

TECH TALK TECH TALK TECH TALK TECH TALK

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Cindy Franklin with small patient Smith. Photo by Margaret Foote.

CINDY'S KIDS

Little six-week-old Earl R. Smith III is just one of Cindy Franklin's 50 children. The tiny fellow joined her growing brood last week during his first visit to MIT's newly organized Pediatric Clinic. He made baby noises, wiggled around, and even fell asleep while Mrs. Franklin, nurse practitioner at the clinic, examined him and answered his mother's questions.

Mrs. Franklin began treating MIT's children, ranging in age from birth to 10 years, when the clinic opened in mid-December. Located on the first floor of the new Infirmary, the clinic offers facilities for well child care, immunizations and sick child care.

Organized under the direction of Dr. Samuel Clark, associate medical director at MIT, and Dr. Philip Porter, chief of pediatrics at Cambridge City Hospital, the clinic is intended primarily for children of MIT's student population. Now it is staffed by only Mrs. Franklin, with Dr. Porter serving as her back-up, but as demand increases, so will the number of personnel.

Dr. Clark refers to the new clinic as a trial balloon. To stay in operation, it must be used enough to become self-supporting. He believes the special feature of the clinic is Mrs. Franklin herself. As a nurse practitioner, she is trained to perform many of the pediatrician's routine duties, but unlike the busy pediatric doctor, she can devote more time to each patient. Serious cases that cannot be handled at the clinic are referred to qualified pediatricians.

The clinic is open on Monday, 8:30 to 12; Tuesday, 1 to 5; Wednesday, 8:30 to 12; and Friday, 1 to 5. Appointments can be made by calling Ext. 1505 from 8:30 to 5, Monday through Friday. In case of emergency after clinic hours, call Cambridge City Hospital at 354-2020 and ask for the pediatric house officer.

PHI BETA KAPPA

The nation's oldest honorary fraternity has come to MIT.

Phi Beta Kappa's first chapter at a technological institution was installed here last Wednesday afternoon. This chapter is also Phi Beta

Kappa's first at a school that does not offer an AB degree.

Faculty and administration members who were elected Phi Betas as undergraduates at other universities were installed as the charter members of the new chapter. After the initiation ceremony officers were elected: Prof. William Bottiglia of Foreign Literatures and Linguistics, president; Prof. E. Neal Hartley of Humanities, vice president; Institute Vice President Vincent Fulmer, treasurer; and Prof. Sanborn Brown of Physics, secretary.

Minimum grade average standards have been established for the admission of undergraduates in humanities, science, and social sciences, although Prof. Bottiglia foresees the eventual initiation of architects and engineers.

The chapter's installation marks the fulfillment of a personal goal for Dean Emeritus of Residence Frederick Fassett, who retired in 1966. He was a principal figure in the beginning of MIT's successful drive towards chapter status seven years ago. The first inquiries about a PBK chapter for MIT date back to 1895.

RADIO AND RED TAPE

Ever since Christmas vacation, WTBS (88.1 FM) has been trying to get back onto the air. Final approval to resume broadcasting was granted Tuesday by the Federal Communications Commission.

MIT's campus radio station erected a new broadcast antenna atop Eastgate last September, but contin-

ued broadcasting via the old antenna on Walker until mid-December. Since then, WTBS has been off the air.

Because a last-minute minor change in the new facility's specifications went unreported in the station's application to the FCC, much of the original documentation had to be redone. As an example, the FCC wanted to be sure that WTBS transmissions would not interfere with radio communications of airplanes flying near the station.

The effectiveness of the station's old tower on top of Walker Memorial has been lessened by the construction of the Green building, Eastgate, and the Chemistry building around it in recent years. According to Larry Kilgallen and Paul Green, former and present WTBS station managers, the \$4,500 new antenna will enable listeners to pick up WTBS on their car radios as far west as Concord. The limit for good reception used to be Belmont.

AWARD TO EYLES



Donald Eyles, the Draper Lab engineer who figured out how to bypass the abort signal on the Apollo 14 moon-landing mission, was among those honored last Saturday by NASA. At a ceremony at the Manned Spacecraft Center in Houston, Eyles was given the NASA Public Service Award. In the picture, Eyles, left, is being congratulated by astronaut Alan B. Shepard, Jr., while George Low, acting administrator of NASA looks on. Wide World Photo.

A SLICE OF AIR

As air traffic increases in the coming years the problems associated with its control will grow proportionally. Restrictions on the number of aircraft, inefficient use of air space, and high pilot and controller workload characterize the more obvious problems. These must be solved if the air traffic control sys-

tem is to keep pace with aviation's growing needs. A cockpit simulator in the Department of Aeronautics and Astronautics is providing students and faculty with the facilities to tackle these problems head on as they arise.

The simulator was donated to MIT by the Boeing Corporation (TT, Jan. 21, 1971). The research program will develop new cockpit displays to assist pilots in all-weather flying and avoiding mid-air collisions. Increasing the efficiency of air traffic control systems is the ultimate goal of the project.

The traffic and navigation display now being tested will extend the visual senses of the pilot so that he can operate in bad weather much the same as he does in good weather. The display is similar to that of the ground controller's radar scope, providing a pictorial representation of aircraft positions. Alphanumeric tags near each aircraft give its identity, altitude, and speed. The new cockpit display focuses on its own aircraft, so that the pilot will always find his own craft in the center of the display, while the conditions surrounding it change to reflect the actual traffic patterns in which it is flying.

The display presents a "slice" of altitude. Only aircraft within a set distance above or below will be shown on the screen. The horizontal range of the scope may be varied by the pilot in different traffic densities. Inputs for the system will be taken from ground computers, airborne navigation receivers and other sources.

This type of on-board display simplifies many problems. In zero visibility weather the pilot could simply follow a beacon on the screen to come in for a safe landing. A beacon could also inform each pilot of his correct position to insure efficient sequencing and spacing for landing at a busy airport. When a mid-air collision is imminent, the display would not only locate the danger, but also give the pilot directions on how to avoid the collision.

The work on the cockpit simulator is an example of interdisciplinary cooperation. The Flight Transportation and Manned Vehicle Lab-

oratories of the Department of Aeronautics and Astronautics and the Electronic Systems Laboratory of the Department of Electrical Engineering are working under the sponsorship of Lincoln Lab in the project. Any one of the groups would have trouble solving the many-faceted problems involved, but with the FTL handling operations research, the MVL optimizing human factors, and the ESL contributing the hardware and developing simulation capabilities, many answers come swiftly.

The simulator has another beneficial feature. Aero and astro students sometimes have a hard time relating cut and dried equations to real life problems. Their professors hope to have them fly the simulator and thus get a feeling for what those equations really mean to the aircraft and the pilot.

CATALOGUE COMMITTEE

An ad hoc committee of students, faculty and administrators has been formed to take a critical look at the *General Catalogue* as to its effectiveness. The committee has two main missions. It will immediately identify sections of the present catalogue which require changing in the 1971/72 edition. In the longer range, the committee will establish policy, content and editorial guidelines for future issues of the catalogue.

The Catalogue Advisory Committee is being coordinated by Paul E. Johnson of the Institute Information Services. Questions or suggestions should be addressed to him in Room 5-105, Ext. 2706.

WOODROW WILSON FELLOW

Gordon Legge, '71, has been awarded a Woodrow Wilson Fellowship. Legge, a Physics major from Toronto, plans to do graduate work in astrophysics at Berkeley, Harvard, or Cambridge University in Britain.

Finalists in this year's competition among college seniors also include John Guiniven, a Philosophy major from Philadelphia, and Bill Rastetter, a Chemistry major from Williamsburg, Virginia.

NEW HORIZONS

Traditional engineering research is being expanded in the Department of Aeronautics and Astronautics to include the social, legal and political aspects of advanced flight technology.

Technological advances on various sorts of air and space vehicles still command major attention in the department. But other kinds of research are going on there as well these days—research that first glance might seem unrelated to the mainstream notion of air and space transportation.

For example, biophysical research. It turns out that pilots often refuse to believe their airplane instruments, preferring, instead, to trust their own senses. What is it that happens—physiologically—that might cause a pilot to plunge his craft into a fatal spin? Thus biophysicists in Aero and Astro, in an effort to develop the tools to answer the question, are working on systems that will simulate the balance sensors in the human inner ear.

And then there is city building. In collaboration with workers from the Departments of Architecture and Urban Studies and Planning, Aero people are exploring new ideas for the layout of urban centers. Vertical and Short Take-Off and Landing aircraft (V/STOL) are among the hottest ideas on the aeronautical engineers' drawing boards for the '70s. A V/STOL commuter ride from, say, Sturbridge to Boston could be accomplished in about five minutes for a one dollar fare with technology available right now. Such a system could drastically change the nature of the city as we now know it. Thus, several aero people have found themselves inexorably led to city planning.

The supersonic transport, on the other end of the transportation scale, has, of course, been widely publicized. But there is more to the SST than simply designing a fast airplane. The SST has legal aspects—community residents will put up court fights against noisy new airplanes using new runways near their homes. Expertise in the legal processes is becoming a prerequisite for

a few SST men. And before the general community will accept the SST, the problem of noise will have to be eliminated—perhaps by acoustics engineers in MIT's Aero and Astro Department.

EN GARDE!

Women have been studying at MIT for 100 years, but until recently, there has been no established program of women's athletics on campus.

Recognizing the need for organized coed sports, the Athletic Department established the division of women's athletics in 1969. Ross H. Smith, director of athletics, appointed Professor Silvio N. Vitale coordinator of the new division. Professor Vitale has served as fencing master at MIT for 22 years. Working closely with Dean Emily Wick, he has initiated a growing program of intercollegiate sports and recreational activities for MIT coeds.

Women's fencing and sailing teams have been sponsored by the Athletic Department since 1962, but now coeds also can participate in intercollegiate field hockey, basketball and softball. As interest and the number of players grow, other teams will be formed.

The coed teams have done well in their infancy, but one problem they have encountered is breaking into schedule commitments made between other schools in previous years.

Professor Vitale notes that women who participate in one sport generally are active in another, depending on season. For example, several girls who played field hockey in the fall are now on the basketball team.

Although physical education is not required for MIT women, many take part in PE classes and other recreational activities offered by the department. Some favorites include crew, volleyball, swimming, tennis, karate, judo, squash, archery and lacrosse.

Quoting the adage "One must crawl before one can walk and one must first walk before one can run," Professor Vitale says the two-year-old program "is now walking and



Freshmen Jane Pai, left, and Pam Jackson, get fencing instruction from Professor Silvio Vitale. Photo by Randy Adams, '74.

with dilligence, integrity and guidance, it will walk faster." He greatly admires "his girls" and believes that an active women's athletic program will help make MIT a truly coeducational campus.

THE ECONOMICS OF BLOOD

Inflation and the high cost of living are worrying everyone these days. But there is one way in which we, as individuals, could actually cause prices to fall—by giving blood.

More than 6.5 million pints of blood are needed for civilian use each year, yet voluntary donations run about 20 per cent below the demand. This forces a greater reliance on blood bought from donors at prices from \$4 to \$25 a pint, according to economist and columnist Sylvia Porter. In addition she writes, "studies show that the overwhelming incidence of hepatitis traced to transfused blood involves blood sold by donors."

Our participation in the Red Cross Blood Program provides the insurance we need. There is still time to sign up and help to meet this year's goal of 2,500 pints.

AIDS FOR THE BLIND

A deaf man gets up to answer the doorbell. In his pocket is a simple vibrator that lets him "hear" it. By connecting the vibrator to the bell of a regular or Braille typewriter, a blind and deaf typist can "see" the end of a line.

This and other aids for blind or deaf people are the products of the Sensory Aids Evaluation and Development Center, directed by Mr. Vito Proscia, who is blind himself. Working largely from undergraduate and graduate theses, the Center has developed an array of remarkable devices. Frequently government funding supports the progress of mechanisms, which the Center later subjects to tests "in the field."

Under the auspices of the Department of Mechanical Engineering, the Center has designed and built a print-to-Braille translator which uses a computer time-sharing facility, and the MIT Braille-Emboss System, the outgrowth of a 1960 student project. Using this equipment, a secretary can type a 200-word paper in three or four minutes, after which the machine will reproduce a copy a minute for students in a class. This is a considerable improvement over present slow, laborious methods.

The Draper Labs have helped redesign the machine, and the Center has built 20 new models. This latest version has been connected to a news wire for a blind newscaster. Earlier

versions have helped blind persons in careers in computer programming, a field of growing popularity among blind people. Other devices from the Center are a convenient folding cane and the "Pathsounder," which warns its user of obstacles his cane misses.

The Center's other purpose is to evaluate aids developed by outside industries. Sweden's Silva Ltd., for example, showed the Center a prototype Braille compass. They now market a model the Center liked. Researchers in industry are also developing maps which use different textured patterns to represent buildings, streets, and sidewalks.

FOR SALE, ETC.

Beautiful dark brwn orlon, hand made, teddy bears, 22", \$15; hand blown glass, Japanese fish net balls w/orig rope, 15" diam, \$15/ea. Call 272-5719.

Nvr used "Bitches Brew" album by Miles Davis, \$3.50; wdn skis, rubber laced ski boots, F 6 1/2, \$15. x7422.

Admir 19" port tv, perf cond, \$50; twn sz bed \$15. Al, x5371.

Green sofa, 3 pc, \$75; sml maple dsk w/chr, \$20. x589 Draper 7 or 354-2487.

Danish solid teak dsk, exc cond, \$450 or best. x4934.

Men's figure skates, sz 12, blk, worn once, brnd new, \$20. x2180 or x2360.

Full sz gas range, best offer; free: Roll-Away dbl bed. x1630 or 646-3157 evgs.

Skis; ski boots and ice skates, all in gd cond. 495-2817 days or 527-9110 evgs.

Dynaco Stereo-120 amp; PAT-4 preamp; Sony TTS-3000 trntbl, PUA-237 tone arm, all perf cond. David, x5820 or 491-3488.

Set of Wrld Bk Encyclopedia, exc cond, \$110. Call 484-9591.

Port metered 115 AC/12 DC pwr supply/rech, carrying case, 60 lbs, \$150. Mike, x6807.

Ski boots, sz 7N, Koflach buckle, in fine cond. Betsy, 782-8609.

Wollensak 6120 stereo tape deck, retail \$200, sell \$100, 2 wks old, inc warr. x7539 or 628-5598.

Gldn Swiss watch w/gldn bracelet (18K), ladies' sml sz, \$70. Sylvia, x5339.

Mono rcrd player, \$15. Mark, x3539.

Used studded snows, 7.75x14, \$15/pr. Jon Leavitt, x3584.

Skiers: 6 Okemo day tickets, all cheap. Cathy Kusnick, x540 Wellesley or 235-0951.

Free: blk & wht gentle kitten, 9 wks old, fem. Jane, x5640.

Zenith tv, 23" b&w, 6 yrs old, gd cond, \$75 or best. Bob, 322-9527.

Sony 350 tape deck, \$120; Scott 299-T solid state amp, \$120; Dyna tuner, \$70, exc cond. Call 262-7207 evgs.

Stroller-carriage comb, v gd cond, \$25; stroller, gd cond, \$10. Call 491-4308.

Old port typwrtr, best offer; Mikimoto pearl necklace, \$200; pearl brooch, \$75; pearl ring, \$40 or best. x5044.

Antique radio receivers. x420 Linc.

Typwrtr, Oliv-Underwd, stndrd, w/case, exc cond, \$60. Shirley, x7772 or 492-5453.

GE auto clothes drier, \$95. Call 623-0319.

Henke buckle ski boots, sz 8N, \$25. x4337.

Girls' outgrown spring clothing, all gd as new, fits szs 10 or 12: coat & hat, \$12.50, skirt \$2, dresses \$1.50 to \$7.50. G. Levine, x288 Draper 7.

Northland skis, 175 cm, \$15. x4425 or 492-2809 (after 10 pm).

Pr Hart skis, 6'1", w/Tyrolea bndgs, exc cond, used only once, \$90. Ethel Vokey, x358 Linc.

Roomsize rug, 8 1/2 x 11 1/2, rubberback, red, used 4 mos, \$10. Manfred, x7119.

KLH-11W, stereo port, 1 yr old, 1 yr guar remaining, asking \$175. x4202.

Slide proj, stack loading, 300w exc cond, \$1750. Call 469-0115.

Women's Reiker ski boots, sz 7, w/rack, \$15. Sue, x3724 or 868-4825.

Metal dress cabinet w/mirror, exc cond, \$15. Frances Larin, x6732.

Pr mtd snows, 7.75x14, used 1 seas, \$25/pr. x4996.

Rickenbacker elec guitar, exc cond, \$250. Rokie Chauhan, x3161 or x3162.

Scott LT 112B Stereo FM tuner, \$125; RCA b&w 20" tv, '71 mod, new \$160, now \$120, 3 mos old. Call 354-1869 evgs.

Bx spring, full sz, gd cond, \$5. Dave, x7573 Linc.

Woman's new brwn lthr coat, sz 9-10, orig \$120, sell \$65. x4531.

Royal typwrtr, port, w/case, both fine cond, \$30. Penny, x6256 or 547-4377.

New tbl lamps, \$10 and \$14; elec frying pan \$9; elec hand mixer \$5. Call 491-7027 evgs.

Formica din tbl w/4 chrs, \$35; sofa chr \$10; Polaroid Swinger \$5. Julie, x156 Draper 7 or 354-4736.

Lrg Calif mod tbl lamp, ceramic w/walnut trim, \$25. Call 395-8747.

Photovolt Densitometer mod 525 w/Varicord and Integrator for chromatographic or electrophoretic strips, best offer. Dr. Linder, x6759.

Pr Scott S-14 acoustic suspension spkrs, orig \$100, w/sell \$60. Don, 491-2853.

Sears sew mach in cabinet, 25 yrs old, \$30 or best. Howard, x4233.

Mattress, 4" foam, wht canvas cover, 5 sided, 7'x5' max dimension, \$20. Call 864-2087.

KLH 24 FM stereo hifi, 2 yrs old, exc cond, \$200 or haggle. x6805 or x7619 or 868-2876 evgs.

Twn sz bx spring & matt, new, \$40. Jim Hepp, 489-2315 evgs.

Coffee tbl, commode & tbl lamp, lk new, \$150. Call 535-4211.

Dyna stereo-70 pwr amp, \$80. Bill x2207.

'68 BSA 650cc, Firebird Scrambler, mint cond, \$850 or best. Linda, x5357.

'53 Studebaker Starlight Coupe, 6 cyl, running cond, some xtra parts, \$150 x5507.

'61 Mercury Comet, 74K, 4 gd tires, new batt, \$100. Geoff, x2273 or 729-4368 evgs.

'62 VW w/'65 eng, 23K, 2 spares, 2 snows, \$350. Call 924-8572 evgs.

'62 Tempest, auto, low mil, new exhaust sys, v gd cond. Call 492-3503.

'64 Chevelle Mailbu, hrdtp, 6 cyl, auto, pwr st & brks, R, snows, 53K, \$550. Ken, x7858 Linc.

'68 Mustang GT 289 V8, 4 barrel, 4 stndrd, new clutch, batt, tires, exhaust, 50K, \$900 firm. Charlie, x5880 or 284-6914 evgs.

'66 Dodge Dart, 4 dr, 6 cyl, auto, \$890. x7309 Linc or 653-6630.

'67 Chevy II, 6 cyl, 2 dr, stndrd, pwr st, 38K, exc cond. Call 232-5087 evgs.

'68 Tempest Coupe, 6 cyl, top cond, \$1095. Garavan, x5530 Linc.

'68 Mustang convert, exc cond, \$1500. x3694.

'68 Chevelle Malibu, 2 dr, 327 V-8, 4 spd, posi, \$1800. John MacDonald, x7630 Linc.

'68 Camaro hrdtp, 6 cyl, \$1375. Trosky, x241 Draper 7.

'69 TR6 radial ply tires, AM-FM, low mil, exc cond, \$2250. Dick Giannino, x232 Draper 7.

'69 Subaru, exc cond, \$500 firm. George, x3541.

Concord, split entry, 8 rms, 2B, panel fam rm, 2 frplces, w/w carp, 1/2 acre farm set, 2 yrs old, 2 car gar. Nagy x2458.

Everett 3 rms, 3rd fl, recently renovated, all util, adults only. Call 387-2080 evgs.

Wellesley Hills, completely furn 3BR house to rent late Apr to late Aug. x2683 or x4396.

Watertown/Camb line, 5 rm apt, gar prking, 12 min dr to MIT, adults only. Call 924-1284.

WANTED & MISC.

French native as tutor, 1 hr per wk, any evening, \$6, conversation only. Call 227-5652.

Silent movie proj, 16mm. Joe, x4117.

WI do typing. x5381 or 547-2748 evgs.

Drafting tbl, 30" wide (or more) by 60-72" long; drafting mach, cond unimp but must be repairable. Call 486-8819, (Littleton) evgs.

Man's 10 spd touring bike. R. Campbell, x6010.

Canoe, 15 or 17 ft. Lou, x3584.

Girl's 10 spd racing bike; med sz knapsack. Judy, x7423 Linc.

Fem rmmate, own rm & kit priv in private home in Belmont Ctr. Mrs. Moran, 484-3599.

WI do thesis typing, reports, manuscripts, etc. x6936.

Rmmate, own rm in furn apt, 15 min walk from MIT, mid Mar thru June, \$45/mo. Andy, x2109 or x4376 or 354-1452.

Reg 8 mm Castle or Official films, in gd cond. Jim Hudson, x4070.

Amer-Flyer trains, sets or indiv cars, tracks, etc. Blanchard 843-2279 after 7 pm.

Someone or sml fam to live in Winchester & take care of 4 children during Mar 17 - Apr 4. x4282 or 729-8077.

WI do thesis typing, IBM elec, at MIT. Call 491-4312.

WI do fed & state income tax. Al Urbonas, x5889.

Used canoe. Ron, x7779 Linc.

Kitchen utensils; wl do typing. Madeline, 267-0772.

Girl, 19 yrs old, wl bbsyt & do fam help for fam touring US this summer. Call 969-3834.

Fem rmmate, great loc, spacious, comf apt, off Harv Sq, own rm, avail mid-Mar. Joan, x3368 or 5268.

WI do straight & tech typing. Sharyn or Marsha, x6025.

WI do Russian (Russian type), French or Eng typing. x3966 or 484-9151 (after 3 pm).

Long haired blk male guinea pig for student. Call 262-6907 evgs.

Woman's 5 or 10 spd bicycle. Peggy, x4801 or 449-3161.

Pr of tire chains for 13" wheels. Jeannie, x3584.

Used bassinnet and folding crib. Evelyn, x5996.

Subjects needed for psychophysical hearing exp, repetitive but challenging, 10 hrs per wk, now thru Aug, wl pay. Jeff, x2575 or 566-2640.

LOST: 3' green scarf w/buttonhole. x3198.

Pr of 7.35 or 7.75x14 tires w/gd tread left. Don, x2333.