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James Winebrake '89 Links Liberal Arts and Technology as Scholar and Dean at RIT

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By Samuel T. Clover '91

With an international reputation for research on alternative fuels, emissions control, and the environmental impact of global freight transportation, **James J. Winebrake '89** began his tenure as dean of

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Rochester Institute of Technology's College of Liberal Arts in January.

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"Finding integration among disparate disciplines has become my calling," says Winebrake. "RIT truly values the role of liberal arts in a technological education, and we have a number of novel, interdisciplinary programs aimed at expanding student learning in the liberal arts.



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James Winebrake '89

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STEM [science, technology,

engineering, mathematics] students that participate in liberal arts curricula as double majors or concentrations are more creative problem-solvers than those who do not. They are more fully aware of the social context of their work, and are more thoughtful in considering how their actions and decisions affect others. These are the types of engineers and scientists that the world needs."

Winebrake, of Pittsford, N.Y., served the previous eight years as professor and chair of RIT's Department of Science, Technology, and Society/Public Policy. He directed the B.S. in public policy and M.S. in science, technology, and public policy programs.

As co-director of the RIT Laboratory for Environmental Computing and Decision Making, Winebrake and his team designed software that allows analysts to evaluate the cleanest way to transport goods, both by mode and route. "Trains and ships are a lot cleaner than trucks," he says.

Among Winebrake's many other ongoing collaborative projects is an examination of market potential of alternative fuel vehicles, including electric, bio-fuel, and natural gas. Funded by a National Science Foundation grant, it includes participants from University of Michigan, University of California, Northeastern University, and University of Michigan.

Winebrake, a physics graduate, earned a master's in technology and policy from Massachusetts Institute of Technology and Ph.D. in energy management and policy from University of Pennsylvania. He is a member of the National Research Council's Committee on the Study of Potential Energy Savings and Greenhouse Gas Reductions from Transportation and the U.S. Department of Energy's Transportation Energy Futures Steering Committee.

The seeds for Winebrake's path from physics to research in freight transportation to dean of a liberal arts college were planted at Lafayette. "I was always attracted to liberal arts courses, particularly philosophy and English. They helped me become a better physicist and opened up ways of thinking about the world that improved my problem-solving skills. Lafayette taught me the importance of the liberal arts as a foundation for how we think about the world and our place in it."

He says the journey began with his involvement in social justice issues during his senior year such as helping start a homeless shelter in Easton and being a founding member of Hands Together, an organization that sponsored trips for students to volunteer in Haiti. Founded by Father **Thomas J. Hagan**, former Lafayette Catholic chaplain, it still operates today, and the executive director is **Douglas Campbell '86**.

"Those experiences led me to think more about bigger-picture issues," Winebrake says. After a few economics courses, he saw how the field of public policy integrated STEM and liberal arts disciplines in order to achieve social goals. That insight led him to the programs at MIT and Penn. "I studied the interaction of science, technology, and the liberal arts through a policy prism. This was not only exciting, but also I felt it gave me an opportunity to make a difference in the world for the better."

After earning his Ph.D., Winebrake served briefly as an analyst with the U.S. Department of Energy, and then became associate professor of public policy in James Madison University's novel integrated science and technology program.

In its second year, the program had 40 students. It included training in science and engineering, but also in social sciences, writing, and communications. “They were able to tackle problems in technology fields in ways that traditionally trained engineers could not,” says Winebrake.

Later, RIT began a new degree in public policy with a technology component. “I was quick to jump at it,” says Winebrake. “Its core philosophy was integrating science and technology disciplines with the social sciences and humanities in a policy context. All this at a technological institute. It was a dream job. This is what I was trained to do.” He joined RIT in 2003.

He cited a quote by Steve Jobs from the March 20 *New York Times*: “It’s in Apple’s DNA that technology alone is not enough—it’s technology married with liberal arts, married with the humanities, that yields us the result that makes our heart sing and nowhere is that more true than in these post-PC devices.”

The recipient of several awards for scholarship and teaching, Winebrake is the author of numerous articles and the textbook, *Dynamic Modeling of Environmental Systems*. In New York, he serves on the state Energy Planning Board and Genesee Valley Regional Clean Cities board.

Two other Lafayette alumni teach at RIT. They are **Nicholas DiFonzo '81**, professor of psychology, and **Vincent Pandolfi '91**, assistant professor of school psychology.

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