

The doctors are in – almost



TAMA UNGER/Citizens Medical Center

Dr. Sarah Gabel, family practitioner, and Dr. Kelly Gabel, general surgeon, toured the new clinic area with Scott Focke, Family Center for Health Care clinic manager, when they visited Colby over the Memorial Day weekend. Construction of the offices and exam rooms is expected to be completed in August; the doctors will begin their practices in Colby in September.

Genome now mapped for wheat's ancestor plant

It's hard to go anywhere without a map – especially into the deep and complex world of genetics. Now, Kansas State University researcher Bikram Gill and an international team of researchers have developed a physical map of wheat's wild ancestor, *Aegilops tauschii*, commonly called goatgrass, as they take a huge step toward sequencing the wheat genome – a complete look at wheat's genetic matter.

A physical map of a genome shows the physical locations of genes and other DNA sequences of interest. Scientists use them to identify and isolate genes that are responsible for different traits, such as disease resistance and days to maturity.

The research was published in the April 22 edition of the *Proceedings of the National Academy of Sciences*, www.pnas.org/content/early/2013/04/18/1219082110.full.pdf+html.

"Making a physical map is akin to breaking an egg and then assembling it back into a whole egg," said Gill, who is a universi-

ty distinguished professor of plant pathology at K-State. "The wheat chromosome DNA is cloned in bacteria, millions of bits of DNA, which are sorted by robots and fingerprinted on sequencing machines and pseudochromosomal molecules are reassembled using powerful computers and algorithms."

"Wheat has the largest genome among crop plants and this is the biggest map as yet assembled for any organism, animal or plant," Gill said.

The work, which began 10 years ago, was supported by the U.S. National Science Foundation. K-State's portion of the \$10 million funding totaled \$2 million.

"Many years ago we discovered that a particular wheat ancestor – *Aegilops tauschii*, commonly called goatgrass – is a gold mine for wheat improvement," Gill said. "Wheat varieties grown in the Great Plains are protected from the leaf rust disease by genes extracted from goatgrass and from Hessian fly in the eastern U.S."

The physical map developed

by the research team provides a roadmap for the mapping of genes that make wheat resistant to diseases, heat and drought and result in quality bread, Gill said, adding, "Most resistance genes seem to lie at the ends of chromosomes and can be easily accessed, leading to breeding of more productive and sustainable wheat varieties."

The next step in the process, Gill said, is to obtain money to sequence the wheat genome, but added, "it's tough, in the tight budgetary situation we are in."

"Research is expensive and long term and we need to keep at it slowly and surely and not by 'stops and starts,'" Gill said. "We need to invest in research."

At stake is a crop worth billions of dollars to the U.S. and Kansas.

The dollar value of U.S. wheat production over the last six years (2007-2012) averaged \$14.2 billion per year, according to U.S. Department of Agriculture data. In Kansas, the average dollar value per year over the same period was \$2.101 billion.

Law changed for farmers' markets in Kansas

Farmers' markets across Kansas will have access to more marketing and promotion opportunities and receive other benefits provided through the Farmers' Markets Promotion Act, SB 120, which was signed into law by Gov. Sam Brownback.

The bill designates the Secretary of Agriculture as the registration authority for farmers' markets, establishes a central registration of the markets and limits the legal liability of registered farmers' markets. There will be no fee associated with the

registration. However, registered farmers' markets will have access to marketing, outreach and advocacy efforts through the From the Land of Kansas state agricultural trademark program, the ability to receive benefits from federal grant dollars that are awarded to the Kansas Department of Agriculture on behalf of Kansas farmers' markets and legal liability protection.

"Farmers' markets play an important role in agricultural advocacy and rural economic growth. Establishing a central registration of farmers' markets in Kansas will

enable KDA to apply for federal grants and other resources on behalf of Kansas farmers' markets for promotional and marketing activities," Secretary of Agriculture Dale Rodman said.

"From 1987 to 2012, the number of farmers' markets in Kansas increased from 26 to 118. As we see this segment of agriculture continue to grow in the future, the Farmers' Market Promotion Act will enable KDA to partner with the markets and help them be more successful."

Man to swim with bricks in tow

ALGONAC, Mich. (AP) – A long-distance swimmer plans to swim 22 miles across Lake St. Clair this summer while hauling dinghies filled with 2,000 pounds of bricks.

Jim Dreyer has made direct crossings of each of the five Great Lakes. He's scheduled to begin his swim on Aug. 5 from the Clinton River Boat Club near Algonac, and the event is to raise funds and awareness for Habitat for Humanity.

The swim is expected to take 30 hours and end Aug. 6 at Detroit's Belle Isle.

Dreyer tells *The Grand Rapids Press* (bit.ly/18pXdG5) that this effort will be one of his most challenging.

He's partnered with Habitat for Humanity of Michigan to help fund building projects for up to 75 affiliates through the Cornerstone Strength Swim Campaign.

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