

The Effects of Drugs on Bugs: An Independent Study

by Derek Monthei



Have you ever wondered about the effects of drugs on bugs and how that information is used in the field of Forensics? I was fortunate last semester to explore these questions when I designed (with the help of my mentor) a Forensic Science Independent Study in the fields of toxicology and entomology. It was a great experience, giving me the opportunity to apply material used in previous classes, to practice new laboratory skills and to learn more about these two fields. My experiment was an extension of what Michelle Peace has been doing in her forensic toxicology laboratory. She has been working in the area of entomotoxicology, which is the use of insects as alternative toxicological specimens. It was decided that I would study the effects of Carisoprodol, which is sold under the trade name Soma®, on the life cycle of a fly species. Carisoprodol is a muscle relaxant that is sold by prescription only.

The purpose of my experiment was to determine if the drug, Carisoprodol, affected the growth cycle of the species *Phormia regina* (also known by the common name of the Black Blow Fly), when the larvae of this species ingested varying concentrations of the drug. Any significant changes in growth cycle would mean changes in the post mortem interval (PMI) of the deceased for someone who had large concentrations of the drug in their system when they died. Colonies of *Phormia* were reared on sugar and water and then given pork loin to induce ovipositing of eggs. The eggs were then placed on drug-laden meat and reared until the larvae reached the third instar. The larvae were then preserved at -20 °C and later were

weighed and measured. The results from this experiment indicated that Carisoprodol had little to no effect on the life cycle of *Phormia regina*, indicated by no change in their developmental timing and no significant difference in larval length.

Even though Carisoprodol had no effect on the fly's life cycle, the experiment is significant because a carbamate like Carisoprodol has not been tested before in this manner. This experiment could be done with another species of fly and have different results. Also, another person doing an independent study could take the maggots that I collected and determine if Carisoprodol accumulated in the maggots or if a metabolite of the drug is present. The presence of Carisoprodol would be significant to a toxicologist because if a body found at a crime scene was devoid of tissue, the toxicologist could test maggots to determine if the deceased had Carisoprodol in his or her system. My study showed that a forensic entomologist would not have to adjust the PMI based on the presence of the drug because the insect's life cycle is not changed due to the drug.

I have been invited to write my results and present them at a regional conference. Independent studies give students the opportunity to make a contribution to science and to explore future
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What is a Ram Pal Anyway?

by Danielle Bareford

If you are looking for a cool way to be of service to the university and a way to strengthen mentoring and teaching skills, then I recommend that you consider the Forensic Science Ram Pal Program. Last fall, I participated in this pilot mentoring program. I attended weekly VCU 101 lectures comprised of forensic science freshmen and was assigned to a group of students taking the 10-week course. Each week after lecture, we organized into our groups for a “break-off” period where we discussed topics pertaining to the lecture and any other student concerns. Our primary role as Ram Pal mentors was to make ourselves available for the students’ questions regarding university services, academics, and any other concerns brought to our attention.

Most topics chosen for our discussions were very important to all freshmen, while some were more specific to freshmen in the Forensic Science Program. As a Ram Pal, it is a relief to realize that you don’t have to have the answers to all potential questions, understand all university policies, or be familiar with all of the services offered at VCU. The Ram Pals were able to consult their own mentors, the VCU 101 instructors, for aid in providing the assistance students required.

While the Ram Pal mentorship program provided important information to the students, it also brought a diverse group of people together, sharing an interest in forensic science, to form study groups, create lasting student-teacher relationships, and begin new friendships. It was a rewarding experience and the most important knowledge I gained from being a Ram Pal was that first-year experiences are just as unique as the individual experiencing them.

Ram Pals Needed for 2004-05

The Forensic Science Program is currently seeking Ram Pals for fall 2004. For information and/or an application, e-mail your request to fos@vcu.edu. Applications are due Friday, March 12, 2004.

Greetings from Your Student Club President

Dear Forensic Science Student,

Here we are loaded down with homework yet again! However, there are some other things to put on your “To Do” list, such as get involved with the Forensic Science Student Club. This club not only enriches your unique education here at VCU, it also makes you an all-around more appealing applicant for pre-professional programs. It also is a great way to make contacts for future employment.

Currently the club is assembling a Graduation Committee to assist in the first-ever Forensic Science program graduation ceremony this May. A sign-up sheet for those interested in this committee will be brought to each one of general meetings listed below:

Wednesday 2/25 from 4:00-5:00 p.m., Forum Room, University Student Commons, Russ Chandler, Division Chief for VA Fire Marshal Academy, “*Case Studies in Fire Investigations.*”

Monday 3/29 from 2:00-3:00 p.m., Location TBA and Demonstration-Monroe Park Blair Miller and his K-9 companion, Thor, “Human Remains Searching.”

Thursday 4/8 from 5:00-6:00 p.m. Location TBA, Art Westveer, Behavioral Science Unit FBI, Quantico, VA.

Please join us on the above dates to meet these wonderful guest speakers!

Sincerely,

Pamela Jill Grizzard

FSSC President



A Plan for Your Career Development

The University Career Center's Career Development Plan recommends specific career planning steps based on your classification. These steps can easily be turned into building blocks to help you make the connection between your major and your career. What are you building?

Freshman Year

- Talk with professors about your interests
- Come to the Career Center (907 Floyd Avenue, University Student Commons, Room 130) and take SIGI Plus, designed to help you identify skills and interests and how they relate to career fields
- Take on-line computer tests such as Career Key, www.careerkey.com
- Join clubs
- Spend time in the Career Center Resource Library

Sophomore Year

- Continue to read more about careers in your field
- Visit websites devoted to Forensic Science
- Schedule an appointment with Shajuana Payne, the Career Center counselor for Forensic Science majors
- Explore potential organizations that offer internships and co-op experiences
- Work with your career counselor to begin to develop a resume



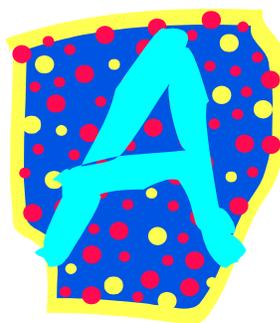
Junior Year

- If you have not already met with Shajuana Payne, counselor for Forensic Science majors, please do so
- Develop a resume
- Join your profession's professional organization as a student member
- Register with the Career Center's online resume referral system known as CareerConnections
- Attend Career Fairs and talk with employers
- Identify internship or Co-op opportunities
- Apply for externships through the Alumni Office
- Network

Senior Year

- Attend job search programs
- Work with Shajuana Payne to plan strategies and options
- Revise your resume to include internships or new experiences
- Sign up for on-campus interviews with companies or agencies
- Attend more Career Fairs at other locations
- Let the faculty in your major know what type of job you are looking for

Advance Registration



is for Advance Registration and Advising. Plan to see your Forensic Science advisor the week of **March 29th-April 2nd.**

Registration dates are as follows:

Seniors	April 7
Juniors	April 12
Sophomores	April 19
Freshmen	April 26

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career interests. Seniors who want to do an independent study must meet with the professor they want to work with beforehand and discuss the logistics and the timeline for the experiment. Students must make sure they have time in their schedule as it is usually time consuming. It can be a great experience!



Important Dates

Please see Forensic Science Student Club dates on page 2.

March 12 - Ram Pal application deadline

March 22 - Summer advance registration

March 26 - Last day to withdraw with a mark of "W." Talk with financial aid before withdrawing from a class.

March 29-April 2 - Advising for fall semester

April 5 - Fall registration begins

April 19 - Deadline to apply for fall and summer internships

May 4 - Classes end

May 5 - Reading Day

May 6-14 Final Exams

May 22 - Commencement and Diploma Ceremony

Need Help? Free tutoring for math and science classes is available every Monday, Tuesday and Wednesday evening from 5-7 pm in the Learning Center at the Education Annex, 109 N. Harrison street. Just walk in. Includes MATH 141, 151; BIOL 151-52; BIOL 218; CHEM 100; 101-02; CHEM 301-302.

Academic Success Program Workshops offer help on note-taking, test-taking, stress management, and other study strategies. Visit <http://www.pubinfo.vcu.edu/calendar/searchKey.asp?>

Ask an Advisor

"How can I get work experience in this field while I am attending school."

There are several ways to do this. First, **FRSC 493, Forensic Science Internships** are available for Forensic Science seniors who have completed 27 credits in the core program and have a 2.75 cumulative grade-point average. For more information, visit <http://www.has.vcu.edu/forensics/intern>. The deadline for a fall 2004 internship application is April 19, 2004.

Second, VCU's **Cooperative Education Program** allows you to combine paid work experience with classroom learning. Interested students should visit the University Career Center's web page at <http://www.pubinfo.vcu.edu/dsa/coop/index.html>.

Third, VCU's **Office of Alumni Activities** offers a week-long externship program which provides students the opportunity to shadow someone on the job for a week. This program is offered during winter and spring breaks, and the application deadline is in early October.

Fourth, there are several **governmental internship programs** which may be of interest to Forensic Science students:

- (a) The FBI Honors Internship Program at <http://www.fbi.gov/employment/honors.htm>.
- (b) Federal Law Enforcement Training Center's College Intern Program (FLETC) at <http://www.fletc.gov/intern.htm>.
- (c) The Department of the Navy's Naval Criminal Investigative Service' Student Internship program at www.ncis.navy.mil.

Applications for these federal programs are extensive; those interested are encouraged to begin the process early.

More about Bugs

CSI: Crime Scene Insects, currently on exhibit through May 17th at the Science Museum of Western Virginia (Roanoke, VA). For more information, visit <http://www.smwv.org>.

