



## Current issue topic at Boyd High

By SARAH LYNCH - The Independent

ASHLAND— A member of a stem cell biology team from the University of Louisville School of Medicine visited students in the Boyd County School System on Monday.

The purpose of the presentation, a part of the Kentucky Dataseam Initiative, was not only to inform and educate these students but to also inspire them to pursue careers in science.

Jania Ratajczak — whose husband, Dr. Mariusz Ratajczak, is the director of the U of L James Graham Brown Cancer Center’s stem cell biology program — informed more than 100 students at the middle and high schools about the team’s findings.

These findings, which were presented in December at the 47th Annual Meeting of the American Society of Hematology in Atlanta, identified cells in the body that could possibly lead to a better understanding a treatment of diseases and disorders.

About 30 AP biology/honors anatomy and physiology juniors and seniors met in Mary Lee Lewis’ class to listen to Ratajczak explain how the research was conducted and what this means to scientist all over the world — not to mention patients who could, one day, be cured of or treated for conditions and disabilities such as heart disease, stroke, diabetes, burns, spinal cord injury, Parkinson’s, Alzheimer’s and arthritis.

Ratajczak, a native of Poland, explained to students that bone marrow is the “home” of hematopoietic stem cells — a stem cell from which all red and white blood cells evolve — and “very small embryonic-like” (VSEL) stem cells, which have been observed in animal studies that hematopoietic stem cells appear to be able to form other kinds of cells. A VSEL could possible form muscle, blood vessels and bone.

If this can be applied to human cells, she said, it may eventually be possible to use these stem cells to replace a wider array of cells and tissues than once thought.

Lewis said her biology students began studying the tissue chapter in their book last week. Because of the knowledge they had obtained on the subject during class time, the students were able to ask Ratajczak questions a the end of the presentation.

One student asked what, exactly, was the purpose of this research.

“It is to show that there are embryonic-like stem cells in adults,” Ratajczak explained. “Children typically have more than adults. Our purpose is to eventually make these cells useful for growing new cells to cure diseases.

“We are already doing research now on generating cells for the pancreas,” she continued, “and we are not more than a year and a half from when we first made the VSEL cells discovery.”

In addition to the pancreas, the U of L team of seven scientists have grown VSEL cells in a lab and has stimulated them to change in different types of nerves and heart cells. Since December, the process has been replicated at three other laboratories in Louisville, two in Poland and one in Indianapolis.

Ratajczak said many U of L students are performing VSEL cells experiments and research.

“We want to involve as many young people as possible to make sure this research and the progress already made continue,” she said. “I believe that, eventually, we will be able to develop VSEL cells into any kind of cell in the body.

The importance of visiting schools is to encourage students to get involved in the science field, she said.

“This is the future. It belongs to you.”

For more information, visit [browncancercenter.com](http://browncancercenter.com).

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Photos



Janina Ratajczak, from the University of Louisville gives her presentation Monday to Boyd Co. High School students about stem cell research conducted at the school. The Independent