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UMM UNDERGRADUATE *Research* Symposium April 21, 2004

Featuring student research and scholarship from across the campus



Abstracts

2004 Undergraduate Research Symposium

Presenter: Tim Connors

Project Advisor: Gretchen Minton (English)

Title: Commodification of Identity: Materialism in Tamburlaine, Volpone, and Timon of Athens

Type of presentation (Oral / Poster): O

Abstract:

In Tamburlaine, Volpone, and Timon of Athens identity is never absolute but instead dependent upon the characters' material goods. These very different plays are bound together by their central materialistic drives, which work as an animating principle for many of their characters. In each of these plays human bonds are replaced with financial bonds. Tamburlaine replaces bonds of love and friendship with promises of future wealth. Volpone worships gold because of its power to disrupt social bonds. He has only two real interests, the acquisition of gold and the disrupting of human bonds. These interests become one in the person of Celia, a married woman who is deemed equal to gold. Timon uses exorbitant spending to throw parties in order to create himself as the social and economic center of Athens. When his wealth runs out the true character of his friends is revealed, ironically he then finds a large amount of gold but then uses it to buy the hatred of people rather than friendship. These plays are born of a culture of acquisition shown through Tamburlaine's lightning quick rise to political and military power; Volpone's scheming after gold, his sole desire; and the corrupt greed of Athens which seems to revere Timon for his wealth and promptly removes it from him.

Presenter: John J. Determan

Project Advisor: Jane Johnson; Nancy Carpenter (USDA Soils Lab; Chemistry)

Title: Optimizing Trace Gas Storage Methods in Agroecosystem Studies

Type of presentation (Oral / Poster): P

Abstract:

In the early years of agricultural research, much of the research focused on maximizing crop yields. Dramatic increases in production have occurred and the research focus has shifted to minimizing environmental impacts of agriculture, while maintaining food production and profitability. The trace gas of nitrous oxide (N₂O) has been linked to important environmental concerns, the depletion of stratospheric ozone and global climate change. Nitrous oxide is an undesirable by-product of nitrogen fertilization of crops. Currently, studies are in place to determine which farm management system results in the least amount of N₂O emission and thus minimize environmental, while still allowing for farming to remain a viable source of income. One such study is located on the USDA-ARS Morris research farm. Trace gases (Carbon Dioxide, methane and N₂O) are being collected with closed vented chambers. Currently, these gases are stored in syringes until they can be measured for N₂O, methane and carbon dioxide using GC-flame ionization detection, GC-electron capture detection and GC-thermal conductivity detection spectrometry, respectively. The concentration of methane and N₂O can be near the detection limits of the GC, therefore it is critical to optimize storage and transport conditions, especially since it is difficult to store gases without leakage. Studies are needed to measure the amount of trace gas loss over the storage period and what amount of storage time can elapse before the leakage makes the measurements irrelevant. The report will discuss tests used to determine maximum storage time and optimum storage conditions.