

1-15-1993

## NEWS AND NOTES 1993, VOL.3, NO.15

The Rockefeller University

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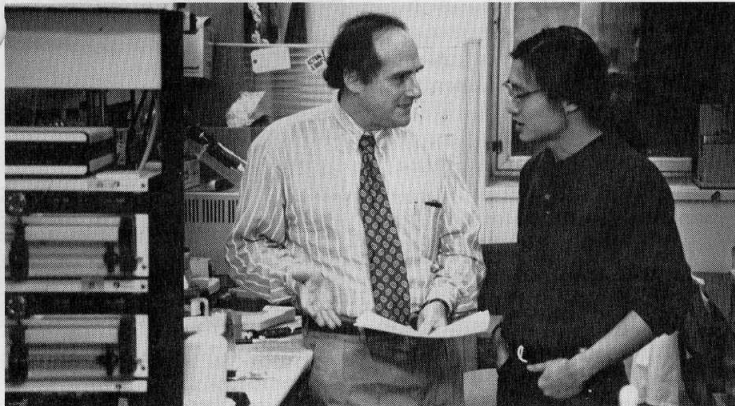
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# news & notes

January 15, 1993 Volume 3, Number 15

The Rockefeller University



Professor Ralph Steinman (left) and Assistant Professor Yongwon Choi are two of the researchers on campus who plan to use a new biocontainment facility that the university will begin building this spring.

## Researchers plan experiments for new biocontainment facility

Rockefeller University researchers will be able to expand their studies of AIDS, tuberculosis, and other infectious diseases thanks to a new biocontainment laboratory that the university will begin building this spring.

The new facility, designed to ensure the safety of investigators pursuing new lines of research with infectious organisms, will be larger and more technologically sophisticated than any currently available on campus. A \$300,000 grant from

the Abby Rockefeller Mauzé Charitable Trust and a gift of \$250,000 from The Starr Foundation will cover a significant portion of the cost of constructing and equipping the biocontainment laboratory.

The lab headed by Professor Zanvil Cohn and Professor Ralph Steinman is already planning experiments that rely on the new biocontainment facility. The group recently instituted a program of tuberculosis research to complement their long-term study of the immune system's interactions with HIV, the virus that causes AIDS. The increased incidence of TB in recent years, exacerbated by antibiotic-resistant strains of the TB organism, is closely linked to the AIDS epidemic. Drug-resistant TB infections are often lethal for those whose immune systems are compromised by HIV.

The research of Assistant Professor Yongwon Choi will also benefit from the new facility. Choi has conducted extensive studies of T cells, a type of immune system cell that is severely depleted in people with AIDS. He is now performing experiments that could lead to a deeper understanding of how HIV causes the loss of T cells.

"The new biocontainment facility will vastly expand the university's capacity for research on infectious diseases," said President Torsten Wiesel. "The increasing toll of the AIDS epidemic and the re-emergence of TB—especially drug-resistant strains—make it essential that Rockefeller scientists have the tools and resources to fully confront these diseases. I would like to express my gratitude to the Mauzé Trust and The Starr Foundation for their vital support."

The Abby Rockefeller Mauzé Charitable Trust has provided consistent support to The Rockefeller University over the years. In 1991, it awarded the university funds to modernize the Laboratory Animal Research Center. The Starr Foundation, a major benefactor of education, medical care, and research, helped establish the Royal Thai Fellowship at the university in 1988.

## Harvey Society lectures build on 88-year tradition

Next Thurs., Jan. 21, Wayne A. Hendrickson, professor of biochemistry and molecular biophysics at Columbia University, will speak on the "Structural Biology of Cell Surface Interaction" in Caspary Auditorium as part of the Harvey Society of New York's long-running lecture series. The monthly series, in which scientists address current biomedical topics, has drawn researchers and physicians across the city since the society's founding in 1905.

"I believe it is the longest continuous lecture series on biology and medicine in the United States," said James Darnell, Rockefeller University professor and vice president for academic affairs. Darnell was president of the Harvey Society from 1985 to 1986 and was a member of its council from 1986 to 1989. Other members of the university who were on the society's board of directors include Professor Emil Gotschlich and Assistant Professor

Stephen Morse.

The Harvey Society owes its name to English scientist William Harvey, who lived from 1578 to 1657 and is considered by many to have laid the foundation for modern medicine. He was the first to demonstrate the function of the heart and the circulation of the blood throughout the body.

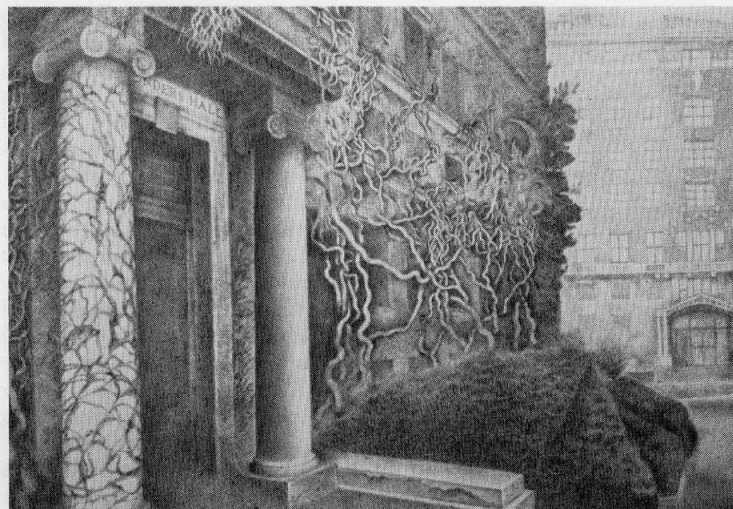
The Harvey Society was conceived as a meeting ground for clinicians and scientists. "There exist two classes of medical societies in New York, one of clinicians and one of experimental and theoretical researchers," the founding president, Graham Lusk, noted in his remarks at the first meeting.

"Knowledge of the experimental or theoretical sort, if presented in a broad and liberal spirit, may be made of value to members of all classes of the medical fraternity."

Lusk and the other members of the first board, who included Simon Flexner, the first director of The Rockefeller Institute for Medical Research, established that the lectures would be "from the laboratory point of view, of subjects of general interest."

The New York Academy of Medicine hosted the first Harvey Lectures in 1905. The Rockefeller University began hosting the lecture series, which is open to the university community, in 1970.

## A fresh view of RU



The illustrations of Csaba "Jacky" Zemlenyi, a mechanic for the university's residential buildings, have appeared in *The New York Times*, *Newsweek*, and *Time*. See story, page 2.

**2** Dance rescheduled for February

**3** Teenagers learn about viruses

**4** Volunteers assemble ice rink



# RU mechanic illustrates passion for drawing

By Jennifer Horne King

"I come from Transylvania but, don't worry, I love garlic," says Csaba "Jacky" Zemlenyi. Despite his thick accent and imposing frame, no one could mistake this affable and talented individual for Count Dracula. Zemlenyi came to The Rockefeller University in 1988 to work as a mechanic for some of the university's residential buildings. In this capacity, he cleans and maintains the buildings; the rest of the time, he draws and paints, contributing regularly to publications such as *The New York Times*, *Newsweek*, *Time*, *Details*, and *New York Magazine*.

Zemlenyi was formally trained in art, first at the College of Fine Arts, and later, at the Academy of Fine

Arts in Bucharest, Romania. By the time he graduated in 1974, his works were already in state exhibitions as well as in shows in Paris, Dusseldorf, Berlin, and Moscow.

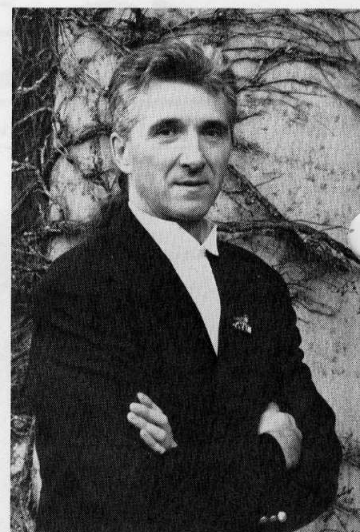
The subjects of Zemlenyi's illustrations vary, but all have a timeless quality, making them difficult to place in a historical context. "I want to leave something to the imagination," he said. To further enhance the timelessness of his work, Zemlenyi uses deep, earthy colors in his paintings. "I look for special ingredients for my paint," he explained, "the way painters did centuries ago, so that each color looks like a fruit slowly baked in the sun." For his drawings, Zemlenyi uses ball-point pen which gives the picture a hazy quality, like a fine etching.

Not all of Zemlenyi's projects involve painting or drawing. In 1975, he was commissioned to design a 1,280-square-foot mosaic for the interior of the Romanian Resita theater. One year later, Zemlenyi designed period costumes for a cast of 3,500 in a Romanian epic movie entitled, "The 1877 War of Independence."

Even though Zemlenyi became well known as an artist in Romania, he yearned for more freedom. "I was drawn to this country for its ideals," he said. "While I'm not sure how realistic these ideals are now, there is a deep respect for individual rights in this country. This was not the case in Romania, where it was normal for citizens to have to prove their identification to the police several times a day. To me and to most people it felt like a repeated violation."

Zemlenyi was made a political prisoner at age 17 for associating with a youth organization that supported independent thinkers. He was imprisoned for four years. Some of that time was spent in solitary confinement. "When there is too much aggression in people's lives human dignity takes a back seat," he said. "Some tolerated the violations while others, like me, couldn't and eventually left."

Since 1980, when he arrived in



Csaba "Jacky" Zemlenyi

the United States, Zemlenyi has designed record and compact disc covers, illustrated two books for McGraw Hill, designed costumes for the Ballet Company of Quebec, and decorated several residences and restaurants.

Despite this success, Zemlenyi found that making ends meet as a free-lance artist was difficult. "I felt drained relying on my art for money," he explained, "which is why I came to Rockefeller. Now, I have a stable income and can be as creative as I like—on the side."

A painting by Zemlenyi hangs in the Vojtech Blau Gallery, 800B Fifth Ave., at 61st St.

## After 'Stormy Weather', wishing for 'Blue Skies' Dance rescheduled for February

The Holiday Dinner Dance, rained out by the storm of Dec. 11, has been rescheduled for Fri., Feb. 19.

"Hopefully the weather will cooperate this time," said Margarita Campbell, administrative secretary in the Allfrey lab who has helped organize the event for 25 years. "We'll hold the dance in anything short of a hurricane."

The location, menu, and music will remain as originally scheduled. The dance, to be held in Abby Aldrich Rockefeller Hall at 8 P.M., will feature music by The Gotham Sultans. The group will play swing, Motown, rock-and-roll, jazz and Latin dance music. President Torsten Wiesel, who is honorary

chair of the Dance Committee, will attend the event, which draws people from all over the university.

Tickets are still available, on a first-come, first-served basis, for \$25 per person, or \$40 for those who wish to help support the event. They are available from the Personnel Office, the Faculty Club, the Purchasing Office, Hospital 106, Media Resource Service Center, the Cashier's Office, and the Deans' Office (for students). They may also be ordered by mail by sending a request and a check payable to "The Rockefeller University" to Angie Dohnert in the Purchasing Department, Box 258.

## Card is key to 68th St. gate



Rudy Spangler, research associate in the Kreek lab, runs his key card through the electronic lock at the 68th St. gate. The gate is open between 8:00 A.M. and 4:00 P.M., Monday through Friday. At other times, including holidays, a key card is needed to pass through the gate. Key cards may be obtained from the Security Department, x8506, free of charge.

## New computer offers molecular modeling

A new computer intended primarily for molecular modeling and other high-end color graphics applications is now available to the Rockefeller community. Computing Services announced this week.

The graphics display for the new computer, a Silicon Graphics Inc. (SGI) IRIS 4D35GT, called RockyS, is located in the graphics room in the Computing Services User Area, Smith Hall A21. Molecular modeling programs include BIOSYM's InsightII, Discover, Homology, Delphi, DMol, and Small Molecule Modeling.

To use the RockyS computer, individuals must have an account with Computing Services and must request that this account be open to RockyS. An appointment, which may be made electronically, is needed to use the graphics display. Those who do not need the graphics display but who would like to use the SGI compilers or to run their own programs can do so through a batch queuing system.

The cost of using RockyS is \$5.00 each hour connected plus

\$0.05 per Megabyte per day for disk storage. There is no CPU charge.

Requests for information and for access to RockyS should be made to the consultant by calling x8940 or sending e-mail to "consult."

News&Notes is published each Friday throughout the academic year by The Rockefeller University, 1230 York Avenue, New York, NY 10021. Phone: 212-327-8967.

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# High school students explore 'the world of viruses'

By Susan Blum

During the Christmas break, when most high school students were taking it easy, nearly 400 students took a different approach to the holidays: they came to The Rockefeller University for two mornings of challenging scientific lectures.

The students, selected for outstanding achievement, attended the 33rd annual Alfred E. Mirsky Christmas Lectures on Science. The series began in 1959, when Mirsky, a Rockefeller biochemist who was also the university's librarian, organized lectures on science for young people similar to those begun by the scientist Michael Faraday in Great Britain in 1827. This year's speaker was Rockefeller University Professor David Baltimore, whose topic was "A Little Information Can Pack a Big Wallop: The World of Viruses."

## Learning the basics

Baltimore's first lecture outlined some basic information about viruses. They are, he explained, a "special life form that has distilled life to its essence." Infinitesimally small—the largest is just one-fifth the size of an average bacterium—viruses must of necessity travel light. Most of the minimal information they carry is devoted to accomplishing their modest goals: reproducing within a cell, and introducing themselves into others. Viruses' efficiency derives from their ability to mobilize the protein-producing machinery of the cells they infect, rather than lugging around their own equipment.

Baltimore explained that the enormous number and variety of viruses can be classified by how they make messenger RNA, the nucleic acids that cells decode to produce protein. To get their proteins made, viruses provide messenger RNA to a cell's protein-making machinery. They do this in a number of different ways, depending on whether their genes are made of DNA (like the genes of all cells) or RNA.

## Getting specific

Baltimore's second lecture focused on a few specific viruses, including those that cause smallpox and polio. He chronicled the eradication of smallpox, achieved in 1977. This public health triumph was possible because the immune system can learn how to arm itself against pathogenic invaders. Vaccines exploit this ability by evoking a safe, "artificial" viral infection that protects against

future infections with the virus. Certain characteristics of the smallpox virus also contributed to the development of a successful vaccine. Like a large number of other viruses, smallpox infects cells only transiently, rather than lurking within them once the initial infection has passed. Moreover, since the virus only infects human beings, it vanished once vaccination prevented human-to-human transmission.

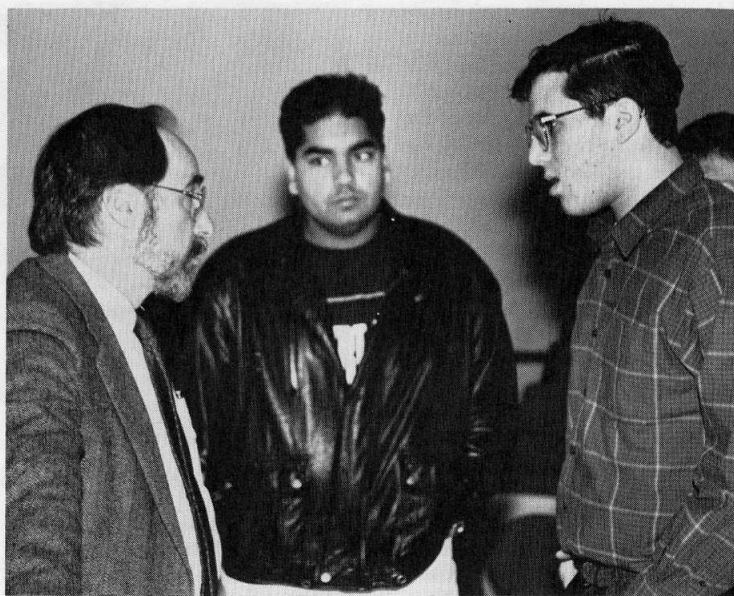
A similar success story is the use of vaccines to prevent polio, which Baltimore called "the AIDS of the '50s." Vaccination has already eradicated polio in developed nations, and the World Health Organization has targeted the virus as the next candidate for worldwide eradication. In addition to describing how polio causes disease, Baltimore detailed the extraordinarily complicated strategies the virus uses to duplicate its RNA, get its proteins produced, and inhibit the activities of infected cells.

## Learning about cancer

At the start of the second day's lectures, Baltimore recounted how studies of viruses led scientists to discover the genes that cause cancer. In 1911, a young scientist at Rockefeller named Peyton Rous, who later won the Nobel Prize, isolated a virus that transmitted cancer from one chicken to another. Later, the "Rous sarcoma virus" and others like it were shown to be RNA viruses. But for more than half a century after Rous's initial discovery, a mystery persisted: How can a virus, which in most cases causes only transient changes in a cell, lead to the permanent cellular changes characteristic of cancer?

The answer came from research conducted independently by Baltimore, then at the Massachusetts Institute of Technology, and Howard Temin at the University of Wisconsin, research that earned them the Nobel Prize in 1975. The scientists discovered an enzyme, reverse transcriptase, that makes a DNA copy of the information carried by a class of RNA viruses called retroviruses. This DNA copy then integrates into the DNA of the infected cell. In other words, Baltimore explained, "retroviruses make themselves into a gene."

At some point in evolution, certain retroviruses, such as the Rous sarcoma virus, not only integrated into a cell's DNA, but also incorporated snippets of cellular DNA into their own genetic endowment. From that point on, each time one



Rockefeller University Professor David Baltimore answers questions from high school students after one of his lectures on viruses at the Alfred E. Mirsky Christmas Lectures on Science.

of these viruses infected a new cell, it "injected" those hitchhiker genes, as well.

Many of the cellular genes transmitted by retroviruses are genes that can make a cell cancerous. In their normal state, these genes are essential to a cell's healthy growth and development, but their incorporation into retroviruses causes harmful changes that promote the uncontrolled cell growth that is cancer's hallmark.

Few human cancers are caused by viruses, but it turns out that the same genes picked up by cancer-causing animal retroviruses are mutated or deregulated in other ways in cancerous human cells. By giving researchers the first clues about which genes are involved in cell growth gone awry, "the study of retroviral genes taught us a tremendous amount about cancer," Baltimore said.

## 'The most awful virus'

He ended the lecture series with a discussion of "the most awful virus"—the Human Immunodeficiency Virus (HIV) that causes AIDS. HIV is a retrovirus whose genetic organization and regulation is extraordinarily complex. This genetic ingenuity endows HIV with a unique, two-stage life cycle. Unlike other retroviruses, which produce all their proteins at the same time, HIV produces its protein in two stages. Only when this second phase is completed can the virus assemble itself, kill the infected cell, and go on to infect others.

The primary cells targeted by HIV are the CD4 cells that control

myriad aspects of the immune system's response. It is their cataclysmic depletion that signals the onset of full-blown AIDS. CD4 cells must be activated before the HIV virus can complete its life cycle, and in some cases this activation does not occur until many years after the cell is initially infected.

HIV raises a host of unanswered questions, among them the function of its complex genes. "Many HIV genes do things that molecular biologists never even imagined were possible. We still don't know what all of them do," Baltimore said. Another question is why HIV evokes an inadequate immune-system response, thereby circumventing the natural defenses mounted against most other viral infections—and perhaps also thwarting the possibility of a vaccine that will protect against HIV.

Given vaccines' uncertain prospects, and the lack of any naturally-occurring compounds to fight HIV, the best hope in the war against the virus may lie in the nascent antiviral drug industry, Baltimore said. A first generation of drugs, such as AZT, is already in use, but these drugs are harmful to human cells and not harmful enough to HIV, which can evolve to resist them.

"So far, the virus has proved smarter than we are," Baltimore summed up. The challenge of finally outsmarting this "most awful virus" is just one among many that the young members of his audience may choose to tackle should they opt for careers in science.



# Hoping for cold weather, volunteers pour water into ice rink

University ice skaters won't have to wait in long lines at Central Park for a spin on the ice this year. On Monday, more than a dozen volunteers gathered in sub-freezing weather to lay the groundwork for a rink on the Rockefeller campus.

Eugene Roth and Geoffrey Prout of the Carpenter Shop directed the volunteers, who included parents, students, postdocs, and faculty. Together, they pulled plastic sheeting flat over a plywood frame on the tennis court and then flooded it with water.

"It's such a cheerful thing," said Professor Brian Chait, a member of the rink committee. "With the playground temporarily closed in the Scholars Residence and Faculty House, parents have been looking for a place to play with their children. Now, they can all benefit from the rink; after all, it's safe, convenient, and free!" One of Chait's two children, now a teenager, first learned to skate on

Jennifer Horne King



Dozens of volunteers gathered on the tennis court Monday to help build an ice-skating rink.

the Rockefeller rink, which dates back to the 1950s. "He's passionate about skating now and has competed in several races," said Chait. "The rink was a great place for him to learn."

Due to budget constraints, the

university was unable to continue funding the skating rink as it had in the past. In order to keep the rink going, a group of parents formed a committee, recruited volunteers, organized fund-raising, and purchased plywood and plastic.

"The rink is a wonderful way to drum up some community spirit," said Libby Hixson, a teacher at The Children's School who has introduced many children to the rink. "The committee understood that buying the wood is an investment. It can be used to make rinks for many years to come."

Martine Moreillon, another member of the committee and a mother of three who works in the Tomasz lab, said: "Parents should feel free to come to the rink even if they don't have skates. We can almost always find a pair to lend them." On cold afternoons, volunteers will be available to provide help for beginners.

Now all that remains is for the rink to freeze over.

Some volunteers are still needed to organize fund-raising events and help with maintenance as well as the final disassembly of the rink. Contact Libby Hixson, x8580 or Martine Moreillon, x8278.

## Potpourri

### Tri-Institutional Noon Recital

Cellist David Finckel and pianist Wu Han will perform works by Brahms and Rachmaninoff in the Tri-Institutional Noon Recital today (Jan. 15) in Caspary Auditorium. Finckel, who plays in the Emerson String Quartet, is the winner of the 1985 New England Conservatory-Piatigorsky Artist Award. Han plays with many renowned performers, including the Emerson and Guarneri String Quartets, the Beaux Arts Trio, Cho-Liang Lin, Lynn Harrell, and Jean-Pierre Rampal. Admission to the concert is free and open to the Tri-Institutional community.

### Wednesday evening concert

The string group I Solisti Italiani will perform with flutist Gary Schocker in the Wednesday Evening Concert Series, at 8:00 P.M. on Jan. 20 in Caspary

Auditorium. They will perform works by Respighi, Bartok, Grieg, Albinoni, and Vivaldi. Admission to one concert in the series is \$17 per person; \$7 for students or postdocs of the Tri-Institutional community. For information or reservations, contact Cathy Rogers, x8971.

### Sweat Shirt Shop sale

The Sweat Shirt Shop will have a special sale on Wed., Jan. 20 in Tower lobby from 11:30 A.M. to 2:00 P.M. The shop, run by volunteers and located next to the laundry room in the B-level tunnel, is open on Tuesdays from 11:30 A.M. to 2:00 P.M. Proceeds from the shop benefit The Children's School.

### Symposium

The Memorial Sloan-Kettering Cancer Center and the Cancer Research Institute will host the William B. Coley Symposium, fea-

## Claude E. Forkner, Sr., 1900-92

Claude E. Forkner, Sr., who worked as a research associate at The Rockefeller Institute for Medical Research from 1927 through 1929, died last month at the age of 92.

Forkner joined Florence R. Sabin at Rockefeller to study blood cells and their ability to form antibodies to infectious organisms. As part of a project sponsored by the National Tuberculosis Association, Forkner, Sabin, and their colleagues investigated the role of the mono-

cyte white blood cell in the formation of tubercles during tuberculosis infection. The results helped identify phthioic acid, the lipid responsible for formation of tubercles in the final stages of the disease.

Forkner left Rockefeller in 1929 to continue his studies of hematology at other universities. In 1937, he joined the Cornell medical faculty. He was associated with Cornell and The New York Hospital for 30 years.

turing a lecture entitled "Frontiers of Immunology and Cancer Immunology." The lecture will be held at the Rockefeller Research Laboratories (430 East 67th St.) on Mon., Jan. 25 and Tues., Jan. 26, from 8:00 A.M. to 5:00 P.M. For free registration, contact Tricia Schafer, 639-3136.

### News&Notes Index

A bulletin board of *News&Notes* articles is available to those who have accounts with Computing Services. Articles from each issue are entered the following week. To access the file, log onto rockyj and then give the command: "notes news-notes". An index page is provided for each issue. To read an article, type its number, then press the enter or return key. Articles can be searched by words in their

titles. The following commands can be used to find an article:

- "h" or "?" for help;
- "-" to move to an earlier index;
- <space>, to move to a more recent index;
- "i" to return to the main index page;
- "X" for a search prompt, and for more notes on the same topic;
- "x" to begin a search on a different word;
- "q" to quit the program.

### Music Room practice time

Practice time is available in the Music Room on the first floor of Caspary Hall. The room, equipped with a Steinway grand piano, music stands, and chairs, may be reserved for one hour during the day or evening. Contact Kate Cameron, x7802.



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