BIOMEDICINE

Medical School Caught Up in Pennsylvania Hospital Debacle

When molecular geneticist Darwin Prockop came to the MCP-Hahnemann School of Medicine in Philadelphia 2 years ago, the future seemed bright. Prockop, who runs a gene therapy center at the medical school, was one of about a dozen top scientists recruited by MCP-Hahnemann in the past few years with promises of hefty salaries and abundant research support. But this spring, prospects for Prockop and his colleagues at the nation's largest private medical school took a nosedive. The organization that runs the school, the Pittsburgh-based Allegheny Health Education and Research Foundation (AHERF), after many months of hemorrhaging funds, filed for bankruptcy last month. "It's literally unprecedented for a medical school to be caught up in this kind of bankruptcy proceeding," says Jordan Cohen, head of the Association of American Medical Colleges.

Next month, Allegheny's eight Philadelphia hospitals will be put on the block, and a court has ordered an academic committee to come up with a plan by mid-October for restructuring MCP-Hahnemann and the three professional schools that make up Allegheny University of the Health Sciences. Officials hope they will be salvaged as an intact, independent university, but researchers like Prockop, whose budgets are being severely squeezed, are worried. There is a "very real" chance that much of the expensive talent lured to Allegheny during its expansionary binge will jump ship, says Prockop.

The Allegheny debacle is an extreme example of the turmoil at U.S. academic medical centers triggered by the rapidly changing health care economy, as managed care and severe cutbacks in insurance payments have turned hospitals that were once university cash cows into financial drains. But observers contend that a unique set of circumstances, and misjudgments by Allegheny's former president Sherif S. Abdelhak, pushed Allegheny over the edge. They include a massive expansion at a time when many other health centers were contracting, and an extremely competitive medical market in Philadelphia that crimped Allegheny's anticipated revenues, says health consultant Gerald Katz of Plymouth Meeting, Pennsylvania. The financial collapse was a "colossal disaster and one that could have been avoided" with more prudent management, says Donald Faber, chair of the MCP-Hahnemann neurobiology department. (Abdelhak could not be reached for comment.)

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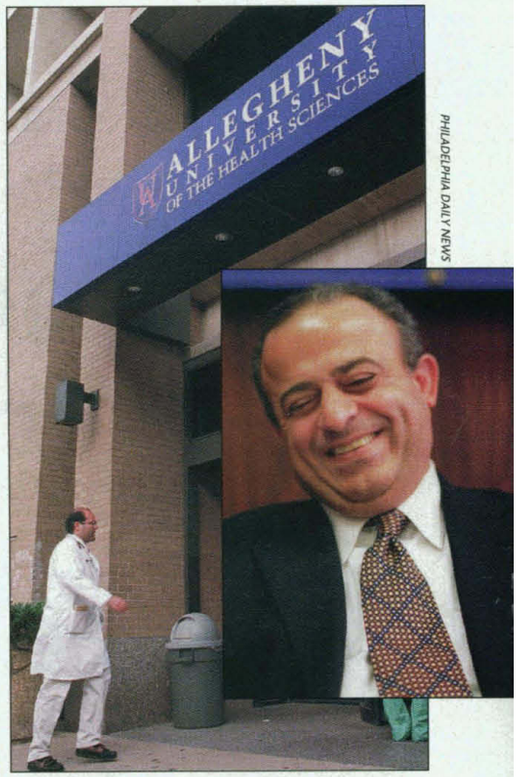
>
> —Donald Faber

Until recently, Allegheny was riding high under Abdelhak, who spent 12 years at the helm before the AHERF board fired him last June. "Some people were very impressed with what Abdelhak was doing," says Faber. But he did "two things [that] brought the whole system down," contends biochemistry professor Gerald Soslau. He purchased several hundred private practices, paying top salaries to physicians whose patient referrals were supposed to generate revenue for the system's hospitals. But the return turned out to be "minimal," says Soslau. Then last year, Allegheny bought up two Philadelphia hospitals, one of which was soon closed, that came saddled with $160 million in debt.

"I think Abdelhak was operating under a set of assumptions that used to be the case but were no longer the case," says Katz. Philadelphia, he says, has too many hospital beds; much of the population is enrolled in health maintenance organizations, which have highly restrictive reimbursement standards; and only two insurance providers cater to 80% of the population, giving them power to "pretty much dictate the prices" of services. When the Philadelphia branch of AHERF filed for bankruptcy on 21 July, Allegheny claimed it was $1.3 billion in debt.

Things really began to unravel in the spring, when officials used a number of endowments and special funds to pay pressing expenses, according to reports in the *Philadelphia Inquirer*. AHERF reportedly quickly restored the money to one endowment, worth $3.4 million, after the donor complained. Allegheny officials are now "reviewing all restricted funds," says spokesman Thomas Chakurda, to determine if any "were moved inappropriately."



PHILADELPHIA DAILY NEWS

Boom and bust. Allegheny University of the Health Sciences recruited several top scientists under Sherif S. Abdelhak's expansionist policies.

The researchers recruited during the expansionist phase are now feeling the squeeze. Prockop, who came from Jefferson Medical College in Philadelphia in 1996, says he discovered last month that a foundation-donated fund containing $360,000 for diabetes research that he had brought with him to Hahnemann had been "depleted." Prockop anticipates that the school will renege halfway through his 5-year contract, and he says he is "actively pursuing" possibilities for moving his 20-person lab elsewhere.

Another scientist who got burned is Howard Ozer, a cancer researcher at Hahnemann Hospital who was lured from Emory

University last year with the promise of a $5 million-a-year budget for his research and treatment center. Unlike Prockop, who gets half his budget from the National Institutes of Health (NIH), Ozer is heavily dependent on funding from the hospital and is now preparing a slimmed down, $1.2 million budget. He is guardedly optimistic about prospects when the hospitals are taken over by new proprietors; nonetheless, "if I had it to do all over again, I would not have come to this institution."

The financial crisis "should have been seen much earlier, and probably could have been dealt with if it had been," says Ozer. Faber remembers site visitors from a licensing board a year or so ago remarking that "you're the only people who are expanding while the world is contracting."

Indeed, many other U.S. academic medical centers made wrenching adaptations to the managed care economy. Both Stanford University and New York University, for example, have merged their hospitals with other systems. In 1996, restructuring at the University of Southern California's medical school led to a lawsuit by scientists complaining that attendant pay cuts constitute an assault on tenure. And the University of Pennsylvania last month reported that its health system ran a deficit of $100 million in the fiscal year ending in June. Georgetown University Hospital reported losing $27 million last year, but spokesperson Paul Donovan says the hospital expects to turn a profit again next year as a result of management reforms aimed at making the clinical, teaching, and research functions all self-supporting.

Observers are hoping the worst is also over for Allegheny. The bankruptcy court last month approved an emergency $100 million loan to AHERF from Madeleine LLC, an investment consortium, to cover salaries and expenses until a purchaser takes over the hospitals. So far, three national hospital chains are lined up to bid on the eight Philadelphia hospitals that will be sold on 29 September. Last month, Congress passed a measure allowing medical students to continue getting federal student loans worth some $43 million a year. And NIH won't cut off the roughly $56 million in grants Allegheny researchers receive each year, says NIH spokesperson Don Ralbovsky.

"This is a fragile time for us," says Faber, who is a member of the university restructuring committee. But "the hope and expectation is that … we will come out of this as a viable, freestanding university."

–CONSTANCE HOLDEN

CLIMATOLOGY

Did an Ancient Deep Freeze Nearly Doom Life?

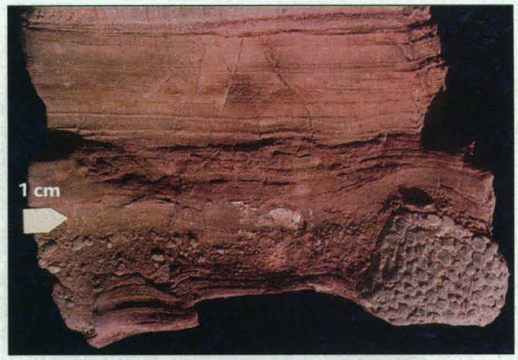
For most of its history, Earth has been a comfortable place for life. Even during the regular ice ages of the past million years and the huge impact 65 million years ago, most organisms either adapted to the new conditions or found refugia and survived. Now, researchers propose that about 700 million years ago Earth suffered a series of enveloping ice ages that nearly snuffed out life. Coated by ice and snow from pole to pole, the planet slept on for millions of years, according to this theory, until it was finally roused by its own volcanic emanations.

On page 1342 of this issue of *Science*, geologists Paul Hoffman and Galen Halverson and geochemist Daniel Schrag, all of Harvard University, and geochemist Alan Kaufman of the University of Maryland, College Park, present isotopic and geological evidence from Namibia for an ancient "snowball" Earth that threatened the diverse but still simple organisms that then constituted life on Earth. "It's mind-boggling that such events may have happened," says Hoffman. While rocks from the time do record at least two ice ages, not everyone is convinced that the glaciation was so extreme. "This is really interesting, but it's really speculative," says geochemist Louis Derry of Cornell University. "There are significant questions about the data."

The data come from rock deposited about 700 million years ago on the edge of a long-vanished ocean, in what is now Namibia in southwest Africa. The rock section under study—carbonate topped by a jumbled deposit of debris dumped into the ocean by glaciers, followed by a distinctive "cap layer" of carbonate—preserves a tracer of ancient life's productivity: two isotopes of carbon in the same ratio as existed in the ancient ocean. Photosynthetic organisms tend to remove more carbon-12 than carbon-13 when they draw in carbon dioxide, causing the ratio of carbon-13 to carbon-12 in the water to rise, while chemical precipitation of dissolved carbonate onto the sea floor removes equal proportions of each isotope, leaving the ratio unchanged.

Other researchers have traced isotopic changes in the Namibian rocks, but Hoffman and his colleagues have the most complete record. Well before the ice age, the isotopic ratio suggests that carbon was removed from the world ocean through about half chemical and half biological processes, says Hoffman. But as the ice age approached, the portion due to biology began to decrease, as would happen if the ice were gradually spreading across the globe. The glacial deposit itself doesn't preserve a faithful isotopic record, says Hoffman. But afterwards, the cap carbonate record suggests that biological productivity had dropped all the way to zero, and recovered only slowly. "It's difficult to imagine any other mechanism that would shut down productivity on that scale other than global glaciation," says Hoffman.

No one knows just why the ice age began, but as highly reflective snow and ice spread to lower latitudes, more sunlight would have been reflected from Earth, chilling the planet further until a runaway glaciation enveloped even the tropics, says Hoffman. He assumes that there were at least a few breaks in the ice or patches of bare ground where microbes and multicellular algae survived to later give rise to all life today. But across most of its surface, he says, "Earth just sat there."



P. HOFFMAN/HARVARD UNIVERSITY

Traces of a snowball? A glacial deposit is abruptly capped by warm-water carbonate rock.

The group suggests that eventually, volcanic carbon dioxide oozing from the interior over millions of years created a greenhouse effect powerful enough to break the ice's grip. Then, this high carbon dioxide level drove the deposition of the cap carbonate.

To find out how long Earth had to wait for this volcanic rescue, Hoffman and his colleagues estimated the duration of the isotopic event by calculating the ancient sedimentation rate. They used the rate at which