The SCIENCE SCENE

California State University, Hayward

The Newsletter of The School of Science
Volume 5, Issue 3
May, 2002

Biochemistry-Biology-Chemistry-ComputerScience-Engineering-EnvironmentalScience-Geology-HealthSciences-Mathematics-Nursing-Physics-Psychology-Statistics

IN THIS ISSUE:

STAT Students Show Strong Trend at CSU Research Competition

Three students from the Department of Statistics participated in this year's 16th Annual California State University Student Research Competition held at CSU Long Beach May 3rd and 4th. Satkartar Kinney and Xiaojie Li, both current MS students, presented their research in the Physical and Mathematical Sciences Section. Satkartar's presentation was titled "Incorporating Temperature Variation into the Baseline Model for Power Curtailment." Xiaojie's presentation was titled "A User-Friendly SAS Program for Determining Statistical Dependence Between Two Variables in Observational Studies." Hui Liu, also an MS student, presented her research in the Biological and Agricultural Sciences (Molecular & Cellular) Section. Hui's presentation was titled "Analysis of Microarray Genomic Data of Breast Cancer Patients."

Xiaojie Li won first prize in the Physical and Mathematical Sciences Section. She was presented with an award and will soon receive a cash prize. Xiaojie's faculty mentor was **Ward Rodriguez** (STAT). Satkartar and Hui both worked with **Eric Suess** (STAT).

Xiaojie Li, and Professor Suess

Shannon Austermann, a former Statistics 1000 student of Prof. Suess, was also a presenter at the Research Competition. Currently an MS student in the Department of Speech and Audiology, Shannon presented her research in the Health, Nutrition, and Clinical Sciences Section. Her presentation was titled "Measuring Processing Load in Sentence Comprehension: Sustained Visuo-perceptual Attention." Next year Shannon will begin working on her PhD in Education at SDSU.

All of these presentations can be found on the Department of Statistics website: www.sci.csuhayward.edu/statistics/

Satkartar Kinney, and Hui Liu

School of Science Expands Biotechnology Offerings to Include Bioinformatics

Cal State Hayward has the oldest integrated biotechnology program in the CSU system. The Biotechnology Certificate Program (BCP) was established at CSUH in 1986 to meet the personnel requirements of the rapidly expanding Bay Area biotechnology industry. To date, the program has placed well over 200 students in private, governmental and academic research labs. Since that time the field of biotechnology has grown and matured.

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New areas of emphasis and needs have become apparent. One of these areas is Bioinformatics.

Bioinformatics is the use of computers for the acquisition, management, and analysis of biological information. It exists at the intersection of molecular biology, computational biology, clinical/medicine, database computing, the Internet and DNA sequence analysis. This is a new scientific discipline evolving from the interaction between biology and computer science. This was prompted by the explosion of information generated by the Human Genome Project. However, the Human Genome Project is only the most visible of a host of sequencing projects aimed at a variety of species, ranging from microorganisms to plants and animals, which will produce an enormous volume of data for the foreseeable future. As the time needed to store, annotate, and analyze this stream of information has grown, Bioinformatics has emerged as a separate and very important field of investigation and application. There is expected to be a dramatic increase in demand for practitioners in this field, who are already in short supply. Frost and Sullivan, a San Jose consulting firm, has predicted a 10 percent annual growth rate in the Bioinformatics market, while the National Science Foundation has estimated 20,000 jobs will be created in the field by 2005.

To meet this potential demand, the School of Science and Office of Extended Education is presenting a curriculum unique to the Bay Area and the CSU. A four course, evening certificate program is now available. The four courses include Introduction to Bioinformatics, Statistics for Bioinformatics, Perl Programming for Bioinformatics, and Advanced Bioinformatics. Approximately 20 students are in the certificate program with another 20 taking individual classes on a space available basis. There are certain prerequisites that must be met before participating in the certificate program.

- Steve Benson (BIOL)

For more information about the Bioinformatics Program at CSUH see Dr. Benson in Biological Sciences or visit the web site: www.csuhayward.edu/acaprogs/biotech.

Dr. Trumbo Wins Carver Award

The Institute of Mathematical Statistics (IMS), the premier international scholarly society of statisticians and probabilists, named Bruce E. Trumbo, Professor of Statistics at CSU Hayward, as the first recipient of its newly established Carver award. The award memorializes Professor Harry C. Carver of the University of Michigan, who founded a new mathematically oriented statistics journal (*The Annals of Mathematical Statistics*) in 1930. Five years later this led to the establishment of IMS as the sponsoring organization for the new journal and societal home for researchers in mathematical statistics. The Institute quickly grew to worldwide recognition among statisticians. (For a brief history of the IMS see www.imstat.org.) The IMS established the Carver award at its August 2001 meeting in Atlanta, Georgia, to recognize members who have provided outstanding service to the society and the profession. A committee of past presidents of IMS chose Dr. Trumbo after an international call for nominees at the end of 2001.

The President of the Institute of Mathematical Statistics, Dr. Iain Johnstone, Department of Statistics, Stanford University, will present the Carver medallion to Dr. Trumbo on July 28, 2002 in Banff, Alberta, Canada at the IMS Annual Meeting, to be held jointly with the Statistical Society of Canada, and the 4th International Probability Symposium.

The Statistics Department will be hosting a reception honoring Dr. Trumbo's accomplishments on Thursday, June 13, from 4:00-6:00pm at the University Club. If you are interested in attending, please contact the Statistics Department at (510) 885-3435.

Dr. Trumbo served as IMS treasurer from 1982 to 1985. During this period he shepherded the newest of the Institute's world-renowned journals, *Statistical Science*, from its financial planning stages through to publication. Among many other contributions to IMS and the statistics profession, he has served as advocate for statistical science in federal government service, been instrumental in establishing a much-used computer-searchable index of statistical publications, served as editor of several statistical publications, been an

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(Dr. Trumbo, continued from page 2)

influential member of policy making committees of statistical societies, and made recognized contributions to the use of computers in the education of statisticians. (In 1993 at its annual meeting in San Francisco, the American Statistical Association recognized Dr. Trumbo's service to that organization with its Founder's Award.)

- Julia Norton (STAT)

CAMP at CSU Hayward

California Mathematics Project

Rudy Horne (MCS) and **Phil Gonsalves** (MCS) have been granted funding from the California Mathematics Project (CMP) for CAMP (County of Alameda Mathematics Project). CAMP is sponsored by California State University at Hayward (CSUH) and the Alameda County Office of Education (ACOE).

CAMP will partner with school districts in the East Bay to enhance the quality of mathematics education in grades 4-8. CAMP will work with teachers to increase their mathematical and pedagogical content knowledge and develop teachers' leadership skills, with a specific focus on helping prepare all students for algebra by 8th grade. The focus of CAMP is on developing teacher leadership and partnerships with school districts.

CAMP participants will attend a summer Leadership Institute at CSUH, August 1-14, 2002, plan and participate in three Saturday follow-up sessions at CSUH, and plan and co-facilitate at least four district after-school mathematics workshops throughout the 2002-03 academic year. Participants will also develop and use classroom-based mathematics assessment to support the districts efforts to improve student achievement. If you would like more information about CAMP, e-mail to: camp@bay.csuhayward.edu.

- Philip Gonsalves (MCS)

The BEST Institute

The BEST Institute is a School of Science initiative to bring together Science and Education faculty and teachers and administrators from the K-12 community to improve science education in the K-12 classroom. This year, we have formed a formal partnership with the Hayward Unified School District to provide University-based professional development for science teachers. This summer (Aug. 5-16), we are hosting an Invitational Science Academy for middle school teachers; we will concentrate on physical and life science content, English-language development and developing educational leadership in our participants. In addition, during the 2002-03 academic year, we will be hosting several Saturday Science Workshops for elementary and high school teachers.

This is an exciting time for the BEST Institute. We were created as a regional site by the California Science Project in October 2000. Since then, we have grown to serve over 120 teacher participants in our programs. This has been a time of growth and, with our formal partnerships with local school districts; we expect to deliver programs that are truly meaningful for improving science education in the classroom. As we all are facing at the University, our challenge in the future is the budget situation in the State of California. We expect to survive this process by seeking funding opportunities and partnerships with other agencies and foundations.

Lastly, in October of 2001, we hired a new Associate Director, Dr. Don Hubbard. Don has extensive experience in public school teaching, science education, and teacher professional development. Don has an Ed.D. from Harvard University, was Chair of the Science Department at Berkeley High School, and comes to us from the Lawrence Berkeley National Laboratory where he led a professional development program for science teachers in the Vallejo Unified School District. Please visit our web page at www.sci.csuhayward.edu/best for more information about the BEST Institute and our upcoming programs.

Don Hubbard

- Jeff Seitz (GEOL)

The Future of Healthcare is Bright

Over the years, students involved in the Preprofessional Health Advisory Program have gone on to professional schools across the country. This year the tradition continues. A group of remarkable students has gained admission to dental, medical, pharmacy, and veterinary schools. Here at CSUH these undergraduate and post baccalaureate students have excelled in the classroom and have been active members in their communities. Their dedication and determination to becoming quality healthcare providers are traits that will serve them well as they pursue the training for their chosen professions.

The following is a list of individuals who have been accepted for the entering Class of 2002. Those who will be attending dental school are: Mr. Garrett Lum (Boston University); Mr. Alfonso Navarette (New York University); Mr. Paul Perez (UCSF); and, Ms. Tane Rontal (UOP). Those going on to medical school are: Mr. David Chinn (Touro); Ms. Anna Choe (Western University); Ms. Akiko Hall (UCSF); Ms. Elizabeth Han (Western University); Mr. Jerry Kubena (undecided); Mr. Thomas McCoy (Arizona / Midwestern); Ms. Teri Schreiner (Albany); Ms. Karbo Tam (MCP Hahnemann); and Ms. Kim Washington (undecided). Mr. David Duncan will be attending pharmacy school at UOP. Those beginning their training at UC Davis School of Veterinary Medicine are Ms. Theresa Baumgartner, Ms. Lori Thomas, and Ms. Carol Vetri.

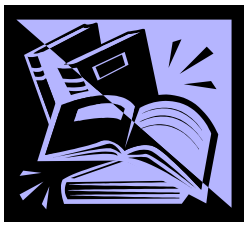
It has been wonderful advising these outstanding individuals as they progressed toward this point in their lives. It is indeed a pleasure to congratulate them on this major accomplishment.

- Julia Dragolovich (BIOL)

Publications

Joy Andrews (CHEM) published a paper, "An X-ray Absorption Spectroscopic Investigation of the Nature of the Zinc Complex Accumulated in Datura Innoxia Plant Tissue Culture," appeared in Microchemical Journal, Volume 71, Issues 2-3, April 2002, Pages 231-245. It was co-authored by Rebekah A. Kelly, and Jane G. DeWitt.

♦ Dr. Andrews also published, "X-Ray Absorption Spectroscopy of Thiacrown Compounds Used in the Remediation of Mercury Contaminated Water." It was published in the Microchemical Journal, Volume 71, Issues 2-3, April 2002, Pages 247-254. It was co-authored by **Darrell B. Bishop** (CHEM), Geoffrey D. McCool, Art J. Nelson, John G. Reynolds, Theodore F. Baumann, Glenn A. Fox, and Jane G. DeWitt.



Richard E. Bozak (CHEM) and **Ron Hicks** (CHEM) have co-authored a paper, "X-Ray Structure," that will soon appear in Acta Chemistry Scandinavia.

Jack Carter (MCS) co-authored a paper with Beverly Ferrucci (Keene State College) and Ben-Har Yeap (Singapore National University), "Developing Algebraic Thinking" was published in Mathematics Teaching in March 2002.

Leann Christianson (MCS) and **Kevin Brown** (MCS) co-authored a chapter of Web Computing, titled "Avoiding W4 – Wireless Web Browsing." The book was sponsored by the International Institute of Informatics and Systematics.

Michael Hedrick (BIOL) published a paper co-authored with Lise Broch, Rey Morales (former CSUH graduate students), and Anthony Sandoval (former CSUH undergraduate student), "Regulation of the Respiratory Central Pattern Generator by Chloride-Dependent Inhibition During Development in the Bullfrog (Rana

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(Publications, Continued from page 4)

Catesbeiana)." It was published in the Journal of Experimental Biology.

♦ Dr. Hedrick also published **"**Temperature and pH/CO2 modulate respiratory activity in the isolated brainstem of the bullfrog (Rana catesbeiana)," co-authored with Rey D. Morales and published in Comparative Biochemistry and Physiology.

Hilary Holz (MCS) published a paper, "Validation of Relative Feature Importance Using Natural Data," which appeared in Pattern Recognition Letters 23 (2002) 367-380. The paper was co-authored with Murray H. Loew (George Washington University).

Pauline Kelzer (NHS) will present a research paper, "Public Participation in Evaluating Physical and Recreational Programs for Disabled Persons: Results of a Survey," in November 2002 at an American Public Health Association meeting in Philadelphia. Mary Ellen Pratt (a CSUH graduate student) is the co-author.

Michael Leung (School of Science) and **Carol Lauzon** (BIOL) co-authored a paper with Yu Liu, Maria E. Ryan, His-Ming Lee, Sanford Simon, George Tortora, and Lorne M. Golub (all from State University of New York at Stony Brook). The paper, "A Chemically Modified Tetracycline Is a New Antifungal Agent," was published in Antimicrobial Agents and Chemotherapy, May 2002.

Luther Strayer (GEOL) published a paper co-authored with John Suppe. The paper, "Out-of-plane motion of a thrust sheet during along-strike propagation of a thrust ramp: a distinct-element approach," was published in the Journal of Structural Geology 24 (2002) 637-650.

Richard Bozak (CHEM) presented a talk "From Metallocenes to Cytotoxicity in Mouse-Cell Leukemia: An Intimate View of Academic Research & Some Bay Area Chemical Urban Legends." The talk was presented at the American Chemical Society California Section Meeting in Lafayette, California in April 2002.

Jesse A. Canchola (STAT) will speak at the Western Users of SAS Software (WUSS) 2002 conference in San Diego in September 2002. He will present a talk entitled "Imputation Strategies for Sexual Orientation using SAS Proc MI." The co-authors are Joseph A. Catania (UCSF), and Tor Neilands (UCSF).

Don Gailey (BIOL) is enjoying a number of opportunities for professional growth afforded by sabbatical leave. This includes research training in the lab of Dr. Bruce Baker, a member of the National Academy of Sciences and Professor of Biology, Stanford University. Dr. Gailey is characterizing the structure and expression of the fruitless gene in the honeybee. This is a master gene of male development in the fruit fly Drosophila melanogaster, and if its expression is conserved in the bee this would provide the first molecular evolutionary evidence that the gene has been widely conserved among insects.

♦ He has also expanded his participation in review panels at the National Institutes of Health in Bethesda, Maryland. He served as an MBRS genetics scientific review panel member in February, and as a member of the MBRS Subcommittee programmatic review panel in March.

♦ He will present a research poster abstract at the National Drosophila Research Conference in San Diego later in April, and will then serve as outside examiner for two senior honors thesis projects at Swarthmore College over the Memorial Day weekend.

♦ He will then present a program poster at the NIH Bridges to the Baccalaureate Degree Directors' Meeting in Maryland, mid-June, representing the program he directs here on campus. In between, Don is writing a sample chapter for a textbook proposal he hopes to submit to publishers in June. The textbook will be targeted for a non-major human genetics course, inspired by his participation in the Sophomore GE Cluster on Genes and Heredity.

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(Professional Accomplishments, contd. from page 5)

♦ Most recently Don was appointed a member of the program review panel for the NIH's Initiative for Minority Student Development program. This will include participation in a series of program site visits and final evaluations at the NIH in Bethesda, MD during June and July.

Pauline J. Kelzer (NHS) gave a talk, "Program Evaluation and a Service Learning Partnership: Potential for Collaboration," it was presented to the Board of Directors of the Eden Medical Center Community Health Foundation in February 2002.

Eleanor Levine (PSYC) was honored as a 2001-2002 Service Learning Curriculum Development award winner. The Office of Faculty Development and Office of Instructional Services hosted the Service Learning Poster Session and Reception. Dr. Levine presented a poster outlining her project, "Community College Transfer Students' Satisfaction with CSUH Programs: CSUH Student Research Projects."

Susan Opp (BIOL) presented a talk, "Timing and Susceptibility of English Walnuts to Husk Fly Attack," at the 34th Annual Walnut Research Conference sponsored by the Walnut Marketing Board and the University of California. The talk was co-authored by Joe Zermeño (CSUH graduate student), Carla Garrick (MSEIP intern), Bridget Mooney (CSUH undergrad) and Cullen Wilkerson (CSUH graduate student).

♦ Dr. Opp served as a Judge at the Piedmont High School Science Fair in February 2002.

David Sandberg (PSYC) was honored as a 2001-2002 Service Learning Curriculum Development award winner. The Office of Faculty Development and Office of Instructional Services hosted the Service Learning Poster Session and Reception. Dr. Sandberg presented a poster outlining his project, "Incorporating Service Learning Into Social and Personality Research."

Eric Suess (STAT) presented three workshops for the office for the Office of Faculty Development and the Faculty Center for Excellence in Teaching. The first workshop, "Don't Reinvent the Wheel," was presented with Ann Meyer (Human Development), Myoung-Ja Lee Kwon (Univ. Librarian), and Norma Schmitz (Manager, CSUH Bookstore) in January 2002. The second workshop, "Untenured Faculty: A Panel on Research and Teaching" was presented with Jennifer Schacker-Mill (English) and Maxine Craig (Sociology) in March 2002. The third workshop, "Knowledge Swap," was co-authored with Ann Meyer (Human Development).

Detlef Warnke (GEOL) and two of his graduate students, Steven F. Newton and Lora F. Teitler, of the CSU Hayward Department of Geological Sciences, presented posters to the Paleoceanography and Paleoclimatology session of the Fall Meeting of the American Geophysical Union, December 2001, in San Francisco. This annual meeting of the AGU is the largest gathering of physicists, astronomers, geologists, oceanographers, atmospheric scientists, climatologists, and paleoceanographers/ paleoclimatologists on the West Coast.

♦ The poster presented by Steven F. Newton and Dr. Warnke was entitled "Biogenic silica at the Eocene-Oligocene Boundary, ODP Site 177-1090, Agulhas Ridge, South Atlantic". This poster presented the results of analyses of the variation in weight percentage of biogenic silica (opal) over the Eocene-Oligocene Boundary in a deep-sea core from the South Atlantic. This work was the basis for Mr. Newton's thesis for the Master's Degree in Geological Sciences, which he has completed.

♦ The poster presented by Lora F. Teitler and Dr. Warnke was entitled "Late Pleistocene History of Ice Rafting at South Atlantic (Agulhas Ridge) Sites TN057-6-PC4 and ODP 177-1090". This poster presented the results to date of work in progress that will analyze sediments from deep-sea cores, looking at variations in the timing of the arrival of debris that was rafted to these sites by icebergs. The history of the ice-rafted debris is compared to isotopic variations in the sea water, recorded in the tests of plankton, that reflect variations in such environmental parameters as sea surface

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(Professional Accomplishments, contd. from page 6)

temperature and the volume of ice on the continents. This work will be the basis for Ms. Teitler's thesis for a cross-disciplinary Master's Degree in Paleoclimatology. Both posters are currently on display in exhibit cases in North Science Hall.

Brenda Bailey (NHS) received a grant from Eden Township Healthcare District for her project "Eden Township Healthcare District – Cal State Hayward Partnership."

Leann Christianson (MCS) and **Kevin Brown** (MCS) were awarded a grant for the project "Proposal for Internet Teaching Laboratory" for the Cooperative Association for Internet Data Analysis.

Beverly Dixon (BIOL) and **Chris Baysdorfer** (BIOL) received a grant for the project "Isolation and Identification of Cellulytic Bacteria from Environmental Sources for Use in Commercial Fermentation Systems" from the Chancellor's Office.

Bette Felton (NURS) and **Arthurlene Towner** (Dean, School of Education and Allied Studies) were awarded a grant from the California School-to-Career Interagency Partners to continue the dissemination efforts of the three-year project, "Professional Educator Faculty Engagement in California School-to-Career."

Michael Hedrick (BIOL) received a grant for the project "Developing a Comprehensive Physical Model of Lymph Movement in Amphibians" from the National Science Foundation.

Pauline J. Kelzer (NHS) was awarded a Service Learning Curriculum Award. The purpose of the grant award is to convert the internship and senior seminar courses in the Health Sciences Program to Service Learning courses. With this grant Dr. Kelzer will develop the Service Learning components for the Health Sciences Program. She currently serves as the Internship Coordinator for the program.

Carol Lauzon (BIOL) and **Sue Opp** (BIOL) received a grant for their project, "Improving Sterile Medflies to Protect California Agriculture." The grant was awarded by the CSU Chancellor's Office.

Carol Lauzon (BIOL) received a grant from the U.S. Department of Agriculture via a subcontract through UC Riverside for her project "Insect – Symbiotic Bacteria Inhibtory to Xylella Fastidiosa in Sharpshooters."

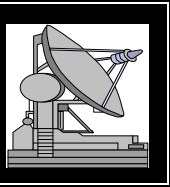
Sam McGinnis (BIOL) received a grant for the project "Protection of the California Red Legged Frog for the City of Millbrae" from the city of Millbrae.

Christopher Morgan (MCS) was the recipient of a grant from Rational Software for his project, "SEED Program Product and Courseware License Agreements."

Spring 2002 Election Results

Academic Senate	Leann Christianson, MCS William Nico, MCS Pam Parlocha, NHS Bruce Trumbo, STA
Committee on Academic Planning and Resources	Assim Sagahyroon, MCS
Committee on Instruction and Curriculum	Joy Andrews, CHE
Committee on Research	Don Gailey, BIO
Faculty Affairs Committee	Bruce Trumbo, STA
Fairness Committee	Pauline Kelzer, NHS
Non-Grade Related Student Complaints Committee	Leann Christianson, MCS
University Promotion & Tenure Committee	William Nico, MCS

STUDENTS IN THE NEWS



Mary Katherine Colbert, a graduate student, has been awarded a research grant to study "Movement Patterns of Northern Pacific Rattlesnakes in an East Bay Park."

Shabana Gidwani, a statistics student, was awarded the Justin Randle Memorial Scholarship through the Statistics Department.

Brian Haas, a current CSUH graduate student and Associated Students Fellowship Recipient, has been accepted to the Ph.D. program at the State University New York, Stony Brook.

Leighton Hinkley, a former CSUH undergraduate student and two year Associated Students Fellowship Recipient, has been accepted to the Ph.D. program at U.C. Davis. He is currently a research assistant in radiology at UCSF.

Kosuke Iwaki, a graduate student, was awarded a research grant for "Pathogenic Amoebae Associated with Aquatic Systems."

Satkartar Kinney, a graduate Statistics student, was awarded a 2002 Statistics Department Scholarship.

Xiaojie Li, a graduate student in Statistics, was awarded a CSUH Associated Students Research Grant award for her research project "A User-friendly SAS Program for Determining Statistical Dependence Between Variables in Observational Studies."

♦ She was also recipient of the Heebok Park Scholarship through the Statistics Department.

Edward O'Hara, a sophomore biology major, was named one of ten Genentech Scholars. The award carries with it a $5,000 scholarship, a paid summer internship position at Genentech, and a Genentech mentor to advise on academic development and career opportunities. The ten Genentech Scholars were selected from over two hundred applicants. Other successful applicants are students at Stanford, UC Berkeley, San Francisco State, City College of San Francisco and UC Davis. Ed is currently working with Dr. Chris Baysdorfer and has a part-time job at a local biotechnology company, Zyomix.

Jeffrey Stone, a senior majoring in biology and winner of the 2001-02 E Guy Warren Scholarship, will enter the UC San Francisco Ph.D. Program in immunology. He was supported in his research training by a National Institutes of Health MBRS SCORE grant awarded to Don Gailey (BIOL).

Rachel Wade, a graduate biology student, was the recipient of the Van Harreveld Memorial Award from the Central Nervous System Section of the American Physiological Society. The award was based upon a submitted abstract: "Dependence of Respiratory-Related Motor Output on Extracellular K+ Concentration in the Isolated Brainstem of Larval and Adult Bullfrogs (Rana catesbeiana)" that she will present at the upcoming Experimental Biology meeting (April) in New Orleans. She will receive a certificate and cash award at the meeting.

Joe Zermeno, a graduate student in biology, has been awarded a research grant for "Adult Diet Influences Survivorship and Flight Capacity of Mediterranean Fruit Fly and Walnut Fruit Fly."

Gulan Zhang, a statistics student, was the recipient of the George J. Resnikoff Memorial Scholarship, through the Statistics Department.

DATES TO REMEMBER

June 10 – 15	Finals Week (Spring)
Saturday, June 15	Commencement
Monday, June 24	Summer Quarter Begins
Thursday, July 4	Independence Day University Closed
September 3-8	Finals Week (Summer)

The Science Scene is the tri-annual newsletter for the CSUH School of Science.

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Thank you for all of your contributions.
Please submit any items you would like to see in the Fall issue to Andy at:
adobbin@csuhayward.edu