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## Focus on Research, Member's Profile: Jim Casanova, PhD

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A member of the Digestive Health Research Center since its inception, Dr. Casanova is an associate professor of cell biology and frequently collaborates with other members, primarily Drs. Peter Ernst and Amy Bouton. His current research interests include the biology of epithelial cells and the regulation of cell function by small GTP binding proteins. He also makes use of cultured epithelial cell models to study the pathogenesis of intestinal pathogens such as Salmonella in a physiologically relevant setting. Recently he has begun to incorporate mouse models into these studies and hopes to make significant progress later this year.

“My research is generally aimed at understanding the mechanisms by which epithelial cell function is regulated and how these cells are manipulated by bacterial pathogens. Specifically we are uncovering the mechanisms used by Salmonella to infect host epithelial cells. Although most Americans are familiar with Salmonella as a cause of food poisoning, more virulent strains cause typhoid fever in developing countries and are a major world health problem. These are devious organisms - they trick epithelial cells into internalizing them, which protects them from the immune system. They can also cross the epithelium and colonize macrophages which transport them to the liver and spleen. Salmonella have evolved sophisticated machinery that allows them to survive and replicate inside infected cells. However, infected cells send off signals that trigger a massive inflammatory response which eventually results in clearance of the infection. We are interested in how the bacteria trigger their own internalization, how they survive inside host cells, and how infected cells trigger

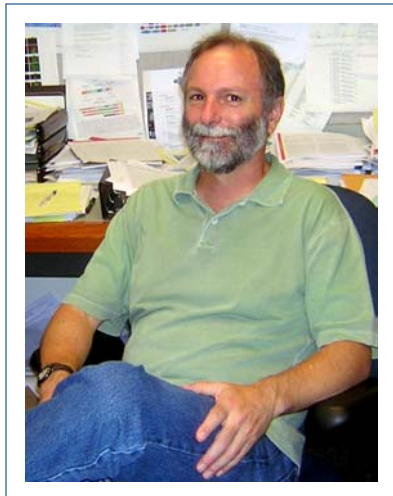
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*“Uncovering the mechanisms used by Salmonella to infect host epithelial cells.”*

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## Focus on Research



*Jim Casanova, PhD*

an inflammatory reaction.”

A past recipient of a Senior Research Award from the Crohn's and Colitis Foundation of America, Dr. Casanova is currently supported by a renewed 2005 NIH grant for study of mechanisms of Salmonella invasion and transmigration. Dr. Casanova's access to resources has been greatly enhanced through his use of the histology and flow cytometry core services and he has found the core staff very helpful and fair with pricing. As he gets further into mouse modeling he plans to send even more work our way, especially since the UVa Cancer Research Center will no longer be subsidizing core services for their members.

Jim helps further the goals of the DHRC by being on the review board for the center's pilot feasibility program and is scheduled to deliver a talk with the DHRC Seminar Series on January 30<sup>th</sup>, presenting his latest results on "Host cell responses to Salmonella infection". You can reach him by phone at 3-4821 or email at [jec9e@virginia.edu](mailto:jec9e@virginia.edu)

### Recent Publications:

- The Arf6 GEF GEP100/BRAG2 regulates cell adhesion by controlling endocytosis of beta1 integrins. *Curr Biol.* 2006 Feb 7;16(3):315-20
- The DOCK180/Elmo complex couples ARNO-mediated Arf6 activation to the downstream activation of Rac1. *Curr Biol.* 2005 Oct 11;15(19):1749-54
- WAVE2 signaling mediates invasion of polarized epithelial cells by *Salmonella typhimurium*. *J Biol Chem.* 2005 Aug

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*UVa Cancer Research Center will no longer be subsidizing core services for their members*

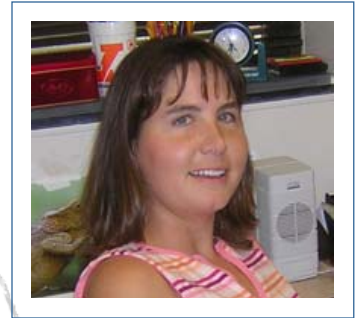
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## Submit News Items

If you are interested in submitting news or ideas to DHRC members and users via this quarterly newsletter please contact the editor Shelley Moss by phone 982-3821, email [swm2v@virginia.edu](mailto:swm2v@virginia.edu) or the DHRC director Fabio Cominelli at 243-6403, email [fc4q@virginia.edu](mailto:fc4q@virginia.edu)

## New Face in Immunology/Cell Isolation Core

During the months of September and October, while Liz Wiznercwicz is out on maternity leave, Dr. Peter Ernst's newest laboratory technician, Mary Harp, will be temporarily handling all orders and laboratory processing at the Immunology and Cell Isolation Core. As such, she will be the core's point of contact for all customers. Mary has been a laboratory tech at UVa for six years, most of which were spent in Mark Worthington's lab, you will find her very easy going and professional. Besides enjoying lab work she is an avid equestrian, competes often in local events and recently acquired her own horse farm near Routes 29 and 33. You can reach her direct phone at: 2-3695 and email at: [mgh3m@Virginia.edu](mailto:mgh3m@Virginia.edu)



Mary Harp, Laboratory Technician

## Interested in Joining the DHRC?

Full members of the Digestive Health Research Center are expected to have active Gastroenterology related research programs that are supported by peer reviewed extramural funding. Investigators who do not meet the above grant criteria can become an associate member by participating in active GI research alone or provisional membership by sufficiently indicating their future plans toward GI investigation. Any investigator wishing to become a member at any level should:

1. Complete this [fillable pdf membership application form](#) and send or fax this form to Gail Hundley by email at: [egh4n@virginia.edu](mailto:egh4n@virginia.edu) or Fax: 243-6405
2. Additionally, please submit your current biosketch or CV with the application form

A member of the administrative core will contact you for a meeting if required. Your application, biosketch and any supporting materials will be sent to our board, who will make decisions during regularly scheduled meetings. If accepted you will be given membership commensurate with the level indicated on your application.

As a member you will be eligible for subsidized user rates at all of our core facilities. All nonmembers wishing to use core services must be charged at full cost, contact individual cores for a description of current charges. Thanks for your interest in the DHRC.

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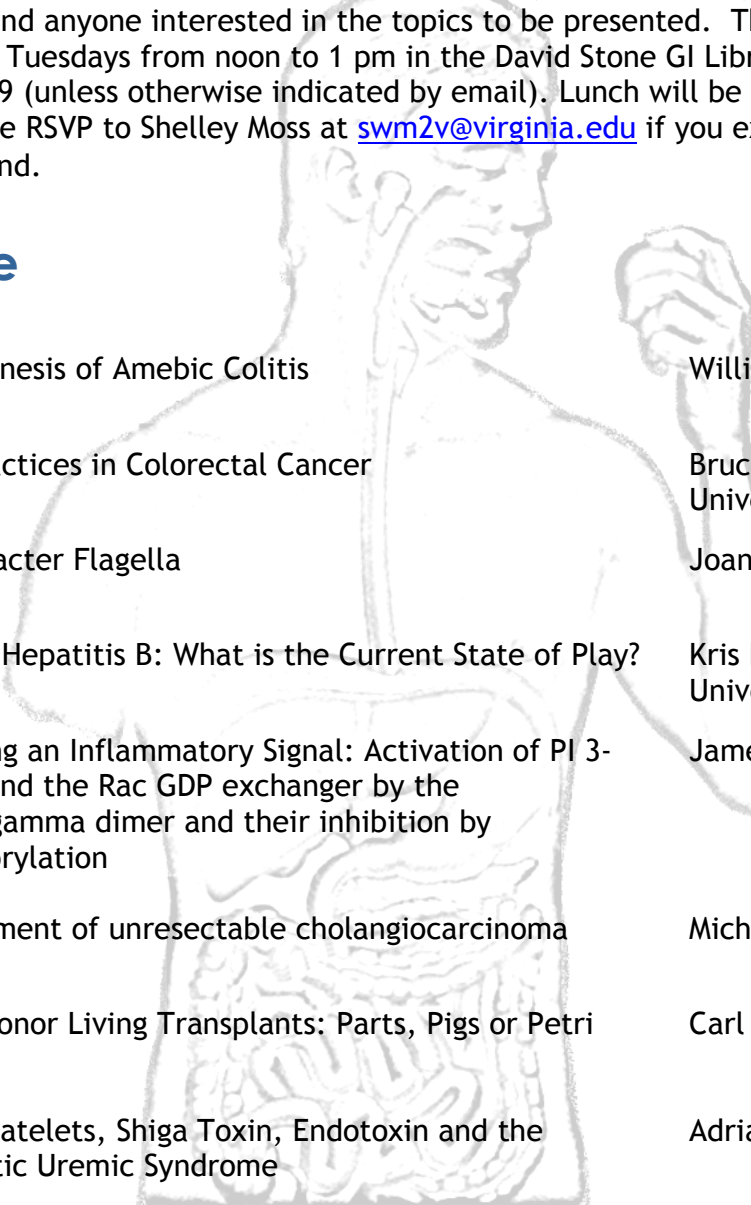
*As a Member you will be eligible for subsidized user rates at all of our core facilities.*

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## DHC Seminar Series Fall Schedule

The 2006-07 DHC Seminar Series is directed towards members, their trainees, laboratory personnel, GI Fellows and anyone interested in the topics to be presented. The series is CME accredited and held on Tuesdays from noon to 1 pm in the David Stone GI Library, West Complex, 2<sup>nd</sup> Fl RM 2109 (unless otherwise indicated by email). Lunch will be provided for the Seminar Series so please RSVP to Shelley Moss at [swm2v@virginia.edu](mailto:swm2v@virginia.edu) if you expect a group larger than two to attend.

### 2006 Schedule



Sept 19	Pathogenesis of Amebic Colitis	William Petri, MD, PhD
Sept 26	Best Practices in Colorectal Cancer	Bruce Sands, MD University of Chicago
Oct 10	Helicobacter Flagella	Joanna Goldberg, PhD
Oct 17	Chronic Hepatitis B: What is the Current State of Play?	Kris Kowdley, MD University of WA
Oct 24	Inhibiting an Inflammatory Signal: Activation of PI 3-kinase and the Rac GDP exchanger by the Gbeta/gamma dimer and their inhibition by phosphorylation	James Garrison, PhD
Oct 31	Management of unresectable cholangiocarcinoma	Michel Kahaleh, MD
Nov 7	Living Donor Living Transplants: Parts, Pigs or Petri Dishes	Carl Berg, MD
Nov 14	Blood platelets, Shiga Toxin, Endotoxin and the Hemolytic Uremic Syndrome	Adrian Gear, PhD
Nov 21	Ages and Stages in IBD	William Tremaine, MD Mayo Clinic
Dec 5	Multimodality in small animal imaging	Stuart Berr, PhD
Dec 12	TBA	Wa'el Jarjour, MD