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Science in the Next Century: Will 1995 Seem Like the Dark Ages?

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Nobel Laureate, Other Leading Scientists Probe:

Science in the Next Century: Will 1995 Seem Like the Dark Ages?

BLOOMINGTON, Ill.--A Nobel Prize-winning chemist, a Caltech researcher, and eight other scientists polish their crystal balls and take a look at science in the next century in the latest issue of *Illinois Wesleyan University Magazine*.

Jean-Marie Lehn, the French Nobel laureate who delivered an address at IWU last October, predicts the 21st century will belong to chemistry as scientists probe supramolecular chemistry or interactions among molecules.

"It's a sort of molecular sociology!" Lehn said, explaining these studies will revolutionize and broaden scientists' thinking, and get at the very origins of life.

Harry B. Gray, a National Medal of Science winner and director of the Beckman Institute at the California Institute of Technology, sees a world filled with environmental, energy, and health problems challenging scientists in the next century.

Gray, who lectured at IWU last October, said, referring to the super-secret atomic bomb project of World War II, 'The 'Manhattan Project' for the next few years will be new drugs and new environmentally acceptable fuels. If you tick all that off, it's all chemistry; it's all molecular . . . everything you can think of but high energy nuclear physics is chemistry.

"This is the end of the great century for physics," Gray added. "Now it's time for the great century of chemistry."

Lehn, Gray, and the other scientists made their prognostications in "Science in the Next Century: Will 1995 Seem Like the Dark Ages?" an article in the winter edition of the 20,000-circulation quarterly, *IWU Magazine*. The article is written by Elaine Graybill, the magazine's managing editor.

Ned Carter, a psychologist in the Department of Occupational and Environmental Medicine at University Hospital, Uppsala, Sweden, and a 1974 IWU graduate, sees "behavioral inoculation" or preventive psychology as a key advance in his field in the next century.

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" . . . instead of treating anxiety, phobias, and depression," Carter forecasts, "we'll know more about how to raise individuals less likely to suffer from those problems."

Joanna Hunter, a chemist with SRI International of Menlo Park, Calif., and a 1988 IWU graduate, sees the benefits of genetic technology, but quickly adds these advances will trigger ethical questions.

"We are on the frontier of learning about human genetics," Hunter said, "pioneering new methods of diagnosing, preventing, and treating genetic disorders.

"Clearly, the ability to detect genetic mutations will save lives," she added. "However, genetic testing raises sticky ethical questions: whether to terminate pregnancy, deny insurance, implement genetic treatments, etc."

James Dugan and Johnna Shapiro, IWU assistant professors of psychology, see the study of consciousness, or self-awareness, as a frontier of science. However, experimentation into consciousness treads into a traditionally religious area.

Shapiro explained: "We want to get [consciousness] down to its simplest terms, which means something biological."

She describes psychological/neurological experimentation into consciousness as "eating the elephant a bite at a time." The elephant, of course, is consciousness. The individual "bites" are types of awareness including visual, olfactory, tactile, and their corresponding biological states in the brain.

Andy Rex, a professor of physics at the University of Puget Sound and a 1977 IWU graduate, points out: "History's lesson is that none of us can say what is in store for the next century.

Narendra Jaggi, IWU associate professor of physics and chairman of the Physics Department, sees science as much more than the technology of larger and faster computers. He sees fundamental changes in science that will bring the material and spiritual worlds much closer.

Jaggi explained: "Tipler, an eminent cosmologist from Tulane, says, 'Either theology is pure nonsense, a subject with no content, or else theology must ultimately become a branch of physics.' Hawking and Penrose have led

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mathematical physicists in developing intellectual tools that can analyze an actual infinity. The old arguments of 'God' and the university being infinite have therefore lost their potency."

"By its very nature," Rex said, "science is open to great changes in how we think about things."

Rex is writing a textbook that takes a new approach to teaching physics: combining calculus and physics in one course.

A copy of "Science in the Next Century" is attached to this news release. Permission is granted to reprint excerpts or the entire article.

IWU, founded in 1850, enrolls about 1,850 students in a College of Liberal Arts, College of Fine Arts, and a four-year professional School of Nursing. A \$15 million athletics and recreation center opened in the fall of 1994; and a \$25 million science building opened in the fall of 1995. The Carnegie Commission for the Advancement of Teaching promoted Illinois Wesleyan to a "Baccalaureate I" institution in 1994, a classification that places it among 161 highly selective National Liberal Arts Colleges in the annual *U.S. News & World Report* rankings. *Barron's Profiles of American Colleges*, another respected college guide, rated IWU "highly competitive (+)" in its latest edition.