

# Clark Open House Oct. 30-31

## Theme: 'Atoms, Lasers and Neighbors'

A behind-the-scenes look at research and researchers on the frontiers of physical science will be offered during the Clark Hall of Science Open House, Friday and Saturday, Oct. 30 and 31.

Theme of the event is "Atoms, Lasers and Neighbors."

Demonstrations, displays, lectures and guided tours are scheduled from 7 to 10 p.m. Friday and 9 a.m. to mid-afternoon Saturday in the science complex where experiments are conducted by more than 20 research groups from the Laboratory of Atomic and Solid State Physics, the Department of Applied and Engineering Physics and the Cornell Materials Science Center.

The program is open to the general public at no charge. This is only

the second time since Clark Hall was built in 1964 that the laboratories will be open to the public.

Touring Clark Hall facilities, visitors will be able to watch photographs being made with a powerful electron microscope, examine the intricate apparatus used to study materials a fraction of a degree above absolute zero, and learn how sophisticated computers are used to control experiments and aid scientists in collecting data.

Also on display will be the far infrared laboratory where the so-called invisible light is used to "see" properties not revealed by conventional light, the instrument-making and equipment fabrication shops where one-of-a-kind devices are built to the exacting specifications

of renowned scientists.

"Sidewalk physics" demonstrations will be set up in the corridors of the Clark Hall complex to illustrate the principles behind everyday phenomena. Theoretical physicists will discuss the way their work attempts to predict the findings of experimental physicists as well as explain the observations of experiments. Other areas open to the public include the Physical Sciences Library, a major resource in the study of physics, chemistry, applied physics and astronomy; the Clark Hall word processing facilities, where discoveries from the laboratory are described and edited for the information of other scientists around the world; and student laboratories, the training ground for physicists and materials scientists of tomorrow.

Open house tours, which are expected to take about one and one-half hours, begin in the Physics Lounge on the first floor of Clark Hall. Parking in the vicinity of Bailey Hall, to the east of Clark hall, is recommended.

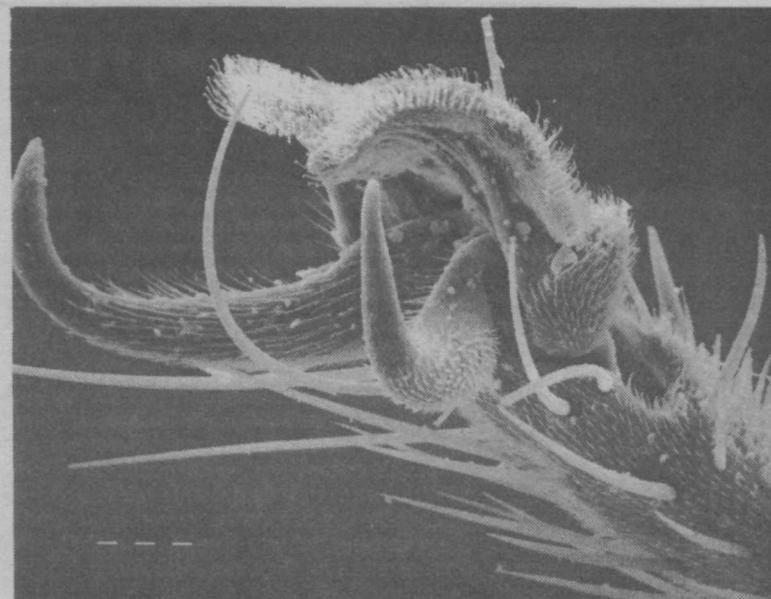
"Some of the research carried out in Clark Hall is experimental and practical, and some is theoretical and abstract," explains Neil W. Ashcroft, professor and director of the Laboratory of Atomic and Solid State Physics. "The common theme, however, is the improvement of the way we understand the properties of solids and liquids, some of which are provided by nature and some of which are man-made."

Noting that physicists consider solids and liquids to be forms of condensed matter as distinguished from the other familiar forms of matter, gases and vapors, Ashcroft points out that many of the solids and liquids studied in Clark are both technologically important and important to understand in fundamental terms for the ways they reveal the laws of nature at work.

"Some of the materials are metals, some are insulators and some are in the very important class of materials known as semiconductors," Ashcroft continues. "We also find that some forms of condensed matter exist under the most unusual conditions. For instance, we study a substance—helium—which only becomes a liquid at -460°F! In the same kinds of apparatus that are used to obtain these remarkable temperatures, we also study metals that lose all traces of resistance. These are superconductors, and in their superconducting states they can be used in coils to produce enormously high magnetic fields."

Research in low temperature physics brought two prestigious awards to Cornell researchers in 1981. Professors of Physics Robert C. Richardson and David M. Lee shared, with former Cornell graduate student Douglas Osheroff, the 1981 Oliver E. Buckley Solid State Physics Prize of the American Physical Society for their discovery of the superfluid phases of helium 3. Physics Professor John D. Reppy and two other researchers received the 1981 London Memorial Award for their major contributions to the field of experimental low temperature physics.

More information on the Clark Hall of Science Open House is available by calling 256-5061.



Magnified 300 times, a housefly's foot looks like this through an electron microscope, one of the facilities that will be demonstrated to the public during the Clark Hall of Science Open House, Oct. 30 and 31. Photograph by Gerhard E. Schmidt.

## Graduate Bulletin

Late initial course registration and/or course additions are still possible upon payment of \$10. Oct. 23 is the deadline for dropping courses or changing the grade option.

Check the Fellowship Notebook in your graduate faculty representative's office for information on the awards whose deadlines are listed below. Additional information on these awards is available at the Fellowship Office, 116 Sage Graduate Center. Unless otherwise stated, prospective applicants must obtain applications directly from the agency concerned.

**Oct. 30: Fulbright Doctoral Dissertation Research Abroad Training Grant Program** — Deadline to submit applications for research in Southeast Asia to the Southeast Asia Program, 120 Uris.

**Nov. 1: Fulbright Doctoral Dissertation Research Abroad Training Grant Program** — Deadline to submit applications for research in South Asia to the South Asia Program, 302 Morrill Hall.

**Nov. 1: American-Scandinavian (ASF) Awards for Study in Scandinavia** — Several types of grants are available for graduate study and research in Scandinavian countries. Applicants must know the country's language because no awards will be made for study at English-language institutions or for study of Scandinavian languages. The ASF also offers a limited number of awards to Scandinavians for study/research in the U.S.

**Nov. 1: New York State Assembly Graduate Scholars Program** — This program provides a stipend of \$7,500 covering one semester and a summer. Assignments include working with assembly leaders, standing committees, or research offices. Applicants must be residents of N.Y. or attend a university in N.Y. and must be matriculated or have completed a graduate degree program. Applications are available at the Fellowship Office.

**Nov. 1: New York State Health Planning Commission Fellowships/Grants** — Pre- and post-doctoral, full- and part-time fellowships may be applied for in any aspect of health. Training must be at an institution within N.Y. Funds may be requested for: stipends, supplies, travel, salary support, and technical assistance. Research grant proposals may be submitted in these priority areas: preventive health care, development/testing of vaccines for communicable diseases, alcohol/drug abuse, mental retardation/illness, public/consumer protection, and oral/dental research. Applications are available at the Fellowship Office.

**Nov. 1: Sigma Xi Grants-in-Aid of Research** — Awards provide from \$100 to \$1,000 to support scientific research in any field. Grants are not normally made for the expense of publication, salary,

tuition, or travel to meetings. Applications are available at the Fellowship Office.

**Nov. 2: Social Science Research Council Fellowships for International Doctoral Research** — This fellowship provides maintenance allowance, transportation insurance, and a research allowance for 6 to 24 months of dissertation research in the social sciences or humanities. The following areas are covered: Africa, Asia, Latin America and the Caribbean, the Near and Middle East, and Western Europe. Applicants must be enrolled at a university in the U.S. or Canada. There are no age or citizenship restrictions.

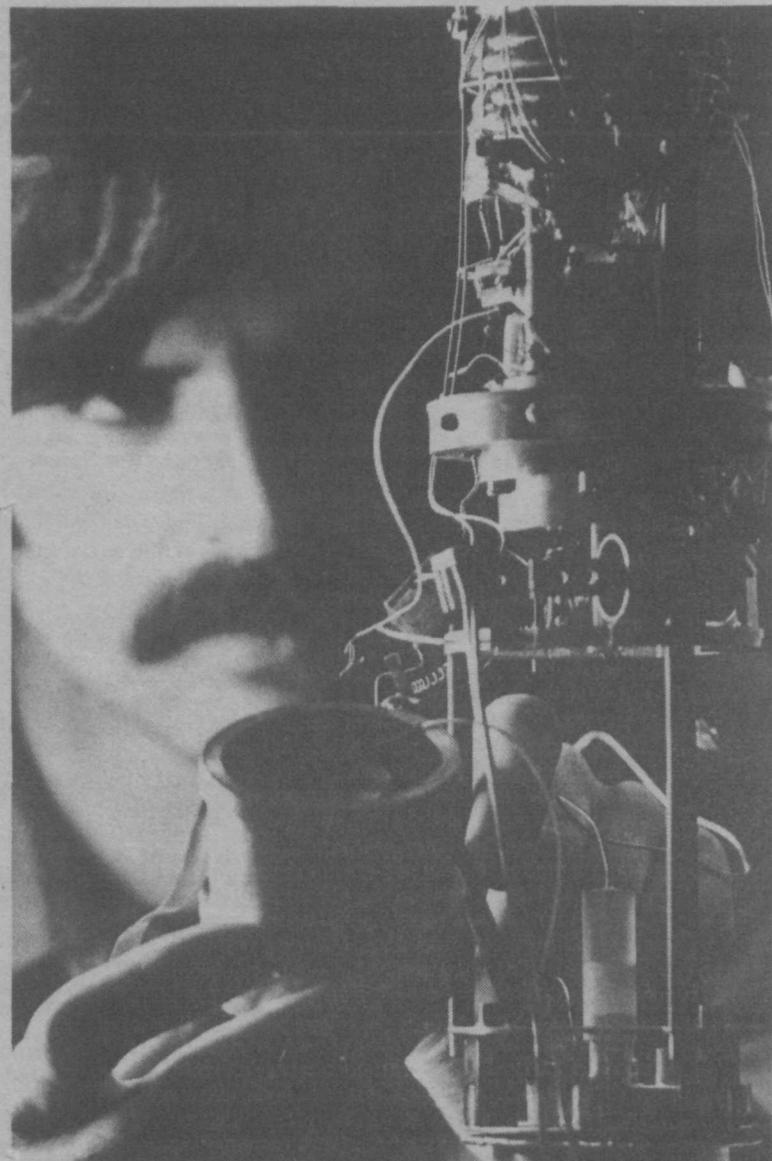
**Nov. 5: Fulbright Doctoral Dissertation Research Abroad Training Grant Program** — Deadline to submit applications for research in East Asia to the China-Japan Program, 140 Uris Hall.

**Nov. 6: Committee on Scholarly Communication with the Peoples' Republic of China (CSCPRC) Program for Advanced Study and Research in China** — This is open to graduate and postdoctoral scholars who are U.S. citizens for long-term study or research in affiliation with Chinese universities and research institutes. Grants include: transportation, stipend, living and travel allowances, and a limited research and educational materials allowance. Applications are available at the Fellowship Office.

**Nov. 6: Fulbright Doctoral Dissertation Research Abroad Training Grant Program** — Deadline to submit applications for research in Africa or the Middle East to Jeanne Bowen, Director, Fellowship Office.

**Nov. 9: Fulbright Doctoral Dissertation Research Abroad Training Grant Program** — Deadline to submit applications for research in Eastern Europe and Russia to the Committee on Soviet Studies, 140A Uris Hall.

**Nov. 9: Fulbright Doctoral Dissertation Research Abroad Training Grant Program** — Deadline to submit applications for research in Latin America to the Latin American Studies Program, 190 Uris Hall.



Graduate student Michael Roukes prepares a nuclear demagnetization cryostat for an experiment in the Clark Hall Low Temperature Laboratory, one of the facilities to be open to the public Oct. 30 and 31. Photo by Roger Segelken.

## Arigoni Here Through Nov. 2

Duilio Arigoni, professor of organic chemistry at the Swiss Federal Institute of Technology in Zurich, will be here through Nov. 2 in his capacity as one of the university's Andrew D. White Professors-at-Large.

During his stay he will give two lectures aimed primarily at chemists and biochemists but still open to the public:

"Application of the Chiral Methyl Group to Chemical and Biochemical

Problems," 8:15 p.m. Monday, Oct. 26, in Room 219 Baker Laboratory;

"The Euhemerisation of Vitamin B/12," at 4:30 p.m. Thursday, Oct. 29, in Room 119, Baker Laboratory.

He will hold office hours in 782A in the Spencer T. Olin Research Laboratory and can be reached by calling 256-4129.



**United Way**  
of Tompkins County

The Cornell campaign for the United Way is at the \$215,245 mark this week, at 80 percent of the goal of \$270,000. Overall, the county campaign is above \$600,000.