

amalgam

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Dear Readers,

Welcome back to Amalgam!

Of course, some of you may not have realized there was an Amalgam to come back to. Here's a brief history:

Amalgam became part of the University of Virginia graduate community in 2004, and the first issue was published in the fall of 2005. An unfortunate hiatus followed this promising beginning, brought on when several key administrative members completed their degrees. Thanks to Tom O'Halloran (recent Ph.D. graduate from Environmental Science), Amalgam stirred back to life in the fall of 2007.

Now with your support, we hope once again to be a thriving part of academic life at U.Va. Our goal is to share with you, our readers, some of the best academic work the university has to offer—but also to serve as a forum for debating important current events.

As our name suggests, you can expect to find a wide variety of content in Amalgam. In this issue, we offer a selection of scholarly work, book reviews, and research reports. We also have a brief recap of this past year's Huskey Research Exhibition. And of course, our "Frequently Asked Questions" section offers preemptive answers to those of you interested in contributing to our next issue.

Finally, please send us your thoughts, comments, and suggestions. Or better yet, join our team!

Happy reading,

Amalgam Staff

The annual Robert J. Huskey Graduate Research Exhibition provides an environment where UVA's graduate students from various disciplines showcase their work to diverse audiences. Academic judges select the best from students' paper presentations and posters. Amalgam is happy to present summaries of some of the papers that were awarded first place in this year's exhibition.

Herpes Simplex Virus Replication: Roles of Viral Proteins and Nucleoporins in Capsid-Nucleus Attachment

Anna Maria Copeland, Microbiology
1st Place, Biological & Biomedical Sciences
Paper Presentations

Our lab studies *herpesviridae*, a large family of enveloped dsDNA viruses. These viruses are responsible for many human diseases, which range widely in severity and affect many different tissue types. Specifically, our work is done with herpes simplex virus type 1 (HSV-1). HSV-1 is the archetypal herpesvirus and has long been studied as a model for the entire herpes family. Its study has expanded knowledge of herpesvirus replication strategies and led the way for specific therapies for many of the human diseases caused by these viruses.

In order to initiate a productive infection, a herpesvirus must deliver its DNA into a host cell nucleus, a process termed "uncoating." The first step in the uncoating process occurs when the DNA-containing viral capsid docks onto the host nuclear pore complex (NPC). The viral DNA then translocates through the nuclear pore into the nucleoplasm, and virus replication begins. We have investigated the roles of both viral and cellular proteins in the process of capsid-nucleus attachment with the goal of determining which cell protein serves as the nuclear receptor for HSV-1 capsids and which herpes proteins bind to that nuclear receptor to anchor capsids to the NPC. A better understanding