

Carrie A. Smith

E-mail: cajacobu@unity.ncsu.edu

Office: 919-515-6995

Education

- North Carolina State University – Raleigh, NC
Ph.D. student, Genetics, Graduation Date: September 2007 (expected)
- University of Delaware – Newark, DE
B.S., Biological Sciences with a concentration in Biotechnology, May 2002

Research Experience

North Carolina State University, Department of Genetics, Raleigh, NC
Graduate Research Assistant, August 2002 - present

- Thesis title: “The many roles and controls of AflR, the transcriptional regulator of aflatoxin biosynthesis”
 - Natural Antisense Transcripts (NATs) in *Aspergillus flavus*
 - Silencing of the aflatoxin gene cluster in a diploid strain of *Aspergillus flavus*
 - The role of NADH oxidase *nadA* in aflatoxin biosynthesis and oxidative stress in *Aspergillus flavus*
- Skills: genomic DNA isolation, DNA cloning, DNA sequence analysis, PCR, DNA gels, RNA isolation, RNA gels, RT-PCR, quantitative RT-PCR, fungal transformation, bacterial transformation, Southern blot analysis, enzyme assays, TLC analysis, plant bombardment

University of Delaware, Newark, DE

Undergraduate Research Assistant, January 2001 - May 2002

Supervisor: Dr. Alan Shapiro

- Assisted with a screen in the model plant *Arabidopsis thaliana* to identify mutants with an altered hypersensitive response.
- Skills: genomic DNA isolation, PCR, DNA gels, manual crosses of *Arabidopsis thaliana*

Teaching Experience

North Carolina State University, Department of Genetics

Private Tutor – Genetics, Fall semester 2007

Teaching Assistant - Genetics, Fall semester 2004 and Spring semester 2005

Undergraduate level course with discussion sessions

- Responsible for teaching two discussion sections each semester
- Responsible for providing in depth coverage of material presented in lecture, designing weekly handout and handout answers, grading weekly homework assignments, proctoring exams, assigning participation grades

North Carolina State University, Biotechnology Workshop

Teaching Assistant – Biotechnology Workshop for North Carolina High School Biology Instructors, Summer 2004

- *Two-day workshop to demonstrate lab experiments for teachers to bring back to their schools to teach high school students*
- Responsible for laboratory set up, demonstrating protocols, answering questions

Mentoring Experience

- Mentored a graduate student from Italy for five weeks, 2007
- Mentored a high school student during summer, 2004

International Experience

- Spent two weeks in a laboratory in Rome, Italy as part of a collaboration

Honors/Awards

- Recipient of a student travel award through the Genetics Society of America to attend the Fungal Genetics Conference (2007)
- Recipient of the Genetics Department Outstanding Teaching Assistant (2006)
- Selected by the Genetics Department to participate in the Graduate Student Professional Development Workshop (2006)
- Nominee for University Graduate Student Association Teaching Assistant award (2006)
- Recipient of the Outstanding Graduate Student Teaching Award presented by the College of Agriculture and Life Sciences (2006)
- Recipient of an Initiative for Future Agriculture and Food Systems (IFAFS) Research Fellowship through the USDA (2002-2006)
- Recipient of a Peter White Fellowship (2001)

Professional Societies

Sigma Xi (2007-present)

Genetics Society of America (2007-present)

American Phytopathological Society (2006-present)

Service

- Participated in Service Raleigh, a one day community service program (2007)
- Recruitment Chair (2003-2004), Vice-President (2004-2005); (2006-2007), and Genetics Graduate Student Symposium Chair (2005-2006) of the Genetics Graduate Student Association.
- Genetics Chapter representative (2004-2005) and Secretary (2005-present) for the University Graduate Student Association, North Carolina State University
- Member of the Teaching Effectiveness Committee under the University Graduate Student Association, North Carolina State University (2006-2007)
- Member of the Academic Policy Committee under the University Graduate Student Association, North Carolina State University (2004-2006)
- Graduate student representative for the University Student Health Standing Committee (2005-present)
- Helped to design and run the Science Olympiad at North Carolina State University (May 2004)

Publications

Smith, C.A., Woloshuk, C.P., Robertson, D., and Payne, G.A. (accepted for publication). Silencing of the aflatoxin gene cluster in a diploid strain of *Aspergillus flavus* is suppressed by ectopic *afIR* expression. *Genetics*. (Accepted April 2007)

Price, M.S., Yu, J., Nierman, W.C., Kim, H.S., Pritchard, B., **Jacobus, C.A.**, Bhatnagar, D., Cleveland, T.E., and Payne, G.A. 2006. The aflatoxin pathway regulator *AfIR* induces gene transcription inside and outside of the aflatoxin biosynthetic cluster. *FEMS Microbiol Lett* 255: 275-279.

Invited Presentations

Trans-sensing mechanism in a diploid strain of *Aspergillus flavus*. April 2006. 3rd *Aspergillus* Meeting. Vienna, Austria.

Understanding the Link between a Natural Antisense Transcript and the Regulation of Aflatoxin Biosynthesis. March 2005. 2nd *Aspergillus* Meeting. Pacific Grove, CA.

Other Oral Presentations

NADH oxidase *nadA*, a link between aflatoxin and oxidative stress in *Aspergillus flavus*. July 2007. American Phytopathological Society Meeting. San Diego, CA.

The many roles and controls of *AfIR*, the transcriptional regulator of aflatoxin biosynthesis. May 2007. North Carolina State University, IFAFS-USDA seminar series. Raleigh, NC.

NADH oxidase *nadA* and its involvement in oxidative stress in *Aspergillus flavus*. March 2007. North Carolina State University, 31st Annual Genetics Graduate Student Symposium. Raleigh, NC.

- Silencing of the aflatoxin cluster in a diploid strain of *Aspergillus flavus* is relieved by ectopic *afIR* expression.** July 2006. American Phytopathological Society Meeting. Quebec City, Canada.
- Trans-sensing Mechanism in a Diploid Strain of *Aspergillus flavus*.** February 2006. North Carolina State University, 30th Annual Genetics Graduate Student Symposium. Raleigh, NC.
- A Trans-sensing Mechanism Affecting Gene Expression of the Aflatoxin Gene Cluster.** December 2005. North Carolina State University, IFAFS-USDA seminar series. Raleigh, NC.
- Trans-sensing Mechanism in a Diploid Strain of *Aspergillus flavus*.** September 2005. Plant Molecular Biology Retreat. Wrightsville Beach, NC.
- Understanding the Link between a Natural Antisense Transcript and the Regulation of Aflatoxin Biosynthesis.** April 2005. North Carolina State University, 29th Annual Genetics Graduate Student Symposium. Raleigh, NC.
- A Natural Antisense Transcript of *afIR*, the Aflatoxin Transcriptional Regulator in *Aspergillus flavus*.** November 2004. North Carolina State University, IFAFS-USDA seminar series. Raleigh, NC.
- Geminivirus Induced Transgene Silencing in *Arabidopsis*: Targeting Transcribed and Untranscribed Sequences.** March 2004. North Carolina State University, 28th Annual Genetics Graduate Student Symposium. Raleigh, NC.
- Movement of Silencing Signals.** September 2003. North Carolina State University, IFAFS-USDA seminar series. Raleigh, NC.
- Movement of the Silencing Signal.** September 2003. Plant Molecular Biology Retreat. Asheville, NC.
- Localization of Geminivirus RF DNA in tobacco cell lines using GFP.** March 2003. North Carolina State University, 27th Annual Genetics Graduate Student Symposium. Raleigh, NC.

Poster Presentations

- The NADH oxidase *nadA* and its involvement in oxidative stress in *Aspergillus flavus*.** March 2007. 24th Fungal Genetics Conference and 4th *Aspergillus* Meeting. Pacific Grove, CA.
- Silencing of the Aflatoxin Cluster in a Diploid Strain of *Aspergillus flavus*.** April 2006. 8th European Conference on Fungal Genetics & 3rd International *Aspergillus* Meeting. Vienna, Austria.
- nadA*, a Gene Regulated by *AfIR*, does not appear to Affect Aflatoxin Production.** October 2005. 5th Annual Fungal Genomics, 6th Annual Multi-Crop Fumonisin, 18th Annual Multi-Crop Aflatoxin Elimination Workshops. Raleigh, NC.
- Understanding the Link between a Natural Antisense Transcript and the Regulation of Aflatoxin Biosynthesis.** March 2005. 23rd Fungal Genetics Conference. Pacific Grove, CA.
- Episomal down-regulation of gene expression in plants and fungi.** January 2004. Keystone Symposia: Emerging Mechanisms of Epigenetic Regulation, Tahoe City, CA.