

**DRUG BUST:** Associated Press reported that “a national survey of nearly 3,000 adults finds that about 4 in 10 wrongly believe the U.S. Food and Drug Administration approves only ‘extremely effective’ drugs.” The study was done by DMS faculty members Drs. Lisa Schwartz and Steven Woloshin.



## Retinal implants: From research to reality

In the back of the eye lie several layers of cells that form the retina and make vision possible. If those cells are damaged or die off, as happens with certain retinal diseases, a person’s vision can fade and ultimately disappear forever. Or at least that used to be the thinking.

**Visual:** But for the past decade, several biotech companies have been pursuing ways to restore some visual perception for people blinded by degenerative retinal diseases. Dr. Christopher Chapman, a Dartmouth ophthalmologist who specializes in retinal surgery, has been working with one such company, IMI Intelligent Medical Implants, for about two years.

IMI is developing a retinal implant and Chapman is respon-

sible for refining surgical techniques to optimize its safety and longevity. He does that in a specialized surgical lab at DHMC that the company outfitted. So far, he’s implanted the device only in animals. He has little to do with the development of the device, he admits, but he’s fascinated by how it works.

A specialized camera that looks like sunglasses transmits image information to a small box containing a processor.

**The processor transmits signals to the implant, a film-like material.**

The processor translates the information into signals that are transmitted to the implant, a film-like material attached to the retina. A microchip in the implant transforms the signals into electrical pulses, which stimulate the remaining retinal cells—those not destroyed by disease. Since those cells can still communicate with the optic nerve, the result is “useful, selective visual perception,” according to the company—although it’s not yet clear how useful.

**Trials:** IMI has tested its implant in people in Europe but has yet to conduct human trials in the U.S. The firm is hesitant to provide a precise timeline because other companies are developing competing devices.

As for Chapman, he’s thrilled to be doing such research. The techniques he develops for the IMI implant could help ophthalmologists improve other procedures, he says. He “sees” that as good news for everyone.

JENNIFER DURGIN



JOHN GILBERT FOX

Chapman shows off some of the components of the retinal implant he’s testing.

## FACTS & FIGURES

### Kids’ stuff



1933

Year the American Board of Pediatrics was established

1937

Year Dartmouth hired its first pediatrician

2

Number of pediatricians on the Dartmouth faculty in 1957

281

Number of pediatricians at all Dartmouth-Hitchcock sites today

80,000

Number of pediatricians in the U.S. today

1992

Year the Children’s Hospital at Dartmouth (CHaD) was designated as a children’s hospital by NACHRI (the National Association of Children’s Hospitals and Related Institutions)

205

Number of children’s hospitals in the U.S. today

6,000

Number of pediatric cases annually in the DHMC Emergency Department (the only Pediatric Level 1 Trauma Center in Northern New England)

10%

Percentage of DMS ’11s who entered a residency in pediatrics

SOURCES: CHILDREN’S HOSPITAL AT DARTMOUTH, DARTMOUTH MEDICAL SCHOOL, AMERICAN ACADEMY OF PEDIATRICS, AMERICAN BOARD OF PEDIATRICS