

# Diabetic Complications Consortium

**Application Title:** Can the Gut Microbiome Influence Urinary Stone Disease in the Diabetic Population

**Principal Investigator:** Joshua Stern

## 1. Project Accomplishments:

We have established a model of fecal transplant (FT) to study how the microbiome may influence urinary stone disease. We have also began to study the role of SCFA as we have identified that in diabetic animals fecal SCFA levels are abnormally increased and that FT can modulate this increase and keep SCFA levels stable.

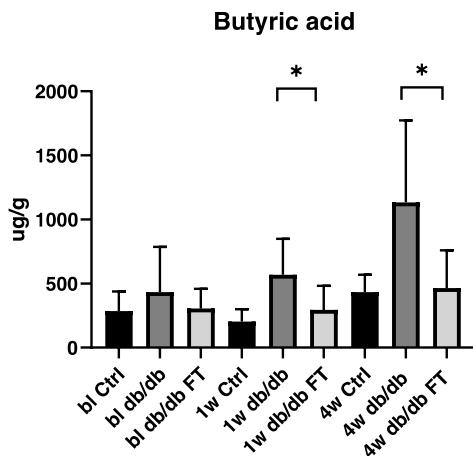
## 2. Specific Aims:

### **Specific Aim 1: To identify a unique gut microbiome profile between diabetic controls and diabetic kidney stone formers:**

**Results:** We are directed by the NIH to focus our efforts on Aim 2.

### **Specific Aim 2: To study effects of fecal transplant on urinary stone risk parameters in the DM2 population.**

**Results:** As seen in the Butyrate figure below, a diabetic animal (db/db) over 4 week period (1w and 4w) will see a marked increase in fecal butyrate from the baseline db animal (bl db/db). One can see clearly that when a separate group of db animals receives a FT (db/db FT) this increase in fecal butyrate is blunted. This data is yet to be published but is certainly of interest to the urologic community at large. Furthermore in this same group of animals we were able to blunt the fall in urinary pH we see with increasingly more severe diabetes.



### **3. Publications:**

Working towards this