



THE HISTORY OF PHYSIOLOGY GROUP NEWSLETTER

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MESSAGE FROM THE CHAIR



The Leadership looks forward to seeing you at the 2007 Experimental Biology Meeting in Washington D.C., as the Program Committee has assembled an outstanding program for the various sections and groups. We especially look forward to seeing you on Sunday, April 29th at 12:00 p.m. for the History Group Luncheon and Business Meeting in a room near the APS Headquarters, which will be located at the Renaissance Hotel. In January and thereafter, we will be sending e-mails on the definite location of the food for the buffet luncheon and for the site of the business meeting and the History of Physiology Lecture. This year's lecture promises to be as interesting and stimulating as the one in San Francisco on the women astronauts who were never given a mission, and we hope you will bring a guest to enjoy the luncheon and the lecture.

We also hope you will attend the History Symposium that is mentioned elsewhere. Since they will be mentioning the research that led to the Nobel Prize, it also has the promise of being interesting and informative.

In the event that you will not be attending, we would still appreciate receiving your 2008 suggestions for future Special Topics or Symposia suggestions. Again, we are looking forward to seeing you in Washington, D.C.

THE LUNCHEON-BUSINESS MEETING OF THE HISTORY OF PHYSIOLOGY GROUP AND LECTURE BY THOMAS J. WALTERS

As noted, The **History of Physiology Group Business meeting will be held from 12:01 to 2:00 on Sunday, April 29th in the Renaissance Hotel** at a site to be determined, with the Business Meeting starting at 12:20. The buffet will be available near APS Headquarters and it should be brought to the meeting room for consumption, preferably before the session starts. For food planning purposes, individuals who plan to use the buffet should contact Charles Tipton on or before 2:00 PM (EST) April 20th, 2007 at tipton@email.arizona.edu.

Immediately after the business meeting, Dr. Thomas Walters will present a History of Physiology Lecture entitled **A PHYSIOLOGIST'S PERSPECTIVE ON STOPPING BLEEDING ON THE BATTLEFIELD: EVERYTHING OLD IS NEW AGAIN** and will answer questions after the presentation. An abstract of the talk is as follows:

Historically, extremity injury has constituted the vast majority of battlefield wounds, many involving life-threatening vascular injury (1). The tourniquet has been used for the management of these wounds since 1674 (4). During this time, the battlefield tourniquet has been surrounded by a range of strong opinions, myths, and lack of agreement among those who care for injured on the battlefield, all based primarily on anecdotal accounts. More recently, an appreciation for the lifesaving potential of the tourniquet has prompted the desire by military medical leaders for a better understanding of tourniquet-related complications based on scientific and medical research (6).

The use of tourniquets to create a bloodless surgical field was pioneered by Joseph Lister and Friedrich August von Esmarch in the 1860's and 1870's (4). Soon after, the first surgical tourniquet-related complications were described by Richard von Volkmann in the form of ischemic contractures (4). Despite this devastating complication, the benefits of the surgical tourniquet were already established and, rather than avoid their use, research in tourniquet design and the pathophysiology of tourniquet-related complications was initiated. In addition, the use of tourniquets as an easy method to induce limb ischemia in laboratory animals has led to the publication of hundreds of papers using tourniquets to study the mechanisms of ischemia and ischemia/reperfusion injury. Although the resulting wealth of information has advanced our understanding of tourniquets and tourniquet-related complications, tourniquets used to control extremity hemorrhage on the battlefield raise unique questions that have only recently begun to be examined. These questions range from what is the optimal emergency tourniquet design (2, 7) to patient treatment issues relating to the impact of mitigating factors unique to trauma such as hemorrhagic shock (3, 5).

1. **Bellamy RF.** The causes of death in conventional land warfare: implications for combat casualty care research. *Mil Med* 149: 55-62, 1984.
2. **Calkins D, Snow C, Costello M, and Bentley TB.** Evaluation of possible battlefield tourniquet systems for the far-forward setting. *Mil Med* 165: 379-384, 2000.
3. **Kauvar DS, Baer DG, Dubick MA, and Walters TJ.** Effect of fluid resuscitation on acute skeletal muscle ischemia-reperfusion injury after hemorrhagic shock in rats. *J Am Coll Surg* 202: 888-896, 2006.
4. **Mabry RL.** Tourniquet use on the battlefield. *Mil Med* 171: 352-356, 2006.
5. **Walters TJ, Kragh JF, Kauvar DK, and Baer DA.** The Combined Influence of Hemorrhage and Tourniquet Application on the Recovery of Muscle Function. *J Orthopaedic Trauma*, In Press.
6. **Walters TJ and Mabry RL.** Issues related to the use of tourniquets on the battlefield. *Mil Med* 170: 770-775, 2005.
7. **Walters TJ, Wenke JC, Kauvar DS, McManus JG, Holcomb JB, and Baer DG.** Effectiveness of self-applied tourniquets in human volunteers. *Prehosp Emerg Care* 9: 416-422, 2005.

Dr. Thomas Walters is an integrative research physiologist at the United States Army Institute of Surgical Research at Fort Sam Houston, Texas. Over the past 5 years, he has been responsible for leading a team of researchers, physicians, and emergency medical personnel to test, identify, and field the current tourniquet system issued to all US and Allied military personnel. In addition he has been involved in writing the current tourniquet use doctrine. His laboratory research is focused on developing treatments for combat-related muscle injury.

FEATURED SYMPOSIUM: “UNDERSTANDING THE ROLE OF THE PANCREAS IN DIGESTION: PLACING CURRENT UNDERSTANDING IN A HISTORICAL PERSPECTIVE”



The History of Physiology featured symposium this year has been organized by Drs. John A. Williams (left) and Joel Adelson (right). **The symposium will be on Monday, April 30, from 10:30 a.m. to 12:30 p.m. in room 147A in the Convention Center.**



Dr. Williams is Professor and Chair of the Department of Molecular and Integrative Physiology at the University of Michigan. His research over the past 30 years has focused on the exocrine pancreas and has elucidated numerous principles of neural and hormonal control of the pancreas, as well as intracellular mechanisms controlling exocytosis from pancreatic cells. In 2003-2004, Dr. Williams served as the 76th APS President. Dr. Adelson is the Chief of the Integrating Medicine and Public Health Program at the Institute for Health and Aging, University of California-San Francisco. While his current major interests lie in public health, health policy, and studies on the improvement of the quality of medical interventions, he has extensively published on exocrine pancreatic secretion.

The purpose of the symposium is to trace the historical development of pancreatic physiology and show how it has led to current paradigms of function and can predict areas where progress should lead to a better understanding of the gland. The symposium will be introduced by Dr. Joel Adelson, who will review original ideas of pancreatic structure and function prior to the 19th century and the work of Claude Bernard on the role of the pancreas in fat digestion. Dr. Adelson will also introduce the issue of nerves vs. hormones in the control of the pancreas. This will be followed by a talk by Dr. Daniel P. Todes (Institute of the History of Medicine, The Johns Hopkins University and author of “Pavlov’s Physiology Factory”), who will discuss how Pavlov organized his laboratory, his approach to science, and the studies his laboratory carried out to understand the function and regulation of the exocrine pancreas. Dr. John Henderson (Dept. of Basic Medical Sciences, St. George’s Hospital Medical School and author of “A Life of Ernest Starling”) will then cover the work of Ernest Starling and the discovery of secretin, the first hormone, which controls the secretion of pancreatic juice. Dr. John Williams will then take up the control of acinar function delineated in the mid-20th century and review the importance of the pancreas in defining the secretory pathway, as well as discuss the importance of calcium and inositol phosphates as intracellular regulators. Furthermore, he will summarize the current state of reductionist approaches and how this is being put back into the animal through transgenic studies. Finally, Dr. Adelson will summarize the presentations and predict how current understanding and experimental approaches will allow us to revisit some of the questions Pavlov and others could not answer on the role of the pancreas in digestion.

APS COUNCIL CHANGES AND DELAYS THE EMINENT PHYSIOLOGIST PROGRAM DEVELOPED BY THE HISTORY GROUP

During 2004 and 2005 with Council approval, the History of Physiology Group developed and implemented an EMINENT PHYSIOLOGIST PROGRAM that resulted in the identification of Drs. Maurice Burg, Carl Gans, Gabor Kaley, and Bodil Schmidt-Nielsen as initial honorees. Most have been videotaped for archival purposes and have biographical articles published in Advances in Physiology Education. Because some Council Members subsequently felt the EMINENT PHYSIOLOGIST PROGRAM added a new tier of membership and that those whose names were submitted and not selected would be resentful, they changed the name of the program to the Living History Program, inactivated the Selection Committee and have delayed officially announcing the program to the Society until a later date when the new selection process has been finalized. It is hoped that reports from the 2007 Council Meeting will announce the new procedures and that we will be able to resume recognizing APS Members who have made significant contributions to the discipline and profession of physiology.

CALL FOR PROGRAM SUGGESTIONS FOR EXPERIMENTAL BIOLOGY 2009 AND BEYOND

It is time to plan for future programs by the History of Physiology Group and our options are to sponsor a two hour symposium with three or possibly four speakers (like this year), to have a featured topic presentation or lecture with no more than two speakers, or we can couple a featured topic presentation with selected free communications on a chosen subject. Your suggestions should be faxed or e-mailed (see last page) to a member of the Program Committee.

KNOW AND CONTACT YOUR LEADERS IN THE HISTORY OF PHYSIOLOGY GROUP

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