mography scans showed a 20% or better increase in dopamine activity in the putamen in more than two-thirds of the treated patients. Patients aged 60 or younger showed a marked reduction in Parkinson's symptoms, while older patients improved only slightly compared to the controls. Even after 36 months, the transplant group was doing better than the controls, Freed reported at the meeting.

The results of the trial are "modest, but [it was] very well done," says Roy Bakay, a neurosurgeon at Emory University in Atlanta. "It's the first study, and there are going to be advances in technology that will be exponential." New techniques to help fetal cells survive the transplant, for example, should lead to more dramatic clinical benefits, he predicts. Bakay adds that if the few human trials still under way also show no placebo effect from a sham operation, he hopes the Food and Drug Administration will remove one ethical objection to such research by allowing researchers to pit one treatment against another. "Maybe after a few of these studies, we shouldn't have to do sham operations anymore," he says. –LAURA HELMUTH

Researchers Plan Free Global Preprint Archive

While the National Institutes of Health (NIH) moves ahead with plans to create a free database of biological publications, a group of research librarians and information experts is trying to concoct something more far-reaching. The leaders—who are following the model of the Los Alamos National Laboratory (LANL) physics archive—met last week in Santa Fe, New Mexico, to begin working out the framework for a "universal preprint archive" that would include papers from all disciplines. By November, according to spokesperson Herbert Van de Sompel of the University of Ghent in Belgium, the group hopes to release a set of indexing protocols that would permit authors to deposit their work at participating sites and readers to retrieve the full text at no cost.

Van de Sompel, an expert on digital libraries, teamed up with Paul Ginsparg, founder of the LANL archive, and LANL research library director Rick Luce to organize last week's meeting. In attendance were more than 20 information specialists representing a variety of institutions, from Harvard University and the Massachusetts Institute of Technology to NASA and the U.S. Library of Congress. All support the idea of making scientific papers freely accessible to the public, although individual participants differ on specifics, such as how to handle non–peer-reviewed material.

The group aims to encourage the growth of preprint repositories such as the Los Alamos archive and knit them together with a set of protocols. Ginsparg's project at LANL began in 1991 as an archive for physics. Now it contains more than 100,000 papers on math, physics, and computer science. Ginsparg declined to discuss the new project in detail but said, "The hope is ... [to] catalyze real progress in new scholarly publishing models over the next 5 to 10 years" (see vole.lanl.gov/ups).

Several groups have already established preprint archives in their own disciplines, some of which have grown rapidly. For example, economists have organized several repositories in a site called Research Papers in Economics, coordinated by Thomas Krichel of the University of Surrey, U.K. (netec.mimas.ac.uk/RePEc). And Stevan Harnad of the University of Southampton, U.K., oversees CogPrints, a collection of papers in cognitive science, psychology, neurology, linguistics, and related fields (cogprints.soton.ac.uk). Last week's meeting was aimed at stimulating other grass-roots efforts.

Van de Sompel says they "managed to agree on some important technical matters that will enable the creation of cross-archive end-user services," which are now being worked out in detail. The format is likely to follow a model described in a draft "Santa Fe Agreement" released earlier this month by Krichel. This draft, which lacks the indexing tags agreed upon last week, establishes a process by which archives and data providers can affiliate with the group. For example, it requires unanimous consent for changes and declares that the objective is "open and cooperative" sharing of data.

The Santa Fe effort differs in tone from NIH's PubMed Central: It's more radical. At present, the latter is gearing up to be a distributor of traditional peer-reviewed articles. But the Santa Fe archivists are focused on another type of scholarly discourse, one in which editors, peer reviewers, and paper will be optional. –ELIOT MARSHALL

First Glimpse of a Cosmic Funnel

Astronomers have caught their first-ever glimpse of the funnel that channels a fountain of subatomic particles, erupting from the center of a galaxy, into a narrow stream thousands of light-years long. The radio images, published in the 27 October issue of *Nature*, hint that a sheath of twisted magnetic fields focuses the particle stream.

Many galaxies have turbulent hearts that emit powerful beams of radio-emitting plasma like this one, which streaks from the center of M87, a galaxy 50 million light-years from Earth. Resembling spotlights at a Hollywood movie premier, such beams are probably generated as matter plunges into a supermassive black hole at the center of the galaxy. Magnetic fields churned up by the swirling, superheated matter presumably squeeze the material into a beam, but astronomers had been unable to locate the focusing "lens." The main problem is that the postulated lens must lie very close to the black hole itself, and it takes a radio telescope the size of Earth to see detail that fine at the center of a distant galaxy.

CREDIT: NRAO

Jet propulsion. New VLBA image of the core region of M87. Earlier radio images of the galaxy at larger scales are shown above.

Fortunately, a team of radio astronomers led by Bill Junor at the University of New Mexico, Albuquerque, had access to just such a telescope: the Very Long Baseline Array (VLBA). Consisting of 16 electronically linked radio dishes extending from Hawaii to Italy, the VLBA imitates the resolving power of a single telescope with a 10,000-kilometer-wide dish. "It is a wonderful instrument," says Junor.

Junor's image of M87 shows a 60-degree plasma cone a few hundredths of a light-year long emerging from the center of M87. Because this cone feeds directly into the 1000-light-year-long, 6-degree-wide jet seen in older images, Junor's team concludes that something is squeezing the plasma into a tight stream. "We want to invoke magnetic fields to wrap the jet," says Junor, but testing that theory with computer models "is a horrendously complicated problem." Maybe so, but astronomer Meg Urry of the Space Telescope Science Institute in Baltimore says, "these observations are an important first step" to understanding the focusing mechanism. –MARK SINCELL

Mark Sincell is a science writer in Houston.