Jenny Sasser, Ph.D. Teacher Resource Page

A Case Study in Renal Physiology
PowerPoint segmented case study in renal physiology

Experimental validation of the countercurrent model of urinary concentration
Essay on APS Classic paper by Geltshalk et al

Groovin on the Nephron Line
This is a YouTube music video about how nephrons function. The video shows a nephron line made out of Lincoln Logs.

Kidneys Tutorial
Interactive html tutorial on the basics of renal physiology

Micropuncture: unlocking the secrets of renal function

A Mother's Salt Intake Could be Key to Prenatal Kidney Development
Press release on a new animal study find that too much or too little salt has an impact on prenatal kidney development. This study, "Both High and Low Maternal Salt Intake in Pregnancy Alters Kidney Development in the Offspring," was conducted by Nadezda Koleganova, Grzegorz Piecha, Annett Müller, Monika Weckbach, Peter Schirmacher, and Marie-Luise Gross-Weissmann, Eberhard Ritz and Luis Eduardo Becker, all with the University of Heidelberg in Heidelberg, DE; and Jens Randel Nyengaard of the University of Aarhus, Aarhus, DK. The study is published in the American Journal of Physiology - Renal Physiology.

When Kidneys Learn to Pee - 2013 APS Video Contest
A video entry for the 2013 APS Video Contest. This video describes the process of ultrafiltration, reabsorption, and secretion within the nephrons of the kidney.

Active Ingredient In Common Chinese Herb Shown To Reduce Hypertension
Press release explains findings that could aid in creating alternative treatments for those with high blood pressure.

Controlling Hypertension: A Research Success Story
In the past 2 decades, deaths from stroke have decreased by 59% and deaths from heart attack by 53%. An important component of this dramatic change has been the increased use of antihypertensive drugs. This remarkable success resulted from broad-based and diverse research programs supported by the federal government, pharmaceutical companies, voluntary health agencies, and private foundations. It included basic research, drug development programs, epidemiologic studies, health surveys of US citizens, clinical research, and large-scale drug trials. Four of the categories of antihypertensive drugs in wide use—diuretics, beta-blockers, calcium antagonists, and angiotensin-converting enzyme inhibitors—
emerged from widely different areas of investigation. In the beginning, the major breakthroughs that led to the development of these drugs were impossible to forecast, and their ultimate applications were impossible to predict. Although decreases in hypertension-related mortality are impressive, enthusiasm must be tempered because the mechanisms of hypertension are still incompletely understood and prevention is not yet possible. Continued research is needed to extend these advances. This article provided by FASEB’s Breakthroughs in Bioscience series.

**Don't stress out**

A monthly installment of our "What A Year!" website project, introducing life science breakthroughs to middle and high school students and their teachers. In cases of prolonged stress, physiological changes can actually become permanent, resulting in a variety of adverse consequences including reduced immune function and mental illness. This month we look at new work that is investigating two of the most stressful situations imaginable: training to be an Army Ranger and traveling in space.

**Eugene M. Landis and the physiology of the microcirculation**

Essay APS Classic papers by Landis and Landis

**Virtual Cardiology Lab: How is a pedigree useful in diagnosing heart disease?**

This lesson is designed for upper level high school, undergraduate and graduate students learning about the cardiovascular system.

**Work of the Heart**

An introduction to cardiac physiology that demonstrates the work performed by the heart.