

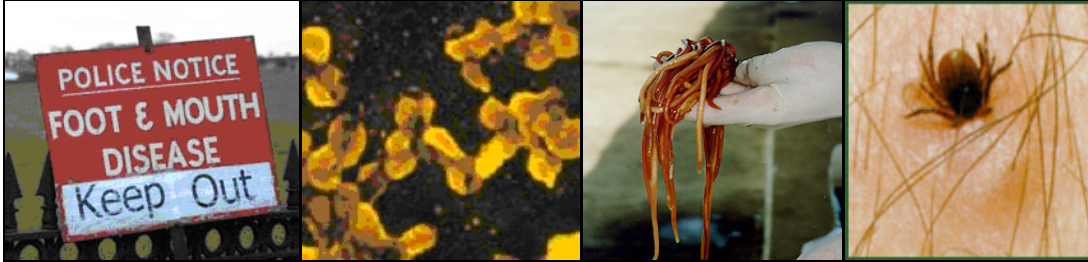


# Notes from the Field

May 2004

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## The Center for Infectious Disease Dynamics (CIDD)



### *Infectious disease research at Penn State*

At Penn State University there are well over 200 members of Faculty that have expressed an interest in disease. These include researchers in Departments as diverse as History, Anthropology, Architecture, Statistics, Physics and Engineering as well as the more traditional Departments such as Veterinary Science, Biology and BMB. The aim of The Center for Infectious Disease Dynamics (CIDD) is to bring together a core grouping of individuals interested in the dynamics of disease infections at a range of scales that stretches from the intracellular aspects of virus-host interactions through to the spatial spread of disease. The focus of CIDD is to bring together workers from different disciplines and stimulate truly interdisciplinary research.

To initiate the Center, we have focused on 2 or 3 systems to explore particular aspects of disease dynamics. First, we have started a working group looking at how seasonal changes in parasite transmission interact with the development of acquired immunity to influence parasite-host dynamics. Second, we have been looking at how parasites stimulate cross immunity within a host and the consequences of immuno-suppressive effects on disease dynamics. Third, we are developing some joint-work on the development of virulence in the Bordetella-mouse system and we are examining how game theory can be applied to an understanding of the evolutionary dynamics of certain diseases. CIDD is a virtual

center that uses a web interface to draw together disciplines by highlighting developments, papers and seminars. Our new website is about to go live and will provide full details of our research projects and activities.

### *Why is CIDD important?*

Issues on infectious diseases are to the fore with increasing threats from bio-terrorism, emerging diseases and the evolution of resistance to chemotherapy. Recent disease outbreaks such as the Foot and Mouth epidemic in the UK, the spread of SARS from China and the recent Influenza pandemic have shown that application of control strategies requires a dynamical approach that examines both how pathogens develop within a host and then how they spread through populations in time and space. To obtain such an understanding of the dynamics of infectious diseases requires a truly interdisciplinary approach that cuts across scales and disciplines from those workers that examine within host dynamics (e.g. immunologists, virologists, evolutionary biologists) through to those examining the spread of pathogens (e.g. population dynamists, epidemiologists).

The Center is run out of 513 Mueller Lab, under the direct supervision of Peter Hudson in a close working partnership with Ottar Bjornstad.

~ Sarah Perkins, Postdoc Scholar

### **CIDD Contacts:**

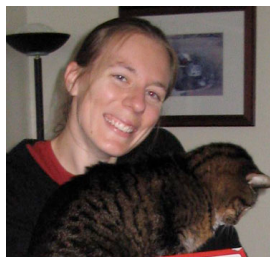
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**See next month's Newsletter for  
CIDD web address**

*Notes from the Field* will have one summer edition on the 1<sup>st</sup> of July. Please send submissions to Jenny Edwards jme145@psu.edu by June 25<sup>th</sup>.

## Introducing...



**Tracy Gartner** is a visiting postdoc in Dave Eissenstat's lab, and is also doing research with Kathleen Treseder, who is at the University of California Irvine. Her current research is examining how spatial and temporal patterns of leaf

litter mixing influence the fungal community and decomposition dynamics across a burn sequence in Alaska. She received her Ph.D. from the University of Connecticut with Zoe Cardon, where her interest in decomposition was sparked by playing with mixtures of sugar maple and red oak leaf litter on acidic and calcareous sites in northwestern Connecticut. An additional side effect of being at UConn was developing a love for basketball and fanatical sports fans. She also enjoys hiking, playing the violin, and relaxing with friends, family, and her cats. She is always looking for new ways to be involved in the Ecology program.



**Louise Comas** joined the USDA-ARS Pasture Lab as a post-doc after finishing her PhD at Penn State in Nov of 2001. She is examining the physiological ecology of pasture species to identify ways that species might be combined to improve grazing lands. Her work is in collaboration with

Drs. Howard Skinner and Sarah Goslee at the USDA. Her research interests include comparative plant biology, plant community structure and mechanisms of plant competition. She is especially interested in below-ground interactions between plants. Her PhD with Dr. David Eissenstat was on examining variation in root traits of co-existing forest trees. Louise enjoys traveling, designing stained glass, biking and cross-country skiing.

### Omer Falik



finished his Ph.D. at the Ben-Gurion University of the Negev (Israel) in 2001. As a plant ecologist Omer is intrigued by the ways plants interact with each other and their immediate surroundings, including mechanisms that influence

plant establishment, below- and above- ground productivity, and root competition and allelopathy. In this area, Omer is especially interested in studying the phenomenon of self/non-self root recognition and discrimination: the ability of plants to discriminate between roots that belong to the same individual (*self*) and roots that belong to other (*non-self*) plants. Currently Omer is a post-doctorate fellow with Professors David Eissenstat and Roger Koide in the Horticulture Department.

Omer's foray into plant ecophysiology is to examine how latitude of plant origin affects plant root and mycorrhizal fungal respiratory responses to soil temperature. Omer enjoys travelling, hiking, listening to classical music and playing the accordion. His dream is to be a faculty member in UC Santa Barbara.

On Wednesday April 21<sup>st</sup> students, faculty and other interested parties gathered in the HUB auditorium for **A Colloquium on Environmental Initiatives at Penn State**, sponsored by Penn State Institutes of the Environment. The second session began with an animated talk about the successes of the Penn State Institutes of the Environment by William Easterling, who heads the organization. Easterling also enthusiastically praised the IGDP in Ecology. Dave Mortensen's speech lauded the vast and varied achievements Penn State Ecology, boasted of the programs presence from the northern taiga to Zambia. Dave also specifically mentioned many faculty members and students by name for their various awards and successes, and stated that, "the essence of the Program is its people."

The highlight of the colloquium (aside from Dave's presentation, of course) was the keynote speaker Robert Kennedy Jr. Although at first it seemed like his voice would give out at any second, Kennedy had no shortage of words or vigor. In true Kennedy family style RFK Jr. charmed and engrossed a nearly packed house with a blend of humor, wit, and sense of urgency for over an hour. He spoke about the power of grassroots environmental movements, the dangers of corporate control, and the spiritual value of nature to the American people. Not surprisingly Kennedy also delved fiercely into the political realm, stating that right now "regime change [in the U.S.] is the only environmental issue; nothing else matters." Kennedy received two standing ovations, and left the audience with this advice "drop everything and get President Bush out of office."

~ *Michael Turns, M.S. Student Ecology*

## Noteworthy...

**Charles Fisher** Professor of Biology, 2003-2004 Faculty Scholar Medals for Outstanding Achievement.

**KeChung Kim** Professor of Entomology, 2003-2004 Edward D. Bellis Award in Ecology for outstanding contribution and dedication to training graduate students.

**Mathew Ferrari and Jenny Edwards** 2003-2004 J. Brian Horton Memorial Award to recognize outstanding achievement and service to the graduate community

**Congratulations to the following students who are graduating from the Ecology Program:**

**Barrett Gaylord**  
**Jacob Thompson**  
**Mi-Youn Ahn**  
**Deborah Slawson**  
**Masami Tonegawa**