education. According to Johns Hopkins dean Richard S. Ross, preparing for the MCAT has become a process that has been "distorting the premed curriculum grossly." Students even drop out of college for a semester to take cram courses for the exam.

The new policy, which goes into effect for September's entering class, follows by 3 years the introduction of "FlexMed," an admissions program that allows students to enter as early as their junior year in college and to take time off to pursue studies in the humanities.

The MCAT is required by 124 of the 127 American medical schools, according to the exam's sponsor, the Association of American Medical Colleges (AAMC). Ross notes that since the average student applies to eight medical schools, the policy won't have much effect until others follow suit. He is planning to hold a meeting with some deans in the fall and is seeking the establishment of a consortium that will agree on a uniform set of minimal science requirements for entering students.

Many see the MCAT as contributing significantly to the dehumanizing aspects of medical school by favoring the more narrowly focused, competitive-minded students. Furthermore, according to Norman D. Anderson of Johns Hopkins (in the *New England Journal of Medicine*, 9 February, 1984), there are no data indicating that MCAT scores correlate with either clinical performance in medical school or later success in medical careers.—**CONSTANCE HOLDEN**

Recurring Problem Caused Shuttle Engine Shutdown

The shutdown of the space shuttle Challenger's center engine midway through its 29 July ascent will not affect the schedule of forthcoming shuttle flights, set for August and October. Officials of the National Aeronautics and Space Administration (NASA) say they plan to replace faulty temperature sensors on the shuttle's engines with a redesigned device.

The sensors, called "transducers," are mounted on the rocket engines' high-pressure hydrogen and oxygen pumps. They have been blamed by NASA officials for the shutdown of Challenger's number one engine and the near shutdown of its number two engine. Other data examined by NASA indicate that the engines were operating flawlessly, says Gerald Smith, chief of the shuttle's main engine office at NASA headquarters in Washington.

Challenger's computer killed the number one engine in response to signals showing that the high-pressure hydrogen fuel pump was overheating—operating at temperatures between 1850° and 1950° Fahrenheit. The engine shutdown occurred 6 minutes into the flight, allowing the shuttle to reach an orbit of 195 nautical miles, far short of the 380-mile orbit that was desired to carry out some solar experiments.

The same sensor has failed in 9 of 19 missions, but never before has the prime sensor and its backup failed on the same engine. NASA began working on a redesigned sensor more than a year ago. The first of the second-generation transducers will be installed on the next shuttle flight later this month.

Because only a limited number of sensors may be available from the supplier, Rosemont, Inc. of Minneapolis, Minn., first-generation sensors could remain on high-pressure oxygen pumps for the next few flights. NASA, however, notes that there has been only one malfunction of the sensor on oxygen pumps—largely because the operating environment is less hostile.

It is the hot, high-temperature operating climate of the high-pressure hydrogen pump that NASA officials believe caused the sensor failure. These sensors are not replaced before every flight, but NASA officials say they are inspected and tested prior to every launch. The sensors are replaced after every four flights.

Of the 13 experiments conducted on Spacelab 2, one gave scientists real trouble. The solar magnetic and velocity field measurement system suffered from a malfunctioning polarimeter that quit on the first day. It began working on Sunday, 2 days before the flight terminated. Still, NASA says the experiment did obtain good three-dimensional images of solar features.

The Instrument Pointing System (IPS), built in West Germany for the European Space Agency to precisely focus solar detectors on the sun, also had problems functioning. NASA officials overcame the glitches by reworking computer software. In the first few days of the mission, scientists got data from three of four solar experiments by bypassing the IPS.

—**MARK CRAWFORD**

Hughes Names Five Vice Presidents

The Howard Hughes Medical Institute (HHMI), now the wealthiest private philanthropy in the country, has just appointed five vice presidents who will be responsible for Hughes' medical research programs and for overseeing the investment of the vast resources the institute gained with the recent sale of the Hughes Aircraft Company to General Motors for more than $5 billion (*Science*, 7 June, p. 1178). HHMI president Donald S. Fredrickson, former director of the National Institutes of Health, says the new appointments attest to Hughes' commitment "to be in the forefront of medical research and to assure the stewardship of its endowment."

Purnell W. Choppin, who has been vice president for academic programs and dean of graduate studies at Rockefeller University, will be the chief scientific officer for HHMI. (Lloyd H. Smith, Jr., is head of the institute's medical advisory board.)

George Francis Cahill, who will retain his title as a professor at Harvard Medical School, will join HHMI as vice president for scientific training and development.

HHMI's chief legal officer will be David J. Taylor, formerly a general partner with the law firm of Schiff, Hardin & Waite. In addition to his legal interests, Taylor is head of the Bordeaux Wine Society in Washington.

Robert C. White, who was with the Ford Motor Company for 35 years, where he most recently was corporate assistant treasurer, will be HHMI's chief financial officer.

And Graham O. Harrison will join the institute as chief investment officer. Graham was with U.S. Steel for three decades, where he managed the company's $7 billion pension fund.

—**BARBARA J. CULLITON**