

MRB NEWS

Featured Faculty: Jennifer S. Laurence, Ph.D.

Research Interests:

Protein Structure and Function

Academic Areas:

Pharmaceutical Chemistry

Assistant Professor, Dept of Pharmaceutical Chemistry, Assistant Professor, Dept of Chemical and Petroleum Engineering

Educational

Background:

Postdoctoral research, Biological Sciences, Purdue University, 2004

Ph.D., Chemistry, Purdue University, 2000 B.A., History, Miami University, 1994



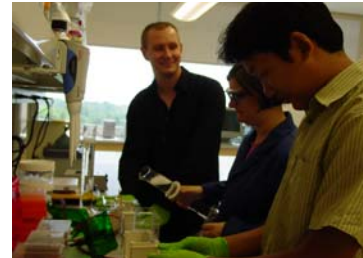
At the University of Kansas, cancer researchers are focusing on ways to improve drug treatment of the disease.

Part of this research looks at ways to minimize side effects from cancer drugs and improve the ability of the drugs to kill cancerous cells. "Chemotherapies are effective at treating solid tumors and cells that are in the early stages of cancer because the cancer hasn't changed enough to evade the drug," said Jennifer Laurence, Assistant Professor of Pharmaceutical Chemistry. The

Laurence lab research focuses on a protein called PRL-1. This protein is observed to be present in high concentrations in a lot of different types of cancer cells. By studying the structure of PRL-1, Laurence observed that the protein might function differently at different points in the cell life cycle. One function of the protein is positive. It plays an important role in tissue regeneration, which helps the body repair and replace damaged or missing tissue. However, when the protein is improperly expressed aberrant growth or cancer results. By mapping out the different structures of PRL-1, Laurence hopes to provide a three dimensional picture of the protein drug designers to more effectively target the

protein in cancer treatment. This would enable drug designers to recognize the structure of the protein in cancer cells that promotes cancerous growth and target the drug to work on a specific form of PRL-1 while avoiding the healthy, tissue-regenerating form of PRL-1 found in other cells in the body. "We try to provide pictures that allow for more selective drugs to be designed. The goal is to minimize negative effects on normal cell function and instead only target the part that's gone awry to achieve the desired outcome without negative side effects," Laurence said. Another aspect of the PRL-1 protein that relates to cancer is that it seems to be able to take a cancer cell and cause it to change from its original form and location and spread to other parts of the body. This process, known as metastasis, makes the treatment of cancer much more difficult. "Once metastasis occurs chemotherapy is often far less effective. If we can prevent PRL-1 from encouraging this process, it may become possible to treat more advanced cancers with currently existing drugs. By understanding how PRL-1 plays a role in metastasis, Laurence believes that

cancer treatment could expand to treat cancer patients who aren't treatable with current drugs.



MEET THE POST DOC



Name: Stephan Lorenzen

Lab Group:
Bioinformatics

Field of Study: *Bio-
Chemistry and Theoretical
Biology*

Time at KU: 8 months

Hobbies: *Hiking, Reading*

Home Town: Flensburg
located in Northern
Germany

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Pictured above: A "snapping" turtle visits the sidewalk of MRB. Photos taken by Stephan Lorenzen's cell phone.

MRB TIDBITS

The fridges on each floor have been cleaned and will be done once a month. Please, when you spill something or have old food, it would be very helpful if you would clean up!

NFPA fire codes and OSHA standards require that a 3 foot wide path to electrical panels be maintained at all times.

Plans are underway to have a couple of park benches outside under the front awning.

BUILDING HOURS: For the summer, the front doors will lock at 5:00 p.m.



Newspapers that we once received, USA Today, Wall Street Journal, KC Star, LJWorld are back again and located in the main floor lobby!

Magazine racks have been placed in the first, second, and third floor lounge areas. If you have scientific publications/magazines you'd like to share please put them in the rack!

Coffee will now be .10 per cup. Please place your money in the cans located next to the coffee machines. This does not include the Espresso machine, which is still .35 per cup.

When sitting on the concrete walls out front—beware of CHIGGERS!!!

When setting up someone new to your group, the PI or the designee from the PI should send admin an email requesting the type of building access and the request for a lab key.

Several types of bugs have been located throughout the building. Exterminators will be treating areas on Tuesdays and Thursdays for an undetermined amount of time.

The end of the fiscal year is fast approaching. If you have any questions on invoices please feel free to contact Ann, Carla, or Teri.

We have two insulated coffee carafes in the main office that can be borrowed for conference room meetings—Please see Admin!

Look forward soon to our first MRB Social Function. Details will arrive via email.

NO SMOKING: Please do not smoke outside the south door, near the generator. There is no ashtray and that door should not be propped open. Propping open any door is highly discouraged.