HART

MEDIA RELEASE

Hart Field Site Group Inc
PO Box 939
CLARE SA 5453
0427 423 154
admin@hartfieldsite.org.au

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Hear about the reality of robotics at Hart Field Day

It might sound far-fetched, but the idea of using robotics in large-scale, broadacre agriculture is realistically just around the corner, according to University of Sydney Australian Centre for Field Robotics (ACFR) senior research fellow Dr Robert Fitch.

Dr Fitch, the lunchtime guest speaker at this year's Hart Field Day on Tuesday, September 16, says robotics is set to "transform the way food is grown, produced and delivered".

"What robotics will bring is more emphasis on system-level optimisation," he says.

"Not just automating the current operations, but instead using information and automation to change the operations. We call this 'thinking beyond the robot'.

"The farm of the future will likely involve a 'system of systems' where teams of relatively small robots and sensors work together to collect information and perform mechanical tasks."

Far from taking jobs away from people on farms, Dr Fitch – himself a farmer's son from Ohio in the United States who chose to further his career off-farm – thinks robotics will maintain jobs in agriculture, as well as create new ones.

"There will probably be more people working in agriculture than there are today, but some will be in information-based jobs such as data analysis, and others will build, maintain, and write software for robot systems," he says.

Dr Fitch and his team have already worked extensively in the mining and cargo sectors, among others, and he sees agriculture as the next big industry to be transformed by robotics.

"There are a number of motivations for our research in agriculture at the ACFR, among them are the fact that over the past three decades, Australia has lost roughly 40 per cent of its farmers," he says.

"The average age of farmers in increasing, and younger generations are abandoning the family farm to work in other areas. At the same time, Australia is seeking to significantly increase its export capacity in order to support projected increases in demand for food in Asia.

"Robots will be able to collect vast amounts of precise information about the health and maturity of crops, which will lead to a new class of information-based jobs that will entice younger generations back into agriculture without the need to physically work on the farm.

"This information, along with the automation of mechanical processes, will increase the efficiency of farming, leading to better yield and profitability."

Dr Fitch says his team and research partners are already working on trials on a farm in Queensland, with the farmer set to commercialise the robotics system within the next two years and see a switch from bigger machinery covering bigger areas, to larger numbers of small robotics targeting specific areas.

“His vision is to reverse the trend of attacking larger areas with bigger machinery by attacking small areas with small robotics, and more of them,” Dr Fitch says.

“As well as overcoming problems such as soil compaction from large machinery, which was a primary motivator of this Queensland wheat farmer, it opens up opportunities to rethink things like weed control and operations.

“It allows for greater flexibility, things like being able to ‘work’ a robot 24 hours a day, or consider different kinds of weed control methodology.

“Instead of thinking ‘bigger is better’ we’re thinking ‘smarter is better’.”

Dr Fitch says he can also see benefits in using robotics to tackle snails, and his team is working with some Yorke Peninsula farmers in developing a robotic system to control the pest.

“We can see massive potential in using this same technology to combat problems with snails,” he says.

“Just as robotics are being used extensively already in horticulture in counting and estimating yield, it could be used equally effectively in snail mapping, or beyond that in actual collection of snails.

“We’re really at the beginning of this story and when we start seeing robotics out in the paddock we’ll see enormous benefit to the industry.”

The theme of this year’s Hart Field Day is “Farming: from a different perspective”, and robotics in agriculture will be just one of the highlights.

A demonstration of an unmanned aerial vehicle (UAV) will feature, along with 21 rolling sessions throughout the day as well as numerous static displays.

For more information about the Hart Field Day, take a look at the Hart Field-Site Group website www.hartfieldsite.org.au

Media contact:

Hart Field-Site Group research and extension manager Sarah Noack 0420 218 420.