Coalition pickets MIT corporation

By Kenneth Hamilton

The MIT-Wednesday Coalition Against Apartheid protested last Friday in front of the Sloan School of Management while a meeting of the MIT Corporation was being held inside. Between 60 and 70 people attended the rally to demand that the MIT Corporation divest itself of stocks in corporations doing business in South Africa and also make a statement against apartheid.

Vincent Fulmer, Secretary of the Institute, declined to state whether a petition embodying the Coalition's statements presented to Constantine B. Simonides by the Coalition last May was a subject of discussion at the meeting. The petition was signed by 1,000 members of the MIT community. According to Cheryl Strothers '80, a representative of the Coalition, the petition has not been formally acknowledged by Simonides.

Dave Vanderbilt G, also a representative of the Coalition, commented that the Coalition is having some difficulty identifying which group bears responsibility for this issue, be it the Corporation, the Committee on Shareholder Responsibility, or the Executive Committee.

Lawrence Krauss O, speaking for the Coalition, said that part of the reason rallies such as the one last Friday have been organized by the Coalition is to publicize the issue and stimulate dialogue within the MIT community. Krauss announced that the Coalition plans to hold a reception for Drake Koc on October 17 between 6 and 7 pm in the Spot- ford Room (J-236). Later at 9pm Koc will be speaking at Harvard in Longfellow Hall. Drake is the Executive Director of the Black Allied Workers Union.

Last spring, Greg Williams, a staff member of the American Friends Service Committee, spoke on the role of the Student Center as part of a demonstration supported by the Coalition. He urged MIT students to occupy the Cambridge offices of the Badger Corporation, a subsidiary of Raytheon. Raytheon is one of the corporations in MIT's investment portfolio that has assets in South Africa. Cheryl Strothers '80, however, one of the leaders in the coalition, disavowed having any plans to carry out such action since she claims that "it would lack worth value.

Prosthesis research at MIT

By Jay Glass

"We're optimistic...that we can provide improved mobility for amputees," stated Assistant Professor Woodey Flowers of the Mechanical Engineering department, "and we will be moving in that direction in the near future.

Flowers and several colleagues are now involved in research into the design of above-knee (A/K) prostheses which would allow the artificial leg to be "customized," allowing amputees to walk with their natural gait.

"[Flowers'] design research is being conducted in rehabilitation design work through his enjoyment of engineering design, and "applying what you like to an area such as rehabilitation...is a nice thing to do," he said.

The A/K prosthesis undergoing preliminary evaluation is a device controlled by a microcomputer, usually worn on the back or hand-held. It sends appropriate low-power signals to a magnetic particle brake in the knee mechanism. The brake then produces a torque during the "swing" phase of walking, resulting in an improvement in the gait of the amputee.

Flowers mentioned that in contrast to currently used prostheses which straighten the leg and "vail" during the "swing" phase of walking, computer controlled prostheses under study would give a "more natural, rolling", action. He doesn't think it realistic to expect that a microcomputer controlled prosthesis will do the job, "only" physically.

Emphasizing that the new developments would not be commercially available in the future, Flowers said, "It's strictly a research tool." Currently all outside use of the system is confined to evaluation as a post-operative training tool at Massachusetts General Hospital.

Future developments of the microcomputer controlled knee mechanism will probably be focused on "optimizing" a prosthesis of an active/passive knee mechanism using a motor/generator as an activating device.

Finding for the project comes from the National Science Foundation and from the Social Rehabilitation Service, a branch of the US Department of Health, Education and Welfare. Says Flowers, "we've been lucky to be given funding and the opportunity to experiment.

Woodey Flowers came to MIT in 1978 after graduating in 1976, and joined the faculty in 1972. Besides research, he is chairman of the 1979 Independent Activities Program (IAP) One-Vision Coalition. He is also well-known for his 2.70 design class and his Design Context at the end of the term.

Department heads describe goals

By Lenni Martin

Editor's Note: This is the third of a three-part series focusing on the special interests of department heads and the goals they have for their departments. Part 1 and Part 2 appeared in the October 6 and October 13 issues.

"We're probably one of the best, if not the best, departments in the world, but what MIT means can't be improved," said Professor John E. Feshbach, one of many department heads who discussed their special interests and departmental goals with The Tech.

One problem Feshbach is working on is how he can work his "incomprehensible" of the curriculum needs of students in general with the needs of students who need special help, what is known as the "fractured" program for certain areas of science and engineering. Professors Samuel Jay Keyser, head of the Department of Linguistics and Philosophy, is working on the development of a cognitive-aesthetic program, and the center would support not only his department but also those in psychology and electrical engineering.

Director of Undergraduate Studies, David S. Perkins, stated that his department is undertaking a major study of its undergraduate curriculum in an effort to improve it. After explaining that a major revision has been made or less every seven years with the last in 1970, Perkins said that "in general, with students that changes need to be made" and that the study was "not" mandated by the administration but was demanded by the students. Perkins stated that his department has tried to strike a reasonable compromise between aspects of civil engineering related to the physical sciences and the intellectual aspects related to planning, policy, and social issues. He added that it is unclear what changes will be made due to the wide differences of opinion.

A major revision of the undergraduate curriculum in Electrical Engineering and Computer Science has been developing for one and one half years, according to Head of the Department Gerald Wilson '61. Core undergraduate courses will have more involvement with digital computers, and laboratory work will be further integrated with normal classroom teaching. "Maybe some of the undergraduate core courses will have more meaning," said Wilson.

Wilson related that he is excited about several "technological problems in the nation that we can have more impact on." They include the development of an integrated circuit technology, automation of tasks such as coal mining, and development of holographic communication systems, which would allow, for example, an Easter to "see" a book without actually going there. "It's like being there in the same room," Wilson said, smiling.

Also sensitive to his department's impact on technology is Jack Koenroth, Head of the Department of Aeronautics and Astronautics. Koenroth whose specialties are propulsion and energy conversion, is "very pleased" with research that he has seen on the transonic compressor and on the aerodynamics of computers for jet engines.

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Head of the Department of Psychology, Richard Held, head of the Department of Psychology. One of Held's best-known research projects, the kitten crossed experiments, which proved that active movement must accompany visual stimulation for the development of motor coordination, is a project headed by Held that found that babies prefer horizontal and vertical lines to diagonal ones due to heredity rather than environment. The Koenroth hypothesis was that babies acquire the trait by living in a civilisation full of structures embodying parallelism and perpendicularity.