The Interaction Point

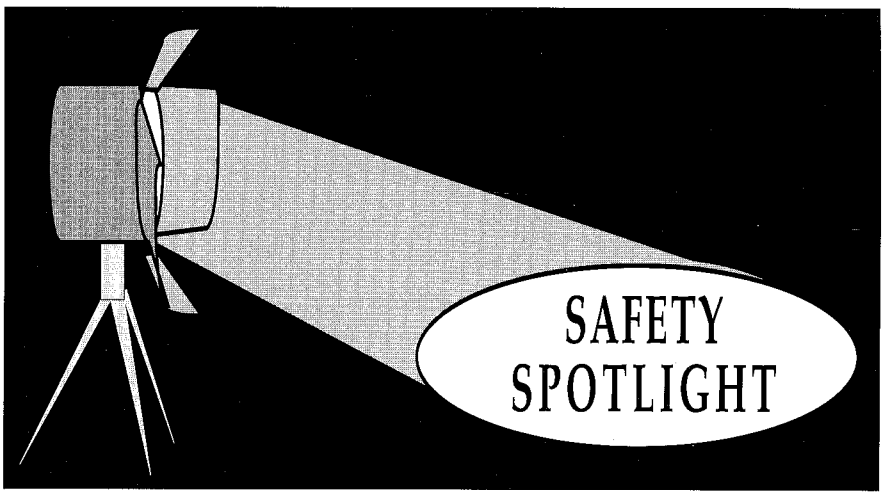
Events and Happenings
in the SLAC Community
June 1991, Vol. 2, No. 6

Who ARE All These Pseudo-Tigers?

WILL THE REAL TIGERS PLEASE STAND UP?

by Mary Ross

IT SEEMS THAT EVERYWHERE you turn these days, someone says a tiger's just been there. Wait a minute—the Tiger Team is not due until October. Who ARE all these pseudo-tigers and why should you give them the time of day?



First, there are the dozens of SLAC and SSRL personnel engaged in the labs' own pre-Tiger Team self assessment. Then there are the consultants who were brought in to help with the environmental part of the assessment. Also, during parts of June and July, the DOE San Francisco Field Office (SAN) is conducting its own ES&H self assessment. One objective of the SLAC/SSRL self assessment and of SAN's is to find all our problems before the real tigers do. Thus, the self-assessors are acting very tiger-like.

On top of all that, SLAC and SSRL were visited the last three days in May by a committee put together by DOE's Office of High Energy and Nuclear Physics (HENP) to see how we're coming along in adopting and adapting to the increased emphasis on environment, safety and health, and how we are doing with our Tiger Team preparation. You see, the folks in HENP, who are interested in our research program, don't want any surprises to come out of the Tiger Team's assessment of SLAC either.

While all these assessments do take time out of our already busy schedules, they are providing some important benefits as well. First, the better we do the job of identifying our weaknesses and laying them on the table, the better we can identify courses of corrective action. The visit from the HENP panel provided a good opportunity to do this. In fact, the panel was impressed with the framework that we have laid for improving our ES&H practices and for implementing new programs to sustain good performance.

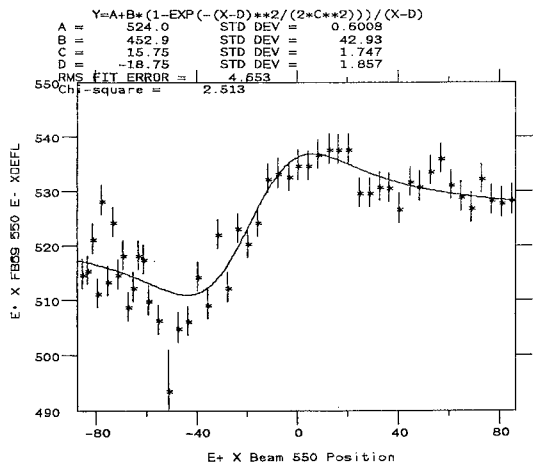
Second, we have a lot to learn from each other and from the extra bands of environment, safety and health professionals that are coursing through our workplaces. Although we won't have Tiger Teams to look forward to every year, we will be required to beef up and formalize our *ongoing* self-assessment activities. Our own vigilance must replace that of the Tigers. The experience that we gain now by going through the self assessment and watching and listening to the consultants and DOE assessors can be extremely valuable. The Tigers will go away, but the requirements will not.

HOW TO PUT IN YOUR TWO CENTS' WORTH

DO YOU WANT TO CONTRIBUTE an idea for making SLAC a safer and healthier place? Are you concerned about a potential hazard but can't get anything done about it? Send VM mail to ESHIDEAS or call the ES&H Hotline (anonymously, if you prefer) at ext. 4641.

SLD/SLC Update

THE COMMISSIONING OF SLD OFFICIALLY STARTEDat the beginning of June as SLC delivered beams to the collider hall. The goals of the two-month engineering run are to tune up the new final focus system of the collider for maximum luminosity, study the backgrounds, and produce enough events to begin understanding the performance of the individual systems of the detector.



Evidence that the two beams are interacting with each other.

By Sunday, June 9, the electron and positron beams had been separately brought around their arcs and centered on fine wires that are inserted into the beam pipe near the collision point in the middle of SLD. The point of that exercise was to get the beams close enough together that their mutual interaction can then be used to steer them into head-on collision. Just before six o'clock that evening, both beams were brought through and the button pushed to begin scanning the beams past each other, looking for the telltale deflections. The very first try worked, producing the characteristic graph shown here.

Work has now shifted to fine-tuning the upstream magnets and adjusting the final alignment to shrink down the size of the beam spots at the focus. Meanwhile, the injector, positron system, damping rings, and linac have all been put in fine order to deliver the high-intensity beams that together with small spots will make useful luminosity.

During this machine work, SLDers have been taking advantage of quiet lulls in the potentially noisy beam tuning process to turn on and time in detector systems.

So far, so good.

—Bill Ash

EVENT CALENDAR JULY–AUGUST, 1991

ALL MEETINGS are held in the Orange Room, unless another location is listed. Please notify the Public Affairs Office of any additions or changes by calling ext. 2204 or sending e-mail to NINA@SLACVM.

July 6, 11:30 a.m.
SLAC Day at the Stick (Buses)

July 15–19
Physics Teachers Workshop (H. Quinn)

August 5–16
SLAC Summer Institute (SSI) (Auditorium/Orange Room)
TOPIC: Lepton-Hadron Scattering (D. Leith, L. Dixon, D. Burke, J. Hawthorne)

August 15
DOE Institutional Plan On-Site Review

August 26–28
SLD Collaboration Meeting (Squaw Valley Lodge) (M. Breidenbach, C. Baltay, M. Helton)

Benefits Office News

JULY IS HEALTH NET MONTH, and a month of excitement has been planned for you!

July 9 Cholesterol Testing
July 23 Healthwise Game Wheel
July 24 Computer Stress Inventory
July 30 Body Fat Analysis

TIME: 11:30 a.m.–1:00 p.m.

LOCATION: Breezeway between auditorium and cafeteria.

Health Net, California's second largest HMO, sponsors these educational, entertaining, enlightening wellness events free of charge for all SLAC employees. With clinics in all the surrounding counties, Health Net also includes Stanford University Medical Center.

Test your health knowledge and win terrific prizes! Play our Healthwise game on Tuesday, July 23, and win!

Stressed out? Wound up? At the end of your rope? Take our computerized stress inventory on Wednesday, July 24. Learn what your stressors are and how to deal more effectively with stress.

Hard Body? Soft Body? Somewhere in between? Quantify that "body" by having your body fat tested on Tuesday, July 30. Wear short or loose fitting sleeves.

Health Net Month is their way of saluting the folks at SLAC and helping us in our quest for good health!

—Betty Strickland

POSTER INFORMATION

For information on the Standard Model of Fundamental Particles and Interactions poster, featured on p. 4, contact Helen Quinn, ext. 2713, or email QUINN@SLACVM.

ZGATE SCULPTURE PROPOSED

ON FRIDAY, JUNE 14, environmental artist and Stanford graduate Dana Chodzko gave a public presentation of her proposed SLAC sculpture "Beyond the Gates of Z." Chodzko unveiled her three-dimensional model illustrating the preliminary arrangement of the environmental artwork, which may employ 500 pieces of equipment and machinery previously used to install the 4,000-ton, $60 million SLD. If approved, the completed sculpture will commemorate SLAC's pursuit of the "Z" particle. The art piece, spanning nearly 800 feet in the shape of a giant "Z," would intersect the PEP Loop Road while traversing low lying hills within the laboratory compound. The proposed design plan schedules the artwork's completion during the Stanford Centennial Week Celebration September 26–October 6, 1991.

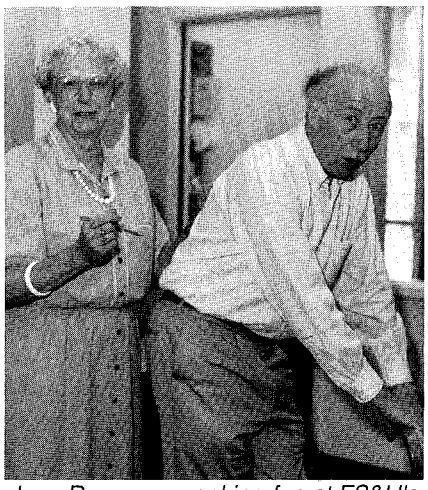
Laurose Richter and Richard Zdarko look on as artist Dana Chodzko explains her concept of "Beyond the Gates of Z."

The idea for the art project grew from the SLD collaboration's need for equipment storage space. The sculpture could provide an artistic storage solution for machinery that is not currently in use, but may have future applications for scientific research at SLAC. Initially, a group of SLD physicists formed the SLAC Sculpture Garden Advisory Board and contacted the Stanford University Art Department for assistance with conceptualization for the project. The Art Department recommended Chodzko for the job. Richard Zdarko, a physicist in the SLD collaboration, is primarily responsible for making the sculpture idea a reality. Zdarko believes the sculpture can financially benefit the laboratory by "recycling" machinery which could have future scientific uses.

—Robin Chandler

---

25 YEARS HONORED



Joan Dammann poking fun at ES&H's Matt Allen.

JOAN DAMMANN, R.N., Certified Occupational Health Nurse, was recently honored with a surprise reception in the Medical Department and a pin by her Supervisor, Marcia Katz, R.N. of the Palo Alto Medical Clinic, in recognition of twenty-five years of medical service. She was also awarded a month's bonus vacation, which she will spend motoring to Minnesota.

In June of 1966 Joan joined the Clinic and two years later moved to SLAC where she was instrumental in setting up the Medical Department. Over the years she has functioned as a full-time nurse at SLAC, served on the Safety Committee, and set up many health-oriented programs for employees. For many years Joan has provided First Aid coverage at the Annual Family Day on site.

Joan is affiliated with the California El Camino Real Association of Occupational Health Nurses (AOHN), South Bay; she is a past president and current secretary of Mountain Western AOHN; she is also a member of the Northern California, California State and American (national) AOHN.

—Marion Lisotto and Eunice Butera, R.N.

Physicists and Teachers Team Up

New Approach to Science Education

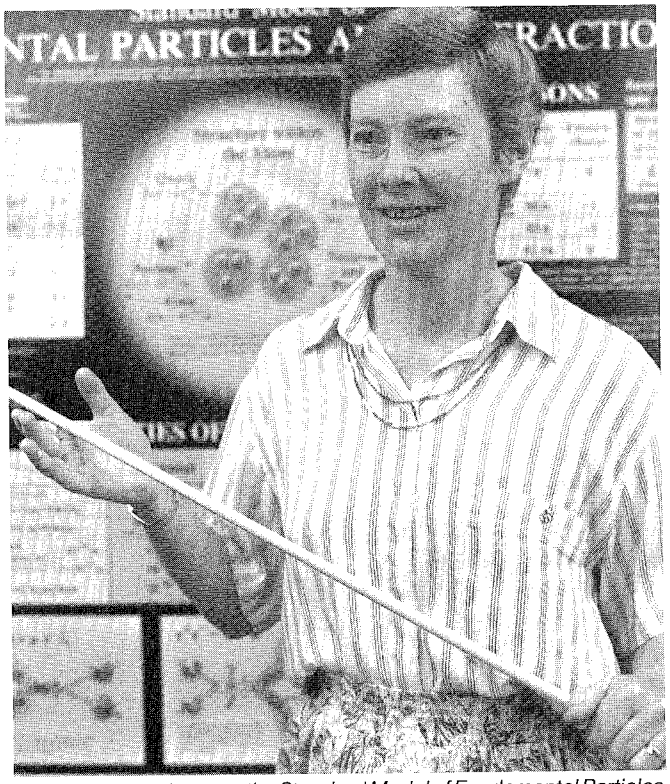
THE MAJORITY OF PEOPLE ENTERING scientific fields are white males. Elementary school science is often taught by teachers who grew up with science as facts, are bored with science, or, even worse, afraid of it. Too few pre-college people are interested in physics and mathematics. If you were the largest employer of scientists, and would like to leaven the ranks of white male scientists with a balance of minorities, and women, what would you do?

As the largest employer of scientists, the federal government has set as its highest priority the improvement of the level of science education for pre-college level teachers. In the past, science was taught largely as theory and a set of facts. The movement now is to teach students to see the scientific process as a way to find answers to interesting questions. This new approach to science education must start with the retraining of grade school and high school teachers.

The Department of Education (DOE) recognizes that the national laboratories are a tremendous resource in the effort to retrain teachers. As an experiment, SLAC, Sandia, and LBL, together with the Oakland School District, are setting up a program to train teachers in partnership with the labs. The Bay Area Science and Technical Education Consortium, consisting of participants from the labs and the school district, has already held several meetings. DOE has contributed $500K for this year, most of which will be used as stipends to teachers to attend various training programs this summer.

Helen Quinn, who started her SLAC career as a graduate student and is now a physicist in the Theory Group, was appointed Science Education Officer for SLAC several years ago. As her first project Helen worked on a poster of the Standard Model of Fundamental Particles and Interactions of physics education, in collaboration with high school and college teachers and other physicists. The poster was prominently displayed at a recent meeting of Industrial Associates of SSC and praised by the DOE as one of their significant educational contributions.

Helen then developed a Macintosh HyperCard stack called Particles and Interactions with Andrea Ertzberger, a Palo Alto High School teacher. The hypermedia program introduces the viewer to the fundamental particles of nature. This project evolved into the nonprofit group, Contemporary Physics Education Project (CPEP), of which Helen is the president. CPEP seeks to find ways to distribute information to science teachers and school districts and to develop further materials. Members of the



Helen Quinn and poster, the Standard Model of Fundamental Particles and Interactions. For more information concerning the poster, see box on p. 2.

project include high school and college teachers and physicists. Science Kit, a commercial distributor, is distributing materials developed thus far. Their catalog goes to high school teachers throughout the country. CPEP is now working on a student book and a teacher packet suggesting classroom activities related to teaching the fundamental structure of matter.

At Helen's suggestion, SLAC has offered summer jobs to high school physics teachers from the Oakland School District to get them more excited by working directly on projects here and to take that enthusiasm back to the classroom. SLAC will also offer a summer workshop to 20 physics teachers. Volunteers are needed at varying levels for projects such as this workshop.

California science textbooks are being redesigned in conformance with the recently accepted Science Framework's recommendation that 40% of the time spent on science should be hands-on activities. California Assessment Program testing is also being redesigned to emphasize doing science over learning facts. In fact, the plan is to move away from textbooks in science and mathematics toward hands-on activities.

—Ilse Vinson and Janet Dixon

This Number No Longer In Service...

NADA COMSTOCK HAS SEEN MANY CHANGES since her arrival in the SLAC phone room in 1967. Back then the standard equipment was the plug and cord PBX switchboard, which was retired as an antique in 1988. The present phone system, a computerized, automated console, allows operators much less personal interaction with callers. The original telephone room in the A&E building was so cramped that Nada and her colleagues sat elbow to elbow, talking and reaching across each other to service the calls. "It takes a strong personality to survive in that environment! We *had* to get along with each other," says Fran Balkovich, who replaced Nada as supervisor of Telecommunications Operations.

Nada Comstock and her husband Harold.

It helps to like people if you work as an operator; Nada thoroughly enjoys people, has a great sense of humor, and always goes the extra mile to help. Virtually everyone at SLAC knows Nada Comstock's pleasant voice. She and her colleagues would amaze callers from all over the world whom they had never met, by recognizing them from their voices. This was especially true during the time of the old phone system which required more interaction with callers.

Nada's cheerful telephone manner gained her many long-distance friends. One, Dr. Katsuo Hasegawa of Japan, called collect especially to talk to Nada. Once, when Dr. Hasegawa visited SLAC, he gave a private piano concert in the auditorium for Nada and her husband, Harold.

Recently Nada used her artistic skills to design and decorate the retirement home she and Harold share at Pine Mountain Lake. The Telecommunications staff and her many friends will miss Nada and her cheery voice and hope that she will visit us now and then.

—Fran Balkovich and Ilse Vinson

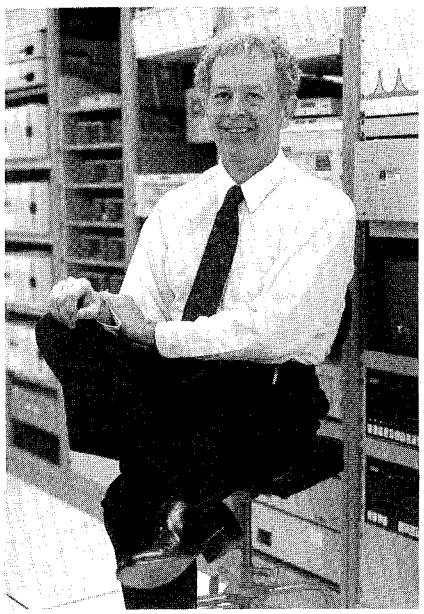
One Career Ends With Class

FEW KNOW AS MUCH ABOUT Computer Operations as Charlie Class. July 1, 1991, will mark the end of a 28-year career with SLAC that saw him begin as a Computer Operator for the University in 1963 and finish as Network Operations Manager for SCS.

The explosion in the late 1970s of remote computer connectivity at SLAC created the need within SCS for a group to meet developmental and operational networking requirements. Charlie was a natural choice to lead this group. Today the networking group is responsible for the installation, maintenance, and integrity of SLAC's computing networks.

A man of many interests and talents, Charlie is active in the Barber Shop chorus and has shared his vocal talents with all of us during the SLAC Christmas parties. Since taking up ballroom dancing in the early 1960s, he has danced on cruise ships for free passage and cheap tequila!

Still feeling a little left out of the public eye, Charlie became the Phil Donahue of the Valley, hosting his own community service television talk show in 1982, which covered topics ranging from boa constrictors to Hotlines. Deciding to take his show on the road, in 1985 he produced a special from Italy entitled "Italian Magazine." Today, Charlie co-hosts and produces the highly regarded show, "High Technology with Killen and Class," which focuses on hot issues in the Computing and Telecommunication industries.



Charlie is proof that there is Life After SLAC. Though turning his dosimeter and pager in, he will not partake solely in the leisurely life of retirement. Fishing poles are out, more television is in! He and his two daughters will be going on a cruise to the western Caribbean, while his three grandchildren plan a summer of activities for grandpa.

SCS is holding a picnic on June 27 (noon) at Sector 6 to wish Charlie a happy retirement and success in his business endeavors. Call ext. 2287 or ext. 2406 for additional information.

—Teri Church

REMEMBERING SANDRO

ON JUNE 12, 1991, THE CAMPUS REPORT published the following:

Physics graduate student dies in Yosemite accident. Alessandro Mazzucato, 29, an Italian graduate student in physics at the Stanford Linear Accelerator Center (SLAC), died in an accident at Yosemite National Park on Saturday, June 8.

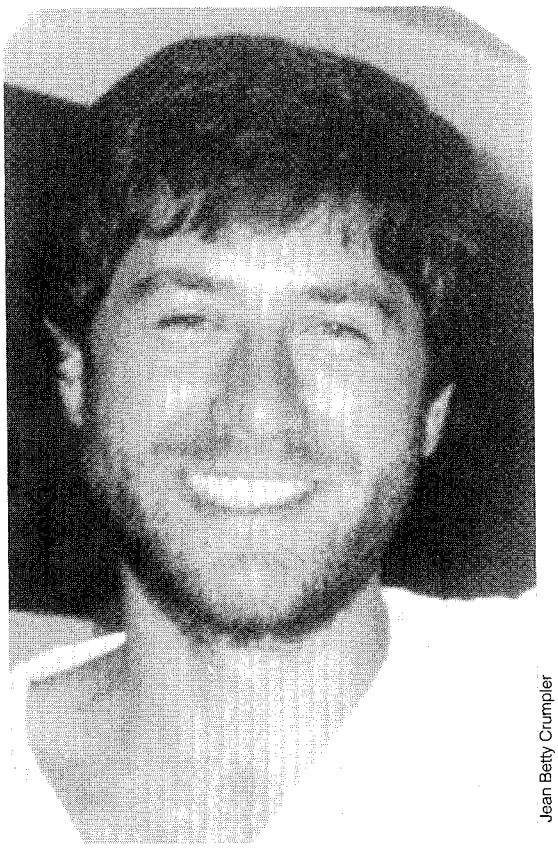
Mazzucata lost his footing in Chilnualna Creek near the southern edge of Yosemite Park and tumbled about 55 feet down a series of cascades to his death.

Mazzucata was a member of the Padua Group, Italian physicists working in collaboration with SLAC scientists at the SLAC Large Detector. He came to Stanford in the spring of 1990, went back to Italy in the fall and returned again in April.

Professor Marcello Piccolo, speaking for the Italian delegation at SLAC, said Mazzucata is remembered as an enthusiastic physicist who liked to work. Advised by Profs. Dario Bisello and Maurizio Loreti of the University of Padua, he was working on the [warm iron] calorimeter, one of several particle detectors that are part of the SLAC Large Detector.

He was expected to complete his degree, the Laurea in Physics, at the University of Padua in the fall.

A native of Padua, he is survived by his parents and two sisters.



Jean Betty Crumpler

For those of us who were well acquainted with Sandro, this report, and others which were published and broadcast, were infinitely sad, but it did not convey much of a sense of the delightful man that Alessandro was. Classically trained on the guitar, a lover of music, poetry, beauty and people, Sandro seemed more an aesthete than a man of science. He leapt, wholeheartedly and energetically, into whatever caught his interest. His friends use the words, "joy, bright, warmth, talented, funny, good-natured, smiling, guileless, and life loving" to describe the way he was. If Sandro ever agonized over anything but his decision to pursue physics over music, he never troubled his friends with it. Inarguably and without charity, one can say that he was a stellar person of many talents who, through his hard work and pleasant personality, was destined to positively affect many people. Twenty-nine years was not sufficient to fulfill the promise he held. A favorite poem of Sandro's says it best:

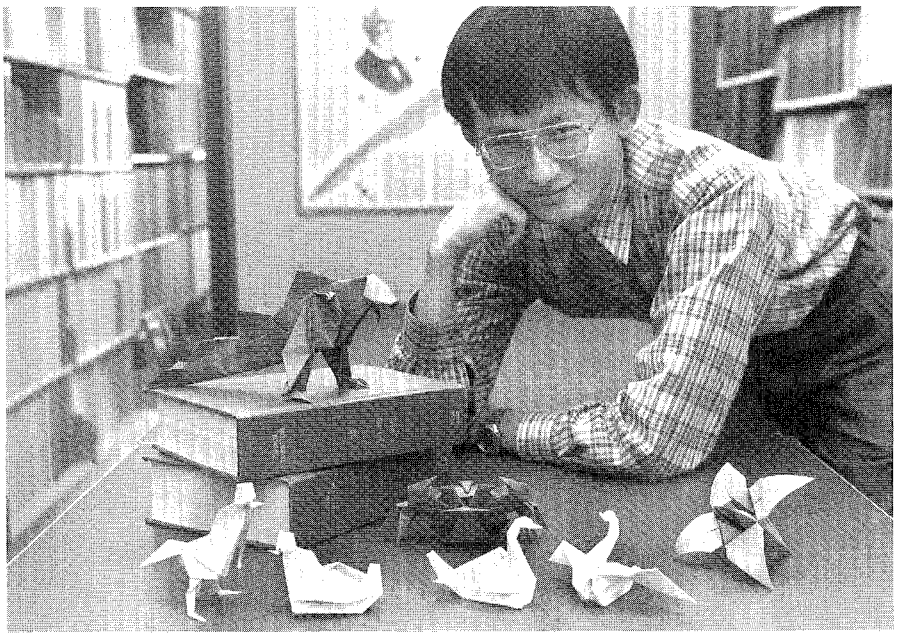
My candle burns at both ends;
It will not last the night
But ah, my foes, and oh, my friends—
It gives a lovely light!
—*Edna Vincent Millay*

— *Margaret Helton*

PHYSICIST HAS SPECIAL BENT FOR RECYCLING

TATSU TAKEUCHI, A PHYSICIST in the Theory Group, periodically checks the trash to see what I have, yet again, thoughtlessly thrown away. The other day, he retrieved some discarded bulletins. The following day the bulletins reappeared folded into the form of a flower and an F14 fighter jet. The jet's wings could be placed in one position for take-off and another position for extended flight.

He created the F14 following an incident with a five year old child. After showing the child how to make a flower, the child was unimpressed. "But it's not exciting! Why can't you make anything exciting?" This disturbed Tatsu's sleep for five nights. The day after the fifth night Tatsu created the F14.



Tatsu Takeuchi shown here with some of his recent paper folding. Clockwise from top: Godzilla, crab, lily, two swans, and two unidentified creatures.

Tatsu declines to say how many years he has been doing Origami, as this would reveal his age, but he started at the age of three. When asked if his mathematical ability was a factor in creating new designs, he said not in his case. He learned a lot of combinations and conceptualizes other possibilities using the same or a similar premise. "In Japan, there is a successful blind origamist who creates designs completely by touch...Any three year old can do it." Tatsu has just this week created the monster Godzilla. "Godzilla is a bit difficult. You'd need a year's practice to fold that design."

The rule is you can only use one sheet of paper in a square shape. It's all folds. No cuts. As his first disciple, I have been struggling with a simple hen. "Tatsu, what three year old child did you have in mind?" I asked. His reply, "I always enjoy terrorizing people with that statement."

—*Elea Drake*

SLAC Welcomes New Employees

Raymond Alley, Accel. Dept.; **Donald Arnett**, Mech. Eng.; **Andrew Bazarko**, Publ. Affairs; **Kathleen Burrows**, Accelerator Department; **Rick Challman**, Facilities; **Mark Crane**, Controls; **Dongsheng Du**, Theoretical Physics; **Harold Harvey**, Controls; **Deqiang Huang**, Exp. Group C; **Marcus Hodge, Plant Maint.; Dona Jones**, Bus. Svcs. Dept.; **Priscilla Lukon**, Klystron; **Cheh Pan**, Env. Safety & Health; **Jose L. Perez**, Experimental Group E; **Allan Shelton**, Plant Maint.; **Cecilio Vasquez,** Klystron; **Rongsheng Xu, Shaoqiang Zhang**, Exp. Group C.

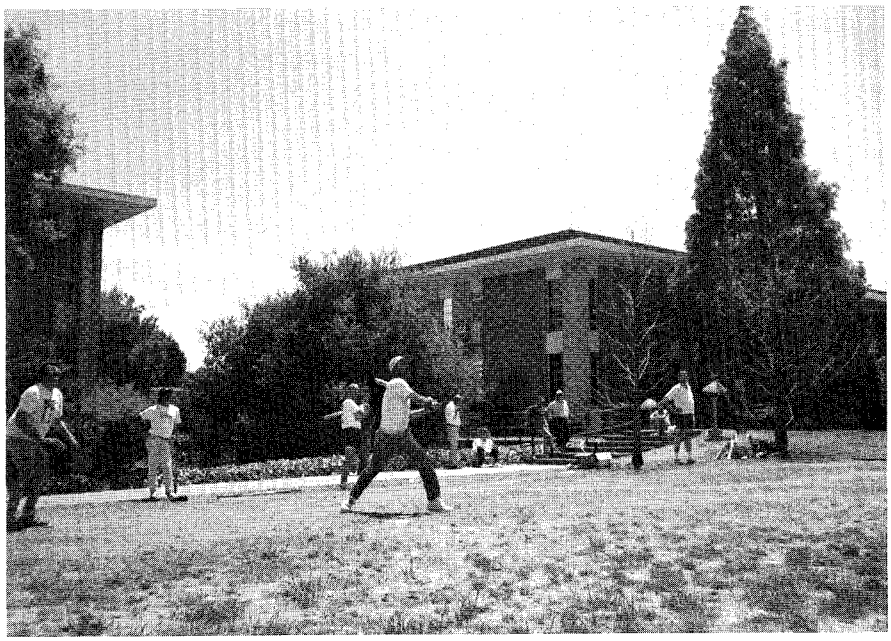
Bin Becomes Mail Stop

As of June 7, the designation Bin will now be replaced with Mail Stop. There is no need to change current stationery or other items which show the Bin designation, however, new items ordered should carry the term Mail Stop. If you have questions or concerns, please contact Hugh Steckol at ext. 4245, or HUGH@SLACVM.

The Interaction Point is published by Information Services of Stanford Linear Accelerator Center. Editors: Evelyn Eldridge-Diaz and Bill Kirk; Photographer: Tom Nakashima. Deadline for articles is the first of every month. Submissions may be sent on SLACVM to TIP or by SLAC mail to TIP, MS 68. Phone (415) 926-4128.

Experiment vs. Theory Softball Game Held on The Green

TITANS CLASH AT SLAC



Nina Adelman Stolar

F = ma — For every action there is an equal and opposite reaction.

Experimentalists	**3**	**0**	**3**	**0**	**5**	**1**	**4**	**0**	**0**	**16**
Theory Group	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**4**

IT WAS A STUNNING SPORTS upset of epic proportions as the SLAC Experimentalists pummelled the SLAC Theorists 16-4 in their annual softball match-up. The Experimentalists jumped out to an early lead and never looked back as pitching sensation Dick (Big Daddy) Zdarko dominated the Theory batters. It was clear from the first pitch that the Experimentalists were on a mission to avenge last year's humiliating loss. Much of the informality of past years was sacrificed as player-coach John (Who's Up?) Venuti worked an awesomely effective batting order featuring 25 Experimentalist hitters.

Opposing pitcher James (The Hanging Curve) Bjorken, who had pitched the Theory Group to victory the two previous years, could perform none of his legendary sorcery this time. As Bjorken struggled on the mound, the run scoring machine Theory Group was conspicuously absent this year. Almost all the offensive fireworks were provided by the Experimentalists who charged ahead early and broke the game open in the middle innings. Lew (Da Hammer) Keller capped a five run surge in the fifth inning by smashing the only homer of the game deep into Panofsky Grove.

But it was the Experimentalists' sure handed and innovative approach that frustrated the Theory Group and helped assure victory. A new technique called the "snowcone" doomed the Theorists by stranding countless baserunners. It entails catching a fly ball so that only half of the ball is trapped by the fielders mitt—the other half sticks out perilously. The snowcone technique was used to perfection by centerfielder David (The Iceman) Leith who stopped a bases loaded two-out rally in the fourth inning by snagging a deep fly ball while standing on the sidewalk of the A&E Building. What had previously been described as a lucky catch is now being touted as Experimentalist fielding science.

The Theory team had a distinctly international flavor this year. Players bringing a wide variety of cross-sport skills were Vittorio Del Duca (Italy), Jan Louis (Germany), Yossi Nir (Israel), Tatsu Takeuchi (Japan), Larus Thorlacius (Iceland), and Brian Warr (England).

Player coaches Lance Dixon and Howie Haber tried numerous strategies to rally the Theory Group. None proved successful until the eighth inning when momentum shifted dramatically. The Experimentalists, having exhausted their firepower early and showing signs of fatigue, were held scoreless the final two innings. Suddenly awakened, the Theorists unleashed a torrid ninth inning bases loaded rally led by Michael (Stringman) Peskin's sizzling infield hit. Despite the runs produced it was a case of too little, too late as the weary Experimentalists sealed the victory with another snowcone catch for the final out.

At Sid Drell's post-game party the Experimentalist braggadocio was tempered by a chorus of groans from aching muscles and joints. According to one wag, the Experimental victory has restored the natural order of the Universe. Yet another quipped that Chaos still prevails. The final score however is definitive: Experimentalists 16, Theory Group 4.

Until next year.

—Nina Adelman Stolar