

## Poster Raises \$ For Charities

By Cristine Phillips

Connie Kirker's Art 120 class has come up with a clever and entertaining fund raising idea: a personalized poster of the Delco campus following the "Wheres Waldo" motif.

For only \$1 students can buy a space on the poster, placing themselves anywhere on campus. In addition, five words of the individual's choice will be placed on the poster next to their picture. All twenty-two students from the Art 120 class have collaborated on the poster, which means this project has already begun production. The cut off date for purchasing a space is Friday November 5.

Once printed, the poster will be sold for \$5 and will be distributed before winter break. All money, over the cost of production, will be distributed to a scholarship or charity chosen by the Art 120 students.

To help this great fund raising project become a success, campus members can stop by 112LLC any Tuesday or Thursday morning from 9:00-11:20 a.m. to have their picture drawn on the poster for only \$1 or they can contact Connie Kirker in room 126LLC.

### DRIVER WANTED!!

Will pay for daily ride from Berwyn to and/or from campus. Call 296-8525 for details.

\$\$\$\$ FREE TRAVEL AND RESUME EXPERIENCE!! Individuals and Student Organizations wanted to promote SPRING BREAK, call the nation's leader. Inter-Campus Programs 1-800-327-6013.

The Keystone Society and French Club are sponsoring a SKI TRIP to Smuggler's Notch, Vermont, January 3-8. For more details contact 892-1234 ext. 710 and 712.

## The Freshman Zone

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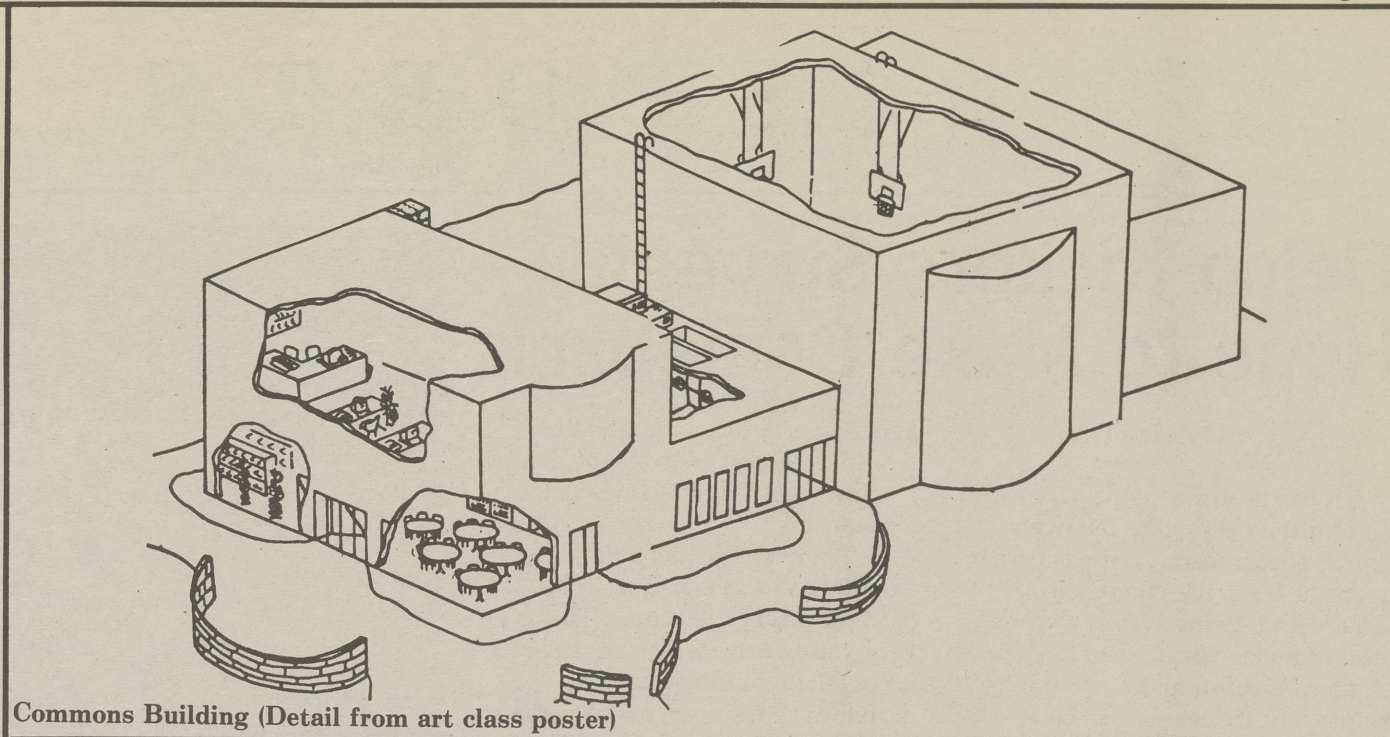
courage, and hopefully, a sense of humor. (But if not, bye bye column.) They should all command an admiration for their endeavor. They deserve it. Now, if you'll excuse me, I have to go change the side of my Bing Crosby album. So, till we meet again, I'll see you in .....THE FRESHMAN ZONE!!!! (I really gotta get some special effects added to the budget.)

## As Andy Sees It . . .

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to George Herbert Walker Bush, and that is why our country will be nothing more than a farse if, he is, in fact re-elected. George Bush represents a Bible-toting controlling class of people whose main objective is wealth and world power at the expense of everyone else.

Again it has been the Democratic party representing the tired and forlorn middle class, which has spent this campaign concerning itself with the real problems, such as, the enviroment, national health-care, and our desperate economy. These



Commons Building (Detail from art class poster)

## Sweat Test Can Determine Drug Use in Athletes

By Ed McFall

A recent "sweat test" at Penn State Delaware County Campus determined there is no statistical difference in the perspiration of men and women - and the research could lead to a rapid spot test for the presence of drugs in athletes.

A research team consisting of a chemistry professor, an athletic director, a librarian, and a student-athlete found there is no difference in the pH, or acidity factor, in the sweat of men and women.

And because there is not any difference, sweat tests possibly could be employed instead of, or in conjunction with, the presently used urinalyses to test for drugs in athletes immediately after competition.

The researchers acted as a result of a challenge issued in a chemistry class during a discussion about certain deodorants and shampoos referring to pH factor and women.

While research by other scientists has shown that men may sweat more than women, the Penn State researchers found the measures of pH of the perspiration produced by both males and females was in the same range, 6.1 to 6.7.

The only drastic variable in the pH readings among volunteers used in the study was when several of the

persons tested were found to have an infection and were being treated with antibiotics.

John Tierney, the Penn State chemistry professor involved in the research and a person actively involved in Olympic rowing, noted that when athletes are tested for drug analysis of a sample of urine from the athlete is used. However, most athletes do not have any urine to donate after competition, but they are sweating.

Tierney pointed that since the study done to the Penn State team showed that the pH of sweat for men and women is in a narrow, well define range and changes only with illness or drug intake, then measuring the acidity level of athletes during testing would provide a simple, quick determination of any chemical imbalances in an athletes' body.

He said the possibility of using pH measurements to test for drug intake came as a surprise to the Penn State team since there had been nothing to indicate that in the literature they had researched. Tierney added that the research in this are was continuing.

And it was not what the researchers were seeking to determine when they began the project.

The research by Tierney, Daniel Doran, assistant professor for health and human development, Susan Ware, senior assistant librarian, and Mary Varano, a Penn State student-athlete, began after a discussion in Tierney's chemistry class for non-science majors.

When asked where they had heard the term pH before, a significant number of the students immediately identified the term to be associated with deodorants and shampoos.

The students noted that two commercial products they were familiar with stated that they were "pH balanced for a woman," with the inference that men and women had different pH values for their bodily fluids or parts.

Tierney questioned this, stating that the pH balance should not be drastically different for men and women. He admitted that he had no immediate data to support his position and thus the challenge arose to prove his contention.

The team's search of chemical literature revealed that the pH values

for many bodily fluids, for both humans and animals, are known and have been cited, except for that of sweat. However, an average value was cited in a few papers on cystic fibrosis research in the medical literature.

No studies could be found in the literature where both male and female subjects were tested under the same conditions and their sweat pH was measured.

The report prepared by the four researchers also noted that communication with one of the manufacturers of a deodorant "indicated that they were in possession of proprietary information concerning sweat and pH and that no general literature references were available."

Thus experiments were conducted on campus with the aid of male and female students in several exercise science courses.

The initial 40 subjects were instructed not to apply any deodorants, hair sprays, body lotions or facial preparations that could interfere with the test results.

After a 20-minute warmup period, and a one-minute testing period, samples of perspiration were taken from each subject. In order to ensure the accuracy and reliability, at least three methods of testing were employed on each subject. The first was use of pH test strips.

A second method utilizing a pH meter also was applied to each subject and confirmed the validity of the color changes observed on the pH testing strips. A third test using a pH drop test was administered to every fourth subject to further confirm the first two methods.

The researchers' report said of the tests that, "It can clearly ben seen from these results that the pH of a person's perspiration is independent of the sex of that person and falls between a normal low of pH 6.1 to a normal high of 6.7." One subject, a male, recorded an 8.2 reading and when questioned, it was revealed that he was on antibiotic medication for an infection.

Because of this, two other subjects, who were on antibiotics, were located. Under identical test conditions, the pH of their perspiration was tested and found to be greater than eight. The study by the four-member research team is ongoing and the number of subjects is now up to 100.

### Letter to the Editor:

The Lion Ambassadors would like to thank everyone who participated in the Car Wash for Leukemia. We made \$425 in pledges and donations.

are the kinds of issues that out-out-of-touch President just can't seem to understand.

So here is my suggestion: Let the Republicans talk all they want about the "rotten liberal press", Murphy Brown, and Bill Clinton's draft record.

But at the same time, give an ear to what Mr. Clinton and Mr. Gore have to say, because you may be suprised to find that there are still some polician's who are actually concerned about the real issues and, most importantly, the direction of this nation.