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On 100th Anniversary, a University Feels Reinvigorated

By KAREN W. ARENSON

At the parties and conferences last week celebrating the 100th anniversary of Rockefeller University, the mood was congratulatory. In just a century, Rockefeller researchers had developed vaccines against meningitis, discovered that genes are made of DNA and demonstrated the connection between cholesterol and heart disease. And its laboratories were percolating with new experiments on AIDS, cancer, obesity, lupus and other modern-day scourges.

But among top administrators, there was also a sigh of relief. In recent decades, Rockefeller had seemed to lose its momentum. Although it was still highly regarded, its large, hierarchical labs were considered inhospitable by young scientists hoping to make their mark. Budget deficits cut into its rich nest egg. And it faced difficulty courting students and teachers who regarded New York City as a hostile place.

The appointment of Dr. David Baltimore as president in 1989 seemed only to compound the problems. He was a Nobel laureate and biologist brought in to reinvigorate the university, but charges that he had not forcefully investigated accusations of fraud in his old laboratory at the Massachusetts Institute of Technology caused growing turmoil and led to his resignation after only 18 months.

"In the 80's, this place went flat," said Dr. Arnold J. Levine, the university's president since 1998. "And then there was the big hiccup with David Baltimore.

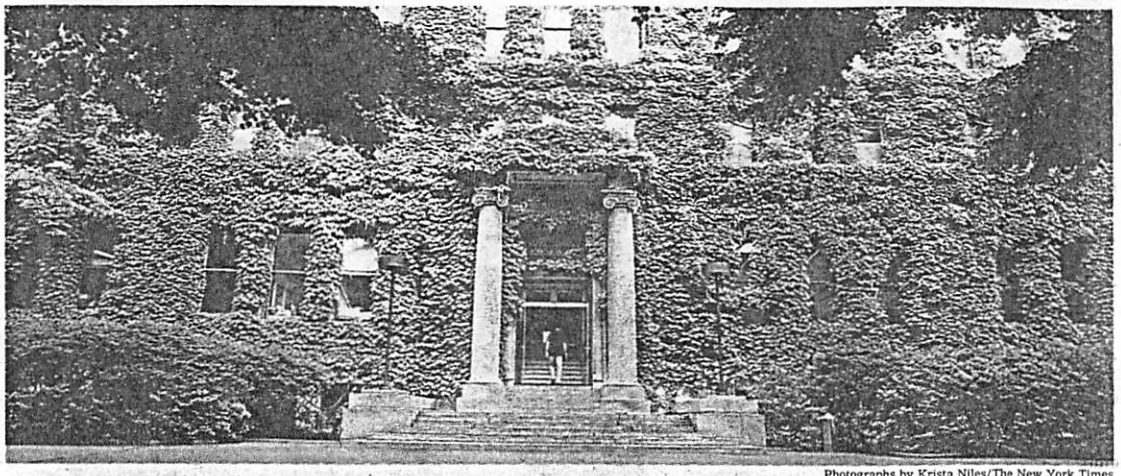
"It was not his fault," Dr. Levine added, referring to later findings by federal investigators that the fraud charges were unsubstantiated. "But instability does not create great science."

But Rockefeller is hopping again. A tiny university with only 69 faculty members, 150 graduate students and 290 postdoctoral researchers, it has collected two Nobel Prizes in the last two years. Student applications have begun to increase. It is two-thirds of the way toward raising $350 million in a capital campaign. And there is a new interest in the university in New York and beyond.

"It is much easier for me to do my job now than it was 5 or 10 years ago," said Maren E. Imhoff, Rockefeller's vice president for development. "People are more interested in science, and that's been more important for us even than the explosion in wealth in the 90's."

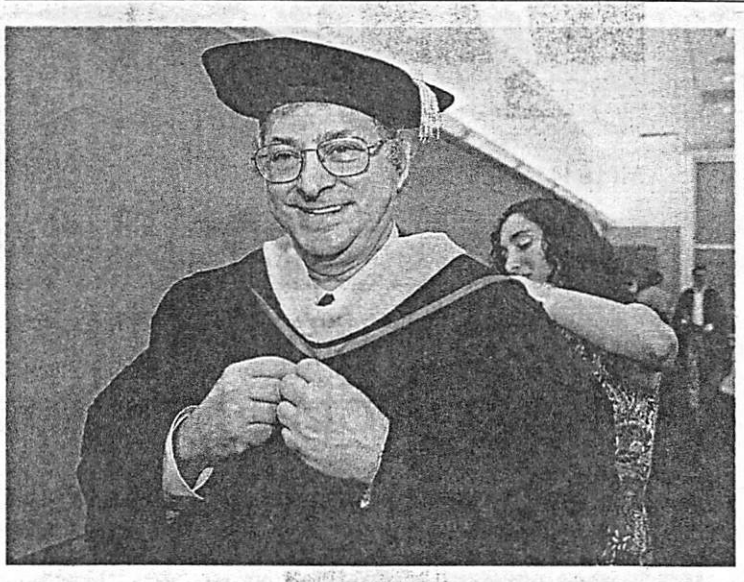
Founded a century ago by John D. Rockefeller to find cures for diseases after his first grandchild died of scarlet fever, the university always seemed like one of those fabulously wealthy institutions that never lacked for anything. Its 15-acre campus, between York Avenue and F.D.R. Drive in the 60's, is dotted with graceful cedars and ivy-covered research laboratories. It holds monthly concerts by groups like the Guarneri String Quartet and owns a world-class art collection. Until the 1950's, its professors were reluctant even to seek government research grants.

Academically, too, Rockefeller has seemed favored, as scientists associated with it have collected 21 Nobel Prizes and 16 Lasker Awards. Its focus on basic biomedical research seemed to make it well positioned to capitalize on the explosion of interest in genetic research, yet it was not considered one of the leaders in the race to map the human genome.



Photographs by Krista Niles/The New York Times

Founder's Hall, the original building at Rockefeller University, whose 15-acre East Side campus is dotted with ivy-covered labs.



Dr. Arnold J. Levine, Rockefeller's president since 1998, preparing for the commencement of his university's 43rd class of graduate students last Thursday.

Judy MacDonald, a postdoctoral researcher, working in a cell biology laboratory. Rockefeller has 150 graduate students and 290 postdoctoral researchers.

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Despite his short tenure, Dr. Baltimore, who is now president of the California Institute of Technology, began to reorganize the labs and bring in younger professors. Torsten N. Wiesel, a Rockefeller professor and Nobel laureate who followed Dr. Baltimore as president, calmed the agitated campus and brought in some new faculty members. Now Dr. Levine, a prominent cancer researcher who was chairman of Princeton University's molecular biology department, is trying to move the university in new directions, bringing in new scientists, fashioning new partnerships with other universities, and raising more money to supplement the university's $200 million budget and $1.4 billion endowment.

Remaining at the top of the field is far more complicated than it was when the Rockefeller Institute for Medical Research opened its doors in 1901. Dr. Joseph L. Goldstein, one of the Nobel laureates who joined in the centennial celebration last week, noted in a speech that there were fewer than 4,000 scientists in the world in 1901, but today there are more than 100,000 in biology, chemistry and physics. Biomedical research has also become extremely expensive and more dependent than ever on disciplines like chemistry, mathematics and computational sciences.

Scientists used to conduct one experiment at a time, said Dr. Stephen K. Burley, a Rockefeller professor and deputy to the university's president, but modern technology now enables them to conduct 96 experiments simultaneously.

"The whole style of discovery is changing," he said. "We no longer think of biology as the study of one gene, one protein, one process. Now we have to have huge databases to keep track of what we are doing in the lab."

Among the recent recruits to join the faculty is Dr. Alexander Tarakhovsky, a gregarious, 45-year-old Russian known as Sasha, an M.D. and a Ph.D. who moved to New York from Germany a year ago to establish an immunology lab with 10 postdoctoral researchers and graduate students. His lab studies the molecular basis of diseases like lupus and autoimmune diabetes, to try to understand the malfunctioning of lymphocytes, which ordinarily provide defenses against the body's invaders.

"They give you support, money and lots of freedom," Dr. Tarakhovsky said in his spacious, well-lighted lab filled with gleaming equipment. "They supported me at a level that no German institute would.

"The budget for my lab now may be equal to the budget for the whole former Soviet Academy of Science," he added with a grin. (Rockefeller has committed $3 million to support the lab over three years.)

The price for such lavish support, he acknowledges not unhappily, is performance.

"We are much more productive here," he said. "There is more pressure, more fear. You have to live up to certain standards. Here at Rockefeller there is double pressure, pressure from your peers and pressure from the past. As long as my science is unconventional and successful, they like it."

He said researchers in his laboratory had already published three papers in Nature magazine and four in Science magazine.

Yael Pewzner-Jung, a postdoctoral researcher from Israel who is finishing her research in Dr. Tarakhovsky's lab, has been struck by her freedom to pursue whatever experiments she needed.

Seated on a high stool one morning last week, with tweezers in her left hand and small scissors in her right, she carefully clipped the kidney, liver and spleen from a small dead mouse splayed open before her, and put pieces in small test tubes for analysis.

She had replaced one of the mouse's genes with another, and was looking for a green fluorescent protein to tell her whether the transfer had been effective.

"If an experiment doesn't work, the next day I can repeat it," she said. "That is the only way to do science."

Dr. Levine, Rockefeller's president, is also bringing in scientists in areas it is trying to strengthen, including physics and computational sciences. A genial man who gets carried away when he starts to explain science, Dr. Levine recognizes that as a boutique university, Rockefeller cannot hope to match the breadth of other research universities in those areas, but he hopes to offer students a wider range of courses through partnerships with other universities.

Rockefeller already works closely with its two neighbors, Memorial Sloan-Kettering Cancer Center and Weill Medical College of Cornell University, and Dr. Levine has plans for collaborating with both the Courant Institute of Mathematical Sciences at New York University and with the chemistry department at Cornell University in Ithaca, N.Y.

Another priority is the overhaul of Rockefeller's small hospital; it has committed $115 million for renovations and academic programs. The hospital has only 40 beds, but is one of the largest clinical research centers in the United States.

Dr. Levine is also eager to expand the graduate student body. Rockefeller has no undergraduates and started accepting graduate students only in 1956 in the belief that they would keep the senior researchers challenged. Nearly 700 people applied for admission as graduate students next fall; Rockefeller accepted 85, of which 28 will enroll. They will receive free tuition and a $22,000 stipend, and can choose from university apartments (it owns more than 700) with rents as low as $300 a month.

"Some people are amazed that we don't get everyone we accept," said Sidney Strickland, Rockefeller's dean of graduate and postgraduate studies, and added that some students are looking for a larger or more structured program than Rockefeller's.

Those who do enroll quickly become part of the research culture, working side by side with the scientists and postdoctoral researchers. As Rockefeller graduated its 43rd class last week, the students' mentors rose one by one to describe their students, talking of their insights, their cheekiness and of how they would be missed as colleagues.

After the graduation ceremony, Dr. Sanford M. Simon, a professor of cellular biophysics, looked proudly at Yu Chen, a graduate who had worked in his lab, and described him and his classmates as the future of science. "One of the strongest legacies you can leave," he said, "is the new generations you train."