Penn Charges Retin-A Inventor with Conflict

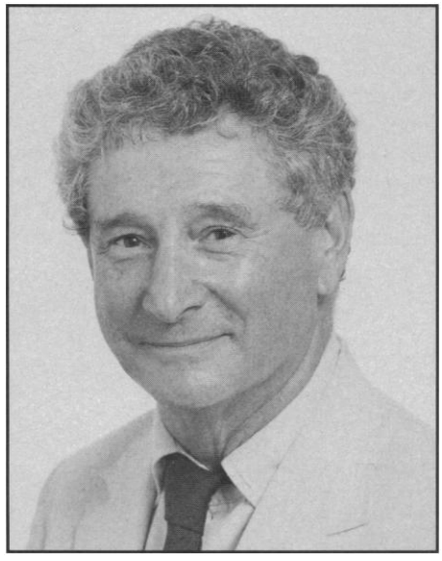
The university says it should have a share of the millions likely to be made on a product developed by one of its faculty members

ALBERT KLIGMAN, the dermatologist who invented the anti-wrinkle skin cream called Retin-A, may have achieved fame and fortune through the product's instant success in the marketplace, but now his reputation—if not his fortune—may be affected by a legal assault from his employer, the University of Pennsylvania. Penn claims that Kligman violated the school's conflict of interest and intellectual property rules in the early 1980s when he filed a patent for the anti-wrinkle cream in his own name and quietly gave a commercial license to the pharmaceutical giant, Johnson & Johnson.

Kligman, now an emeritus professor in Penn's dermatology department, discovered in the 1960s that retinoic acid, or Retin-A, is effective in treating severe acne. He and the university jointly benefit from the patent for that application. Later he also claimed that retinoic acid can be used to reduce the wrinkling of "photo-aged" skin. (Although widely used as a wrinkle remover, Retin-A has not yet been approved by the Food and Drug Administration for this purpose, and its effectiveness is still very much in debate.) But when Kligman applied for a patent for this new cosmetic use of the medication in 1981—a move that would essentially extend and broaden the original patent on Retin-A—he did not include the university as a co-owner.

In legal papers filed in Philadelphia's U.S. District Court in January, Penn charges that Kligman colluded with Johnson & Johnson to deprive the university of its rightful share of the profits. Penn argues that since the new use of the drug was developed at least in part in its own laboratories and tested on patients in university facilities, the university has a claim to ownership.

Penn bases its argument not only on common law, but on academic principles outlined in a conflict-of-interest statement it issued to the faculty in 1983—after Kligman had filed for his new patent on Retin-A—and a patent policy first issued in 1966 and updated later. These rules demand that faculty members inform the administration of any inventions they make while working on university time or with university property. They also require faculty members to offer Penn the first right to exploit research that may be used in "private enterprise."



Father of Retin-A. *Albert Kligman says he did the key work on his own time.*

The lawsuit could prompt other researchers and college administrators to take a closer look at faculty members' rights and obligations under conflict-of-interest guidelines. Older faculty, in particular, may find that rules that applied when they were hired have been superseded by new, more rigid constraints. That, at least, is what Kligman claims.

Although lofty principles have been invoked, the case at its heart is a fight over who gets to share the millions of dollars that may result from Kligman's invention. The original patent has already made Kligman a multimillionaire and, because Penn was given a share in the profits, it also has brought Penn about $11 million. In addition, Kligman independently donated several million dollars of his own income to Penn's dermatology department. Penn says in its legal papers that it expects the medication will be commercially just as successful as an anti-wrinkle cream as it has been as an anti-acne medication, and it wants a share of that success.

Indeed, even though Retin-A has not been yet approved to fight wrinkles, it is already being widely prescribed for that use. *Money* magazine, in fact, estimates that Ortho Pharmaceutical, the Johnson & Johnson subsidiary that markets it, made profits of $20 million on the product in 1988. But the licensing agreement between Kligman and Johnson & Johnson for use of Retin-A as an anti-wrinkle medication would leave the university out in the cold. Depending on sales, Kligman would receive between 1 and 5% of the profits and Penn would get nothing.

Kligman is not talking to the press. His attorney, Thomas Morrison of the New York firm of Patterson, Belknap, Webb & Tyler—who is also the attorney for Johnson & Johnson—has asked his client to remain silent for now. "Dr. Kligman likes nothing better than to discuss his inventions," says Morrison, but "I don't want him talking to 25 different reporters about the case."

But in legal filings, Kligman maintains that he developed the anti-wrinkle cream on his own time and with his own resources. For example, Morrison says, Johnson & Johnson gave Kligman grants totaling more than $100,000 specifically to develop his Retin-A concept. These funds were not channeled through the university's accounts but to two separate entities created by Kligman, Ivy Laboratories and Simon Greenberg Foundation. They are "organizations which [Kligman] funded out of his own pocket," says Morrison.

Kligman's motion to dismiss the suit says that "like many of his colleagues during the 1950s, 1960s, and 1970s, Kligman received only a nominal salary and was expected to earn a living through outside activities." While some dermatologists saw patients and others read slides, "Dr. Kligman earned his living consulting for drug and cosmetic companies," according to the motion. It quotes favorable comments from several of his peers, including former dermatology department chairman Walter Shelley, who said that he was fully aware of Kligman's outside work and never considered it improper.

In addition to having had 20 consulting or licensing agreements with Johnson & Johnson during his career, Kligman received other obvious forms of support, according to Kligman's legal papers. The company reimbursed him for the cost of an attorney to file patents on the Retin-A cream; it invested "5 years and millions of dollars in preparing a New Drug Application to the U.S. Food and Drug Administration" so that his invention could be marketed as an anti-wrinkle cream; and, "with the help of Johnson & Johnson, the invention was displayed at the December 1985 convention of the American Academy of Dermatology, where it won the Academy's Gold Medal for Investigative Achievement."

The case against Kligman has at least one

"fatal weakness," according to Morrison. Kligman filed for the contested patent in 1981, an event so old that it cannot be litigated unless the statute of limitations is suspended. And that, says Morrison, would require the university to prove that Kligman "fraudulently concealed the invention and the arrangement with Johnson & Johnson, which is preposterous."

Penn claims in its legal briefs that Kligman did not inform the university of his plans for Retin-A as an anti-wrinkle cream. Instead, the university contends, Johnson & Johnson "induced" him to sign an exclusive license agreement. The suit, which was originally filed by Penn's agent, University Patents, was joined by the university itself last month. Johnson & Johnson's "willful, wanton, outrageous" and "reckless" conduct, in Penn's view, threatens to rob the university of its property. Penn is asking the court for more than $75,000 in compensation on each of six counts of injury.

Meanwhile, Kligman has broken his silence just once. His office released a note saying, "I regret that the University which I have served faithfully for more than 40 years has joined with University Patents to prosecute these false and unfair charges."

■ ELIOT MARSHALL

Feud Flares Over Thallium Superconductor

For the second time in less than 2 years, a dispute over credit for a high-temperature superconductor has roiled a team of researchers. Zhengzhi Sheng, a chemist at the University of Arkansas, has charged that his former supervisor Allen Hermann unfairly received credit for work that he—Sheng—actually did by himself. At issue is the discovery of the family of thallium compounds that includes the highest temperature superconductor known.

The dispute comes at a ticklish time. The U.S. Patent Office is now reviewing joint applications from the two scientists and the University of Arkansas for patents on the superconductors. So far the only patent on thallium superconductors has gone to IBM researchers who first isolated and characterized the 120 K material that Hermann and Sheng discovered (*Science*, 20 October, p. 320). University officials are hoping the current squabble will not damage their chances to get broad patent rights to those compounds, which could be worth millions of dollars.

Sheng ignited the controversy after learning Hermann had been named Person of the Year by the readers of the newsletter *Superconductor Week*. In response, Sheng sent the newsletter's editors a manuscript, "How I discovered the 120 K Tl-Ca-Ba-Cu-O superconducting system," that gives a detailed account of his research from the time the first high-temperature superconductors were announced in 1987 until the discovery of the thallium compounds in early 1988. According to an article in the 19 February issue of *Superconductor Week*, Hermann's name is not even mentioned in the narrative until the acknowledgements section. In an interview with *Science*, Sheng repeated his claim that he did all of the work. "[Hermann] actually never made a sample or measured a resistance curve," he said.

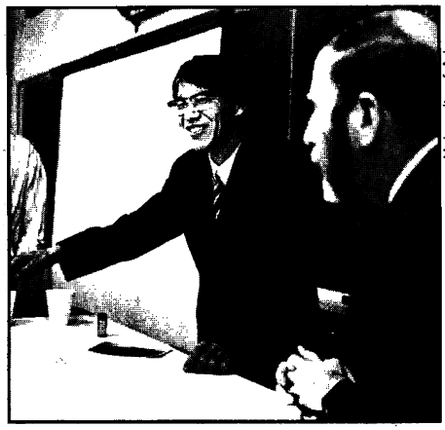
Hermann's version is somewhat different. The former chairman of Arkansas's physics department recalls that he set up a small superconductivity team in the spring of 1987 after the "Woodstock of Physics"—that meeting of the American Physical Society at which thousands of physicists got their first exposure to the revolutionary high-temperature superconductors. Shortly afterward Sheng, who had just completed a doctorate in nuclear chemistry, joined the group as a postdoctoral fellow. "[Sheng] had no experience in superconductivity or condensed matter physics," Hermann says.

Indeed, Sheng was not even familiar with the standard way to measure the vanishing resistance in a superconductor, Hermann says. "I helped him set up the resistivity measurements." Hermann acknowledges that Sheng did most of the work in the lab. "After a point, I was a roadblock runner," he says. But he remembers that the two "talked frequently about direction" and says it is hard to pinpoint which of them first came up with the idea of using thallium.

When they announced their discovery of the thallium compounds in February 1988, Hermann was the natural spokesman. He was the team leader and was comfortable in front of a crowd; Sheng was a postdoc with poor English skills. Although Sheng's name often appeared first on papers and patent applications, and although Hermann always gave Sheng credit when speaking at meetings or press conferences, the two were not viewed as equals by the scientific community or the press, both of which normally assign the lion's share of the credit to the team leader. Hermann became a fixture at superconductivity meetings and was recruited to a highly paid position at the University of Colorado at Boulder, where he moved in January.

The last straw for Sheng apparently was Hermann's selection as Person of the Year. Ironically, Hermann had written to *Superconductor Week* that he accepted the award "in the spirit in which it was given, i.e., as leader of the team that discovered the Tl-based compounds." He added, "I would appreciate it if, in your report on this award in *Superconductor Week*, you would give special mention to my brilliant colleague at the University of Arkansas, Dr. Zhengzhi Sheng." Hermann sent a copy of that letter to Sheng, which is how Sheng learned of the award.

The details of the Hermann-Sheng conflict echo an earlier controversy between Paul Chu and Maw-Kuen Wu over who discovered the revolutionary Y-Ba-Cu-O superconductor in early 1987 (*Science*, 5 August 1988, p. 655). After team leader Chu at the University of Houston got most of the credit as well as a National Medal of Science, Wu at the University of Alabama in Huntsville pointed out that he had been the one who actually fabricated the material. Wu eventually did receive recognition for his contribution and is now a tenured professor at Columbia University in New York City.



University of Arkansas

Happier days. *Sheng, left, speaks at a press conference as Hermann looks on.*

Sheng may not fare as well as Wu. He has been promoted to a nonteaching research professor position at Arkansas but he has not been granted tenure. And by all indications, the university was not pleased with Sheng's public bid for credit. They asked him to retrieve his manuscript from *Superconductor Week* and not release it to anyone else, and also requested he not speak to the press until they decide how to respond to the controversy.

■ ROBERT POOL