**Joseph D. Groom, Jr.**

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**EDUCATION**

2012– PhD candidate. Department of Genetics, University of Georgia, Athens GA

Major Professor: Dr. Jan Westpheling

2011 Intensive German Language Program. Universität Regensburg, Regensburg, Germany

2008–12 B.A. (Molecular & Cellular Biology, German) with Honors.

Vanderbilt University, Nashville TN

**PUBLICATIONS**

**Groom J**, Yi X, Gautier N, Blum D, Westpheling J. A maltose-inducible gene expression system in *Caldicellulosiruptor bescii*. *In preparation.*

**Groom J**, Chung D, Kim S, Guss AM, Westpheling J. Deletion of the *recA* gene of *Clostridium thermocellum* eliminates random chromosomal integration of replicating plasmids: use for stable gene expression. *In preparation*.

**Groom J**, Chung D, Olson DG, Lynd LR, Guss AM, Westpheling J. (2016) Promiscuous plasmid replication in thermophiles: Use of a novel hyperthermophilic replicon for genetic manipulation of *Clostridium thermocellum* at its optimum growth temperature. *Metabolic Engineering Communications* 3, 30-38.

Yu M, Ji L, Neumann DA, Chung D, **Groom J**, Westpheling J, He C, Schmitz RJ. (2015) Base-resolution detection of *N*4-methylcytosine in genomic DNA using 4mC-Tet-assisted-bisulfite sequencing. *Nucleic Acids Research* doi: 10.1093/nar/gkv738.

Chung D, Young J, Bomble YJ, Vander Wall TA, **Groom J**, Himmel ME, Westpheling J. (2015) Homologous expression of the *Caldicellulosiruptor bescii* CelA reveals that the extracellular protein Is glycosylated*.* *PLoS ONE* 10(3): e0119508.

**Groom J**, Chung D, Young J, Westpheling J.  (2014) Heterologous complementation of a pyrF deletion in *Caldicellulosiruptor hydrothermalis* generates a new host for the analysis of biomass deconstruction. *Biotechnology for Biofuels*7,132.

Kendall A, Bian W, Maris A, Azzo C, **Groom J**, Williams W, Shi J, Stewart P, Wall J, Stubbs G. (2013) A common structure for the potexviruses. *Virology* 436,173-178.

Kendall A, **Groom J**, Bian W, McDonald M, Williams D, Stewart P, Ghabrial S, Stubbs G. (2010) Structural studies of filamentous plant viruses by X-ray fiber diffraction and cryo-electron microscopy. *Phytopathology* 100 (6), S60-S61.

**AWARDS/HONORS**

2015–16 Jan and Kirby Alton Graduate Fellowship, University of Georgia

2014 Honorable Mention, NSF Graduate Research Fellowship

2012 – Presidential Fellowship, University of Georgia

2012 Commendation for Outstanding Undergraduate Research,

Vanderbilt University

2008–12 Fielding Boles Honor Scholarship, Vanderbilt University

**RESEARCH SUPPORT**

2015 National Institutes of Health T32 Training Grant ($24,000)

2013-15 Graduate Student Association Travel Award, UGA Genetics Dept ($3000)

**POSTERS/PRESENTATIONS**

***Oral Presentations***

08/2015 *Promiscuous plasmid replication in thermophiles*

International Thermophiles Meeting, Santiago, Chile

03/2015 *Genetic tools for* Clostridium thermocellum.

BioEnergy Science Center Focus Area 2 Meeting

National Renewable Energy Laboratory, Golden CO

06/2014 *Extending genetic methods to the genus* Caldicellulosiruptor *for the study of plant biomass deconstruction.*

BioEnergy Science Center Retreat, Chattanooga TN

08/2010 *The role of* ACA10 *in the Arabidopsis defense response.*

Plant Genome Research Project Summer Student Symposium,

Cornell University, Ithaca NY

***Posters***

08/2016 *Expanding the genetic toolkit for* Clostridium thermocellum DSM 1313.

Molecular Genetics of Bacteria and Phages, Madison WI.

06/2015 *Investigation of an AraC-like Regulator, PecR, that Controls Transcription of a Pectinase Gene Cluster Important for Biomass Deconstruction by* Caldicellulosiruptor bescii.

BioEnergy Science Center Retreat, Chattanooga TN

07/2014 *Extending Genetic Methods to Members of the Anaerobic, Thermophilic Genus* Caldicellulosiruptor *for the Conversion of Plant Biomass to Biofuels.*

Annual Meeting of the Society for Industrial Microbiology and Biotechnology, St. Louis, MO.

09/2013 *Plant Biomass Deconstruction by* Caldicellulosiruptor.

International Thermophiles Meeting, Regensburg, Germany

07/2013 *Genetic Manipulation of* Caldicellulosiruptor *species.*

BioEnergy Science Center Retreat, Chattanooga TN

**MENTORING EXPERIENCE**

2016 Supervisor for Master’s degree student in UGA Biomanufacturing and Bioprocessing Program. Xiunan Yi. *Testing new promoters and signal peptides in* Caldicellulosiruptor bescii.

2014 Supervisor for Young Dawgs high school internship program. Noor Sohal. *Down-sizing a shuttle vector based on a native thermophilic plasmid.*

2013 Supervisor Undergraduate Honors Thesis research. Alyse Ragauskus. *Genetic Manipulation of* Caldicellulosiruptor.

**OUTREACH/SERVICE**

2014–15 UGA Genetics Department Graduate Student Recruitment Chair

2014–15 Student travel grant reviewer. Department of Genetics, UGA.

01/2014 Science fair volunteer. Colham Ferry Elementary School, Athens GA

2013–14 UGA Genetics Graduate Student Association Representative

2013–14 Weekly science outreach volunteer. Hilsman Middle School, Athens GA

2013–15 Yearly interactive presentation: *The Carbon Cycle.* BioEnergy Awareness Day, State Botanical Garden, Athens GA

**ADDITIONAL TRAINING**

2015 Visiting Scholar. National Renewable Energy Laboratory, Golden, CO.

2010 Plant Genome Research Project Intern. Boyce Thompson Institute for Plant Research, Cornell University, Ithaca NY

**REFERENCES**

Jan Westpheling, Ph.D., Professor

Genetics Department

University of Georgia, Athens, GA

Graduate Thesis Adviser

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Gerald Stubbs, D.Phil., Professor Emeritus

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Vanderbilt University, Nashville, TN

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