Reed professor, Qmedtrix put together idea

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A new partnership between a local entrepreneur and a Reed College professor represents Reed's first foray into the realm of technology transfer.

The endeavor also charts a new direction for Portland medical bill review company Qmedtrix Systems Inc.

Dr. Merrit Quarum, founder and chief executive of Qmedtrix, launched the company Medrithms Inc. with his former Reed College physics professor Richard Crandall. Medrithms is short for medical algorithms. Crandall is the director of Reed's Center for Advanced Computation.

The duo aims to build on the concepts that spawned Qmedtrix's success — using medical algorithms to detect medical billing errors prior to payment.

Medrithms is designed to operate as a stand-alone company, but will initially be connected to Qmedtrix. Medrithms founders have applied for a $100,000 Small Business Administration Technology Transfer grant, proposing a partnership between Reed and Qmedtrix for the project. The grant application, the first of its kind that Reed has submitted, received a score that makes funding probable, but not certain.

Quarum and Qmedtrix have reason to look for other opportunities. The once high-flying Qmedtrix has been hurt by workers' compensation reforms enacted in states where its market was strongest. It has laid off much of its work force, and revenue is down substantially from the $28 million it reported in 2003. Company officials declined to give detailed information on revenue.

Reed has furnished the site and most of the computers for the project, said spokeswoman Beth Sorensen. Two Reed alumni are dedicated to the project, which is being carried out at the Center for Advanced Computation.

Quarum said possible target markets for the technology would include Medicare payment vendors and group health plans.

"This work is particularly timely due to recent changes in Medicare program policy initiatives which provide new opportunities to deploy this approach to cost containment," the grant proposal says.

The ambitious project would demand accuracy in the 90 percent range — difficult to achieve considering the complexity and subtlety of billing abuses and errors.

"The way to get accuracy up to 100 percent is to fuse together different algorithm scenarios so they can work together," Crandall said.

Research will center around two varieties of algorithms: genetic and neural network algorithms. Neural networks emulate how scientists believe networks of neurons behave in human brains, and have strength in pattern recognition. Genetic algorithms emulate the genetic selection process of mutation, fitness scoring and selection.

"Genetic algorithms are very hard to perfect, but can end up being very powerful," Crandall said.

The resulting dynamic system would also be able to learn — a phenomenon called machine learning — using correctly coded data sets of health care claims. The new company was registered with the state in late October at Quarum's home address. Crandall operates another company called Perfectly Scientific Inc., a consulting firm.

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