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Futurist predicts chips in brain

They would contain sum of human knowledge, he says at RIT

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Two generations ago, computers were room-sized behemoths. Today, you've got vastly more processing power for far cheaper in your pocket. So tomorrow?

Try millions of cell-sized machines coursing through your system, taking care of your health.

Or microscopic computer implants in your brain giving you near-instant access to the sum of human knowledge.

And that future — not many decades or centuries but a handful of years from now — is predictable enough to be pretty inevitable.

That was the message inventor and futurist Ray Kurzweil brought Wednesday night during a talk at Rochester Institute of Technology.

The pioneer in such fields as optical character recognition and text-to-speech synthesis spoke before an audience of more than 1,000 as part of RIT's Caroline Werner Gannett Project.

Kurzweil's talk followed closely the theme of his best-selling 2005 book *The Singularity is Near*, which argued that the breakneck pace of modern technological evolution is actually predictable and thus can be planned for.

"We can invent now with the technology of 2020, 2030," he said. "We can talk about what will be feasible at that point."

Much of his talk revolved around the constant steady rate of technological progress, with computing power growing exponentially, and what that foretells for future applications. That technological future is, in his view, very cornucopian.

For example, Kurzweil said his trend lines show solar energy as meeting the world's energy needs in about 18 years, since the amount of electricity generated from solar doubles about every two years.

Having recently charted the human genetic code, scientists are only at the early stages of treating biology like technology, but using the same approaches will let people reprogram the genetic software that makes them run. That work will mean that in about 15 years, humankind will start adding more than a year each year to its average life expectancy.

"If you can hang on another 15 years, you may get to experience the remarkable century ahead," Kurzweil said.

Such a science-fiction future already is being worked on in labs, he said, with animal testing on inhibiting the fat insulin receptor gene that could end obesity.

"We'll be able to overcome the limitations of biology."

And while the cost of technology continues to get cheaper, the nation's — and world's — increasingly information technology-centric economy will continue to grow larger as new applications emerge, he said.

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