



CHEMISTRY DEPARTMENT NEWSLETTER

August 1985 No. 10

CHEMISTRY DEPARTMENT UNDERGOES TWO FIVE-YEAR REVIEWS



Dr. Raymond E. Davis, Blunk Memorial Professor of Chemistry, University of Texas, Austin: External Reviewer.

During the past year the Chemistry Department was reviewed by the American Chemical Society and also participated in a University-mandated external review by Dr. Raymond Davis, Blunk Memorial Professor at the University of Texas, Austin.

The purpose of the ACS review was to re-certify the BS degree in Chemistry. The review was based entirely upon information furnished by the department but did not involve an on-site visit. The Committee on Professional Training of the ACS complimented the department for its thorough report and remarked that

"Committee members were concerned over the rather high teaching loads of your tenured and tenure-track faculty and your extensive use of part-time faculty, particularly since many of these individuals have very heavy teaching loads."

Dr. Davis, on the other hand, spent two full days in the Chemistry Department interviewing faculty, staff, and members of the Advisory Council and prepared a thorough and thoughtfully written report of his findings.

In the preface of his report Dr. Davis wrote as follows: *"The Chemistry*

Department at CSULB is a very solid department, with sound views of its goals and missions, and a clear primary commitment to the good of its students in attaining these goals. The breadth of interests and abilities of its faculty is reflected in the soundness both of its research and course programs.

"The most striking impression gained in interviews with students, faculty and staff is the sense of esprit de corps at all levels. Students repeatedly remarked not only on the quality of their course work but also on the caring attitude of the faculty, extending beyond formal classroom contact to individual counseling, work with student organizations, and personal concern and friendship. For their part, students contribute strongly to the welfare of the department, with one of the most vital and enthusiastic American Chemical Society student affiliate chapters I have seen anywhere. The staff, both technical and secretarial, take justified pride in how well they do their jobs, and feel that their efforts are appreciated by the faculty and students."

Among specific suggestions which Dr. Davis offered which will receive serious consideration during the coming year are:

- Consider modernizing and standardizing (freshman chemistry) ... and introduction of elementary quantitative analysis and some instrumental experiments.
- Continue plans to introduce laboratory segments in undergraduate inorganic and biochemistry courses.
- Continue present high grading standards coupled with advice to students about the nature of chemistry study.
- Attempt to introduce both (advanced) undergraduate and graduate special topics courses on a more regular basis (depends on faculty expansion).
- Continue to expand the already productive interaction with the Advisory Council.

Continued on Page 2

Continued from Page 1

- Acquire additional top-loading balances for undergraduate teaching labs.
- Work for major commitment for Department, School and University, with assistance from Advisory Council and outside funding sources for continuing acquisition and upgrade of equipment, both for research and course use.
- Work for acquisition of many more microcomputers and their systematic utilization in nearly all phases of departmental operation.
- Consider space needs of the Chemistry Department, including renovation.
- Work for expansion of the net faculty size by 6-8 positions.
- Expand the office staff by 1-2 positions.
- Continue efforts to establish and monitor safety procedures.
- Work to establish a funding differential to reflect higher departmental costs associated with the MS program.
- Keep the academic programs on their present generally excellent track.

The department is very grateful to Dr. Davis for sharing his insights with us and offering constructive suggestions for the improvement of our programs.

Now the ball is in our court! Our biggest challenge will be to persuade the University administration to provide the Chemistry Department with additional resources to help implement some of Dr. Davis' recommendations.

Dr. Harold Weintraub: Sixth Rachele Distinguished Lecturer

by Jeffrey Cohlberg

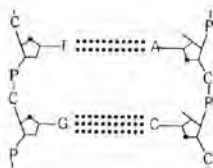
This year's Rachele Distinguished Visiting Lecturer was Dr. Harold Weintraub, a noted biochemist from the Fred Hutchinson Cancer Center in Seattle, WA who spoke on molecular probes of gene expression. The Hutchinson Center is a small private research institution composed principally of a number of senior scientists and their post-doctoral associates and supported almost entirely by grant funds.

Dr. Weintraub received his doctorate at Harvard and taught at Princeton before going to the Hutchinson Center. He is well known for his work on chromatin, especially his experiments showing the segregation of pre-existing histone octamers with the "leading strand" during DNA replication.

Dr. Weintraub gave two lectures. On April 15, a talk on "Tissue Specific Gene Expression and Chromatin Structure" discussed the evidence that the molecular structure of chromatin is altered in active genes. Dr. Weintraub presented evidence for a loosening of the association of the H1 histone with the rest of the nucleosome, allowing the solenoid-type winding of the nucleosome chain to become unwound. Presumably this is necessary before transcription by RNA polymerases can occur.

The second lecture on April 16, "Anti-sense RNA: Molecular Tool for Genetic Analysis," described a new technique for creating "mutations" in animal cell line. Through the tricks of genetic engineering, it is possible to synthesize on RNA with an "anti-sense" sequence which is complementary to the coding sequence of a messenger RNA. When the anti-sense RNA is microinjected into a frog oocyte, it hybridizes with the messenger RNA, forming an RNA duplex which cannot be translated into protein by ribosomes. The effect is the same as if the cell has a mutation which prevented the expression of the gene. Dr. Weintraub described the use of this technique in probing the functions of various proteins in animal cells.

Dr. Weintraub's visit was distinguished by his uniquely informal style, and both his lectures and his meetings with faculty and students generated tremendous enthusiasm among the biochemists, all of whom agreed that his seminars were among the most exciting our department has heard. The department is deeply grateful to Rachele Laboratories for its continued support of this annual program.



Dr. McDowell Joins Chemistry As Inorganic Chemist

Dr. M. Steven McDowell will be joining the inorganic chemistry faculty as an Assistant Professor starting fall 1985. Dr. McDowell received his BS degree from Miami University and his PhD in inorganic chemistry from Iowa State University. His research thesis, "Free Radical Reactions of Some Transition and Organotransition Metal Complexes," was completed under the direction of Dr. James H. Espenson. He has just finished a two-year post-doctoral appointment with Dr. Donald T. Sawyer at the University of California, Riverside examining among other things the activation of H_2O_2 and



Dr. M. Steven McDowell, Assistant Professor, Physical Inorganic Chemistry

related compounds by Fe(II) complexes in aprotic media and the chemistry of perhydroxyl radical (HO_2). Dr. McDowell's research interests include reaction mechanisms of inorganic and organometallic complexes, free radical chemistry, the chemistry of O_2 , H_2O_2 , HO_2 , O_3 , and bioinorganic chemistry.

His major teaching assignments will be in the areas of advanced inorganic chemistry at the undergraduate and graduate levels and the freshman courses in general chemistry.

Interests outside of chemistry include a pet iguana named George, photography, basketball, and fascination with railroads.

Strawberries, Chloropicrin and Undergraduate Chemistry

Editor's Note: The following article was written by Stephen Wilhelm, an honors major in Chemistry and recently elected to Phi Lambda Upsilon, Chemistry Honorary Society. Stephen is a second-generation chemist, as you can gather from the story.

The year was 1953. California strawberry crops were being devastated by soilborne diseases such as *Verticillium* wilt. New land would produce a good crop but subsequent plantings would be useless. As suitable new land diminished so did yields, falling to 5-6 tons of strawberries per acre. So it was that chloropicrin or trichloronitromethane was first tested as a soil fumigant in California by Dr. Stephen Wilhelm, plant pathologist at UC Berkeley and E. C. Koch in the fall of 1953. They found that yields more than doubled in the treated soil, and fertilizer requirements were reduced by half. Today almost 100% of strawberry land in California is fumigated by a chloropicrin-methyl bromide mixture, annually, before planting. Yields are now 20-30 tons per acre.

Advances in the vapor phase nitration of propane at Purdue University during the 30's made it possible to produce nitromethane at low cost (but high risk!). Enter John Wilhelm, then chemist at Douglas Aircraft Co. and brother of the above Stephen Wilhelm. In 1958 he developed the process for the production of chloropicrin from nitromethane that is still being used today by Niklor Chemical Co. at its Carson, California plant.

Chemistry undergraduate Stephen Wilhelm is employed at Niklor and finds his work there very challenging. Being a small firm (10 employees) one must be willing to wear many hats. A typical workday includes lab analysis, process operation, purchasing, equipment maintenance, etc. Stephen is also working on treatment and reduction of the process wastes at Niklor. Although not able to enroll full time, Stephen feels his work experience is invaluable. "Given the current public heightened awareness of chemical hazards I feel it is imperative that plant operators, engineers and managers all have a strong background in chemistry."

Chloropicrin. Trichloronitromethane: nitrochloroform; Picfume. CCl_3NO_2 ; mol wt 164.39. C 7.31%, Cl 64.71%, N 8.52%, O 19.47%. First prep'd in 1848 by Stenhouse from picric acid and bleach powder. *Review of prepn, properties, physiological action, and uses:* Jackson, *Chem. Rev.* 14, 251 (1934). Manuf from nitromethane and alkaline hypochlorite: Wilhelm, U.S. pat. 3 106,588 (1963).



Dr. Kenneth L. Marsi, Trustees' Outstanding Professor, 1985

Kenneth L. Marsi: Trustees' Outstanding Professor

by Henry N. Po

The small Chemistry Office was overflowing with people. A call had come from the Chancellor's Office, and some Chemistry faculty and staff had gathered in anticipation of an important announcement. Finally the message got through that Ken Marsi had been chosen by the CSU Trustees' Selection Committee as one of two Systemwide Outstanding Professors.

His association with the CSULB Chemistry Department began one spring afternoon in 1961 when Ken, an Associate Professor of Chemistry at Fort Hays Kansas State College, received a telephone call from the late Dr. Robert Henderson, then Chairman of the Department of Chemistry at Long Beach State College. Ken was invited for an interview at his own expense which he had to decline because he could not afford the airfare. In his characteristically business-like manner, Dr. Henderson replied, "I guess we will have to take our chances and hire you sight unseen." This was the beginning of Ken's twenty-four years of professional service at Long Beach where he has distinguished

himself as a teacher who cares and inspires, a research scientist whose innovative work in the field of phosphonium salt hydrolyses, as judged by one of his colleagues, "remains a firm cornerstone in the understanding of mechanisms in organophosphorus chemistry," and as an outstanding department chairman whose leadership is admired and whose innovative administration is emulated by others.

Ken Marsi received his baccalaureate degree in Chemistry in 1951 from San Jose State College and in 1955 his doctoral degree from the University of Kansas. His doctoral dissertation described the synthesis and resolution of tetravalent phosphorus compounds. After receipt of the PhD he spent two years as an industrial chemist with the Sherwin-Williams Company. He then decided that teaching and academic research were what he desired most. In 1957 he returned to Kansas where he became an Assistant Professor at Fort Hays Kansas State College, rising rapidly to the rank of Associate Professor before coming to Long Beach.

Ken has been an active researcher at Long Beach and has published thirty-one scientific papers, co-authored one book, received sixteen grants and awards, and served as a member and often a chairman of many university committees and councils. He has reviewed and refereed over sixty books, grant proposals and scientific manuscripts, presented twenty-six scientific papers and seminars, and has actively participated in several capacities in the Southern California Section of the American Chemical Society. Although he has served as the Chemistry Department chairman since 1975, he still teaches organic chemistry. It is his teaching and his dedication in helping students learn chemistry that earned him his distinguished honor.

Finally, the following quote from one of the letters summarizes it all:

"Dr. Kenneth L. Marsi is just a fine human being--generous, warm-hearted, unassuming, totally dedicated to the service of his students, faculty, University, and profession, and a person of utmost integrity. He is truly a realistic teacher-scholar-administrator-person."

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Chairman's Report

Our enrollments in chemistry courses have remained relatively stable, we have a record number of graduate and undergraduate chemistry majors, our student organization is as active and involved as it has ever been, and many honors have come to our students and faculty. The challenge is to maintain our program with the marginal budget support which the state provides. Fortunately, with the cooperation of the faculty, the ingenuity of the staff and the generous support of our loyal Advisory Council we somehow seem to make it all work.

Probably the most important event of the year, with the greatest potential to help transform our chemistry program, was the visit of our external reviewer, Dr. Raymond Davis, who examined every facet of our department and provided a lengthy report of recommendations for its improvement. His comments are presented in more detail elsewhere in this Newsletter. During the coming year our faculty will analyze the report carefully and address the thoughtful suggestions which Dr. Davis has offered. It should be noted that Dr. Davis made ample use of alumni responses which many of you returned last year as a retrospective evaluation of your education.

The column, "Present Status of Our Graduating Students," found on the inside of this Newsletter, is quite revealing of current trends in higher education. Fewer graduating students are electing to continue with graduate training in chemistry. The emphasis now seems to be post-graduate work in the professions: medicine, dentistry, pharmacy, business, law. Also a larger proportion of our undergraduates are looking for jobs immediately upon graduation; this is in line with national trends. Graduate enrollment at CSULB has declined rather markedly, but fortunately the number of graduate students in our department has remained healthy.

Finally, the Outstanding Professor Awards which came my way are to be shared with those who made it all possible. A "good" professor cannot develop in a vacuum; he must have good students and stimulating colleagues and an environment which nourishes excellence. I am especially grateful to Dr. Henry Po and Dr. Edwin Harris, my nominators, for their tireless efforts on my behalf in assembling materials supporting my nomination. My greatest reward was reading the thought-

ful and often touching comments of alumni reaching back over the twenty-eight years of my teaching career and the generous words of my colleagues. Each letter was a reminder of the awesome responsibility which a professor has in helping to shape and direct the lives of his students; I hope that I have exercised it well.

Ken Marsi

Individual Gifts to the Chemistry Department

During the past year the department received 40 separate gifts from 38 individuals totalling \$2775. This also includes gifts to the Robert B. Henderson Memorial Scholarship Fund. In addition to cash awards and scholarships (see articles on student awards and the Henderson Award elsewhere in this issue) contributions helped send a promising student to the National Cancer Institute in Bethesda, MD to participate in an undergraduate summer research program. Jeff Mallory, a chemistry major, was invited to spend the summer at the National Cancer Institute but, because of government cut-backs, support funds were not available this year.

Your gifts in any amount are appreciated and are thoughtfully used. You are invited to become a contributor. Gifts are acknowledged with a personal letter from the Department Chairman, and the Alumni Office is also informed so that your name will appear in the annual alumni publication. Make any checks payable to: CSULB Foundation and send them to the Department of Chemistry, California State University Long Beach, Long Beach 90840.

With sincere appreciation, Ken Marsi.

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Corporate Gifts to the Chemistry Department

Corporate cash gifts to the Chemistry Department during the past year amounted to \$10,000. Much of this money was used for scholarships and awards to students. Other uses were to help support our very active seminar program and to meet emergency needs in the operation of the department. A significant gift from Rachele Laboratories enabled us to continue the excellent Rachele Distinguished Visiting Lecturer series. The value of equipment and supplies contributed to the Chemistry Department exceeded \$100,000. For a program as active as ours, such contributions are of enormous help. State funding alone is inadequate to maintain the level of activity which we believe to be healthy and appropriate for the educational and research mission of this department. Corporations and individuals providing cash and in-kind gifts during the past year include:

Aerospace Corporation
Dr. Edwin Becker
Bio-Dynamics
Brotman Medical Center
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Continued on Page 5

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Mary Martha Molina, President, Student Affiliates, ACS.

Student Affiliates of the American Chemical Society

by Martha Molina

The purpose of this organization is to foster a small college atmosphere within the department, promote enthusiasm for the study of chemistry, and stimulate interest in chemically-related careers.

This was very busy year indeed for the Student Affiliates. Our many projects included the Welcome Back Bash, Annual Taco Feast, Winter Holiday Party, Spring International Potluck, Awards Luncheon, and the ever-popular weekly coffee and donut hour. On these occasions students, faculty, and staff gathered in an informal climate for good food and excellent conversation. Special thanks to Dr. and Mrs. Marsi for their hospitality in hosting the Winter Holiday Party.

SAACS service included participation in the Red Cross Blood Drive. Over 10 gallons of blood were donated by faculty and students in the Chemistry Department. To promote lab safety and raise funds for the year's projects, we held a screening of the ACS film, FLASHPOINT, and sold lab aprons, safety glasses, and CRC Handbooks.

Alumni played a very active role this year, presenting career seminars both semesters. Our thanks to Dr. John Nelson (BS 1969), environmental lawyer; Stan Huth (BS 1973), Allergan research chemist; and Michael Hoover (BS 1971), chemist for the Long Beach Police Crime Laboratory. These lectures proved successful and thought-provoking, and the series will be expanded next year.

Faculty honors and awards are not unusual for this department. This year the Affiliates had the opportunity to recognize extraordinary achievements of several faculty, beginning with a surprise reception for Dr. Ken Marsi, who was chosen as the CSULB Professor of the Year, an award which later escalated to statewide honors. We also established an award for the Outstanding Professor, as

selected by the students. This year's very deserving recipients were Dr. John H. Stern and Dr. Roger A. Acey. The unofficial "Rookie of the Year" award went to Dr. Mark Anjo.

A free tutoring service for General Chemistry students, under the direction of Tim Brady, was initiated at the end of the spring semester. We hope it will develop into a strong, continuing program next year.

I would like to thank our advisor, Dr. Marsi, for his help, as well as all of those who contributed to the spirit and success of the organization this year; they are far too numerous to list.

The officers for the 1985-86 year are: Paz Eilat, President; Michael Maniaci, Vice President; Duane Gergens, Secretary; Brian Huang, Treasurer.



Ty Woodward at the Console of the Kennedy Center Organ.

Molecules and Music

Many of our students are multi-talented, and Ty Woodward, a graduate student in biochemistry, is a foremost example. Ty spent this past summer not only as a teaching assistant for a quantitative analysis laboratory and working on his master's research project, but also recording a classical organ album on the large pipe organ at the Kennedy Center in Washington, DC. It will be released for sale in November of this year. Look for it!

As for his musical background, he holds a bachelor's degree in organ performance from USC, is director of music and organist at a large church in the Los Angeles area, and has played many con-

certs throughout the United States. In addition to classical organ, he also plays the "Mighty Wurlitzer" theatre organs which were originally used to accompany silent films during the early part of this century.

After completing his bachelor's degree in 1982, he decided to return to school to fulfill science requirements for admission to medical school. While at CSULB he entered the master's program in biochemistry and is currently working on his master's research project dealing with the possibility that some peripheral neuropathies are of an autoimmune etiology. His research director is Dr. A. J. Berry.



Dr. Michael Monahan, Lecturer,
Organic Chemistry.

Alumnus Dr. Michael Monahan Appointed Lecturer in Organic Chemistry

Dr. Mike Monahan (BS 1963) will be returning to his *alma mater* this year after a diverse career which has ranged from academic researcher to entrepreneur. He has been appointed as a Lecturer in Organic Chemistry for the 1985-86 academic year.

In addition to a BS degree in Chemistry from Long Beach State College in 1963, Mike received his PhD degree from the University of California, San Diego in 1968. At UCSD, he worked in the field of physical organic chemistry. His thesis was entitled *The Stereochemistry and Mechanism of Acid Additions to Cyclohexene*. This was the first of more than 40 collaborative publications in chemistry, biochemistry, and physiology.

Since completion of his doctoral studies, he has been involved in the synthesis of peptides, beginning with a post-doctoral appointment in the laboratory of Martin D. Kamen at UCSD in 1968. In 1970 he accepted an appointment in the neuroendocrinology laboratory at the Salk Institute for Biological Studies in La Jolla, becoming part of the incredibly productive group assembled there by Roger C. Guillemin, Nobel Laureate.

In 1977 Dr. Monahan left Salk to give industry a try. By early 1978, he started his own company, CAL-MED (California Medicinal Chemistry Corporation), doing contract research and synthesis of peptides. In 1983 he sold his interest in CAL-MED and relocated to San Diego to manage real estate investments and reorient his interests. In short order he was involved in teaching assignments at local colleges in the San Diego area.

His research interests include peptide synthesis and physical organic chemistry. Among his personal interests are contemporary art; Japanese wood-block prints; African, New Guinea, and pre-Columbian meso-American art; tribal Afghani rugs; bicycling; and gastronomy.

FACULTY NOTES

Dr. Roger Acey's research group has been engaged in two basic areas of research. One involves the study of metal binding proteins and metal homeostasis in the developing brine shrimp *Artemia salina*. In addition, his group has been interested in the isolation and characterization of citrus tristeza virus, a plant pathogen commonly found in Southern California. "We hope to develop a quick and reliable assay for this pathogen. Presently, two students and I are spending the summer at the University of Toledo studying the effects of xenobiotics on developing brine shrimp. We hope to use these preliminary studies to develop a biological system for evaluating drug embryotoxicity. Recently, Chevron Oil Company donated two incubators and all necessary glassware for culturing a series of bacteria capable of metabolizing hydrocarbons. We hope to be able to establish a strong collaborative effort in the near future to study the metabolic pathways required for hydrocarbon digestion."

Dr. Mark Anjo reports, "My first year at CSULB has been quite exciting for me. Since the last edition of the *Newsletter* there has been an addition to my family. Our son, Elliot, has just turned one and is already walking and talking. His favorite word is "hot dog," which is also his favorite food (note he only gets high protein turkey dogs). My teaching is off to a very good start and I feel that my enthusiasm has made up for any lack of experience. My biggest challenge has been making Quantitative Analysis interesting to a wide audience; it tends to be a dry subject. Instrumental Analysis, on the other hand, is exotic to most students, and my major task has been to make the student comfortable with the physics of the instrument systems. The research projects I have begun are progressing quite well on three fronts: 1) I am working with two students on the characterization and application of a pyrolytic carbon film electrode. Both Fariah Badrun and Zai-luddin Ariffin have contributed a lot to

the characterization of the electrode; 2) Andrew Rosenstratten and I have been working on the construction of a photoacoustic spectrometer; 3) a software project is under way to emulate analog instruments with microcomputers."

Dr. Peter Baine spent his sabbatical leave working with Dr. Kenneth L. Servis at USC. They collaborated on investigations involving two-dimensional nuclear magnetic resonance.

Dr. A. J. (Jack) Berry reports that Lenora Noroski (BA 1985) has had a productive summer developing an enzyme-linked immunoassay for tetanus toxoid antibodies--a test for the diagnosis of immunodeficiency. She leaves for Cornell Medical School in a few weeks. Summer support was obtained from a Minority Access to Research Careers (MARC) grant and Specialty Labs, Inc., Los Angeles. Kelly Carroll is working on a chromatographic procedure for analyzing the multimeric structure of von Willebrand's factor--a blood clotting factor deficient in von Willebrand's disease (a type of hemophilia). Ty Woodward has started a project which examines the possibility of an autoimmune mechanism involved in patients with peripheral chronic neuropathy of unexplained origin. He is specifically looking for auto-antibodies directed against nerve membrane phospholipids. This study is being conducted in cooperation with Dr. King-Engle of Cedar-Sinai Hospital (Neurology). Jack Berry is busy supervising these and several other projects. He also serves as head cheerleader.

Dr. Stuart Berryhill has a manuscript titled, "Scope and Mechanism of an Iron to Cyclopentadienyl Ligand Silyl Group Migration in Complexes of the Type $C_5Fe(CO)_2SiMe_2R$ " reporting the work of two graduate students, Gary Clevenger (BS 1982, MS 1983) and Yucel Burdurlu (MS 1985), which will be published soon in the journal, *Organometallics*. Work is continuing in his laboratory on a project funded by the Research Corporation which involves the synthesis and structural dynamics of a series of π -allyl iron and molybdenum complexes which contain phosphine and phosphite ligands.

Dr. Jeff Cohlberg has had a busy year. He recently received a three-year grant from the NSF to support his work on the structure and assembly of intermediate filaments. Among other things, the money allowed him to acquire a fully-equipped analytical

ultracentrifuge with a photoelectric scanner from UC Irvine to replace the old instrument acquired in used condition from Caltech many years ago. His research group now includes four graduate and two undergraduate students. Starting materials for preps include such voodoo-like materials as pig eyes and spinal cord, chicken gizzard, and chicken blood. His work involves gel, column, and centrifuge runs, and lately the use of antibodies, cell cultures, and presently electron microscopy and immunofluorescence. During the past year he also served on a special NIH Cell Biology study section, bought a house, took his first backpacking trip, and had a landmark birthday (no, not 25).

Dr. Jerold Devore devoted his sabbatical leave to in-residence study, developing a mathematical model to extend the theory of the behavior of dense fluids.

Dr. Dorothy Goldish is continuing work on matters of educational policy and curriculum as a member (and secretary) of the University Planning and Educational Policies Council. She also serves on the Academic Senate, and on the Associate Vice President's *ad hoc* Task Force on the Learning Environment. She is also member of the Chancellor's Task Force on Underrepresentation of Women in Science, Engineering, and Mathematics. This committee is seeking to make recommendations for ways to increase the number of women majoring in technical fields, as well as the number of women faculty. "We have always had substantial numbers of women majoring in Chemistry at CSULB, and I hope alumni find ways to convey to young girls--and their parents--that science is an acceptable and interesting major for women as well as for men."

Dr. James L. Jensen continues as Associate Dean of the School of Natural Sciences. In addition to administrative duties, he continues active in research and received the Distinguished Scholarly and Creative Achievement Award from the University this past year. The National Science Foundation has provided support through 1988 for the work on hemiacetal breakdown and the mercury (II) promoted hydrolysis of O,S-acetals. This past year also saw the publication of the last of Kenny Yamaguchi's (BS 1979, MS 1981) work on kinetic solvent isotope effects. Cooperative research with Ken Jenkins of the Molecular Ecology Institute on the

presence and effects of organic substances in the marine environment continues to progress slowly, as the GC/MS allows.

Dr. Margaret (Peggy) Kline will be returning for a second year as Lecturer in Organic Chemistry and will be teaching physical organic chemistry and beginning chemistry for nursing and home economics students. Her office is adjacent to the Student Affiliates lounge, and she reports, "I really enjoy and appreciate the enthusiasm of the chemistry students." In her spare time she rides and shows her horse.

Dr. Van T. Lieu was on sabbatical leave for the Spring semester of 1985. Half of his time was devoted to on-campus studies to continue and extend his research in the area of chemical problems in petroleum oil recovery which includes enhanced oil recovery by dilute polymer alkaline flooding and development of analytical methods for the determination of oil in brine. The other half of his time was spent with Brown and Caldwell Analytical Laboratories in the evaluation and development of analytical methods for the determination of organic halides in waters and solids. He presented the results of his findings in organic halide analysis at the California Water Pollution Control Association Conference in May, 1985.

Dr. Robert Loeschen continues as the Coordinator for Chem 111A (Freshman Chemistry). He reports that he enjoys teaching Chem 111A and is trying to improve upon methods of presenting the subject material to the students. According to the students the lectures move too fast and the exams are too long and difficult! Was this the way it was when you took it?

Dr. Kenneth Marsi continues as Chairman of the Chemistry Department. During the past year he authored one publication. He also served as external reviewer for the Departments of Chemistry at CSU Northridge and Fullerton. It was a year of honors; he received the University Outstanding Professor Award, the Trustees' Outstanding Professor Award and a special commendation for his "contributions to the CSU and to Chemistry" from the chemistry department chairs of the 18 other CSU campuses. The latter award was presented at a meeting of CSU Chemistry chairs at California Polytechnic State University, San Luis Obispo in April. He

continues as a member of the Executive Committee of the Southern California Section of the American Chemical Society, serving as the supervising chairman of the Nominations and Awards Subcommittee and the Student Affiliates Subcommittee.

Dr. Darwin Mayfield maintains his interest in original documents relating to the evolution of chemistry as a modern science. In a presentation for the departmental seminar series, he reported on work done at the Huntington Library in San Marino during sabbatical leave in spring, 1984. The talk was titled "Robert Boyle and the Gas Law Gang." He continues his reading at the Huntington and last spring visited the rare book collection of the Center for the History of Chemistry located on the campus of the University of Pennsylvania.

Dr. Louis Perlgut, although an emeritus professor, will return this fall to teach Chem 300, biochemistry for nursing and home economics students. He participated in the Spring Commencement where he hooded his MS student, Laurie C. Brodie.

Dr. Nail Senozan is concluding a Fulbright Fellowship spent at Ege University in Izmir, Turkey. During the year in Turkey he taught and participated in collaborative research in blood chemistry with another faculty member at Ege University. While in Turkey, Dr. Senozan and his wife, Diane, became parents of a daughter, Erin Ayse, born March 2, 1985.

Dr. Philip L. Stepanik has been appointed for a second year as Lecturer in Biochemistry. Previously, he was a postdoctoral fellow at the UCSD Department of Medicine where his research involved the biochemical characterization of a proton ATPase of audifying epithelia which might function in regulating pH. Dr. Stepanik attended graduate school at the University of North Dakota in Grand Forks, receiving a PhD in Biochemistry in 1982. His doctoral research dealt with enzymology studies of glucose-6-phosphatase glucokinase and hexokinase under the direction of Dr. Robert C. Nordlie. In addition, he received his MS in Chemistry in 1976 from Northern Arizona University in Flagstaff.

Dr. John Stern continued his research on the thermochemical properties of various sugars in aqueous solutions.

Continued on Page 8

Continued from Page 7

Dr. A. G. Tharp has been elected Chairman of the Regional Judging Committee of the American Orchid Society. The region includes Southern California, Arizona and Utah.

Dr. Leslie Wynston was elected President of the Western Region of the Association of Advisors to the Health Professions. He reports that our department's proposed BS degree in Biochemistry was placed on the Academic Master Calendar by the Board of Trustees for implementation in the fall of 1987.



Bill Benaquista, Instructional Support Technician.

Bill Benaquista Joins Stockroom Staff

Joining the Chemistry Stockroom Staff during the summer of 1985 is Bill Benaquista, formerly a stockroom employee at Los Angeles City College, and most recently (for the past five years) at El Camino College. Bill came to California from Pittsburgh, PA by way of Phoenix, AZ. He is a graduate of Hawthorne High School and received his AA degree in Chemistry from El Camino College.

Bill's hobbies include stamp and coin collecting and darkroom photography techniques. He has had a number of his photos published. He also enjoys reading science fiction, gardening, backpacking and camping.

Faculty and staff welcome you, Bill!



Chemistry Department Staff. Left to right: Joyce Kunishima, Stockroom; Robert Soukup, Electronics Shop; Jeannette Santage, Department Secretary; Laura Hulse, Student Assistant, Chemistry Office; Frances McLuen, Secretary; Robert Clark, Glass Shop; Bernadine Sparta, Secretary; Cristian Presutti, Stockroom; Karen Knox, Director of Laboratories; Robert Glenn, Stockroom.

Staff News

by Bernadine Sparta

Bob Clark, Glassblower, and lovely wife, Sharon, will be leaving Long Beach to move to the Santa Rosa, CA area. Bob has accepted a position as a Glass Technologist with Opto Electronics, and will be moving to Santa Rosa after the middle of August. Sharon is looking forward to raising chickens, and Bob will be growing vegetables over the septic tank! They will be missing all their friends at CSULB and have promised to keep in touch. Bob joined the chemistry staff in 1979, succeeding Jim Lane who has been a glassblower at UC Riverside since that time.

Laura Hulse, Student Assistant in the Chemistry Office, is in her third year at CSULB and is working toward a degree in Public Administration. Laura is presently planning her wedding to Greg Wight, Equipment Technician, School of Natural Sciences. The happy couple will be wed on August 24, 1985. We wish them much happiness!

Joyce Kunishima, a stockroom staff member and her husband, Dennis, a microbiology graduate student, are anx-

iously awaiting the arrival of their first child in September.

Fran McLuen, a secretary in the department, is celebrating 10 years with CSULB and would like to say a big "hello" to all her acquaintances over the years that have come and gone. She and her husband, Chuck, spend their vacation time between their two homes in the Crestline Mountains and Palm Springs. Her son, Chuck II (24), will be coming back to CSULB for a year to finish up his degree and son, Scott (20), is completing his work at Golden West College and will be transferring to CSULB.

Editor's Note: If a faculty member wrote you a letter of recommendation in the last ten years, it was probably Fran who typed it.

Bernadine Sparta, and husband, Sam, celebrated their twenty-fifth wedding anniversary this year by traveling to the island of Maui where they stayed at beautiful Napili Bay. The Spartas have two children, daughter Robyn (21), and son Derek (16). Bernadine joined the Chemistry Staff in 1982 after having been secretary for two years in the Religious Studies Department.

Former Faculty: Where Are They Now?

Dr. Vasil Babamov (Lecturer 1983-85) is returning to his position at the Instituto Tecnologica de Tijuana, Tijuana, Mexico, where he is Professor of Chemistry in the Center for Graduate Studies.

Michael Cohen (Lecturer 1984-85) has accepted a position with Fluorochem, Inc. in Azusa, CA.

Dr. Irene Huang (Lecturer 1980-81) is a chemistry professor at Rio Hondo College in Whittier, CA.

Dr. Larry Kirk (Lecturer 1979-81) has been promoted to Professor of Chemistry at California State University, Chico. He and his wife, Maureen, announce the birth of their first child, Brian Patrick Kirk, born May 8, 1985.



Dr. Linda McGown

Dr. Linda McGown (Assistant Professor 1979-83) is Assistant Professor of Chemistry at Oklahoma State University in Stillwater, OK. She reports, "The years I spent at CSULB were instrumental in my subsequent success here at OSU. I have funding from the Army, NIH and NSF (about \$300,000 in direct costs for three years), and I have just had my promotion with tenure approved and sent to the Board of Regents for final approval. I have four PhD students and one postdoc, with one or two more to arrive this summer. Jenna will be three in May and is doing wonderfully."

Saule Palubinskas (Part-time Lecturer 1976-83), formerly with Truesdail Laboratories, has joined IT Corporation in Cerritos, CA. IT Corporation is an active member of the CSULB Chemistry Advisory Council.

Dr. Polly Ping (Part-time Lecturer 1982-83) works as a chemist in Connecticut. At last word from Polly, the Ping family was expecting an addition, and Polly had

been temporarily assigned from the lab bench to do literature study and computer work.

Dr. John Roberts (Lecturer 1977-79), after a distinguished research career at Caltech's Kerchoff Laboratories, has accepted a faculty position in the Department of Biology at California State University, Dominguez Hills.

Dr. Ronald Wikholm (Assistant Professor 1972-78) is a chemistry professor at the University of Connecticut, Hartford Campus and completed a portion of his sabbatical during the spring and summer of 1985 at UC Irvine.

Dr. Andrew Wong (Lecturer 1982-84) is Assistant Professor of Chemistry at Occidental College. He was married in Taiwan in 1983 to Bonnie Hsieh. Andy recently was awarded a Research Corporation grant to study reactions of organometallic compounds.

The Chemistry Graduate Program

The Chemistry Department has approximately 50 Master's students, about equally divided between the Chemistry and the Biochemistry programs. Of this number about 17 are supported as teaching assistants and 9 as graduate assistants. Several graduate students are also employed as research assistants on faculty grants. Fourteen graduate students were listed for graduation at the Spring Commencement. Their thesis titles and faculty sponsors are listed. It is interesting to note that the majority came to our department from other universities.

MS in Biochemistry

Laurie C. Brodie, B.A., Chatham College, Pennsylvania

Thesis: "Mass Spectral Identification of Monoiodohistidine and 3-Phosphoro-4-iodohistidine" (Perlgut)

Anjana D. Patel, B.S., M.Sc., Bombay University

Thesis: "Detection and Isolation of a Proteoglycan from Developing *Artemia Salina*" (Acey)

Charles B. Seaton, B.S., University of Southern California

Thesis: "A Comparative Study of Specific Metal Cation Effects on the Kinetics and Heat Stability of *L*-Lactate Dehydrogenase Isoenzymes from Beef Heart, Beef Muscle, Rabbit Muscle, and Human Erythrocytes" (Cohlberg)

Deborah H. Schwyter, B.A., California State University, Long Beach

Thesis: "A Heterogeneous Enzyme Linked Assay for Biotin" (Berry)

Jeffrey H. Stack, B.S., California State University, Long Beach

Thesis: "Detection of Metallothionein-like Gene Sequences in Developing *Artemia Salina*" (Acey)

Aron Thall, B.A., Kalamazoo College

Thesis: "The Existence of Cadmium Binding Proteins in Developing *Artemia Salina*" (Acey)

MS in Chemistry

Stephen J. Bigus, B.S., California State University, Long Beach

Thesis: "Chromyl Chloride Oxidation of 1-Alkenes" (Jensen)

Yucel F. Burdurlu, B.S., Hacettepe University, Turkey

Thesis: "Synthesis of Ring Substituted Derivatives of Dicarboxylcyclopentadienyliron Alkyl Complexes" (Berryhill)

Dwayne Y. Ishida, B.S., California State University, Long Beach

Thesis: "Methods of Preparation and Structural Studies of Cyclopentadienyl Iron π -allyl Complexes Containing Phosphorus Ligands" (Berryhill)

Janet C. Kiang, B.S., Providence College, Taiwan

Thesis: "One-electron Oxidation of Thiols" (Po)

Larry D. Klein, B.A., California State University, Long Beach

Thesis: "Effect of the Leaving Group on Catalysis of Benzaldehyde Hemiacetal Breakdown" (Jensen)

Hung-Dwan Lee, B.S., Tamkang University, Taiwan

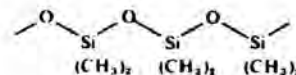
Thesis: "Oxidation of Amines" (Po)

Steven Randolph McGown, B.S., Texas A & M

Thesis: "The Identification of Unknown Organic Waste Pollutants in Sewer Effluent and in Marine Life" (Jensen)

Sharareh Nasser-Moaddeli, B.S., California State University, Long Beach

Thesis: "Accumulation of the Heavy Metal Ions on Hemocyanin" (Senozan)



1984-85 Seminar Series

by Roger Acey, Seminar Coordinator

This year's weekly seminar series was characterized by a flair for the unusual. Topics ranged from Dr. Charles E. McKenna's (USC) talk on "Herpes Viruses and Organophosphorus Chemistry" to "Application of Science to Works of Art," presented by Dr. Frank Preusser of the J. Paul Getty Conservation Institute. The overall theme of his year's seminar series was the developing role of "pure chemistry" in the study of complex biological systems. This was exemplified by Dr. Chris Foote's (UCLA) talk, "From Lasers to Leukocytes, or What is an Organic Chemist Doing in a Place Like This?" As usual, each seminar speaker was treated to dinner at a local restaurant. Students were encouraged to join the faculty for dinner and take the opportunity to meet each speaker personally. This type of faculty-student interaction has resulted in Jeff Stack (MS Biochemistry 1985) deciding to join Dr. Elias Lazarides' research group at Caltech. Professor Harold Weintraub (Rachelle Distinguished Visiting Lecturer) presented two seminars detailing his elegant experiments designed to unravel the genetics of normal human development. Other speakers included: John E. Leonard (Alumnus: BS 1969, MS 1973), UCSD; Katza Lindenberg, UCSD; Ralph A. Bradshaw, UCI; Howard Schachman, UC Berkeley; Duane Blume, CSCB; James H. Swinehart, UC Davis; Michael Karin, USC; Phoebe K. Dea, CSULA; Bill Sunda, National Marine Fisheries Service; Judy Helder, UCSF; Kim Cohn, CSCB; Elisheva Goldstein, Cal Poly Pomona; Thomas J. Andary, Hyland Therapeutics; Claude F. Meares, UC Davis; William H. Okamura, UC Riverside; Larry Ellis, Bakersfield Sheriff's Department; J. Michael Moldovan, Chevron Oil Field Research Company; Christopher Reed, USC; Mel Dutton, CSCB. In addition, Dr. Darwin Mayfield and Dr. Stuart Berryhill from this department presented seminars on their areas of interest. Professor Berryhill's presentation dealt with the "Chemistry of the Iron-Silicon Bond and New σ -Allyl Complexes with Phosphorus Ligands." Special thanks are extended to the Advisory Council and the Chemistry Alumni for their support of this most important academic endeavor.



Kent Showman Awarded the Robert B. Henderson Prize

Kent Showman, a 1985 BS graduate in Chemistry, was given the Robert B. Henderson Memorial Award for his outstanding scholarship. His overall GPA at the time of graduation was 3.89/4.0, and during his undergraduate career he received the American Institute of Chemists Award and the Chemistry Alumni Award as well. Kent was one of only six students for the entire School of Natural Sciences this year to graduate *with great distinction*. He was an undergraduate research student of Dr. John Stern and Dr. Margaret Merryfield. After working for a year or so, Kent plans to begin his studies for the PhD in Chemistry.

The Henderson Award is given to a graduating student who best exemplifies the excellence of scholarship and commitment to chemistry of its namesake, Dr. Robert B. Henderson, who was a member of our faculty during the period, 1955-1983. Scholarship funds are made possible by gifts from colleagues, family, friends and former students.



Kent Showman, Henderson Award Recipient.

CURRENT ACTIVITIES OF SOME OF OUR 1985 GRADUATES

(This is an incomplete list based upon information available to the Editor at the time the Newsletter went to press. Fifty-nine students were candidates for degrees: 31 BA, 14 BS, 14 MS.)

- | | |
|------------------------------|---|
| Michael A. Allison, BS | Hughes Aircraft |
| Ihab E. Bishay, BS | PhD program, UC Irvine |
| David H. Benton, BS | McDonnell Douglas |
| Stephen J. Bigus, MS | Hughes Aircraft |
| Yucel F. Burdurlu, MS | Ameritone Paint Corporation |
| James P. Brophy, BS | Southern California Gas |
| Carlos A. Coello, BA | Dental school, Washington University |
| Peter E. Eleopoulos, BA | Pharmacy, Long Beach Community Hospital |
| Noraini Hamid, BS | Industrial position in Malaysia |
| Christopher Hendrix, BA | McDonnell Douglas |
| Janet C. Kiang, MS | ARCO |
| Larry D. Klein, MS | Beckman Instruments |
| Hung-Dwan Lee, MS | Truesdail Laboratories |
| William A. McCully, BS | Chem-Pro Corporation |
| Mary M. Molina, BA | Medical school, UC Irvine |
| Steven R. McGowen, MS | Conoco, Ponca City, Oklahoma |
| Leonora M. Noroski, BA | Medical school, Cornell University |
| Sharareh Nasser-Moaddeli, MS | IT Corporation |
| Rick Pagliery | Pharmacy school, USC |
| Theresa M. Rohr, BA | Medical school, Cornell University |
| Jeffrey A. Saunders, BA | Commission, US Army |
| Charles B. Seaton, MS | Beckman Instruments |
| Deborah H. Schwyter, MS | PhD program, UCLA |
| Kent Showman, BS | Graduate school, CSULB |
| Jeffrey H. Stack, MS | PhD program, Caltech |
| Aron Thall, MS | City of Hope, Oncology |
| Thuminh T. Tran | Pharmacy school, USC (accepted before completion of BA) |

HONORS TO CURRENT STUDENTS AND NEW GRADUATES

John Allard	Biochemistry Award
	Chemistry Alumni Award
Elizabeth Brinkman	Merck Award in Organic Chemistry
	Chemistry Alumni Award
James Brophy	Honors for Service
	Toni Horalek Award for Service to the Chemistry Department
	Chemistry Alumni Award
Joy Condon	Honors for Service
Kevin S. Kasha	Freshman Chemistry Award (CRC Handbook)
	Chemistry Alumni Award
Monica Keindl	Monsanto Chemical Company Summer Graduate Research Fellowship
Janet C. Kiang	Election to Phi Lambda Upsilon
Lily A. Lim	Graduation with Distinction
	Analytical Chemistry Award
	Chemistry Alumni Award
Eugene Lin	Who's Who in American Universities and Colleges
Jeff Mallory	Chemistry Alumni Undergraduate Scholarship
	Union Oil Undergraduate Scholarship
Michele Miller	Honors for Service
Farshad Mogadam	Election to Phi Lambda Upsilon
Mary Martha Molina	Khalil Salem Award
	Honors for Service
	Election to Phi Beta Kappa
	Toni Horalek Award for Service to the Chemistry Department
	Election to Phi Lambda Upsilon
	Gabrielino/Forty-Niner Award
	Who's Who In American Universities and Colleges
	David L. Scoggins Scholarship
	Graduation with Great Distinction
Jeffrey A. Saunders	Election to Phi Lambda Upsilon
	Graduation with Distinction
Stephanie Schwartz	Election to Phi Lambda Upsilon
Kent Showman	Robert B. Henderson Memorial Award
	Graduation with Great Distinction
	American Institute of Chemists Award
	Chemistry Alumni Award
Jeanne Sinsheimer	Monsanto Chemical Company Summer Graduate Research Fellowship
Christopher Smith	California Foundation for Biochemical Research Summer Graduate Research Fellowship
	Dean Rhodes Award
Vivian Lassiter Smith	Graduation with Distinction
Jeff Stack	Monsanto Chemical Company Summer Graduate Research Fellowship
	Graduate Dean's List
	Who's Who In American Universities and Colleges
	Rachelle Medal, Outstanding Graduate Student in Biochemistry
Roswita Trismitro	Monsanto Chemical Company Summer Graduate Research Fellowship
Alana Vale	Phi Beta Kappa Scholarship
John M. Watcher	Inorganic Chemistry Award
	Chemistry Alumni Award
Stephen N. Wilhelm	Election to Phi Lambda Upsilon

ALUMNI NEWS

Of our approximately 740 alumni 144 have provided information for the 1985 Newsletter; all graduating classes, except those of 1959, 1960 and 1963, are represented. Let's hear from the 1959, 1960 and 1963 grads next year! Please use the inside of the back page of this Newsletter to respond.

One use of this section of the Newsletter is in career counseling with our graduate and undergraduate majors. The occupations represented here show a wealth of diversity and illustrate the career flexibility provided by an education in chemistry. We appreciate the excellent response to our request for information about yourselves, and others of you who may not have responded are urged to so.

Alumni News (continued)

1958

Lloyd S. Peak, BS, a member of the first chemistry graduating class in 1958, taught at Fullerton High School for two years after leaving CSULB. He received a MS degree from Stanford University under the sponsorship of the National Science Foundation in 1962, and since that time has been teaching chemistry at MiraCosta College in Oceanside, CA.

1961

Dr. Fred Dorer, BS, formerly department chair at San Francisco State University and Vice President for Academic Affairs at California State, Sonoma was recently appointed Vice President for Academic Affairs at California State College, Bakersfield.

1962

Paul J. Battaglia, Student, has been promoted to Superintendent of the Production Department at Hughes Aircraft Company's Electron Dynamics Division in Torrance, CA and is responsible for about 100 employees performing metalizing in aluminum and beryllium oxide ceramics; electroplating nickel, copper and gold on various metal substrates; hydrogen brazing of metal-to-metal and ceramic-to-metal materials, and fabrication of MgO-SiC ceramics. This processing is required for the production of Traveling Wave Tubes used in radar, telephone and TV communications and for missile guidance systems.

Dr. Robert O. Hutchins, MS, is professor of Chemistry at Drexel University in Philadelphia. He is also Associate Department Head. Dr. Hutchins received the Lindback Foundation Award for Outstanding Undergraduate Teaching in 1980 and the Drexel University Research Achievement Award in 1982.

1964

Dr. Gary M. Hathaway, BS, has been named Academic Coordinator of the Biotechnology Instrumentation Facilities at UC Riverside.

Dr. Evord F. Knights, BS, is Vice President-Planning and Development for Union Oil of California in the Petrochemicals Division and lives in Palatine, Illinois.

William Timberlake, BS, is Treasurer of the UCLA Chemists' Association. Bill received his MS from UCLA in 1966.

Kahirup J. Torre, MA, is manager of the Inorganic Analysis Laboratory Section of the Haagen-Smit Laboratory Division of the California Air Research Board in El Monte, CA.

1965

Judy Adams, BS, MS 1967, reports, "I live in a log cabin on 5 acres in the northern mountain panhandle of Idaho, 60 miles south of the Canadian border. My two children are grown and on their own, so I am now free to do all the crazy fun things of life such as world travel, backpacking, writing and fixing up my log house. I currently teach algebra part-time at the local college, sell my pen and ink sketches and dabble in real estate. I spent 10 years in basic research at Dow Chemical and at the University of Arizona, followed by 10 years as a professional executive risk manager in the field of insurance. I would love to hear from anyone who remembers me at CSULB."

1966

Howard Bruce Baldwin, BS, MS 1972, is a quality assurance specialist with the Defense Supply Agency of the Department of Defense; he works with the Petroleum & Special Commodities Branch in Norwalk. In addition, he is a part-time instructor at Long Beach City College, teaching chemistry for nursing and home economics students.

Richard Ebner, BS, has spent the last 13 years with ARAMCO in Saudi Arabia. "During this time I've directed the environmental affairs of ARAMCO which included environmental studies in air and water quality, hazardous material disposal and marine biology. The results of marine biology studies are presented in a book titled, "Biomes of the Western Arabian Gulf; Marine Life and Environments of Saudi Arabia."

Dr. Don W. Hayden, BS, is chairman of the Chemistry and Physics Department at Lakeland College in Elkhart Lake, Wisconsin.

Dr. G. David Homer, MS, is an Associate Scientist with the Chemical Research and Development Department of Aerojet Strategic Propulsion Company in Sacra-

mento, CA. He is responsible for research and process development for the production of fine organic chemicals for the National Cancer Institute and for internal use in Department of Defense work.

John Leeb, BS, MS 1972, after 10 years in medical research with the Veterans Administration, is now an analytical chemist doing failure analysis for the US Navy at the Seal Beach Naval Weapons Station. "The work is challenging and exciting, with lots of potential for growth." His sons are David, an honors student at CSU Fullerton, and John, a junior at Rancho Alamitos high school.

1967

Joanne Farvolden Ehteshamzadeh, MS, after having worked as a chemist for Rug Doctor in Fresno, CA, now lives and works in San Francisco. Joanne has two children, Robert, 19, an electrical engineering student at CSU, Fresno, and Raymond, 10.

Dr. David Fagerburg, BS, is still employed with Tennessee Eastman in Kingsport, Tennessee where he is presently involved with chemical research and computer modelling.

Margaret Ann Hohly, BS, MS 1971, after having taught chemistry for 12 years in the Downey Unified School District, is completing a master's program in computer science at CSU Fullerton. She has accepted a teaching position at Cerritos College where she is an instructor of Data Processing.

Dr. William Lake, BS, MS 1969, and his wife, Marien, are still living in the Chicago area with their two children. He is Director of Regulatory Affairs for Travenol Laboratories. Marien is finishing her master's degree in nursing, and daughter, Jennifer, will begin college at the University of Illinois in the fall.

Dr. Alan J. Senzel, BS, does technical editing and writing in the fields of environmental chemistry and engineering. He is Treasurer of the Carolina Chapter of the Society for Technical Communication and won an achievement award in the STC publications competition for "Safety in the Laboratory," which he prepared. Alan and his wife, Phyllis, have children, Richard 3, and Lisa 12. He continues as music and dance reviewer for the *Raleigh News & Observer*.

Gerald C. Wicker, BS, is a sales representative for C.P. Hall, manufacturers of esters used as paraplex and monoplex plasticizers. The sales office is located in Torrance, CA.

1968

Lance Eggenberger, BS, MS 1975, lives in Salt Lake City, Utah with his wife and three children and works for UBTL, Inc., Division of Deseret Research. He is Manager, Quality Assurance Section. UBTL is the prime contract laboratory for NIOSH for industrial hygiene analysis and is a certified contract laboratory for the EPA-CLP program doing hazardous waste analysis. He is studying for certification as an industrial hygienist.

Dr. Norman E. Hester, BS, is Technical Director for Truesdail Laboratories in Tustin, CA.

Raymond E. Ouellette, BS, works for Shell California Production, Inc. in the Environmental Department specializing in waste and water disposal problems. "My job requires interfacing with regulatory and legislative personnel as well as with consultants and contractors."

1969

Dr. Reid H. Bowman, BS, is in charge of the pharmaceutical Process Development Group in the Western Division of Dow Chemical Co. "This group has responsibility for developing new processes for clinical and commercial pharmaceuticals being developed or sold by Merrel Dow. The group is also responsible for producing quantities of pharmaceutical candidates for clinical trials. The chemist and chemical engineer work together in the development of new processes to ensure the quality, yields, ease of operation and safety of the process in the pilot plant. As the leader of this group, I am given the opportunity to work with chemical engineers, biochemists, analytical chemists, industrial pharmacists and commercial directors."

Don Byers, MS, is Biochemistry Instructor at the Northern Alberta Institute of Technology where he has been since 1970. He is presently Western Canada Director of the Canadian Society for Chemical Tech-

nologists, one of the three sections of the Chemical Institute of Canada. He is also Alberta Director of "College Chemistry Canada" for the 13th Conference to be held at Nait in June, 1986. The theme of the conference will be the chemistry of Canada's resource industries, in particular the petrochemical and mining industries. There will also be a session on computer assisted educational advances and available software. "Anyone interested in giving a paper or attending the conference should drop a line to Don Byers at 11762-106th St., Edmonton, Alberta T5G2R1."

Dr. John E. Leonard, BS, MS 1973, is a research biochemist in the UC San Diego Cancer Center where he collaborates with Dr. Raymond Taetle in the study of use of immunotoxins for the treatment of human leukemias through autologous bone marrow transplantation. "The conjugates are used to kill leukemia cells present in the bone marrow; this marrow is later given back to the patient following radiation and chemotherapy treatment to remove leukemia cells from their bodies. My colleagues and I have successfully started human T-cell leukemia cells growing in athymic mice. This will serve as an animal model for the study of immunotoxins and other antibody conjugates for the *in vivo* treatment of human T-cell disease."

Dr. John S. Nelson, BS, formerly of Hagenbaugh & Murphy, has opened his own law office in Santa Ana, CA. He specializes in civil trial and appellate practice, emphasizing defense of personal injury litigation, particularly product liability and toxic tort matters. "The most rapid growing area of personal injury litigation in the next ten years will be the field of 'toxic torts'. Now is a particularly good time for someone with a degree in chemistry to consider going on to law school."

Burton R. "Ron" Rawding, BS, MBA 1980, is district sales manager for Pilot Chemical Co. in Santa Fe Springs, CA.

1970

David Corder, BS, is laboratory supervisor for Union Oil Company of California, Chemicals Division. The plant at which he works employs approximately 150 persons and uses methane from nearby oil fields to manufacture ammonia, nitric

acid, ammonium nitrate, urea and liquid and solid carbon dioxide.

Dr. Claude R. Lassigne, BS, teaches first-year chemistry and second-year courses in thermodynamics and inorganic chemistry at Kwantlin College, located 20 miles from Vancouver, BC, Canada.

1971

Bill Givens, BS, his wife, Mary, and daughter, Beth, 8, live in Auckland, New Zealand where Bill is a theological student at an Anglican (Episcopal) seminary studying for the priesthood.

James Merrill, BS, is a chemist with Nutrilite Products and is studying for an engineering degree at California State University, Los Angeles.

Dr. Joseph Oberlander, MS, works for Dynachem. He and his wife, Paulette, announce the birth of their second son, Michael.

Alan Rosenstein, MS, is a member of a research group at UC Irvine which is investigating the gradient of dopamine receptors in the brain and corresponding these with neurotransmitters and allied chemicals such as glutamate and acetylcholinesterase. Alan is a research associate in the Department of Psychobiology.

1972

Dennis M. Keith, BS, is an industrial hygienist for the Department of Industrial Relations Division of Occupational Safety and Health in Long Beach, CA.

1973

Dr. Ted A. Bailey, BA, is an optometrist associated with Richard Kratz, MD, an ophthalmologist. "My wife, Connie, and I have lived in Dana Point for the past seven years and enjoy sailing in our 27' Coronado every chance we get. My wife has her own business dealing with the importing and distribution of coffee."

Carolina A. Handy, MS, is in her second year of graduate school at the University of Oregon in Eugene, studying for her PhD in organic chemistry. Her research involves the study of enantioselective syntheses of radical reactions. "Mark and I have recently built a new house in Hor-

ton. Our daughters are growing fast, ages 5 and 7."

Dr. Michael J. Locke, BS, is Senior Chemist with Rockwell International, Semiconductor Products Division, in Newport Beach, CA. He is involved with materials analysis for in-house manufacture of integrated circuits and with problem-solving tasks in support of other Rockwell divisions.

Dr. Charles McCombs, BS, continues with Tennessee Eastman in Kingsport, Tennessee. He is presently doing research in the area of Vitamin E chemistry.

Dr. Robert W. Petzold, BA, Board Certified American Academy of Family Practice (1979) and American Board of Preventive Medicine in Occupational Medicine (1983), is serving on active duty with the US Army Medical Corps. He and his wife, Kitty, and their five children live in Edgewood, MD.

Dr. Robert Rona, MS, is employed at Swedlow, Inc. in Garden Grove, CA, investigating new acrylic materials used as windows for aircraft. "There's a good chance that the last time you looked out the window of an airplane, it was made by our company." Bob and his wife, Rebecca, and their three children live in a newly purchased home in Culver City.

Aranong Sirirangkamanont, MS, is an executive in a leading agro-industrial organization in Bangkok, Thailand.

1974

John Hills, BA, has been working in the Hazardous Materials Section of the Orange County Health Department for the last six years. He and Mrs. Hills have five daughters and two sons.

Dr. Frank Lloert, BS, was recently promoted to Manager of Chemical Research with Acusnet Company in New Bedford, MA. His wife, Maureen, has completed her first season with the Rhode Island Philharmonic as a stringed bass player. Their children are Ruth, third grade, and Erin, who will begin kindergarden in the fall.

Dr. Hendrik "Rik" Tuinstra, BS, continues with the Dow Chemical Company in Midland, Michigan. His present work has taken him out of the laboratory to do chemical modelling with computers.

Dr. Richard V. Whiteley, BS, is a chemist with Sandia National Laboratories in Albuquerque, NM where he shared an office with **Dr. Frank Burns, BS** 1972. "That's a remarkable coincidence considering that there are over five thousand people at Sandia."

1975

Chester Callaway, BS, is an analytical chemist with National Testing Standards, Inc., research and testing laboratories in Anaheim, CA.

Dan Gelfand, BS, is Technical Director for Vitek, Inc., a company specializing in vinyl compounding. Among other products, the company manufactures bottles and records.

Peter D. Harney, Student, received a MS degree from the University of Hawaii and was employed as a chemist at Biogen Research Corp. in Cambridge, MA. He resigned his position to return to California where he plans to enter a PhD program in biochemistry.

Stuart A. Nowinski, BS, is a chemistry teacher at San Marino High School and Pasadena City College.

Dr. Patrick Pakes, BS, works as a research chemist with General Motors in Flint, Michigan. Dr. Pakes received his PhD in 1979 in physical chemistry from UC Berkeley.

Maria Erlinda C. Sarno, MS, is Manager of Development with Hyland Laboratories in Pasadena.

1976

Nicholas G. Champlin, BA, is a Senior Development Chemist at Products Research & Chemical Corp. in Burbank. His work deals with sealants and adhesives. He is also Chairman of the Board of Towinik, Inc., manufacturer of Dyna-Graph, a graphite and molybdenum disulfide motor oil treatment. "Happiness is being single, I spend weekends sailing and am also a member of the CSULB Women's Basketball Fastbreak Boosters."

Don Crider, BA, is a process engineer and works in Fullerton, CA.

Dr. Christopher Richmond, Student, is Assistant Director of the Pharmacy at Santa Monica Hospital.

Dr. Ercan Unver, MS, is the project leader for a NIH grant to elucidate the enzyme kinetics of the enzyme nitrogenase. The work is being conducted at USC and involves mass culturing in laboratory pilot plant scale fermentations and chromatographic purification. He has a daughter, Beril, who is three years old.

1977

Dr. Tom Dillon, Student, is practicing dentistry in Downey, CA.

Rick T. Goyt, BA, is now owner/administrator of Residential Care Home for the Elderly and is also involved in a computer consulting business. He and Marsha and their two children live in Sebastopol. "I enjoy being self-employed more than anything I have ever done--and I liked everything!"

Dr. Walter Mann, BA, practices dentistry in San Francisco. "I'm having fun traveling a lot and haven't committed myself to growing up just yet."

Kenneth S. Yamaguchi, BS, MS 1981, completed his PhD in analytical chemistry during the summer of 1985 under the direction of Professor Sawyer.

1978

Dr. Gregory Downs, BA, has completed his MD degree at the Medical College of Wisconsin and will specialize in anesthesiology. His internship is with St. Luke's Hospital in Milwaukee and his residency will be with the Medical College of Wisconsin.

Melanie Grady, BA, is a quality engineer for Northrop specializing in optical emission spectrometry. She is also involved in the testing of adhesives, laminates, resins, composites and plating baths using such instrumental methods as AA, FTIR, TGA, DSC, TMA and HPLC.

Dr. Raymond E. Lyons, BA, received his MD degree from the University of Minnesota in 1984. "Since graduation I have worked with a family practice physician and a urologist. I am currently doing research at the Minnesota Comprehensive Epilepsy Program in medical and surgical treatment of intractable epilepsy. In July 1985 I will start a transitional residency program at the Sioux Valley Hospital, Sioux Falls, South Dakota. Martha and

I are new parents; Mitchell Thomas was born January 6, 1985."

Dr. Marianne Marsi, BS, is a research chemist for the DuPont Co. in the Polymer Division at Central Research Experimental Station in Wilmington, DE. She and her husband, Dr. Lewis Manning, also a research chemist with DuPont, live in their new home in Liftwood, Wilmington, DE.

Daniel Peek, BA, is working on his PhD in crop science at Oregon State University. "I'm doing research on the prediction of herbicide activity from commonly measured soil properties. My wife and I spend our free time camping and fishing, and I still can wreak havoc on the racketball court."

Josh Prager, BS, has completed his third year at the Southern California College of Optometry in Fullerton. At the end of the coming academic year he will receive his OD degree.

Robert Proffitt, BA, continues to work with TRW as a computer programmer. He and Pattie are celebrating the birth of their first son, Matthew Walter, born January 24, 1985.

Dr. James R. Scott, BS, is staff dentist serving Spanish-speaking migrant farm workers in rural health clinics in the San Joaquin Valley.

Theresa Van Andler, BA, a supervising engineering inspector with the South Coast Air Quality Management District where she has worked for the last six years, was promoted to Supervisor for the Industry Operations Unit of the Enforcement Division at the Anaheim office. She is also enrolled at CSULB in the Graduate Center for Public Policy and Administration. Her daughter, Jacqueline, is a freshman at El Camino College and her son, Daniel, will begin junior high this fall.

1979

Virginia Rualo Bleich, BA, works as a chemist and lives in Buena Park, CA.

Dr. John Dillon, BS, is a practicing pharmacist in Salt Lake City, Utah.

Bassam Fasheh, BA, is employed at Northrop Corporation, Advanced Systems

Division, in Pico Rivera. "I work in Major Subcontracts, administering and managing subcontracts. The work is very interesting and challenging. My chemical education is a definite plus in this dynamic environment."

Stephen Fritch, MS, continues to work in the Long Beach Police Department Crime Laboratory. The laboratory is acquiring a new UV spectrometer and gas chromatograph.

Stephen Headrick, BA, and former CSULB stockroom clerk, is employed by United Space Booster, United Technology Corp., as a senior materials engineer. "I am currently working on advanced composite materials for space application. The entire family is returning to school this fall; I in the MS program in Engineering at the University of Alabama, Huntsville (UAH), Denise (a CSULB graduate with a BA in Liberal Studies) in the MS program in Administrative Science at UAH, Ryan in the first grade and Jeremiah in pre-kindergarten."

Thomas M. Johnson, BS, is furthering his modelling career in Paris and Hamburg. Between assignments he has found time to do extensive travelling in the USSR, Hungary, Turkey and western European countries.

Dr. Paul M. Jordan, BA, received his MD degree from the University of Southern California on June 2, 1985 and will be a resident at the USC-Presbyterian Intercommunity Hospital in Whittier, CA in family practice.

Robert Maiden, MS, has formed his own company, Killdee Scientific Glass Company, which specializes in repair of scientific glassware. Killdee is affiliated with West Coast Analytical Service, Inc. in Santa Fe Springs, CA.

Patrick McKay, MS, still works with Genentech but in the newly-formed Animal Health Research Department. "This new department will focus on genetically engineered products that will be useful to animals, whether combatting diseases or simply keeping them healthy." Pat and Mary have bought a new home in South San Francisco and have announced the birth of a son, Brian Patrick, born May 20, 1985.

Dr. Fred McKibben, MS, has finished his internship at County-USC Hospital and

will soon begin his residency there in anesthesiology. His wife, Dr. Diane Danis, is in a residency in pediatrics at County-USC hospital.

Dr. Anthony McLaughlin, BA, started his own dental office in 1983 in Redmond, WA. His wife, Maureen, is completing a master's program at Seattle University. "Maureen and I will be celebrating our 10th anniversary in August (1985); no children yet, but we are planning on adopting a dog."

Wendy Robbins, BA, is in charge of the analytical laboratory at Ceramics Process System in Lexington, MA. Her husband, Daryl, has just completed his MS degree in music at Boston University and plays trumpet for the Boston Pops Orchestra. They recently purchased a home in Natick, MA.

Duane R. Smith, BS, MS 1982, will begin work for the PhD at Cornell University this fall. He has been awarded a teaching assistantship, a research fellowship and a tuition scholarship. For the past several years Duane has been employed as a chemist with ARCO. His wife, **Vivian Lassiter Smith**, is a 1985 graduate of the CSULB Chemistry Department.

Gerald E. Wuenschell, BS, will complete his PhD at USC this year and will begin postdoctoral studies. "I have the impression that research has a half-life of 4 months; i.e., for the past year-and-a-half it seems that in four months I get rid of half of the remaining expected work, regardless of how much work remains."

1980

Robert K. Blair, MS, has been a research chemist with BioResearch, Inc. for five years and continues to work on tissue adhesives.

Dr. Victor Cachia, BA, received the degree of Doctor of Podiatric Medicine on May 19, 1985 for the California College of Podiatric Medicine.

David Chernik, BS, is now employed by Break-Free Division of Sandbar Corporation in Santa Ana, CA.

Brian C. Dubow, BA, is Project Engineer on the Cruise Missile Project/Program with General Dynamics Corp. in San Diego.

Dr. Kelly A. Hendrix, BA, received her DDS degree from Baylor College of Dentistry on June 1, 1985. She plans to practice in an associateship in Laguna Niguel, CA.

Dr. Don Honda, BA, is a pharmacist for Kaiser Pharmacy in Fairfield, CA. In November 1984 he and Linda Murakama, RN, were married. Don received his PharmD degree in 1984 from UC San Francisco. He has coauthored five papers on interfacial transfer of solutes across aqueous phase-liquid hydrocarbon interfaces and has also researched nutrition in AIDS patients at UC San Francisco Medical Center.

Dr. Tina Kishishita, BA, received her PharmD degree from UC San Francisco in 1984.

Robert E. Klenck, BA, is currently in his fifth year of medical school at USC and will receive his MD degree in 1986. He plans to enter a residency in orthopedic surgery. His wife, Susan, is Senior Customer Service Coordinator for IBM in Los Angeles.

K. Scott Marsi, BA, is employed as a chemical sales executive with GAF Corporation. Scott spent three weeks during the summer of 1985 with his wife, Linda, visiting Linda's relatives in Japan.

Dr. J. Mario Molina, BA (MD, USC), is interning at Johns Hopkins University in Baltimore, MD. He recently had a research paper published in *Diabetes*, coauthored with **Bob Klenck**, BA 1980, on work performed at USC School of Medicine. A second paper will appear in *Endocrinology*. Mario was the commencement speaker at the 1985 commencement at Long Beach City College. Mario's sister, **Martha**, was a 1985 BA graduate from the Department of Chemistry at CSULB.

Sharareh Nasser-Moaddeli, BA, MS 1984, works as an analytical chemist at IT Laboratories in Cerritos, CA.

Cheryl Shimazu, MS, and her husband, Hide, announced the birth of a son, Matthew Stephen, born November 18, 1984. Cheryl has returned to CSULB where she is a part-time instructor in the Chemistry Department.

Charlene Taylor, BA, is a medical student, completing her obstetrics-gynecology rotation earlier this year. She has worked at the Manhattan Beach Free Clinic.

Susan Torian, Student, has received her PharmD degree from UC San Francisco and is presently a pharmacy resident in psychiatry at Austin State Hospital at the University of Texas, Austin.

1981

Cathy Baker-Eckhart, BA, works as a chemist in an aerosol company in Santa Ana. She and her husband live in their new home in Whittier.

Michael W. Calhoun, BA, will begin his fourth year of dental school at USC this fall. Mike and Leslie Hutchins were married July 27, 1985.

Sean P. Grady, BA, is a quality assurance engineer for Hughes Aircraft Co. in Newport Beach and is responsible for setting up a process control laboratory for the manufacture of microelectronics.

Tom Harmon, BA, will begin his third year of medical school at the University of Pittsburgh this fall after a summer vacation in Europe. He reports that pathology has been his favorite course so far in medical school.

Janet Havey, BA, is a chemist with Harshaw/Filtrol in hydrodesulfurization research and development.

Jack Long, BA, continues as a medical student at the University of Cincinnati. Jack reports, "I am leaning toward pediatrics. My two months of pediatrics has been the highlight of the clinical biennium to date." His wife, Emily, is working on a degree in physical therapy and has qualified to run in the Boston Marathon.

Steve Miller, BA, works as a chemist with GeoResearch in Long Beach. His company is involved with environmental monitoring and toxic waste handling and disposal.

Dr. Laurene Duke Montgomery, BA, is currently practicing dentistry in Bellflower and Lawndale.

Erika Schneider, BS, is completing her PhD in physical chemistry at UC Berkeley. Her work is in solid-state NMR under the direction of Dr. Alex Pines.

1982

John R. Berg, BS, is a chemist for the Los Angeles Sanitation Districts.

Robin Bjorgan, MS, spent eight months in Japan working as a teacher/translator/technical writer and a stint in France learning conversational French. He has since returned to his former position on the technical staff at Hughes Aircraft.

Gary Clevenger, BA, MS 1983, continues as a PhD candidate at UCLA in organic chemistry. He is a member of Dr. Michael Jung's group. During the Olympics he and his wife, Michelle, were interviewed for the "Olympic Scene--A Reporter's Notebook" column in *The Los Angeles Times*, August 7, 1984.

Dr. Marly K. Eidsness, BA, received her PhD in chemistry from the University of Cincinnati and is presently a post-doctoral associate in the Department of Materials Science at Stanford University, pursuing bioinorganic research on metalloenzymes. She is studying the structures of metal center active sites in enzymes by X-ray absorption spectroscopy; enzymes under study are nitrogenase and carbon monoxide dehydrogenase.

Mario Fernandez, MS, continues as a PhD candidate in organic chemistry at UC Irvine and earlier this year attended an international scientific meeting in organic chemistry in his home town of Monterey, Mexico.

Joseph C. Kaufman, BS, is working as a molecular biologist at the Beckman Research Institute of the City of Hope. He is investigating the application of *in situ* nucleic acid hybridization for the detection of cytomegalovirus in bone marrow and the presence of elevated levels of oncogene transcripts in lung carcinomas.

Kevin Lucey, BA, is employed with Minirem, a company which specializes in the analysis of waste materials.

Annie N. Luu, BS, works as a chemist at the Chemical Division, Beckman Instruments in Brea, CA. Annie was also a part-time lecturer in the Department of Chemistry at CSULB.

Dexter Morris, Student, an ex-senator for the School of Natural Sciences at CSULB, is presently entering his third year of optometry school at the University of California, Berkeley.

Chandrika Patel, MS, is working for Douglas Aircraft Company in Long Beach as an analytical chemist.

Terry L. Schneider, MS, after working 3 1/2 years at the Space Division of Rockwell International in Downey, accepted a position as a materials engineer in the Advanced Composite Automation and Materials Group with Boeing Commercial Airplane Co. in Washington. Currently, he is lead engineer for an R&D group in graphite/thermoplastics composite materials and processes for future aircraft applications. He and Mrs. Schneider, a nurse, love Washington but miss California and sun and beaches.

Douglas Schoon, BA, received a MS in Chemistry in 1984 from UC Irvine and is now employed as R&D manager for Bacon Industries of California conducting research in the field of rubber modified epoxy resins.

William Shoemaker, BS, has completed his third year of medical school at UC San Francisco. He is presently considering pediatrics, internal medicine and surgery as areas for specialization.

Diana C. Talpos, BA, is a medical student at UC Irvine. She has a daughter, Jessica Nicole, born December 5, 1984. Diana is enrolled in a joint MD/PhD program which will lead to a PhD in psychobiology in addition to the MD.

Elizabeth Woods, BS, has completed her first year of medical school at Baylor College of Medicine. "I've enjoyed it a lot. It's a lot of work, but I'm learning so much." Her husband, Gerald, teaches high school in Houston, and their daughter, Emilee, two, is talking "with a Texas drawl."

1983

Marc Barajas, BA, will be entering his fourth year of pharmacy school this fall at UC San Diego. His previous three years were spent at UC San Francisco.

Marlene M. Corriere, BA, received her MS in physiology from Georgetown University in 1985. She has been accepted to medical school at Georgetown University in Washington, DC, and will begin her medical studies in August, 1985.

Tadasha Culbreath, BA, is a science and physical education teacher at Manual Arts High School in Los Angeles, CA.

Don Dillon, BA, has completed his second year at dental school at USC.

Brian Claudini, Student, began chiropractic school at Los Angeles Chiropractic College on January 2, 1985.

Paul Mosher, BS, works as a chemist with Hitco in Gardena, CA.

Michael Mosig, BA, has completed his first year as a dental student at Georgetown University in Washington, DC.

Steve Pentoney, BS, has completed his second year as a PhD candidate in analytical chemistry at UC Riverside. He was named Outstanding Teaching Assistant for 1983-84 and held the Shell Oil Research Fellowship for 1984-85. Steve was recently advanced to candidacy for the PhD and is participating in research in Dr. Peter R. Griffiths' laboratory in the area of development of high sensitivity FT infrared spectroscopy.

Les Phahl, BA, is studying for his master's degree in enology at Fresno State University.

Dean C. Read, BA, has just completed his first year teaching in the Mathematics and Science departments at Gardena High. He has a daughter, Christina, born June 20, 1983.

Armando G. Samaniego, BA, will begin his third year of medical school at Harvard University. He has been appointed to the Harvard Health Professions Admission Committee and the Harvard Medical School Admissions Committee. As a teaching fellow he teaches endocrinology during the summer to disadvantaged college pre-professionals. He also served as co-chair for the National Chicano Health Organization. He is involved in research designing a technique to culture glomerulosa cells and is currently spending three days each week at the Massachusetts General Hospital studying clinical medicine.

1984

Kathleen Allen, BS, is a chemist with Hitco in Gardena, CA.

Lori Childres, BA, has completed her first year of dental school at Washington University School of Dental Medicine in St. Louis, Missouri.

David N. Cook, Student, is beginning the second year of the PhD program in biochemistry at UC Berkeley where he is

working with Dr. John Hearst. "My projects involve the regulation of genes for photosynthetic protein complexes in a photosynthetic bacterium. I am attempting to isolate an RNA polymerase enzyme capable of transcribing photosynthetic genes, and I am studying the regulation of several genes based on the structure of a messenger RNA produced from them.

Jean-Bernard Durand, Student, has completed his first year of medical school at the Medical College of Wisconsin in Milwaukee. "I was well aware of the meaning of hard work. However, medical school has added a whole new dimension to the meaning of the word!" Jean says, "Please inform your students that they will continue to see acid-base chemistry, the aldol condensation, redox reactions and reaction kinetics throughout medical school and in pharmacology."

Dwight Gergens, BS, is a graduate student in organic chemistry at UC Irvine, completing his first year of graduate work.

Kathy Helgoe, BA, has just completed her first year as a medical student at UC San Diego.

Scott Lothamer, BA, will begin his second year of medical school at UCLA in the fall of 1985.

Craig Owens, BA, has been accepted into medical school at Tufts University.

Joanne Parks, Student, has completed her first year of medical school at the University of Southern California.

Jeffrey Roberts, BA, has completed his first year of medical school at UC Davis.

Theresa Rohr, BA, has completed her first year of medical school at Cornell University, New York campus. She says, "New York City takes some getting used to. Almost everyone in my class is from the East. The people here are exceptional, but they've made me feel welcome."

Yut C. Lan Siet, MS, works as a quality control chemist with a pharmaceutical company in Gardena, CA.

Paul Serra, MS, has been accepted into medical school at UC Davis.



Chemistry Alumni employed at the Electron Dynamics Division of Hughes Aircraft Company, Torrance, CA. Left to right: Michael Allison (1985), Paul Battaglia (1964), Paul Morrow (1977).

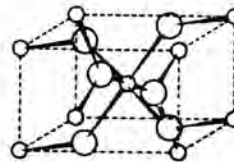
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Recombinant DNA May be the Secret to Better Diagnoses.

by Jordan Barnett

Editor's Note: The following article about Dr. A. J. "Jack" Berry, a member of the Chemistry Faculty, is reproduced in its entirety from *DISCOVERY*, a CSULB publication. It was written by Jordan Barnett, a 1985 graduate of the School of Humanities and a staff writer for CSULB publications. Ms. Barnett is presently a graduate student at the University of Oregon, Eugene.

For centuries doctors have diagnosed disease by questioning and physically examining patients. The color and texture of the patient's fingernails, the way the patient gestures when asked to point out where it hurts - skilled diagnosticians regard these as valuable clues indicating the nature of the patient's disorder. Although modern physicians question and examine their patients, they also rely on diagnostic tests performed in clinical laboratories. Lab tests can confirm diagnoses, provide evidence in baffling cases and help doctors determine appropriate treatments.

Effectiveness is not the only criterion on which lab tests are judged, according to clinical biochemist Dr. Jack Berry. Berry, who develops and refines diagnostic tests for use in clinical laboratories, must also consider such criteria as difficulty, cost, time and danger. He explains that most diagnostic tests originate in research labs - and what works in a research lab is not always suitable for routine use in a clinical lab.

For example, one of his current projects involves a test to help doctors select appropriate treatment for patients suffering from Grave's disease. While the available test is effective and has already been modified (reducing the time it takes from three or four days to a single day), it is still too time-consuming and expensive to be used in clinical labs.

An immune disorder, Grave's disease affects the thyroid gland. Antibodies stimulate the thyroid, causing it to over-produce hormones and creating a hyper-thyroid condition. Treatment depends on the level of antibodies present in patient's blood serum samples.

The current test for Grave's disease requires the use of pig's thyroid gland. Patient's blood serum samples are placed on slices of pig thyroid, and the mixture incubates for four hours. Then the radio-immunoassay (RIA) technique is used to measure the amount of thyroid hormone



Dr. Berry's Clinical Chemistry Research Group. Left to right back row: Jim Loifgren, Research Assistant; Dr. A.J. Berry; Hakim Kouros, Research Assistant; Dr. Peter Knight, Postdoctoral Associate. Front Row: Debbie Schwyter, Graduate Student; Anne Tolles, Graduate Student.

produced by the pig's gland. The thyroid gland must be used within two hours of removal from the pig's body. A lab technician must drive to the slaughterhouse (arriving by six a.m.), purchase a gland and rush it back to the lab.

Berry is developing a method of growing thyroid cells in tissue culture. The method would enable technicians to grow thyroid cells continuously in the lab, eliminating the need for whole glands.

Berry, a professor of biochemistry, conducts his theoretical research at CSULB but travels to specially equipped off-campus labs for any experimental work with infectious diseases. Much of his research is funded by Specialty Laboratories of Los Angeles, which provides supplies, equipment and stipends for graduate student assistants. The CSULB School of Natural Sciences helps Berry by providing him with an undergraduate assistant through the Minority Access to Research Careers (MARC) program.

Berry earned his Ph.D. in biochemistry from Ohio State University and then interned two years at the university's medical center.

His most recent research involves the application of genetic engineering technology to the diagnosis of illness. Researchers are now using what are called DNA probes to identify infectious illness.

DNA probes are DNA fragments that can be used to identify any infectious organism. This is how the probe works: The DNA molecule consists of two linear strands intertwined to form a double helix. Each strand is composed of alternating sugar and phosphate groups called nucleotide bases. The nature of an organism is determined by the sequence of nucleotide bases in its DNA. When researchers want to construct a DNA

probe, they begin by selecting the nucleotide sequence that characterizes the infectious organism to be identified. They isolate and clone (make numerous identical copies of) this sequence.

To test for infectious disease, researchers mix the single-stranded DNA probe with single strands of DNA from a patient specimen. If the strands bond, then the infectious organism is present; the patient has the disease.

Until researchers like Berry came along there was a major drawback to this revolutionary type of diagnostic testing. Before DNA probes can be used, they must be labeled so they can be detected when bonding occurs. Until recently, probes had to be labeled with radioactive isotopes. The procedure was hazardous and difficult, and it had to be repeated frequently due to rapid decay of the isotopes. These problems practically ruled out routine use of the probes. Part of Berry's research focuses on developing probe labels that are not radioactive. New labeling methods would allow more widespread use of the probe technique.

DNA probes can be used to diagnose genetic diseases like Huntington's chorea, as well as infectious diseases like hepatitis B, herpes simplex and salmonella.

Recently Berry spent eight weeks studying recombinant DNA techniques under UCLA's, chairman of microbiology and immunology, Dr. Jack Stevens, and the March issue of *Diagnostic Medicine* magazine featured a cover article written by Berry and Dr. James Peter of Specialty Laboratories in which they describe the use of DNA probes for diagnosis.

As the introduction to the article points out, research like Berry's "may soon replace traditional testing methods, saving time and money."