Five years of data diuresis: what have WEH learned?

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Sullivan JC, Pollock JS. Five years of data diuresis: what have WEH learned? Am J Physiol Regul Integr Comp Physiol 309: R1060–R1061, 2015. First published April 8, 2015; doi:10.1152/ajpregu.00107.2015.—This year represents the fifth annual Data Diuresis session of the Water and Electrolyte Homeostasis (WEH) section of the American Physiological Society (APS) at the 2015 Experimental Biology meeting. As opposed to taking a single organ approach to the study of physiology, the WEH section employs an integrative approach to encompass how the different organ systems interact to regulate numerous physiological and pathophysiological processes. The goal of this minireview is to highlight the broad spectrum of research themes that were presented over the first five years of Data Diuresis. Presentation topics include (but are not limited to) oxidative stress, inflammation, obesity, pregnancy, and hypertension spanning the brain, heart and vasculature, and kidney. WEH researchers continue to impact and help drive the direction of physiological research across multiple disciplines, leaving us excited to see what the next five years of Data Diuresis will bring.

Data Diuresis By The Numbers

The inaugural session in 2011 was promoted as a Trainee Mixer and Data Diuresis Session promising science in a relaxed and fun atmosphere. Data diuresis presenters have included students, fellows, and principal investigators, bringing together WEH scientists at all stages of their careers in a single venue to promote networking among the WEH membership. The intent of establishing the session was to not only highlight new scientific discoveries but also to provide an additional outlet to support the careers of our young scientists, all while gaining a snapshot of what was to come in the scientific programming for WEH (5, 10). Since 2011, there have been 41 presentations in Data Diuresis from laboratories spanning industry, academia, and government. Presenters in the session have been from 28 different institutions with institutional affiliations representing 5 countries (Canada, Ireland, Sweden, Thailand, and the United States). Moreover, in the last two Data Diuresis sessions, clinical presentations were also included (8).

What Have WEH Learned?

The breadth and scope of research that WEH investigators are engaged in is well reflected by the variety of topics covered in the Data Diuresis session over the last five years. Invited presentations have examined the roles of the brain and central nervous system, vasculature, heart, and kidney in maintaining homeostasis under physiological and pathophysiological conditions (Fig. 1). Several presentations have also examined the interplay between the central nervous system and kidney, sympathetic nervous system and the heart, as well as the heart and kidney (3) to gain a more complete understanding of how multiple organ systems interact together to control complex physiological processes. Presentations have covered a number of areas of research that are of common interest across disciplines including obesity, programming, pregnancy, salt sensitivity, circadian rhythm, and hypertension and focused on key mediators of numerous physiological pathways (Fig. 2) as well as presentations on novel methodologies to address important physiological questions (9).

The breadth of topics covered in the Data Diuresis sessions from the past five years typifies the goal of the WEH section to integrate and bring together ideas from across disciplines and organs to maximize our understanding of whole body physiology. The Data Diuresis forum has encouraged broad partic-
ipation and promoted an integrative approach to critical questions in the field of physiology.

DISCLOSURES

J. Sullivan is the current Data Diuresis Coordinator for WEH; J. Pollock is the current WEH chair.

AUTHOR CONTRIBUTIONS

Author contributions: J.C.S. prepared figures; J.C.S. drafted manuscript; J.C.S. and J.S.P. edited and revised manuscript; J.C.S. and J.S.P. approved final version of manuscript.

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