UCLA College | Life Sciences
Integrative Biology & Physiology

Departmental Seminar Series

April 3, 2025 (Thursday)
12pm – 1pm PDT
Venue: TLSB 1100

Physiological benefits of the female kidney

~ key role of tubular flow

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Abstract: Kidney tubule organization differs in female compared to male rodents in the abundance of transporters, channels and claudins ("transporters"). Female vs. male rodents exhibit lower fractional reabsorption of glomerular filtrate along the proximal nephron, greater tubular flow and higher fractional reabsorption of sodium along distal segments. The four core genotype model reveals that both sex chromosomes and gonadal hormones influence the differences in transporter abundance. Young females excrete a saline load more rapidly than males, exhibit an amplified pressure natriuresis response, altered responses to diet and hormones. With aging, the female kidney becomes more energy efficient. These physiological differences are predicted to prepare females to meet the fluid and electrolyte demands of pregnancy and lactation without a rise in blood pressure.