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## The Impact of Estradiol and/or Trenbolone Acetate on the Metabolome and Skeletal Muscle Metabolism of Beef Cattle

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Our data management plan is based on guidelines established by the National Science Board and the National Science Foundation and covers dissemination and sharing of materials and data that are expected to be collected as part of the research described in the project proposal. This data management plan has been agreed to at the institutional level and represents our overarching philosophy of open access to all information and data gathered during any and all publically funded scientific research. We intend to make our data as open access as possible in the shortest amount of time that is needed for securing publications.

### **Expected Data Type**

The data generated from completion of this project will consist of the following datasets: 1) proteomics data, 2) metabolomics data, 3) mitochondrial efficiency data, and 4) feedlot performance and carcass quality data.

### **Data Format**

The data collected from completion of the proposed project will be in the following formats:

- ***Proteomics data:*** Proteomics data will be collected and stored in excel files.
- ***Metabolomics data:*** metabolomics data will be stored as comma-separated files (.CSV)
- ***Mitochondrial efficiency data:*** Measurements of mitochondrial efficiency will be conducted at three different time points. All of this data will be stored in an excel file.
- ***Feedlot performance and carcass quality data:*** General growth data on all cattle will be collected throughout the feedlot trial. This data will include weights, individual intakes with the GrowSafe units, and ultrasound data. This data will be stored in an excel file. General carcass data will be collected on cattle once they go to harvest. This data will be collected by the plant and emailed in an excel file that will contain hot carcass weight, marbling score, quality grade, yield grade, and ribeye area. This data will be stored in an excel file.

### **Data Storage and Preservation**

All data collected will be stored and managed on the Utah State University “Box” system. This will ensure that all team members and graduate students have access to the data at all times. Furthermore, all research data obtained will also be stored on several different hard drives/servers in the labs of the individuals responsible for collecting that particular piece of data. All of the data generated in this project will be stored long-term on Box. Upon publication, some data files pertinent to the analysis and/or interpretation of the research manuscript may be too large to fit in the paper itself. In such cases, these data files may be made available for viewing and/or download via a permanent institutional server with web access.

### **Data Sharing and Public Access**

Generally speaking, the data we anticipate generating will be of the sort that we will *want it* to be immediately accessible to the producers, at least. So we do not expect any extraordinary restrictions on data access. At the same time, we will want/need to formally present and publish our research findings, and so it will be important to keep the actual data to ourselves until then. We pledge to get our data to presentation/publication in a reasonable amount of time: we anticipate having all data presented/published within two years of the project end date. After that time, data will be released to the public. All raw metabolomics data will be deposited on Metabolomics

Workbench, which is supported federally by the the National Institutes of Health (NIH) Common Fund.

**Roles and Responsibilities**

The PD will be responsible for both coordinating and ensuring that all data generated in this project is properly stored, backed-up and shared. Additionally, Dr. van Vliet will be responsible for maintaining and sharing the Metabolomics data and depositing this on Metabolomics Workbench. DMP is already in place for related projects, and no funds are requested for its implementation for the current research.