22 postdoctoral applicants). Committee-based scoring of this year’s applicants produced a clear winner in each category: Casey Carmichal of Boston University School of Medicine (pre-doctoral) and Denise Cornelius, Ph.D. of University of Mississippi Medical Center (post-doctoral). Awards were presented at the APS Business Meeting, by PIC representative Shaila Basavappa, Ph.D.

At the PIC Business Meeting (below), several items related to the symposium programing, APS PST course support, ACE representation and Novel Disease Model Award were discussed, including the following:

- Committee requests the same scheduling for the 2016 symposium on Sunday 10:30 am to 12:30 pm at the June 2015 JPC meeting
- Committee agrees to support teaching the APS Professional Skills Training Course (interviewing for industry Positions) and to review and provide feedback on the online training course materials
- Committee agrees to support the ACE committee via an ad-hoc member. Dr. Josef G Heuer, an active PIC committee member, agrees to serve as PIC representative on the ACE committee and to participate in Capitol Hill visits scheduled in July.
- Committee also wants to enhance communication with trainees regarding industry internships opportunities. This will be accomplished by creating a web-links in the PIC website and sharing this information through the APS website, listservs, and social media.
- Committee agrees to continue to invite the postdoctoral award winner to co-chair the 2016 PIC symposium as well as to invite both predoctoral and postdoctoral recipients to attend PIC Mixer.
- Committee would like to increase the Novel Disease Award applications from all APS sections and participation of PIC EB activities by enhancing communication via Section newsletters and Section PIC representatives. Committee has adapted new review process (similar to the review process currently being used for the Caroline tum Suden Awards) to ensure sufficient reviewers per applicant ratio (6:1) to handle increased applications.
- Committee also discussed and evaluated potential processes to secure NDA sponsorship after 2016. An idea is to encourage fellow industry members or PIC members to donate their honoraria for presentations (if unable to accept due to company policy or certain restriction) specifically for the PIC awards.

The committee plans to review and implement many of these items in next few years.

**C. EB2015 PIC Mixer**

**Background:** The Annual Physiologists in Industry Committee Mixer is traditionally a great opportunity to network with industry and academic APS members alike. It is designed to attract trainees and engage them in discussion about careers, research, and opportunities in industry positions.

**Update/Outcome:** The 14th annual PIC mixer was held on Sunday, March 29th, 6:45 - 8:00 pm at the Revere Room of the Westin Boston Waterfront. The mixer attracted individuals across all levels of training. The mixer was well attended, provided a great chance for meaningful industry career opportunity discussions with many trainees and received good feedback from attendees.
D. EB2015 PIC Business Meeting

**Background:** PIC schedules a business meeting to be held at EB each year.

**Update/Outcome:** This year’s meeting was held on Sunday, March 29th, 2:30 - 4:00 pm in the Revere room of the Westin Boston Waterfront. Dr. Shaila Basavappa chaired the meeting as Dr. Shek was unable to attend the meeting.

E. EB2016 PIC Symposium

In order to foster greater interaction between academia and industry as well as promote cross sectional themes, the 2016 PIC symposium will focus on topics relating to drug development pathways (from pre-clinical research to clinical trials and regulatory approval). The title of the 2016 PIC symposium is “**Metabolic Syndrome and the Pathway of Drug Development; from Bench to Bedside**”. The session is being coordinated and chaired by Matthew Zahner, Ph.D. and Denise Cornelius Ph.D. Dr. Zahner is an active member of the committee, and Dr. Cornelius is our 2015 Novel Disease Model Award recipient at the postdoctoral level. The session abstract is provided below.

**Abstract:** Metabolic Syndrome refers to the clustering of known cardiovascular risk factors including diabetes, hypertension, obesity, dyslipidemia and other emerging risk factors within an individual. Although the increased of metabolic syndrome-related comorbidities are recognized by the World Health Organization, International Diabetes Federation, and several other organizations, no single identifiable definition has been agreed upon making diagnosis and treatment difficult. Notwithstanding, heart disease remains the number one leading cause of death in the world and people with metabolic syndrome are twice as likely to suffer heart attack and five-fold more likely to develop type II diabetes. According to the international diabetes federation 25% of the world’s adult population has metabolic syndrome. Thus there is a clear need to better treat metabolic syndrome and the related comorbidities. Impressive accomplishments in the understanding of cellular, molecular, and neural metabolic signaling pathways and mechanisms have been made over the last several decades. Collectively these accomplishments have improved our understanding of the impact of sustained positive energy balance on metabolic syndrome and related comorbidities. This knowledge provides the foundation to formulate novel therapeutic strategies. This symposium covers the basic research and evolution of necessary steps from discovery, applied preclinical, development, safety, and the clinical and regulatory hurdles required to get a drug from conception to FDA approval.

**JPC Representative:** Matthew Zahner Ph.D. will serve as PIC representative to the JPC and will attend the June 2015 meeting. James Herrington, Ph.D. will serve as alternant in case Dr. Zahner is unable to attend.
**F. Summary and Conclusions**
PIC continues to support the efforts of APS with the initiatives discussed above. We have a committee that is active in PIC/APS, many with new, fresh ideas that will help further strengthen the PIC/APS relationship, and help maturing physiologists understand how industry can contribute to better physiology-based science.

I would like to thank Council for their support, especially for the oversight of Marsha Lakes Matyas and her staff in the APS Education Office.

Respectfully submitted,

Eugene W. Shek, Ph.D.
Chair, Physiologists in Industry Committee
June 22, 2015

eugeneshek@yahoo.com.com