

Thursday, April 9, 2026 at 10:29:18 AM Eastern Daylight Time

Subject: Thesis Defense: Amy Young, MS Biology
Date: Thursday, April 9, 2026 at 10:27:10 AM Eastern Daylight Time
From: SSB Faculty List on behalf of Diane St. Germain
To: SSB-FACULTY-LIST-L@LISTSERV.GMU.EDU

Thesis Defense Announcement
To: The George Mason University Community

Candidate: Amy Young

Program: M.S. In Biology

Date: April 22, 2026

Time: 11:00 A.M. Eastern Time

Location: In Person - IABR Conference Room 1003, Science & Tech
Campus, Manassas VA 20110

and Via Zoom

Join Zoom Meeting

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Meeting ID: 931 8098 6005

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Committee Chair: Dr. Lance Liotta

Committee Members: Dr. Alessandra Luchini, Dr. Emanuel Petricoin

Title: Sample Authentication of Saliva through 96-Single Nucleotide

Polymorphism (SNP) Genotyping

Abstract:

Drugs of abuse testing is common practice in the workforce, for parolees and probationers, and for testing drivers under the influence. Urine drug testing (UDT) has been the standard; however, blood, hair, breath, and saliva are also acceptable. The main challenges to drug testing are the difficulties getting to a drug testing center and sample tampering. To address these challenges, this study will analyze saliva to create a DNA fingerprint to use alongside drugs of abuse testing to prevent sample tampering and allowing people to provide samples without having to travel to a drug testing center. A DNA fingerprint is a profile created with an individual's unique combination of nucleotides. These nucleotides are called single nucleotide polymorphisms (SNPs). It was found that saliva stored at -20 °C was the most stable. Match rates between donor samples range from 36.6%-52.7%, whereas, within donor replicates were highly concordant with a range of 86%-100%. The sample that was spiked with drugs of abuse were consistent with the between-replicate variability of un-spiked samples. Therefore, this process is viable and would be advantageous to drugs of abuse testing.

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