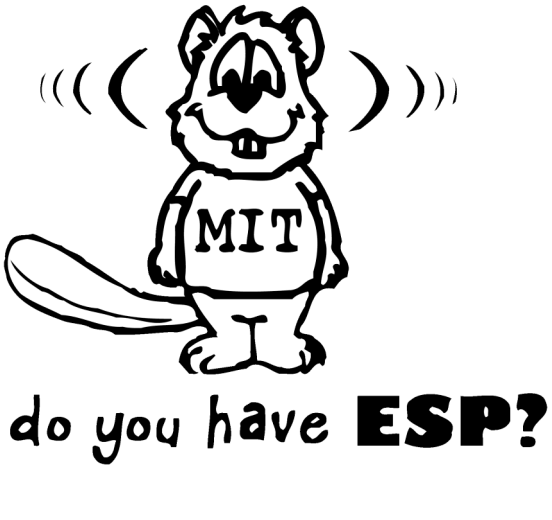


Stories of ESP

LEARNING UNLIMITED

From Martin Forsberg, MIT '57 and one of the founders of HSSP

[see attached letter]

1964: The Karl Taylor Compton Award is given to the "Summer Study Program" at MIT, "whose student teachers over the years have in a unique way fostered the academic well-being of countless students from secondary schools in the Greater Boston community."

1965: Technique has the following from the "Technology Community Association" entry. "The Summer Study Program for High School Students saw a record number of 1600 students engrossed in the study of every-thing from psychology to nuclear physics. These courses were all taught by volunteering M.I.T. undergraduate and graduate students."

1969: Summary of the MIT Educational Studies Program.

The High School Studies Program is our oldest and largest activity, providing students with real teaching experience. It has grown out of the twelve-year-old Summer Studies Program in which (originally) high school students were taught basic college freshman courses. Today over 3000 high school students per year enroll in 250 courses during 3 semesters. Many courses are given which do not occur in either high school or college. Our courses have no required work, quizzes, or attendance restrictions. The idea is to get communication between a college student and a group of high school students outside the restrictive environment of conventional schools.

Recently, we have become more involved with "the system"--doing projects that replace or complement parts of the conventional high schools rather than working in parallel with them. For example, after an 18-month period of politicking, we are now able to bring 10 Cambridge teachers into MIT research labs to interact with MIT people.

For more complex projects which we are now planning, we need politically adept people in large numbers. Other projects include sending 10 MIT students to Cambridghe High & Latin as teaching assistants (for 12 units MIT credit in Teaching Seminar 21l). We will try to learn more about the Cambridge school system for work in future projects. With high school students, we will be trying to develop innovative approaches to high school education. We will be using multimedia units which will hopefully be used by high school students.

The College Colloquium Program brings together groups of interested students under the aegis of ESP to discuss a variety of topics. We will also be working to mobilize student participation in the work of the Commission on the Nature and Purpose of MIT--a comprehensive review of MIT's goals and their implementation.

A final note: we don't believe in bullshit. We have *action* programs and we don't polemicize.

From David Hegedus, MIT ’71:

Hi Dan

My name is David Hegedus and I was the Director of HSSP and ESP for the calendar year 1970. That was a very important time for HSSP because of record growth in courses and student enrollment as well as managing high school students converging on campus where they were exposed to the cultural and political upheaval at MIT & other universities that formed the social context for our efforts. Steve Schwartz ‘70 had been the Director of HSSP before me, and recruited me into the leadership cadre. In the Spring of 1970, the Institute’s mission and values were challenged from the political left and right. President Howard Johnson did an excellent job of keeping multiple forums of communication, information flow and transparent decision making active through the Faculty Senate and its committees. Spring 1970’s climax was the shooting of four nonviolent protestors at Kent State by US National Guard soldiers, and the call for a national student strike. The event radicalized many fence-sitters, and convinced others that the Anti-War Movement was a dangerous realm of student involvement – they either dropped out of political action, or became leaders of the nonviolent Peace Movement, renouncing violence. The call for a student strike at MIT was broad and deep, leading to an unprecedented procedural end to the semester. Calls for a “time of reflection” for students, staff and the Institute resulted in a policy whereby some students got their semester grades based on their work up to the May 4 Kent State Massacre. Students could choose that, or could continue class work until the normal end of semester. The Counter Culture was a strong influence on student values and behaviors. Widespread drug usage by college and high school students meant that HSSP instructors and leaders did a lot of crisis intervention from drug overdoses as well as counseling HSSP students on problems they had during the school year within their schools.

At HSSP, I led a coalition of three leaders. Steve Schwartz ‘70 continued to coordinate the courses in the sciences and engineering, the true core of MIT HSSP. Chip Piatti, a theatre major at Boston College had been a popular instructor for a drama course in 1969. He chose to lead the Humanities courses for 1970 including debate, forensics, solo and ensemble singing, and production of a musical comedy. I lead the overall effort and took on the added role of attracting new MIT student faculty and high school students in social studies and literature, including psychology, sociology, management, anthropology. and several literature courses. Many politicized students were seeking positive ways to make contributions to the off-campus community, and HSSP provided

a structured venue for them to focus their energy and skills on activities congruent with their new counter cultural values.

In Spring 1970, Steve, Chip and I agreed to a common strategy to grow the program in size and diversity. We enlisted students in our classes to be our ambassadors to their schools' students and counselors. With the help of a mailing list of high school counselors, and well-placed students in the main suburban schools, we launched a broad marketing effort. We used the talents of student graphic artists and photographers to produce a variety of psychedelic handouts and posters that could be put up throughout the high schools, not just on the counselors' doors. We trained our cadre of ambassadors in making creative announcements over their schools' public address systems. I also personally talked up the program by phone to counselors from suburban high schools.

We advertized on MIT's campus as well as BU, BC, Wellesley, and other Boston area colleges to attract a record number of instructors. In summer of 1970, HSSP offered over 100 courses for the first time, in a six-week two-nights-a week format. We had over 1000 students from Boston city and suburban schools. I worked with the MIT administration to be sure each class had an appropriate room, and trained a group of "MIT student marshals" who were empowered to deal directly with Physical Plant on any issues of classroom access. Midway through the summer semester, we advertised the end-of-term events for all of our performing arts classes to the Boston college and high school populations. We had enormous attendance at Chip's performances of public speaking, chorus, comedy improv, and a full-fledged Broadway musical.

Summer 1970 was a watershed for HSSP in terms of the success of the largest and most diverse set of courses. I helped the MIT sophomore student teachers to institutionalize the marketing and leadership campaigns to ensure that subsequent semesters would also be broad-based and full of enthusiastic learners.

ESP also added a new wrinkle by co-sponsoring a program to get MIT students as student-teachers in Cambridge, Boston and Newton high schools, in cooperation with MIT's School of Humanities and the Dean of Students and Vice Chancellors Offices. I personally student-taught a high school physics class at a Cambridge high school. We had a dozen placements in 1970.

From Steve Lazar, MIT'81:

Hi Dan:

Thanks for your email message. I did receive the invitation and, unfortunately, will not be able to make it as I will be attending a friend's wedding in Ireland.

I was a member of the MIT class of '81. I first became involved in teaching a couple of classes in the ESP/HSSP during my sophomore year, and became a member of the board. During my junior year the Board elected me president of ESP [I cannot remember who talked me into it...]. I was involved in administering the program during the 1979-1980 academic year and summer of 1980, three semesters in all. I cannot recall exactly how many classes were taught and how many students in all attended the classes. I would estimate that we had 30 or 40 classes, but it might have been significantly more. I think that most of the classes were 8 to 20 students. Perhaps 300-400 students in all. I taught several classes that were aimed toward SAT preparation, particularly during the summer term --- and I seem to recall that it was well-attended.

Dr. Louis Menand of Department 17 --- Political Science --- was the ESP/HSSP faculty advisor. He was a terrific, fascinating man. Almost always taught class in a tweed jacket and bow tie [at least as I remember him] and he was a great mentor. I took several undergraduate courses in political history and constitutional law from him, and ended up going to law school --- I think he was one of the first influences I had in that direction.

A major issue that confronted ESP/HSSP at the time was that it was being largely run by folks who were not directly affiliated with MIT --- either had dropped out, or had never attended. Many of the instructors in classes were also not affiliated with MIT. There was a good deal of discussion about potential liability, and many people felt strongly that a group that held itself out as an MIT sponsored student group should, in fact, be run and conducted largely by MIT students. Without suggesting that any of the non-MIT affiliated individuals had anything but good intentions, it was decided that all officers of ESP/HSSP should be MIT students or alumni; and that all classes should at least be co-taught by at least one MIT student /alumni [some courses were taught be multiple instructors, at least one of whom had to be MIT affiliated].

I remember it as a very fun and challenging activity --- having dealt with the MIT/non-MIT issue was perhaps one of my earliest exposure to a kind of political kind of personal issue --- some of the non-MIT individuals were friends, and I recall being of two minds, but coming to the conclusion that those who advocated the stronger rules requiring MIT affiliation had legitimate arguments. Although I have not had further connection with the group, and don't think of it as having been a major influence in my later, life, it is enjoyable to recall some of the events that were characteristic of being an MIT undergrad at the time.

I remember that ESP/HSPP had some kind of annual party sometime around the holidays, and I ended up cooking an entire turkey or chicken on my hot plate --- we had chicken soup; chicken salad and hot chicken... and DJ'ed using the Student Center Committee's turntables. I had DJ'd some of the Student Center Committee's "Strat's

Rats" that were held in the Stratton Student Center --- this was during the 18 yo drinking age, and we had kegs of beer on campus… very different from today, I imaging.

Other students that were involved in teaching classes [if I remember correctly] included: Dan Shapiro, 81'; Coco Becker '82; Amy Thuer '82; Ken Dumas '82; John Hengeveld '79/'80; Chris Wheeler, '81; and Michael Taviss '82/'83. I wish my recollection was better….

Clearly the above is a non-comprehensive remembrance/view --- but it is surprising how much came back to me after doing a bit of thinking. If only I could recall what I had for breakfast this morning with the same vividness!!

Best regards,

Steve Lazar

From Drew Ozier, involved 1997-2001:

Entertaining memory: "Folding and stuffing until 3am while discussing conspiracy theories about the JFK assassination."

From Daniel Zaharopol, MIT '04:

When I arrived at MIT in 2000, ESP was recovering from several challenges in the late '90s when it had overspent or otherwise run through its budget, and where running the residential summer program MESH (yes, a residential summer program) had caused so many problems and burned out so many of those running it that there were barely any leaders left. Still, the organization had an incredible energy to it, led by Owen Ozier and Elaine Lai, who poured passion and work into it. My first year, Splash had 600 students (more than it had seen in a long time) and I ran spring HSSP which also had 600 students.

By the time I left, Splash had reached 1000 students, and ESP was soon to enter a renaissance of activity. It started new programs (such as Delve, which teaches AP courses to students whose schools do not offer them, and ProveIt, which does math in schools), it grew Splash to what is now a 2500-student program, it finally allowed online registration for programs, and more. The program now involves around 30 students in real leadership roles each year.

My memories are probably familiar to most anyone who's done ESP. The November of my freshman year, I remember staying up late in the ESP office, listening to the results of the 2000 election. I remember lots of envelope stuffing (we used to call it the "Envelope Stuffing Program"), because we used to mail catalogs to all 6000 people on our mailing list. Somehow, those were always fun even though we were doing such menial labor, because we had music on, good company, and, of course, lots of food.

I remember discovering that MIT had a "mail services" that could affix postage for us, so for my HSSP I decided to use them rather than sticking stamps on ourselves. Well, I made the postcards red and their meter used red ink… so we had to stick the stamps on ourselves anyway.

I remember the time that we set a kid's hair on fire. (No serious injuries, but still, wow!)

I remember Splash 2003, when we couldn't reserve Lobby 13 for Splash registration, so we had to use Lobby 10. It turns out that 800-1000 people cannot go through Lobby 10 and pick up their registrations in time. We ended up drafting 26 parents, one per letter of the alphabet, to just hand out registrations as fast as possible.

In fact, I remember Splash mornings when we'd set up Lobby 13. We would draw a big plan on the blackboard and call it our "Battle Plan." We were too cheap to pay for tables and chairs to be set up for us, so we'd get them from the classrooms on the 3rd and 4th floors. We'd station someone in the classroom to pull them out, someone by the elevator to push them in and push the first floor button, and someone by the elevator in the lobby to take them out again. It was a great system.

Back then a lot of MIT classrooms didn't have projectors for showing videos, so we had to bring over our own TVs. About once per semester, a TV would spill off the cart while crossing Mass. Ave. and shatter into pieces in the center of the crosswalk. Owen pushed us to get a new cart with "eight inch pneumatic tires." It cost so much, he had to argue with us a lot—$400 for a *cart*?—but the Luxor really did help. There's another story there, but you'll have to hear it in-person.

Finally, anyone from before my time will remember the huge black couch that was in the ESP office. It was so big that it had been installed *by crane* when the Student Center was built, brought in through the window. That couch was incredibly beat-up: when you sat up from it, you'd hear this "shhhhhhhhhhwoop" sound as the duct tape pulled off from your butt. We replaced that IAP of my freshman year, with hacksaws to break it up, and got new green couches that were way too comfortable and put everyone to sleep.

It's funny how so many of my memories are about these random funny moments, when there was so much that I was learning about how to run an organization, how to teach, and what kind of impact one can have. They were great years, and I'm glad to be bringing the opportunity to more people now!

From Michael Short, MIT '05:

I ran the first fully digital SPLASH, with online registration combined with automatic preference-based class assignments. We had an unusually efficient registration of 1112 students (for those of you who can remember the one-at-a-time in person deals with Josh Shaine yelling at children all day, I was glad to avoid that!).

I stayed up for like 9 days straight writing code to run the class assignments in... MS Excel/VB macros! I'm so ashamed!!! Luckily the next folks that took over (Mike Shaw and Pamela Gay) redid the computerized stuff in a WAY better format, and I learned some real programming languages.

I also taught BOOM, the science of explosions. Managed to fill 26-100 twice in one splash, with a combined enrollment of (I think) over 800 people. The crater and burn marks I left from blowing up sodium at the 26-100 podium is still there to this day. I invite you to check it out!

10 Wendell Street
Cambridge, MA 02138

May 25, 2012

Miss Natanya R. Kerper
Burton-Conner House 5
Massachusetts Institute of Technology
Cambridge, MA 02139

Dear Natanya,

Thank you for your letter informing me of the venture that you and Daniel Zaharopol and other dedicated individuals have launched to spread the brain vitalizing practices engendered at MIT across the globe. The expansion of this blueprint from Cambridge to the world by all those associated with Learning Unlimited is a commendable evolution to Dr. Frank Laubach's work, which was epitomized with the phrase "Each one teach one," as presently LearningU can claim its maxim to be "Each one teach six point six seven."

With such leverage about a million students will be profiting from Learning Unlimited in 13.5 years according to the following assumptions:

1. 50% of the high school and middle school students who benefit from the program themselves will become volunteer teachers for four years when they reach college.
2. The proportion of college graduates in the teaching ranks is presently 20% and will remain so.
3. 10% of contemporary teachers will leave LearningU annually.
   With these suppositions the high school and middle school students in the program will increase by 46% each year. Do you know a savvy mathematician who can audit this analysis, which has been performed by a computational dilettante?

As someone who was on the scene in 1957, I can offer some minor historical amendments to the exposition delineated in the chronicle on the card accompanying the invitation you sent.

When, during the first week of June in 1957, I conceived the notion for an educational epilogue to the regular school year, it was with the intention of soliciting only juniors and seniors of a single high school, Boston Latin School, to come across the Charles and relinquish their summer vacation in order to extend their customary allotment of academia for several evenings a week for ten weeks. My original name for the endeavor was the High School *Summer Project.* As a graduate of BLS with its stringent doctrines, the use of an acronym to refer to this enterprise never crossed my mind nor, as far as I know, the minds of any of the teachers or students associated with it that summer (although, as you have just witnessed, we often encapsulated the name of our alma mater with a three-letter truncation).

My plan was to teach six courses: high school math, physics and chemistry and first year college math, physics and chemistry. I broached my idea to Lew Smith, who had become my bosom buddy during our student tenure. We had already been chums for a year when he got the chance to move from the Parallels on East Campus into my dorm of Atkinson in the Senior House at the beginning of our junior year. The resulting propinquity had cemented our friendship. With no entreaty on my part, Lew immediately proclaimed that he would join me in this effort.

Now that I had such a staunch partner, I was confident that the two of us would be able to deal with the one or two dozen Latin School boys (there having been no girls in the school since its founding in 1635 until they were finally admitted in 1972) who would be masochistic enough to give up their vacation and trudge over to MIT.

On Friday, June 7, after the commencement address given by John Gardner, President of the Carnegie Foundation for the Advancement of Teaching, whose words echoed my own sentiments, we were awarded our degrees in Rockwell Cage by President Killian. During the ensuing weekend I prepared a memorandum outlining the program of instruction for the summer project. On Monday, June 10, I started work at the MIT Instrumentation Laboratory, where I would be employed as a research engineer for the next quarter century. The next day I visited Carl Peterson, the Director of Physical Plant, asking for an allotment of two classrooms for our purposes. He kindly assigned Room 1-132 and Room 1-134. That evening Lew assisted me with the final editing of my manifesto so that on Wednesday morning, June 12, I was able to deliver a presentable rendition to Lee J. Dunn, the librarian at Latin School.

To pigeonhole Mr. Dunn as librarian does him a great disservice. A graduate of Latin School himself, he loved the school and was determined to do all within the realm of possibility to help its students matriculate at the colleges of their choice. He organized and taught after-school classes to the seniors all year long, which were directed to ensuring that we all excelled on the College Boards (our term for what today are known as the SAT tests). In my own case, although I didn't need extra tutelage in math (With my characteristic lack of humility, I can confide to you, Monte Vista's valedictorian, that I was the top student in math, chemistry and physics of all those who hoped to be admitted to MIT.), my vocabulary must have been augmented by a factor of two as the result of the extensive word lists he handed out to us. I even persuaded myself to buy several books each professing to aggrandize one's lexicological prowess and to fortify its assiduous assimilator with an "artillery of words" (to use the imagery of Jonathan Swift). The result has been that still today I am addicted to spewing out literary lingo that distresses some of those who have to read my writing. (However, I am not to blame; the culprit is Mr. Dunn.)

Those students who needed recommendations for their college applications were promptly called into the library for a meeting with him and quizzed about their past life, their deepest sentiments and their ambitions for the future. Mr. Dunn evinced an aura of ESP (In case predilections spawned by your own past life experience evoke another allusion for this alphabetic abridgement, I am disposed to remind you that in those days it referred to "extra sensory perception.") since with further interrogation he was able to recapture additional laudatory information from their subconscious, which they themselves had forgotten. He did not wish to know anything about their grades, although he doubtless was cognizant that half of the class of 252 seniors ranked below average. However, he was also cognizant that this complement of students was the residue of more than 600 who had passed the rigorous entrance exam four (or six) years earlier; the majority had escaped the ensuing academic agony along the way to attend other high schools in the city. In comparison, the failure rate at Marine boot camp is only 11%. Thus, everyone remaining in the senior class, having been tested by fire in the Latin School cauldron, was actually above average. In this case, the well known adage differentiating optimism and pessimism could be paraphrased "The glass was not half empty but more than completely full." Consequently, there was nothing to inhibit Mr. Dunn from preparing an ebullient affirmation for each student who sought his endorsement. By the end of the day, he had sent off imaginative, germane, detailed and glowing testimonials to the applicable college admissions offices.

Without slighting our masters, who had hammered knowledge into our cerebra during our incarceration at Latin School, I can unequivocally affirm that, as a group, we would not have attained the remarkable success which we had in gaining admittance to premier colleges without Mr. Dunn's contribution. Of those aforementioned 252 graduates in 1953, 102 were admitted to Harvard and 62 actually registered there in September. (The families of many of my fellow students, coming from a public school in the inner city, could not afford the $900 tuition, which now seems such a pittance, even if they commuted from home. Nor could I have afforded MIT's similar tuition without the good fortune of being awarded a full scholarship. Working as an East Campus chambermaid for $1.15 an hour that summer enabled me to salt away enough money for the first semester's $160 rent and $160 commons meals.) All 26 of us who were admitted to MIT became students there in the fall. (MIT had a wonderful student loan policy, administered by Dean Pitré, which many of the non- or partial scholarship students took advantage of.)

Aware of Mr. Dunn's passion for each student's acquisition of knowledge, his desire for everyone's continued triumphant achievements and his reputation for dependability, I knew that, by entrusting him with my memorandum, it would be rapidly transmitted to every junior and senior in the school. The announcement described the six courses which we intended to offer and set the total tuition at $2, no matter how many courses a student desired to take. We felt this would offset the cost of mimeographing (four more years would elapse before the introduction of the first commercial Xerox machine) any printed materials which we would distribute over the duration of the summer.

The notice disclosed that each of the six classes would meet for one and a half hours twice a week. Lew and I intended to manage this regimen by scheduling the classes for Monday and Wednesday between 7 pm and 10 pm and Tuesday and Thursday between 7 pm and 8:30 pm. He would teach the two physics courses and calculus while I would be responsible for the two chemistry courses and trigonometry.

Those who were interested in submitting themselves to a summer of cerebral calisthenics were instructed to transport themselves through the front door of MIT, take an immediate right turn and perambulate until they entered Room 1-134 by 7 pm on Tuesday, June 18. The announcement did not warn them that they would be subjecting themselves to the machinations of a couple of neophytes, who had no previous experience in teaching formal subjects. This initial meeting was intended to enable us to apportion the students to the two classrooms which we had been assigned and to the appropriate times, depending on their choice of subjects. We had planned to begin our introductory academic sessions immediately thereafter on Wednesday and Thursday, June 19 and 20.

When Lew and I arrived at Room 1-134 at 6:30 pm, it was already overflowing with about 50 boys and a platoon of nearly 20 more was arriving as each Route 1 bus disembarked at MIT. Discombobulated, I ran to the main corridor and then to Room 10-250 and was relieved to find it empty. We relocated the meeting there and postponed its onset until 7:30 pm. Until that time Lew stayed at Room 1-134 to redirect any latecomers and then left a sign on the door to guide any additional arrivals to the alternate spot.

Eventually a crowd of about 160 showed up. The massive congregation before us was testament that Mr. Dunn had superintended my memorandum through the school with his usual vigor and commitment. We were forced to make some quick decisions to deal with this deluge. The first was to

postpone the beginning classes until the following Monday. Then we discovered that about three-quarters of this throng of academic zealots wanted to take three courses (perhaps as smart shoppers to lower the price per course to 67 cents!). We added another class period on Tuesday and Thursday from 8:30 to 10 pm. It took us until 10:30 pm before we and the students had sorted out the scheduling for each one of them to take his desired subjects. We postponed collecting tuition until the following week. It was clear that Lew and I would not be able to handle this torrent of scholars without added manpower. We needed 10 additional teachers in order to staff two sections of each of the six courses. Unfortunately, I didn't have any more bosom buddies; all I had was anxiety.

The next day at 8 am I stationed myself on the walkway near the northeast entrance of Building 14 (about 30 feet from where Alexander Calder's "The Big Sail" is now located). The Green and Dreyfus buildings did not exist at the time; the entire area from Building 6 to the West Parallel dorm of East Campus was all grass, other than the walkways. Furthermore, the area now occupied by the Whitaker and Landau buildings was a parking lot. (It can be seen at the top of the photograph as well as in a plan in the file http://libraries.mit.edu/archives/mithistory/building20/history.html.)

Thus, I had a clear view of any moving object within about 500 feet. Walker Memorial, which accommodated the main dining hall for East Campus students and Institute staff, as well as Pritchett Lounge (a grill and soda fountain) on the second floor of Walker, generated a fair amount of foot traffic. (The Student Center, with its variety of food services, did not see the light of day until 1965, although it had been envisioned by the Ryer Report in 1956.) From this strategic location I began to buttonhole passersby, offering them the magnificent opportunity to flaunt their knowledge before a class of high school students and to be part of an educational experiment (which, clairvoyant as I am, I claimed would culminate 52 years later in a eleemosynary undertaking designed to bring enlightenment to the youth of the entire planet!). Anyone who came into my sight in this spacious arena became prey for my designs: I was on an implacable mission.

Parenthetically, it is of interest to note that Pritchett Lounge was named for a President of the Institute, who thereafter for a quarter of a century served as President of the Carnegie Foundation for the Advancement of Teaching. It is not beyond reason to envision that Daniel, with his determination to catalyze a cosmic chain reaction based on his past achievements, may someday inherit the same niche which Henry Pritchett and John Gardner inhabited.

On the morning of June 19 my success exceeded my hopes. By 11:30 am I had received a commitment from ten MIT students to become teachers for the next two and a half months. A partial explanation for my good fortune was probably that the 12 days since commencement had winnowed the population of the environs down to those who would be remaining in Cambridge for the summer. A more substantial reason is almost certainly the penchant of MIT individuals to share their knowledge with others (whether those folks want it or not). Before noon I reappeared before Carl Peterson, who acceded to my request for the use of four more classrooms.

I treated myself to a three-course lunch since I was so satisfied with my having successfully completed all the planning and legwork for an enterprise that was a mere concept just two weeks earlier. Then I walked to my workplace at the MIT Instrumentation Laboratory.

That evening it dawned on me that I had merely nailed down a sliver of this endeavor. The substantive chunk of it lay before me: I had to prepare 20 hour-and-a-half lectures for the first year college chemistry course that I was committed to teach. This obligation seemed such a formidable task that night that I was grateful that the play of events had emancipated me from my original plan to teach three subjects: how naïve I had been to have thought that would have been possible. I decided that I could make liberal use of Professor Beattie's (James A. Beattie) freshman General Chemistry (5.01) notes, which, packrat as I am, I still had in my repository of possessions. (Professor Beattie was an eminent physical chemist. He is memorialized in one of the long glass cases at the entrance of Building 6 from Eastman Court with his picture, along with a list of his accomplishments.) Now that I was no longer a student myself, I was free to plagiarize. Tom Lehrer, then a Course 18 instructor at MIT, in his ballad "Lobachevsky," had documented the propriety of this indulgence by pretending to quote the nineteenth century mathematician as follows:

> Plagiarize,
> Let no one else's work evade your eyes,
> Remember why the good lord made your eyes,
> So don't shade your eyes,
> But plagiarize, plagiarize, plagiarize.
> - Only be sure always to call it please 'research.'

(In point of fact, Lehrer's ditty libeled Lobachevsky, who made several important advances in non-Euclidean geometry, but, since he had died about 100 years earlier, there was nothing he could do to defend himself from the calumny.)

During the next several evenings I selected the major topics for the 20 lectures and then prepared voluminous notes for the first two classes, which I read over many times. I tried practically to memorize the lectures since I didn't have the composure to think on my feet well enough to carry the flow of the material extemporaneously in a coordinated way. Nevertheless, I believe I did an adequate job; whether the students agreed with this presumption is an assessment lost in time. My evenings that summer were almost entirely spent in preparing my notes for the forthcoming classes as I seldom felt I had reached a point where I was entirely satisfied with them. In this respect it was a continuation of the previous eight years when I had generally worked until at least midnight at Latin School and at MIT and still felt I was not yet prepared for the next day of school.

I don't think any of the instructors ever collected that $2 tuition; I know I didn't. Perhaps now is finally the time to do so along with 55 years of interest. As a group we never met after the initial assignment of subjects to the teachers. I don't remember the names of eight of them. Those whom I do remember are, of course, Lewis Smith and also Thomas Morgan and Arthur Laufer. The latter two were members of the class of 1958 or 1959 and became my housemates for July and August in a mansion in Watertown, whose permanent residents left for their summer dwelling. Morgan did graduate work at Syracuse University, where I visited him once when I attended a wedding there.

The only students whose name I remember are Richard H. Albert, who entered MIT with the class of 1961 and George W. Karthas, who subsequently graduated from RPI in 1961. Although I never saw Albert after the summer of 1957, I believe it was he who continued the project by coordinating it in the summer of 1958.

Lew Smith was an early employee of Analogue Devices, perhaps the first. He had become a friend of Ray Stata as the result of moving into Atkinson. Lew's room was on the fourth floor, Ray shared a double on the third floor and I lived on the second floor. Lew's contributions at ADI are described by Walt Jung in Chapter H Op Amp History (in the handbook "Op Amp Applications"), paraphrased as follows:

"To compete with GAP/R (George A. Philbrick Researches) and their P2, ADI marketed a number of varactor bridge input op amps, the first of which were the 301, 302, and 303 models. The 301 sold for $198, while the 302A and 303A were $110. Lewis R. Smith designed these amplifiers, as well as their successors, models 310 and 311, which were sold for lower prices of $75. These latter designs were able to achieve significantly improved input currents, which were about 3 orders of magnitude below the GAP/R P2 series. An input current specification this low was then (and still is) a most impressive achievement. Smith described his varactor bridge designs in a patent. It is a high tribute to the model 310 and 311 designs that they are still being produced in 2002."

I am, of course, prejudiced to postulate that it was Lew's creativity that sustained Analog Devices through its embryonic period in order that it might reach its present ripe old age. Thus, whenever I drive past Building 32 with Kena, my companion, who often visits the building for various meetings, I exclaim, "That's the Lewis Reading Smith Building." By virtue of Lew's move into Atkinson due to my residence there, I was a sort of catalyst for Ray's camaraderie with him. Nevertheless, my egregious want of humility has its limits so I would never even suggest that an appropriate name for Building 32 could be the Martin Reinhold Forsberg Building. Lew eventually left Massachusetts for Tucson to work at Burr-Brown, another early operational amplifier provider, also founded by an MIT graduate, Tom Brown. Among his several avocations in retirement is tutoring students in math.

Incidentally, the account by Walt Jung is not only a fascinating chronology of the development of the op amp, it is also a reminder that advances in science and engineering, in fact, in any area of civilized activity, are made incrementally. A so-called innovation results from the zigzags of past experience and the achievements of progenitors.

So it was with the High School Summer Project. Though the notion for it came to my consciousness during the first week of June, 1957, it had been in the incubator for four years and, even before that, an outgrowth of social and educational history.

Since I needed to work part time (which during my entire tenure as a student consisted of cleaning bathrooms in the Parallel dorms from 5 to 7 am six mornings a week for 90 cents an hour) to support my school expenses, I knew I would have little time for extracurricular activities and thus should choose something consequential. So a notice in The Tech announcing a smoker (this word was at one time a common expression for a recruitment meeting, having little, if anything, to do with cigarettes) for Boys' Work volunteers, to be held in Litchfield Lounge (the present Muddy Charles Pub), caught my interest. Boys' Work, now an archaic term, referred to leading a club of boys in a settlement house. At MIT this activity was organized under the aegis of the Technology Christian Association, which sponsored about a dozen community activities such as the semiannual blood drives and the off campus housing service. For the next four semesters during Tuesday evenings I led a group of boys at the Goodwill House in East Boston performing chemistry experiments.

In the spring of my sophomore year I became the Vice President of TCA for Boys' Work. I composed a recruitment appeal and delivered it to everyone in all the dorms several days before the Boys' Work smoker at the beginning of my junior year. In those days there were only five dorms: the Parallels, Senior House, Burton, Baker and the Graduate House (the present Maseeh Hall). The additional advertising enabled me to increase the number of settlement house volunteers to 43 from 17 of the previous year. Since there were more than a dozen settlement houses in Boston and Cambridge at the time I was able to assign volunteers more equitably to each one.

Later that year I prepared a report, supported by the results of a questionnaire that I had submitted to the student body, advocating that TCA change its name to the Technology Community Association, since that was more appropriate to its diverse mission and its diverse membership. This recommendation was adopted two years afterward.

It was the concept and operation of the settlement house which endowed me with the opportunity to hone my capability for lecturing before a group of youths and to organize a volunteer educational program. The idea for the settlement house was brought to America by Jane Addams, who, having been galvanized by a visit to Toynbee Hall in London, founded Hull House in Chicago in 1889. Earlier endeavors in free schooling were initiated in England at the beginning of the nineteenth century by Joseph Lancaster and Andrew Bell, who gave the responsibility to previously edified pupils for teaching fledglings. Thus, freely transmitting knowledge to others has a history back through the ages at least to Socrates and his proselytes in the Agora.

The High School Summer Project of 1957 was, then, so to speak, the child of TCA Boys' Work, the grandchild of Jane Addams, the great-grandchild of Joseph Lancaster and the descendant of Socrates.

I shall end this disquisition with a question. How did my name pop up on your mailing list? It has been my belief for more than half a century that most of the facts, as I have related them above, remained secreted within my memory, and only there. I had long ago concluded that, as far as anyone else was concerned, the origin of that venture in the summer of 1957 was as shrouded in mystery as the actual founder of Rome. Were you able to trace the names of the other eight instructors? They deserve acknowledgement, as it is they who carried out the real work of the project.

Yours sincerely,

Martin R. Forsberg

Martin R. Forsberg

Program holds classes for 130 high schoolers

By Darrel Tarasewicz

The Educational Studies Program conducted its new project, Splash, this past weekend with over 130 students attending. Splash is one of three programs that the ESP runs and that provide classes to high school students on a wide variety of topics. In the words of ESP's brochure, these classes are meant to "provide opportunities for learning and fun."

ESP is a student activity that began in the late 1950's, according to Kenneth Graves '88, former treasurer. The two other programs that ESP provides are the High School Studies Program which will be offered in the spring and Junction, a more intensive academic program, which is offered in the summer, he added.

Splash offers classes that range from the biology of the AIDS virus to vector manipulations. During the one weekend, the classes can range from one to 12 hours, Graves said.

A distinctive feature is that these classes are taught primarily by MIT students, Graves noted. "For Splash we had 22 teachers with nine of them being undergraduates, four of them alumni, and three being graduate students," he said.

The only requirement for a student to become a teacher is that they have an idea for a class, demonstrate some proficiency in the material that will be covered, and have an ability to teach the information to high school students, Graves said.

Currently the ESP has no official faculty participation, Graves said. "ESP does not want to have a faculty member just for the sake of the name," he noted. Rather it is more important that the faculty member be willing to spread the goal of extending education to the community, Graves stressed.

Splash and HSSP attract students mainly from the New England area, Graves said. "We have students coming from far away as New Hampshire or Connecticut," he added. Enrollment was good this weekend as well, with 130 students enrolling for the classes, Graves said.

In the summer program, Junction, ESP gets students from as far away as California or Japan, Graves said. It is also more academically oriented with classes being offered in calculus and chemistry, he added. Graves hopes to see more students coming from far away but the current problem is that ESP cannot offer housing to these students.

"Our goal is to have about 30-40 students coming for Junction and about 200 for HSSP and Splash," Graves noted.

The UNH Notables sing a s
Yule Log concert. See stor

Tuesday, November 25, 2008

This Year's Splash Is Largest Ever

By Aditi Verma
STAFF REPORTER

Feature

This weekend over 2,000 middle school and high school students flooded MIT to "learn anything" in classes taught by over 300 students from MIT and other Boston area colleges who were willing to "teach anything" as part of the Educational Studies Program's twentieth annual Splash event. In the largest Splash to date with 100 more classes and 20 more teachers than last year, over 400 different classes were held all over campus on a diverse variety of subjects.

The Infinite, usually deserted on Sunday mornings, witnessed frenetic activity as students, teachers and volunteers alike rushed to the first classes of the morning at nine. The Bush room was transformed into the Splash headquarters. Abuzz with activity, Lobby 10 had screens hat listed open classes.

A third of the classes had full enrollment, as the subjects ranged from the mundane to the insane. "Our slogan is 'teach anything you want' and we mean it," said Stephanie L. Bachar '11, an ESP officer. There were classes such as "Introduction to Zombie Defense" taught by Eric D. Fogg '09, "What's wrong with the Internets" taught by Michael Borohovski '09 and Benjamin J. Agre

Splash, Page 13

Splash Participants Travel Far to Explore MIT Campus, Learn

Splash, from Page 1

'12, "Counting Infinity" taught by Reuben M. Aronson '12 and "The Physics of Fairytales" taught by Emily B. Pittore '11.

Several students chose to teach multiple classes. Christopher T. Su '11 taught a numismatics class called "The Art of Money" where he showed students coins and banknotes from a number of countries, introduced them to the intricacies of security devices incorporated in banknotes, and exposed them to the variety of designs that are contained in token currencies.

While Su even gave exquisite money as prizes for answering questions, he said that he didn't spend more than ten dollars on the class. The highlight of the class was a 100 billion Zimbabwean dollar note (worth less than a thousandth of a penny). Su, an admissions blogger, also taught a class on applying to college. All sections of both classes were packed.

Albert Y. Wang '12 taught a class on bridge building using gum drops and toothpicks. The bridges were tested at the end of the class and the sturdiest structure held up 450 grams.

Splash classes are classified not only into various categories but also according to age groups catering to students in grades 7 to 12. They enable students to take a short introduction on a particular subject or an intensive workshop in a specific area of interest. Several students at Splash were seniors who are applying to MIT for the coming fall and others were middle schoolers who were brought to MIT by parents who were hopeful that they would want to go to the Institute in the coming years.

Students enrolled in 6 to 8 classes on average and spent about 20 hours being taught subjects of their choice.

In order to fully exploit short attention spans, Splash classes are intentionally kept short and are usually held in hour long sections. The classes were mostly held in the Maclaurin buildings, with a couple of classes also being taught in the Kresge Auditorium.

Student and Parent forums were one of the new additions to Splash this year. Both were put in place to get direct feedback on the classes and the program.

Both students and parents were excited about Splash and several families braved long car and bus rides to come to MIT for the weekend. "Most of our students are from the Boston Area and the Northeast, but every year we have a few dedicated students who come from all over the country," said Bachar. About two-fifths of all Splash students were from out-of-state and a sixth came from outside New England.

Helaine, 12 and Nathan, 13 who came with their mother from New Hampshire spent most of the weekend going from class to class all over campus. At his third Splash, Nathan learned how to make chain mail, tasted dark chocolates, and attended an introductory programming course. He plans on applying to MIT as a senior.

Splash which started at MIT is now expanding to other colleges as well. Last month a team from ESP went to Stanford to help them set up their own version. The response to Splash has been phenomenal in the last few years, and the program is accelerating rapidly.

Splash, which began in 1988, is run by MIT ESP. ESP was started in 1957 with the aim of sharing knowledge with local high school students through various initiatives such as Delve, SAT Prep, Splash on Wheels, and the High School Studies Program. Splash is their biggest program.

Aditi Verma taught a Splash class.

opinion

Avenging the nerds: the beauties of pi and Splash

Column by Adam Braff

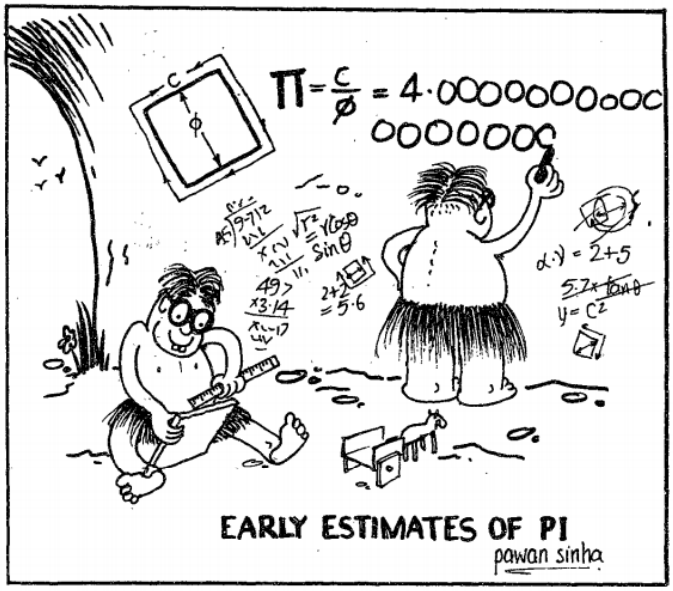
Ah, precocious youth. Smart little boys and girls used to be my pet peeve, along with spunky old people. Not that I've outgrown stereotyping entirely — I'm still not too crazy about the spunky old people. But my hardline stance against the Talented and Gifted has softened since Saturday.

The story of my mellowing began at Central Junior High School. In my second year at CJHS, and for reasons lost to history, I memorized the first 100 digits of pi. (This is relevant because I have found that the best way to chart the development of a gifted student is to follow his relationship with that most famous of irrational numbers.) Yes, I committed this incredibly useless trivium to memory — indeed, to the part of the mind which normal boys used to memorize batting averages — and sealed my fate by spending the next four summers at a Johns Hopkins program called the Center for Advancement of Academically Talented Youth. Some of you out there, no doubt CTY alumni, are cringing as you read this. We all have embarrassing pasts.

After I had seen this — the power of pi to bring me meat — I faltered, fearing what the number could do if used inappropriately. *Pi is not a party trick,* I thought.

In my rookie CTY summer, I found a support group of sorts. A boy from New Jersey had memorized twice as much pi as I. Now, I'm not even going to pretend that what we did that summer was perfectly normal, because it wasn't. We stood on a stage and *took turns reciting digits of pi in front of 200 other losers.* Outstanding. When you're looking for reasons not to like me, this one is beautiful.

Back home, nobody knew about my exploits at the CTY talent show. The Number lay dormant in my brain until my senior year at Greenwich High School. A few of my friends and I had exhausted the math curriculum, which meant we had to take some mutated version of 18.01 or 18.02 while still in high school. This sort of social climbing can stunt a person's conversational skills; we ended up, one day, arguing whether *e* to the *i*-times-pi power was one, as my moronic friend insisted, or negative one, as I insisted. (How



an equation could inspire such spite is beyond my comprehension, let alone pathetic and frightening.) We wagered a porkchop. I don't know why. The teacher came in, did some figuring for us on the board, and proved me right. The next day, my cowering friend entered the room and laid a frozen porkchop in a baggie at my feet.

After I had seen this — the power of pi to bring me meat — I faltered, fearing what the number could do if used inappropriately. At parties when top-heavy women would wrap a leg around mine and ask me to whisper pi in their ears, I would decline. *Pi is not a party trick,* I thought. *Pi is a monumental educational tool.* I said a few digits of *e* to these temptresses and sent them away.

* * * * * *

Back to reality. Last weekend, the MIT Educational Studies Program held its second annual "Splash," which ESP's brochure describes as a "weekend-long extravaganza of lectures, workshops, and seminars for students in grades seven through twelve." Almost 300 kids, most of them precocious, came to MIT to study courses with titles like *Make a Needle Lift a Barbell* and *Zen Buddhism, Part I.* More importantly, a man named Todd Barber G taught a class called *All About the Number Pi.*

When I found out a week ago that Todd was going to spread the gospel of pi, I hesitantly volunteered that I had been personally involved with The Number for quite some time. The nature of our relationship was somehow revealed, leaving Todd to invite me to his lecture and grace the kids with a recital of the first 100 digits. Not an accomplished public speaker, I declined at first. After Todd twisted my arm a bit ("for the children, Adam," and so on) I agreed. I may be a geek, but I am not without a soul.

On Saturday he called me at 8:43 am and told me where his class was meeting. At 10:30 I woke up, realized I had taken a phone call in my sleep, and ran to my obligation. A room full of precocious children and Todd looked up as I entered, unshaven and mean. I believe I scared them. But as the digits began to float from the recesses of my brain to their young ears, I saw a transformation take place. Not in them — they weren't the least bit impressed. It was I who transformed. These kids weren't mere glasses-wearing, shampoo-lacking, shirt-tucked-in-and-buttoned-up-high losers. They were just bright students who had come to MIT for the day because they *genuinely wanted to learn.* It wasn't a religious experience or anything; I just thought of myself and these kids and was glad we had come together to perpetuate education in general and this quirky little number in particular.

The next day I went to Splash's makeshift office in the Infinite Corridor and spoke with Steve Worley '90, the chairman of ESP. I told him what I had done and seen the day before.

"You're right," he said. "As opposed to high school, where the kids are told what to take, Splash lets them take what they want. It's the best way to choose a class of students — they have to be interested, because they chose the course themselves."

ESP, which has been around for 30 years now, started Splash last fall. In its first year, the program drew 130 students from the Boston area and from as far away as California. Part of the reason the program's enrollment doubled this year was the large number of positive reviews from the 7th through 12th graders who let themselves be enriched.

"We have not had a single negative comment," Worley said, "except for the student who complained there were only 80 courses, or the one who said it should take place every month instead of annually. The parents loved the idea."

I asked him how he had gotten parents involved in the program.

"We haven't," he said. "We physically yank the parents away from their kids, because some of the parents seem to want to do the choosing. We want the students to take what *they* want, not what their parents want."

Who were these souls, I asked, who did the yanking and the teaching? Were they paid for their troubles?

"No," he said. "The purpose of ESP is to give the MIT community — students and teachers — a low-risk opportunity to teach. Some of them want to be teaching assistants, and some of them just want to teach a class about physics or comic books, something they know well. We're always on the lookout for teachers for Splash and the High School Studies Program." (ESP's springtime project, HSSP, is a 10-week program similar to Splash.)

Seeing younger students learn about esoterica is inspirational. If the United States is to regain its intellectual status in a world dominated by Europeans and Asians, we Americans must start before college. I'm not coming out in favor of eighties-style high-intensity preschools. What I'd like to see is a preponderance of programs like Splash — an opportunity for precocious kids outside of Connecticut and Massachusetts to excel in whichever field they like. I was lucky, in painful retrospect, to have been given a chance to flaunt my pi fetish among students of the same ilk.

Adam Braff, a junior in the School of Humanities and Social Sciences, is a columnist for The Tech. *He was in the Greenwich Public School System's Talented and Gifted program for six years, an experience which has left him with irreversible emotional damage.*

Student tutoring expanded

By Joseph Kashi

MIT's High School Studies Program has offered Boston area high school juniors and seniors a unique opportunity to widen their knowledge and intellectual capacity. since its inception two years ago, the HSSP has continually broadened until it encompasses a large number of unique and stimulating courses and educational ventures. Starting with subjects offered during the summer to upper-middle-class students, the HSSP has expanded to include many black pupils from economically depressed areas of Boston.

Many of these less advantaged pupils have been recruited through the help of neighborhood community action groups. As these students often do not have the educational background necessary for standard MIT programs, a need developed for courses that would be relevant to their lives, but would not have prerequisites. Out of this need arose courses in such areas as "Problems of Negro Leadership," "The City and Its Problems," and "Economics of Current Events." These courses, which had enrollments of both black and white students, are taught by black teachers, with the HSSP evaluating the results of this approach.

Program expands

A mainstay of the program, the Saturday afternoon lectures on various subjects of general interest not covered by any one course, attracted such lecturers as Professors Thomas, French, and King. Also for the first time, a winter term was initiated, thereby allowing students to expand the scope of their regular High School classes by reporting interesting material to their classmates. Originally, the scope of their regular High School classes by reporting interesting material to their classmates. Originally, the High School Studies Program offered about 20 courses, mostly in math and science twice a week during the summers prior to the autumn of '67. This program attracted approximately 1000 students per week to the Institute. The success of this program encouraged the expansion of HSSP into its present form. The course schedule was doubled, with about half the subjects in the fields of Social Science and the Humanities. In addition, much more was offered in the cultural and extracurricular area.

A primanry objective of the program, that of procuring and training MIT undergraduates as competent instructors. was rather successful. and many more interested students volunteered from Boston College, Boston University, and Wellesley College. Faculty members willing to aid the group in administrative and academic endeavors volunteered, enabling the program to become a well-rounded and run venture. Close to 60 subjects are being offered in the second term this year, which will run concurrently with the MIT second semester. Also, tours to areas such as the National Magnet Laboratory, the Computation Center, and the Hydrodynamics complex will again be conducted.

MIT students are now actively helping Wellesley College initiate a program similar to the High School Studies Program wherein Wellesley would supply most of the intructors and the facilities, but MIT's HSSP would help set up and administer the program. In addition, students from both colleges would teach at each other's program in an effort to broaden available course offerings.

Students teach at Rindge

226 MIT undergraduates are presently teaching in various capacities at Rindge Technical High School in Cambridge Other changes have also been proposed for the Rindge Tech program which is under the direction of Professor Al Lazarus of the Physics department. Foremost among these proposals is an MIT-Rindge exchange program under which an MIT student would fill in for teachers on certain afternoons while the teacher was at MIT attending seminars and classes, or doing research. (However, further checking into this proposal revealed that certain influential members of the Administration were somewhat cool to this idea.) Students interested in working for this program should contact the program secretary at extension 5124. It has been further proposed that since many MIT students eventually teach in secondary schools, that formal education courses be made available to any MIT student who might wish to take them. This would enable them to get teaching certificates much more easily than most MIT graduates are able to get them now.

Tutors needed

In addition to the Saturday morning classes and lectures of HSSP and the cooperative program with Rindge Tech, about 177 undergraduates are engaged in Tutoring PLUS in the Cambridge area, along with Wellesley and other schools. At least 100 more tutors are needed, preferably male. Information may be secured by callling 547-7660.

ıs *fight draft*

part of our country. Their slogan is "Blood tribute without representation – Independence now." Over ninety Puerto Ricans have already refused military service though only one has been brought to trial. His appeal will be

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High school study program to be run by TCA next term

By Greg Bernhardt

The Dean's Office has approved plans for a study program for high school students. Taught by undergraduate and graduate students, the MIT High School Studies Program will offer Saturday classes for students from the Boston metropolitan area. Classes are scheduled to begin February 3.

Independent of the "MIT High" project being studied, The Studies Program represents a school year continuation of the summer program which has been operating for 11 years. The summer program is run by TCA, as will be the new project.

Twofold value

The goals of the program are twofold; to give high school students the opportunity of a college enrichment program and to give the MIT students experience in organizing and teaching courses. Emphasis will be placed on selecting and preparing the student teachers for their courses. The Studies Program will also offer guidance for the high school students.

Precedent at Columbia

The program was inspired by a similar program at Columbia, the Columbia University Science Honors Program. The MIT version will offer topics in the humanities as well. An enrichment program for the brightest students is also planned.

Student planned

Charles Manski '70 is the chairman of the program. Phil Laird '69, is recruiting the students and Bob Metcalfe '68 has charge of selecting the teachers. The program was approved Nov. 2 in a meeting with Dean Holden and Professor Austin.

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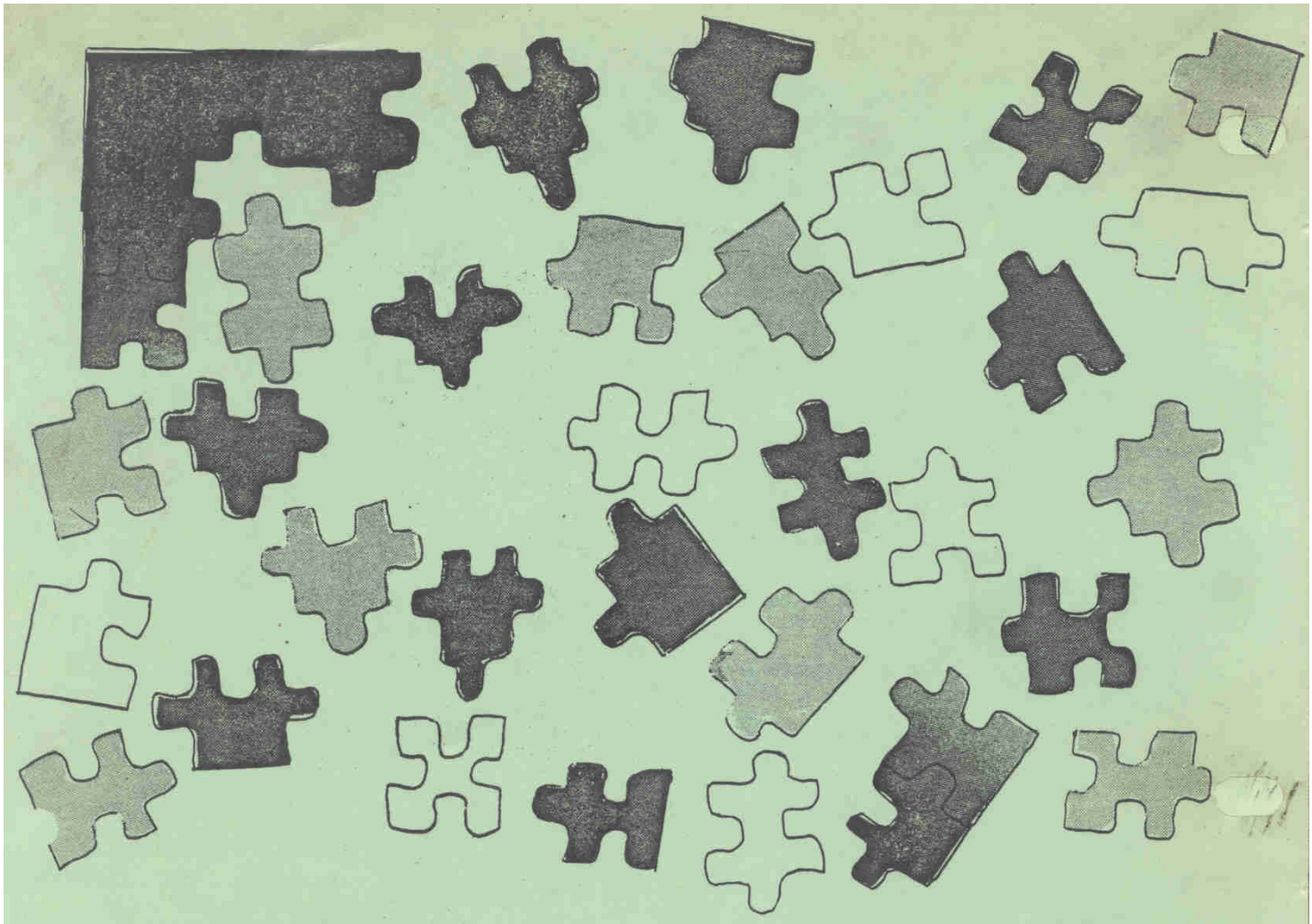
The MIT High School Studies Program offers courses at MIT for 7th–12th grade students. The classes meet for nine Saturdays from March 11th to May 6th. You can take up to three classes for just $25, although some classes may have a fee for materials.

A walk-in registration will be held on March 4th from 10 am to 12 noon at MIT, 77 Massachusetts Avenue in Cambridge. Call (617) 253-4882 for more information.

Take courses you're interested in with the MIT High School Studies Program

The MIT Educational Studies Program

REGISTRATION: March 4th 10:00 am
MIT, 77 Massachusetts Ave. Cambridge
Registration Fee: $25.00
Call 253-4882 for information



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