

華美化學與化工學會

Chinese American Chemical Society (CACS)



Dr. Jesse C. H. Hwa 1924 – 2005

July, 2005

◆ Message from the Chairman	1
◆ In Memory of Dr. Jesse C. H. Hwa	3
◆ Society News / Past Activities	
CACS National Events at ACS National Meeting in San Diego and AIChE Spring Meeting in Atlanta	6
CACS-Great Lakes Chapter 2005 Annual Conference	7
TriState Chapter Annual Symposium	9
◆ Awards and Recognition	
Ralph Yang elected to National Academic of Engineering	10
◆ Profiles	
Commitment to Excellence – Kristine Chin, Publisher and Editor-in-Chief of CEP	11
2005 ACS Award Winner for Creative Work in Synthetic Organic Chemistry – Prof. Chi-Huey Wong	14
Swordsman in Nano-World – Prof. Peidong Yang	15
◆ Features	
Beyond the Lily Pond: An Endeavor	18

CACS OBJECTIVES

The purpose of the CACS is to encourage the advancement of chemistry and engineering in all their branches, to promote research in the chemical sciences and technology, to improve the qualifications and occupational opportunities of its members, to facilitate professional contacts, and to promote interactions with other scientific communities. The CACS is a non-profit organization and does not have political affiliation or regional bias.

CACS NATIONAL NEWSLETTER

The Newsletter is for our members to share our thoughts, information and experiences. All the members are invited to contribute. In general, we solicit articles that are

- informative reports beneficial to most members
- easy-to-read, yet insightful, introduction to specialized areas
- views demonstrating innovation and originality
- provocative views to make people think.

We would like also to report on the accomplishments of our fellow professionals. In addition, we need and welcome write-ups on career pointers and reminiscences, articles to introduce a person or a company, reports on jobs, meetings and activities. There is no fixed format. The Newsletter can be as rich and unique as how all our members make it.

Announcements about job openings and positions desired, in C&E News format, should be sent to the address below.

The articles published here reflect the perceptions of the speakers, reporters, or writers. Errors do occur. For comments and corrections, please write to the address below.

Submission of Articles:

Submit manuscripts to: Dr. Lin Li, UOP, 25 Algonquin Road, Des Plaines, IL 60017, or electronically to Lin.Li@uop.com.

Acceptance of Articles:

The newsletter committee reserves the right to accept, reject, and edit manuscripts.

Newsletter Committee:

Dr. Lin Li, UOP LLC (Team Leader)
Dr. Bing Sun, UOP LLC (local Chapter)
Dr. Patricia Sun (Profiles)
Dr. Yuchun Wang (Features)
Dr. Mindi Xu, Air Liquide (Telenews)

CACS Officers (2005)

PRESIDENT

Dr. David Y. Chang, ExxonMobil
Email: dychang_08502@yahoo.com

FIRST VICE-PRESIDENT

Dr. Yi Hua (Ed) Ma, Worcester Polytechnic Institute
Email: yhma@wpi.edu

IMMEDIATE PAST PRESIDENT

Dr. Teh C. Ho, ExxonMobil
Email: teh.c.ho@exxonmobil.com

SECRETARY

Dr. C. Wilson Xu, Sloan-Kettering/Cornell Medical School
Email: xuc@mskcc.org

TREASURER

Dr. Chu-an Chang, Applied Biosystems
Email: changcn@appliedbiosystems.com

BOARD OF DIRECTORS

Dr. Chu-an Chang, Applied Biosystems
Prof. Phoebe K. Dea, Occidental College
Prof. W. S. Winston Ho, Ohio State University, Chair
Email: ho@che.eng.ohio-state.edu
Dr. Shaw G. Huang, Harvard University
Dr. Jesse Hwa, Hwa International
Prof. Kam W. Leong, Johns Hopkins University
Dr. Norman N. Li, NL Chemical Technology
Past Chair, Email: NLChem@aol.com
Prof. Ralph T. Yang, University of Michigan
Prof. Daniel I. C. Wang, MIT

Website for CACS

www.cacshq.org

Website for CACS-Tristate Chapter

www.tristatecacs.org

Website for CACS-Great Lakes Chapter

www.glcacs.org

Message From the Chairman

W.S. Winston Ho

Greetings! I would like to take this opportunity to thank our CACS President, Dr. David Chang, our CACS Vice President, Dr. Yi Hua Ed Ma, and our Treasurer and board member, Dr. Chu-An Chang for taking care of two major events successfully this Spring, one at the National Meeting of the American Chemical Society (ACS) in San Diego, CA and the other at the Spring National Meeting of the American Institute of Chemical Engineers (AIChE) in Atlanta, GA. On behalf of our Society, I would like to thank our two CACS Keynote Speakers at these two meetings, Professor Phoebe K. Dea, Fletcher Jones Professor of Chemistry and Associate Dean of the College, Occidental College, Los Angeles and Professor Jeffery Hsieh, Director of Pulp and Paper Engineering, School of Chemical Engineering, Georgia Institute of Technology, Atlanta. Professor Dea gave a lecture on “Beyond the Lily Pond: An Endeavor” at the ACS meeting on March 14. Professor Hsieh presented his lecture on “From Industry to Academia” at the AIChE meeting on April 11. Both lectures were fantastic and well received.

David, Ed, and Chu-An have also made special arrangements for two upcoming major CACS events this year: (1) ACS National Meeting in Washington, DC in August and (2) AIChE Annual Meeting in Cincinnati, OH in October. At the ACS meeting, we will have our CACS social hour and banquet, where our invited Keynote Speaker, Professor Bert Ramsay, Emeritus Professor of Chemistry, Eastern Michigan University, Ypsilanti, MI, will present an after-dinner speech on “Chinese Chemistry in Context: Some Observations on the Early Introduction of Chemical Nomenclature in China”. At the AIChE meeting, we will have our CACS banquet, and our invited Keynote Speaker is Professor John C. Chen, Carl R. Anderson Professor, Department of Chemical Engineering, Lehigh University, Bethlehem, PA and AIChE President Elect, 2005. Professor Chen will give a speech on “Chemical Engineering and AIChE – Today and Tomorrow”. For these two events, please see the detail information in the forthcoming CACS activities in this issue of the Newsletter. If you are going to attend one or both of these national meetings, please attend the CACS activities to renew our fellowship and to make friends with our fellow scientists.

As you may know, it is indeed quite a large amount of work to organize events for all the four national meetings each year, particularly in view of the fact that everyone serves at CACS is on a voluntary basis. As usual, CACS local chapters have complete freedom to organize any meetings they want.

As you may have heard, Dr. Jesse Hwa passed away quietly on July 2 in his hometown in Stamford, CT. He was the founder of our CACS, and he contributed significantly to our Society. Even just before he passed away, he still had CACS in his mind. It is very sad that we have lost a great supporter for our CACS.

This issue of the CACS Newsletter was under the leadership of Dr. Lin Li of UOP LLC, who is our present CACS Newsletter Team Leader. He and his team members, including Dr. Bing Sun of UOP, Dr. Patricia Sun of General Electric, Dr. Yuchun Wang of Cabot Corporation,

and Dr. Mindi Xu of Air Liquide, have continued to work hard for our Newsletter. Many thanks for their and other team members' efforts for this issue. If you have any Newsletter items, please send them to Lin or any of the team members.

We really appreciate all the support that you have given to our Society and will continue to do so. Thank you very much for all of your support. Have an enjoyable, great summer!

Chinese Chemistry in Context: Some Observations on the Early Introduction of Chemical Nomenclature in China

CACS Keynote Speech at ACS National Meeting, Washington, DC, Monday, August 29, 2005

Dr. Bert Ramsay

Emeritus Professor of Chemistry, Eastern Michigan University
Ypsilanti, MI 48197 (Email: bramsay1@emich.edu)

Abstract

The introduction of “modern” chemistry into China in the middle of the 19th century posed some interesting challenges to Chinese chemical nomenclature. Foremost was the impracticality of converting the Western alphabetical chemical nomenclature to pictographic writing. The representation of chemical elements as Chinese characters was the most interesting challenge. A rather heuristically unique system evolved and was in place by the end of the 19th century – even before the publication of the first periodic table in China in 1901. The results of the first attempts at organic chemical nomenclature in China were in many respects more systematic than the current IUPAC system.

Dr. Bert Ramsay received his Ph.D. in Organic Chemistry from the University of Pennsylvania in 1960. He was a Professor of Chemistry at Eastern Michigan University until his retirement in 1995. His earlier laboratory research was in the area of physical organic chemistry and photochemistry. During the past 30 years, his principal research has been in the history of stereochemistry – more particularly in the early use and development of molecular models. His interest in Chinese chemistry was stimulated by his position as a visiting professor in China in the fall of 1986 – primarily in Shanghai teaching stereochemistry at East China Normal College and Shanghai Teachers College. His most recent research into the early history of the introduction of western chemistry into China was promoted by his enrollment in beginning Chinese language classes. He still struggles to learn this interesting language.

In Memory of Dr. Jesse C. H. Hwa

by Dr. Teh C. Ho

Jesse Hwa, founder of the CACS, died of cancer on July 2, 2005. He is survived by his wife Dolores, three children, and three grandchildren.

Borrowing from Bob Buford's book "*Finishing well*," one can characterize Jesse's life as going through four *S*-stages. He *struggled* as a junior chemist and then *succeeded* to become a major force in the technical community. He then redeployed himself to do something *significant* by helping others. As his journey drew close to its final destination, he *surrendered* himself to God.



Jesse was born in Hankow, Wuhan, on July 12, 1924. In 1945 he obtained a B.S. degree in chemistry from St. John's University in Shanghai. He was among the first group of postwar foreign students to come to America in 1946 for advanced studies. In 1949 he married Dolores Lowe, a second-generation Chinese American brought up in a Baptist church in Chicago's Chinatown.

He joined the Rohm and Haas Co. in Philadelphia as a research chemist after completing his Ph.D. in chemistry at the University of Illinois, Champaign/Urbana, in 1949. In an interview with Tzy Pong of *Chinese American Forum* in 2002, Jesse reflected "... those research years in the 50s and early 60s were difficult for me, a foreign-born scientist trying to advance myself in the chemical industry. The only thing I could do was to dig a hole in science, without a mentor. Finally, I decided to change. Armed with a strong technical training, I found a managerial job in 1963 in the then Stauffer Chemical Co. In later years, I have a particular sympathy for many China-born chemists who came after me and faced the many similar frustrations in job satisfaction and advancement, and I set out to help them."

At Stauffer Chemical Co., Jesse advanced from a section to department manager in polymers, then to Director of Development, addressing a wide range of chemical technologies and businesses, and later to Corporate Project Director, with responsibilities for creating new businesses.

Jesse's job at Stauffer Chemical Co. led him to many activities within the ACS. In 1973, he became the Chair of the Division of Polymer Chemistry (POLY). He played leadership roles on the International Activities Committee, Advisory Board of Advances in Chemistry Series, Division Councilors Caucus, and Volunteer Career Consultant. He received special service awards from POLY. Outside of the ACS, he was on the Technology Committee of National Association of Manufacturers Advisory and on the Boards of Material Research Institutes at the Universities of Massachusetts and Connecticut. He was the chair and a lecturer on courses on "Research Management", sponsored by the American Management Association.

What prompted Jesse to found the Chinese American Chemical Society (CACS)? "During ACS meetings in the 70s, when there was a large influx of Chinese chemists from Taiwan, many of them walked past each other. They just made eye contact and that was all. I felt we ought to get to know each other as we shared something in common," Jesse told Tzy Pang during the 2002 interview. In the spring of 1979, Jesse knew in advance that a Chinese delegation of chemistry would attend a Pacific Basin Chemical Congress in Honolulu, Hawaii. He arranged a luncheon reception for that delegation during that meeting. About 70 Chinese-American chemists showed up as well. It perhaps was the first time that such a large group of Chinese chemists outside of China sat down and talked to each other. Three similar luncheons during national ACS meetings followed. "With the attendee's enthusiastic response," Jesse said, "I then set out to organize CACS, mostly by writing to people whom I knew. Like rocketry, the lift-off was most difficult, as it required extra thrust. On April 1, 1981, CACS was formally inaugurated during the National Meeting of ACS in Atlanta, Georgia. I was elected its first President."

After Stauffer Chemical Co. was acquired by another company and later broken up into pieces in 1985, Jesse left Stauffer and founded his own company, Hwa International, Inc., which provided consulting services and international technology transfer. Several years later, things took a sharp turn. Jesse wrote to his friends: "In 2000, I was offered a consulting contract that was right up my alley. Then I came to grips with a decision – What satisfaction do I wish to have if I should die in a few years, having helped a company successfully develop a new business in plastics, or having enjoyed life in a way that I want to? I find contributing to society rewarding. Hence, I declined the offer and called it quits to my career." At that point, Jesse did not retire, he just redeployed himself. He wanted to use his knowledge and experience to add values to the lives of junior chemists and chemical engineers.

Jesse's career was rich with recognition and awards for his contributions to polymer chemistry, research management, technology partnerships, and service. However, his overarching goal was to make a difference in the lives he touched. He lived by that creed to the very end of his journey. While in pain and suffering during the past eighteen months, Jesse often inquired about various issues surrounding the CACS. He also read the Bible every day, whenever his strength allowed. "The words from the Bible comfort me," he told some of his friends in an e-note.

Jesse left a shining legacy of progress for Chinese-American chemists and chemical engineers. We will miss him and try to emulate his selfless efforts to make differences in others' lives.

Editor's Note: Jesse wrote this article on June 2, 2005. We here publish it posthumously.

CACS Updates Its Archives at the Chemical Heritage Foundation

Dr. Jesse Hwa

The Chemical Heritage Foundation (CHF) is the premier nonprofit organization on the history of chemistry today. It started out some 20 years ago as a pilot project of ACS with \$50,000 seed money. Arnold Thackray, then professor of history of chemistry at the University of Pennsylvania, was recruited to head the project. He received strong support from the Penn group. Over the years, CHF has grown from some spare rooms at Penn, to a world renowned institution of its kind in a shiny building in the historical district of Philadelphia. This transition was aided by major bequeath (Don Othmer gave \$200M after his death) and endowments. Today, thousands sent in yearly contributions to support it. CHF address is 315 Chestnut St., Philadelphia, PA 19106 (www.chemheritage.org).

CHF publishes a quarterly magazine, a glance of which illustrates the scope of their activities. CHF collects pictures, oral history (e.g., from C. S. Marvel, Paul Flory), books, selective serials, audiovisual materials, artifacts, ephemera, non-print materials, bios, and corporate history. Their archive section houses thousands of indexed boxes.

I had a conversation with Thackray (now President) in the early 90s. He expressed an interest to receive archival material from CACS. That suited our needs well, as CACS is a small organization and does not have a home for its operations. My own file on CACS, probably the most complete set of documents on CACS at the time, measured over one foot in my cabinet. To deposit these documents in CHF for permanent safekeeping seemed logical to me and the Board. The legal arrangement is that the donated material will become the property of CHF. The archival material may be on loan to members of CACS.

In 1995, I organized my file and sent it to CHF. The documents are housed in seven indexed boxes. In 1997, CHF published a six-page Finding Aid (index) to the Archives of CACS.

Teh C. Ho (CACS President 2004) collected additional material from me and Chu-An Chang (Treasurer) to update the deposit. On May 26, 2005, he visited CHF and deposited the following materials: CACS Newsletter (Jan. 1998- Feb. 2005), CACS Files and Announcements (1981, 1994, 1997), CACS-Northern California Chapter Newsletter (1983-1988, 1991), CACS-Northern California Chapter Working Committee Meeting Minutes (1984-1986), CACS-Northern California Chapter Career Development Workshops (1984, 1988), 1997 CACS Membership Directory, National CACS (1994-1997), New York Tristate Chapter (1989-2003), Photos of CACS/ACS activities, photos of activities of ACS Polymer Chemistry Division, Collective Articles of Jesse C. H. Hwa (2002-2004), and Interactions of Jesse Hwa with the People's Republic of China (1975-1994).

Society News / Past Activities

CACS National Events at ACS National Meeting in San Diego and AIChE Spring Meeting in Atlanta

The CACS held its traditional banquets and lectures concurrently with the 229th ACS National Meeting in San Diego and the AIChE 2005 Spring Meeting in Atlanta. The ACS President-Elect Ann Nalley attended the banquet at San Diego event, along with about 60 CACS members and friends. Standing in for CACS President David Chang, Guang Cao (President-Elect of CACS TriState Chapter) thanked the continued support that ACS had provided to CACS. He read a note from the current ACS president, Bill Carroll, that expressed his support for the cause of CACS and his congratulations for the effort of CACS members. Dr. Ann Nalley gave a brief speech, emphasizing that strengthening chemical education will be the theme of her presidency. She pointed out that CACS should have an active role to play in this theme. Befittingly, the evening's CACS Keynote Speaker was Prof. Phoebe Dea, who had just received the ACS Award for Research at an Undergraduate Institution. In her presentation, entitled "Beyond the Lily Pond - An Endeavor," she stressed the need for Chinese chemical professionals to go beyond academic excellence, to get involved in other aspects of professional activities. She drew the liveliest response from the audience when she repeated the word "participation." The gathering ended with the promise from the participants to get more involved in CACS activities

The Atlanta events were organized by Prof. Yi-Hua Ed Ma, CACS Vice-President. Professor Jeffery Hsieh, Director of Pulp and Paper Engineering, School of Chemical Engineering, Georgia Institute of Technology, Atlanta, GA, presented the CACS Keynote Speech, "From Industry to Academia", and addressed the problems one might face during career transition which is usually most crucial for a successful career. With examples from his substantial experiences in Prof. Hsieh's speech stirred considerable interest from the audience, and the discussion continued through the entire dinner.



CACS members got together at the AIChE Spring Meeting in Atlanta. Front: Prof. Hsieh, Dr. Norman Li, Prof. and Mrs. Ma.

GLCACCS Annual Conference, “Shaping the Future”, in Abbott Laboratories

Great Lakes Chapter of CACS (GLCACCS) successfully held its 9th Annual Conference, themed “Shaping the Future”, in Abbott Laboratories, IL on June 11, 2005. Over 100 people attended the meeting; some of whom came from as far as an 8-hour drive away. Led by the Conference Chair Lin Li, CACS Newsletter Team Leader, and the GLCACCS President Ling Ye, the conference organization committee managed to pack together keynote speeches, technical presentations, student poster competition, job fair, career counseling session, and dinner bouquet in the one-day event to satisfy various needs of the participants.

The invited speakers, all are distinguished professionals in industrial or academic background, delivered very inspiring and interesting presentations during the conference. The topics covered a wide range of fields, from AIDS prevention and treatment to next generation automobiles, from career planning and development to doing business in Russia and China. The presentations were performed in a highly interactive atmosphere.



Ms. Wenjin Liu (middle) and Dr. Ling Ye (right, President of GLCACCS) present an award certificate and check to 1st prize winner Xiaoyu Zhang of Northwestern University.



GLCACCS leaders with conference speakers. From left: Dr. Norman Li (Board Chair), Dr. Jane Li (Board Member), Mr. Norm Gisldorf (Senior VP of UOP), Dr. Ling Ye (President), Dr. Simon Tung (GM Technical Fellow), and Dr. Lin Li (Conference Chair).

The highlight of the conference was the student poster competition. It was the very first one that GLCACCS ever hosted in the annual conference. The purpose is to better serve the needs of the increasing number of young GLCACCS members, primarily Ph.D. students and post-docs. The competition was organized, with the help of other committee members, by student members Wenjin Liu, GLCACCS Secretary General, and Jin Shu and Ni Ming, GLCACCS Student Chairs of Northwestern University and Illinois Institute of Technology, respectively. To direct more attention to this brand new program of the conference, the poster presenters were each given a 3-minute opportunity to “advertise” their work orally before the regular 2-hour poster session over lunch. Three winners were selected based on votes of conference attendees, and each winner was awarded a certificate for the prize as well as a cash prize, sponsored by GLCACCS. The winners were:

1st prize winner: Xiaoyu Zhang, Northwestern University (\$300)

2nd prize winner: Jinghua Xu, Michigan State University (\$200)

3rd prize winner: Yaoqiu Zhu, Northwestern University (\$100)

Along with the student poster competition were the job fair and career counseling. HRs and other volunteers from Hospira, Inc., Abbott Laboratories, and UOP, LLC performed onsite recruiting as well as provided career advice and mentoring to students and junior professionals.

Over 30 participants attended the dinner bouquet at the end of the conference. At the bouquet, GLCACS President Lin Ye honored Richard Huang, the former Secretary General, Lifetime Award for his long time contribution to GLCACS.

Chemical Engineering and AIChE – Today and Tomorrow

CACS Keynote Speech at AIChE Annual Meeting, Cincinnati, OH, Monday, Oct. 31, 2005

Dr. John C. Chen

Carl R. Anderson Professor
Lehigh University, Bethlehem, PA 18015 (Email: jcc0@lehigh.edu)
AIChE President-Elect, 2005

Abstract

Professor Chen will discuss the state of chemical engineering profession, its likely changes, and the consequent evolution of our Institute. Professor Chen also will present some thoughts on how Chinese scientists and engineers in the USA, and CACS as a group, can most effectively help themselves and the chemical enterprise in these changing times.

Dr. John C. Chen has just retired as the Carl R. Anderson Professor of Chemical Engineering at Lehigh University. His professional experience includes process engineer at Lummus Company, research group leader at Brookhaven National Laboratory, and professor, department chair, college dean, and research institute director at Lehigh University. His chemical engineering degrees are BChE from the Cooper Union, MS from Carnegie-Mellon University, and Ph.D. from the University of Michigan. His research has received awards from AIChE, ASME, the Alexander von Humboldt Foundation, and the Max Planck Society. A 40+-year member and Fellow of AIChE, he has served in a number of elected roles for this institute, including Chair of Heat Transfer and Energy Conversion Division (1983), Chair of National Heat Transfer Conference (1988), Chair of Particle Technology Forum (1994), Director on AIChE Council (1994-1997), and Institute Secretary (2001-2003). He was elected in 2004 as AIChE President-Elect, 2005, and he will succeed to the presidency in 2006.

Tri-State (NY/NJ/CT) CACS Annual Symposium Held in New Jersey

Tri-State (NY/NJ/CT) CACS held its annual symposium on June 25, 2005, at Shering-Plough Research Institute, Kenilworth, New Jersey. The theme of this symposium was “Chemical and Pharmaceutical R&D in a Global Environment.” ACS president Bill Carroll attended the symposium and gave the opening presentation. He gave a prospective of the American chemical enterprise in 15 years, laying out the trend of globalization and its effect on American chemical industry, government policies, and research at academic institutions as well as government labs. His message was that change is inevitable, and the American chemical enterprise is better off prepared to face the challenges. He also spoke of his recent visit, as a part of an ACS delegation, to China, pointing out some of the common issues he had noticed that face the two countries (drawing students’ interest to science, for example).

Other speakers at the symposium were either top managers at industrial research labs or successful chemical entrepreneurs of Chinese origin. Dr. Rene Imwinkelried, the vice president of Process Chemistry at Shering-Plough, gave a talk on “How China Will Become a Valuable Outsourcing Partner for Drug Development,” in which he remarked that the trend toward globalized effort in the process of drug development is inevitable. Outsourcing is an effective way of improving a company’s competitiveness. Pharmaceutical companies should seize the opportunity and benefit from it.

In a joint presentation, Dr. Ge Li, CEO of WuXi Pharmatech, and Dr. Richard Soll, CSO of Targegen, shared their international collaborative experience with the audience. Mr. Paul Guo, CEO of AstaTech, spoke on his experience in managing human resources in an international company. Dr.



Dr. Wuping Ma, president of SynChem, told the audience his thought process in starting up and growing his company, which changed from a venture for personal success to company success for all its employees. His company currently employs 70 people, 20 in Chicago and 50 in Shanghai.

A rarity at this symposium was a professor entrepreneur, Prof. Xumu Zhang of Penn State University. His world-class research in chiral catalysis led to the founding of ChiralQuest in 2000, which is listed in NASDAQ. Prof. Zhang described the product line of ChiralQuest and

outlined its business plan, which included expanding operations to China. His story was an inspiration to the symposium attendees.

“This year’s symposium had the strongest program in all the years of Tri-State CACS symposium,” remarked Dr. Yuguang Wang, the president of Tri-State CACS. Twelve speakers offered an audience of 150 a full day of informative perspective on R&D in a changing environment. “Our motto for the symposium is,” according to Dr. Wang, “that the theme must be the most interesting, the speakers must be top-notch in chemical and pharmaceutical areas, and the audience must benefit from it.”

Awards and Recognitions

Dr. Ralph T. Yang elected to the National Academy of Engineering

Dr. Ralph T. Yang, a member of the Board of Directors of CACS and the Dwight F. Benton Professor of Chemical Engineering at the University of Michigan, Ann Arbor, was elected to the National Academic of Engineering in 2005. Election to the National Academy of Engineering is among the highest professional distinctions accorded an engineer, and Dr. Yang was cited “for the development of the theory, methods, and materials for the removal of environmentally hazardous compounds from transportation fuels and other difficult separations.”

Professor Yang received his B.S. in ChE from the National Taiwan University in 1964 and both his M.S. and Ph.D. from Yale University in 1968 and 1971, respectively. Professor Yang joined the University of Michigan in 1995 as Professor and Department Chairman after serving on the faculty of the State University of New York (SUNY) for 17 years, and as department chair for 6 years. He recently completed a five-year term as the Department Chair and has returned to full time teaching and research. He has also served as a Program Director for the National Science Foundation, and as a Director of the Separations Division of AIChE. He is a Fellow of the Institute and received the AIChE W. H. Walker Award (for Excellence in Contributions of Chemical Engineering Literature) in 1991, the AIChE 1996 Institute Award for Excellence in Industrial Gases Technology, and the AIChE 1997 Clarence Gerhold Award (from the Separations Division). He also received the biennial SGL Carbon Award from the American Carbon Society in 1999 for the Most Significant Contributions to the Science or Technology of Carbon Materials. In 2001, he received the 2001 Award for Advancement of Basic and Applied Science from Yale University Science & Engineering Society. In 2003, he received the ACS Award in Separation Science and Technology. He has published two books, 350 refereed journal articles and holds 22 U.S. patents. He currently serves on the Advisory Boards of: Adsorption, Adsorption Science & Technology, Carbon, Separation and Purification Reviews, Applied Catalysis A – General, Applied Catalysis B – Environmental, and is a Director of the International Adsorption Society. He is the Series Editor of the Chemical Engineering Series, Imperial College Press.

Profiles

Commitment to Excellence – Kristine Chin Publisher and Editor-in-Chief of CEP

If you're a member of the American Institute of Chemical Engineering (AIChE), the world's leading organization for chemical engineers, you must be familiar with its flagship publication: Chemical Engineering Progress (CEP). Its subjects cover all essential aspects of chemical engineering, including energy transfer and conversion, environmental protection, fluids and solids handling, materials, measurement and control, safety, reactions and separations, as well as professional development, and management. Over 40,000 professionals receive this magazine every month, among whom three-quarters work in industry, with the rest employed in academia and government. This summer, the Publisher and Editor-in-Chief of this prestigious magazine, Ms. Kristine Chin, accepted the interview from our newsletter.



She is a perfect role-model to many young Chinese ladies: she is intelligent, beautiful, energized and outstanding, and she has a very successful career as well as a very happy family life. But above all, she is a woman of her words. She doesn't only talk the talk, but also walks the walk. "Commitment to excellence" is her motto. "If you decide to take on a project (whether it's managing a magazine or raising a family), give it your all." I believe that's the No.1 reason for her success.

Childhood

As the youngest of three children growing up in a first generation Chinese-American family household, Kristine has always been an overachiever. According to her father, she already learnt the multiplication table before turning 5. In spite of that, she still placed a lot of pressure on herself. With an elder brother and sister who are both super smart, she didn't want to be identified as "Kevin or Kathy's little sister", and she even didn't want to do equally as well as her siblings. She wanted to be better. Kristine didn't disappoint herself and her parents, and she was always at the top of her class and graduated #7 out of 1000 students in her high school.

When she was a little girl, her ideal was to become a scientist or an inventor. "I always knew that I wanted to make an impact on society. I wanted people to remember who I am, and of course, to make my parents proud." When she was in the 4th grade, she had a lead role in a school play and got wonderful feedback. So "maybe for a split second, I thought about being an actress." But her passion for science and technology made her choose chemical engineering as major. "I feel that the chemical engineering education gives you so much flexibility to work in any industry," she said.

Career



After graduating from the Cooper Union with Master's degree in ChE, Kristine joined PALL Corp., a filtration company as an engineer in 1995. One year later, she got an editorial position at McGraw-Hill's Chemical Engineering Magazine. Switching industries was quite a challenge. "Unlike preparing my thesis, where I was looking at Chemical Abstracts, my first news article was developed mostly on research via the web and numerous phone interviews. I had to adjust to cold calling people, since I am actually an introverted person." She said, "but nothing is insurmountable." Luckily, she had a great mentor, Mr. Phil Kohn, who gave her lessons on how the publishing industry operates during their lunch breaks. This helped to shape her future career path.

The happy family: (left to right) Emily, Kristine, Sophia and Ricky.

In year 2000, she embraced the first high point in her career. She was involved in launching a start-up magazine, ePlant, which focused on the impact of IT and the Internet on the chemical processing industries. It was recognized as a fine magazine by the readers and her fellow colleagues. Although the magazine was shutdown due to financial decision right after the Internet bubble burst, Kristine experienced her 2nd milestone in year 2001. She was not only named Editor-in-Chief of CEP, but also was able to follow through with her own vision of making the magazine more appealing to all readers. Meanwhile, she acutely sensed the boom of biotechnology. "It is reflected not only in the number of graduating ChE students entering that industry, but also academic institutions changing their names to add on a "bio" component."

CEP

It is hard to believe that CEP, one of the most successful and popular monthly magazines for chemical engineering professionals, is produced with only 2.5 editors! It is Kristine's "commitment to excellence" spirit that enables her meet the deadline. She has dedicated her heart and soul to her job, never getting home before 7:30 pm on weekdays. And she never forgets to thank her team, "luckily, the people who work for and with me are fabulous. I always say we operate like a well-oiled machine." Despite these challenges, she agreed that all the efforts are absolutely worthwhile, especially when the reader calls or writes in to say, "Job well done!" "I also have to admit that I thoroughly enjoy seeing the magazine come to me in the mail. There is just something about creating a magazine and watching all of the various pieces to come together. I guess you can call it pride of ownership."

Children

Although she was born and raised in United States, Kristine appreciates the Chinese ethics her parents instilled in her — work hard, respect the elders, and most importantly, be responsible to family and career. “Family is everything,” she said. She met her husband Ricky at the Cooper Union and was married in 1997. They have two lovely daughters, Emily, 5, and Sophia, 3, who are the most precious treasures in the world for her (picture on the right). In spite of her hectic schedule, she would switch into “mommy mode” as soon as she returned home. Kristine takes Emily to Chinese school every Sunday — she doesn’t want her kids to forget their Chinese roots. Her favorite books include *Good Earth* and *the Joy Luck Club*, “because I can relate to them at some level, whether it is vicariously through my mother or the fact that I am first-generation Chinese in the US.” Just like New York City, where she lives in, she is willing to embrace all diverse cultures. This can be noticed from her eclectic selection of music. From new wave, new age, pop, folk music, to alternative music, rock, and Broadway music, she enjoys all of the beautiful sound of music.



Kristine’s little princesses: Emily (left) and Sophia (right).

“I am happy to be where I am today, but there is definitely so much more out there for me to achieve.” She has spoken at career development meetings at the Cooper Union to help high school students understand the wonders of engineering and explain to them the different career paths they can take with a Chemical Engineering degree. One day when she is no longer a publisher, she ponders the possibilities of being a K-12 teacher. “I think it would be even more meaningful if I can impact a child's life every single day.”

Commitment

While being asked about keys to become successful in United States, she said “I think that you need to have a strong work ethic. You need to be flexible, but don't let anyone take advantage of you. To succeed in the US, you cannot be modest about your accomplishments. This is very hard for me since my parents always said that people should recognize you for your accomplishments and that you shouldn't have to tell them. And, of course, never forget the “commitment to excellence”!

Thank you Kristine, just want to say, this is another “job well done!”

2005 ACS Award Winner for Creative Work in Synthetic Organic Chemistry – Prof. Chi-Huey Wong

Professor Wong is, in the words of previous ACS award winner Dr. Dale L. Boger, “by far the single most influential individual” responsible for the practical utilization of enzymes as efficient catalysts for preparative organic chemistry. His research interests are in the areas of bioorganic and synthetic chemistry and biocatalysis, including development of new synthetic chemistry based on enzymatic and chemo-enzymatic reactions, the study of carbohydrate-mediated biological recognition, drug discovery, and development of carbohydrate microarrays for high-throughput screening and study of reaction mechanism.



Much of his work on enzymatic glycosidation reactions and enzyme-mediated C-C bond formations have resulted in the accessibility of complex oligosaccharides and enzyme inhibitors in multi-kilogram scale for further application in medicine and biology.

Among his more recent achievements, Prof. Wong has developed a computer-based programmable one-pot technique for the synthesis of oligosaccharides. By simply entering the sequence into computer, the building blocks of oligosaccharides with their associated reactivity number will be returned on the screen. Mixing these building blocks in sequence (from high reactivity to low reactivity) will generate the desired product in a protected form in a few minutes. A straightforward de-protection and chromatography will give the final product. Based on this programmable saccharide synthesis, he has discovered new antibiotics and synthesized cancer and HIV antigens for vaccine development, and has also developed a new arraying technology, allowing the immobilization of carbohydrates and oligosaccharide libraries on glass slides and microtiter-plates for the high-throughput analysis of sugar-protein interaction.

Prof. Wong has studied the interactions between aminoglycoside antibiotics and RNA, and he has discovered the structural motif that determines the interaction. He applied this knowledge to develop a new class of efficient RNA-binding small molecules — work that could lead to new opportunities/approaches to develop antibiotics and novel anticancer agents.

Research currently going on in his lab encompasses a wide variety of projects, directed toward development of new chemical and enzymatic strategies and methods for the synthesis of biologically active compounds and designed molecules as mechanistic probes and inhibitors of carbohydrate-mediated biological recognitions, sequence-specific RNA recognition, and enzymatic reactions.

Continued on Page 17

Swordsman in Nano-World – Prof. Peidong Yang

In this year's Spring ACS National Conference, Dr. Peidong Yang, a young Chinese professor from the Chemistry Department of UC Berkley became the winner of ACS Award in pure chemistry. The award was established in 1931 by A. C. Langmuir and is currently sponsored by Alpha Chi Sigma Fraternity to recognize fundamental research in pure chemistry by young scientists who have accomplished research of unusual merit.



Prof. Yang has created a highly visible research program in the one-dimensional (1D) nanoscopic building blocks for assembly of complex architectures with novel properties and functionality. Due to their high surface area, low-dimensionality and potential quantum confinement, 1D nanostructures are expected to exhibit many interesting physicochemical properties, especially in electronic and photonic aspects, which will serve as the basis for miniaturized devices such as lasers, switches, and sensors.

At an age of 33, Prof. Yang has already been widely recognized as one of the leading research scientists in the field of nanostructured materials. His work, which was highlighted in a feature article in *Nature* (Oct. 15, 2002, p. 553), has great impact in the research community of functional nanostructured materials, particularly in the area of using semiconductor nanowires for optoelectronic, thermoelectric and sensing applications. In 2004, the nanowire technology developed by his lab was announced as one of the “10 Emerging Technologies That Will Change the World” in *Technology Review* (MIT's Magazine of Innovation) for its potential to have profound impact on business or society in the not-too-distant future.

So far, he and his group have filed 10 patents and published over 100 papers in top journals like *Science*, *Nature*, *Nature Materials*, *J. Am. Chem. Soc.*, *Angew. Chem. Int. Ed.*, *Nanolett.*, *J. Phys. Chem.*, and *Adv. Mater.* Their discovery of ultraviolet nanowire laser (*Science*, 2001; *Nature Materials*, 2002), superlattice nanowire (*Nano. Lett.* 2002), single crystalline GaN nanotube (*Nature*, 2003), and subwavelength nanoribbon waveguide (*Science* 2004) and their development of nanowire organization processes (*J. Am. Chem. Soc.* 2000; *Nano. Lett.* 2003) have drawn tremendous scientific interest and public attention. His work has been frequently highlighted by scientific and general press, such as *Science*, *Nature*, *Science News*, *Technology Reviews*, and *C & E News*.

Because of his extraordinary contribution to the fundamental study of 1D semiconductor nanostructures, Prof. Yang was recognized by many prestigious awards, including Alfred P. Sloan research fellowship (2001-2004), MIT Tech. Review TR 100 (2003), Julius Springer Prize for Applied Physics (2004), MRS Outstanding Young Investigator Award (2004), Camille Dreyfus Teacher-Scholar Award (2004), Camille Dreyfus new faculty award (1999), the Arnold and Mabel Beckman Young Investigator Award (2002), National Science Foundation Young Investigator Award (2000-2004), and ExxonMobil Solid State Chemistry fellowship (2000). He

was also the first Chairperson for the newly established Nanoscience Subdivision of American Chemical Society.

His group was the first to use in-situ high temperature electron microscopy to observe nanowire growth on nano-size metal catalysts, and to resolve the fundamental nanowire growth mechanism. They were also the first to develop a soft lithographic methodology to pattern and align nanowires into a desired configuration. This microfluidic patterning procedure has subsequently been used extensively in other research laboratories.

In addition, they pioneered the UV/blue lasing from semiconductor nanowires and stimulated significant work worldwide in nanowire-based optoelectronics. This work was selected as one of the top 10 DOE science achievements in 2002, and it has also been one of the most-cited chemistry paper according to ISI. Prof. Yang has recently taken these investigations further into the quantized region by successfully demonstrating the first self-organized GaN quantum wire UV lasers.

Yet another work of widespread influence from his group is the development of a novel methodology for the synthesis of Si/Ge superlattice nanowires. His group then clearly demonstrated their size-dependent thermal conductivities. These fundamental studies are having impact in both thermoelectric energy conversion and integrated circuit design in the sub-100 nm region.

More recently, Prof. Yang has ventured into nanofluidic chemical and biological sensing. His research team has grown the first example of single-crystalline semiconductor GaN nanotube. Because of their single-crystalline and semiconducting nature, these nanotubes could serve as excellent platforms for chemical and biological sensing.

Future work in the group will primarily focus on chemical integration, self-organization, and physical property studies of these 1D building blocks. Major efforts will be placed on increasing the complexity of 1-dimensional nanostructures by incorporating well-defined heterojunctions and addressing the impact of structural complexity on specific functionalities, such as light emission and energy conversion properties. Significant efforts will also be devoted to develop efficient chemical processes to assemble individual nanowires into desired configurations or system architectures.

Prof. Yang graduated from the University of Science and Technology in China in 1993 with B.A. and received his Ph.D. in Chemistry from Harvard University in 1997. The solid fundamental training from USTC, highly competitive environment of Harvard and open style of UC Berkley all made him benefited a lot in his career.

In spare time, Prof. Yang enjoys reading swordsman fictions and is a big fan of Gu Long. To become a top swordsman, one needs not only painstaking effort, sharp comprehension, precise and nimble movements, but also strong motivation, willingness to break the routine and sober mind on any occasion. In nano-world, he is a true swordsman, with knowledge and creativity as his lethal weapons. He is always keen and calm, has clear vision of future direction and moves fast and steadily with his team. Even in the beginning of his career, he had the guts to become a

pioneer. “When I started at Berkeley, I was trying to think what would be the next new direction in material chemistry. We could have looked at nanocrystals or nanotubes, but lots of people were already doing that, and I wanted to come up with something very new with which we could distinguish ourselves.” So they decided to move into the semiconductor nanowire field, which turned out to be a very good decision. “Working with these non-carbon-based materials, the opportunities are unlimited”, he said.

While being asked about the most important quality for a successful chemist, he mentioned vision, hard work, and most important of all, motivation. “There are lots of smart people out there, in many case, motivation makes the difference.”

From Page 14

Professor Wong received his B.S. and M.S. degrees from National Taiwan University, and Ph.D. in Chemistry with Prof. George M. Whitesides from Massachusetts Institute of Technology in 1982. He then worked at Harvard University as a postdoctoral fellow for another year. He started his independent career as Assistant Professor of Chemistry at Texas A&M University in 1983, became Associate Professor in 1986 and Professor in 1987. He has been Professor and Ernest W. Hahn Chair in Chemistry at the Scripps Research Institute since 1989 and a member of the Skaggs Institute for Chemical Biology since 1996.

He serves as an Editorial Advisory Board member for the *Journal of the American Chemical Society* and as the Editor-in-Chief of *Bioorganic & Medicinal Chemistry*. He was head of the Frontier Research Program on Glycotechnology at RIKEN (Institute of Physical and Chemical Research, Japan, 1991–1999), and a board member of the US National Research Council on Chemical Sciences and Technology (2000–2003). He is currently Director of the Genomics Research Center, Academia Sinica, Taipei, a scientific advisor of the Max-Planck Institute, and is a founding scientist and the Chairman of the Scientific Advisory Board of Optimer Pharmaceuticals, Inc. He is the author and co-author of over 515 publications, 60 patents, and four books (*Enzymes in Synthetic Organic Chemistry*, *Combinatorial Chemistry in Biology*, *Catalysis from A to Z*, and *Carbohydrate-Based Drug Discovery*). His seminal work has placed him in the top 100 most cited chemists in the world.

Professor Wong is a recipient of The Searle Scholar Award in Biomedical Sciences (1985), the Presidential Young Investigator Award in Chemistry (1986), the American Chemical Society A. C. Cope Scholar Award (1993), the Roy Whistler Award of the International Carbohydrate Organization (1994), the American Chemical Society Harrison Howe Award in Chemistry (1998), the Claude S. Hudson Award in Carbohydrate Chemistry (1999), the International Enzyme Engineering Award (1999), the Presidential Green Chemistry Challenge Award (2000), and the American Chemical Society Award for Creative Work in Synthetic Organic Chemistry (2005). He is a member of Academia Sinica, Taipei (1994), the American Academy of Arts and Sciences (1996), and the US National Academy of Sciences (2002).

Features

Beyond the Lily Pond: An Endeavor

CACS Keynote Speech at ACS National Meeting, San Diego, CA, Monday, March 14, 2005

Dr. Phoebe K. Dea

Associate Dean of the College and Fletcher Jones Professor of Chemistry
Occidental College, Los Angeles, CA

I am very happy to be here tonight. Professionally and culturally, CACS always gives that feeling of a bond and a belonging that no other organization can match. My association with CACS dates back to the late 1980's when California had a CACS chapter. I also feel humbled to be at the podium tonight, knowing that many of you are well suited to talk about your research in industry or in academia, or to share your professional successes.

We are not talking about state-of-the-art research tonight, nor success stories. Instead, we will touch the subject of motivating undergraduates to do research in chemistry, not unlike a toddler taking his or her first step. Later, we will also briefly touch on the roles of Chinese-American chemists in this enhanced demographic landscape.

I have been very fortunate during my career — 17 years at California State University at Los Angeles, and the last 11 at Occidental College — to teach in two chemistry departments that have a strong tradition of doing research with undergraduates. In fact, my interactions with undergraduates on the research level during these years have been among my most rewarding professional experiences. It is also most satisfying to learn that some minor comments that I made to students during our interactions, often out of concern for their well being, turned out to have made a difference in their lives.

Cal State Los Angeles is a large minority institution that recruits predominately from its immediate neighborhood. Many of its students are married and have families, a situation that requires financial support and time away from academic pursuits. Many are recent immigrants. Science is appealing to many of them because the materials are culture-blind, and the skills acquired promise a better future. Their commitment, dedication, and courage are admirable.

I moved over to Occidental College eleven years ago when I was tapped to fill their newly endowed Fletcher Jones professorship. In contrast to Cal State LA, Occidental College is a small liberal arts college with about 1800 students. It is academically strong and ethnically diverse. The impact of undergraduate research can be seen not only by the large number of graduates who continue on to graduate and professional schools, but also the number of national scholarships and recognition they receive. I am proud to say that each science major at Oxy who received these awards had participated in our undergraduate research program.

Despite the differences in the nature of the two institutions and their students' needs, their chemistry departments have all the required elements for a successful undergraduate research

program: First, faculty commitment to a dual mission of teaching and research. In addition to excellence in teaching, all the faculty are committed to providing students with the highest quality undergraduate research experience. Second, an administration and infrastructure that recognizes and supports undergraduate research. Both institutions have an important component in their chemistry curricula, which is to provide both time and credit for student research early in their studies. In fact, research is required at Oxy for the baccalaureate degree in chemistry. Third, adequate facilities and equipment needed for research. Sometimes, working with a colleague, either within the college or perhaps at another institution, can address the difficulty of inadequate facilities often encountered in predominately undergraduate institutions. A faculty's role can be in one or all of these three categories.

The importance of a student's participation in laboratory research is encapsulated in a Chinese proverb "I hear and I forget. I see and I remember. I do and I understand."

“聽而忘之
看而記之
行而知之”

Most of the skills needed to do chemistry are not innate, but learned through hands-on experience. The apprentice system was in place in the middle ages long before we ever heard of laboratory research.

When I guide students in my research area, I ask them to view their research project as a lily pond. In the beginning, it may look something like Monet's Water Lily Pond. It is difficult to see everything clearly; but as they focus on it, the bridge and the lily pond will become clear. As they zoom in, they then begin to see more and more features of the object. This model also applies to students who first read original research papers. Students can understand what they read in the literature for the first time, to some degree. But after they have tried some related experiments and obtained some data, they will understand the paper at a much deeper level each time as they read it. In time, they will also see how different parts of the project are linked and connected.

With this model, my students indulge in our research area of physical and analytical methods for the determination of molecular structure and interactions of biological interests. In particular, we are interested in membrane structure and dynamics using calorimetry, fluorescence, and NMR techniques.

A total of 120 students have since worked on various projects in my lab. I typically have 6 to 8 undergraduates doing research with me at any given time. As mentors, when we look at the efforts involved, we see clearly the immense demands on our time. This is a situation where the student-faculty ratio is not ten to one, but one to one. Yet, I don't think we can find any greater return on our investment of time.

I would like to share with you a quote by Peter Atkins, a renowned physical chemist: "Joy may be inarticulate, but reflection is empty without understanding. There is delight to be had merely by looking at the world, but that delight can be deepened when the mind's eye can penetrate the surface of things to see the connection within."

It is therefore very important that our students gain familiarity with what other researchers in the group are doing, in addition to their own project. This gives them the opportunity to enjoy the camaraderie that comes from working through a problem as part of a team while having the satisfaction of answering a specific question independently. Having students work in a well-structured research program maximizes the likelihood for them to experience the excitement of a successful research. The benefits of group dynamics must not be limited to the laboratory alone, but extended to department and campus levels via seminars as well as technical and social interactions. These experiences facilitate the students' growth in their self-confidence and in their maturity.

So, what are the expected outcomes of students who participate in undergraduate research? Doing research allows both student and faculty to contribute and create knowledge, and find new solutions to scientific problems. They learn to become creative and begin to ask important questions. In order to make the project work, they must develop analytical skills, sharpen their critical thinking and problem solving skills, and learn to trouble shoot in the lab. It is important to note that the power and purpose of science isn't just in the creation of new knowledge, but in the communication of knowledge. Students are encouraged to present their results at various regional, state and national conferences. Furthermore, students involved in undergraduate research are often more engaged and are very interested and committed to their discipline. They also develop the love of learning so that they become lifelong learners.

Studies have suggested that all scientific and technological work force in the future will need to possess these attributes to be successful. It seems that the undergraduate research experience is a good way to educate our students to become future citizens of the world.

During their typically two to three-and-a-half years in the lab, I frequently ask the students to look at the lily pond again. What do you want at the other end of the bridge? How do you cross the bridge to achieve it? For an undergraduate, goal setting is relatively simple:

- a. Complete the baccalaureate program,
- b. Continue onto graduate school, or attend professional school, and
- c. Be an active contributor to society.

The assessment and articulation of specific steps to achieve the specific goals are more complex and individualized. It is our responsibility and joy as mentors to assist in this process. Their successes are our successes.

I myself frequently look at the lily pond for an inspiration. That lily pond is our campus setting at Occidental College. With Oxy's smaller size, I found it quite easy to work with colleagues outside my department. I also have the opportunity to meet many leaders who share the same educational goals for students. Working together, we were able to model and broaden our undergraduate research efforts on campus from the sciences to the social sciences and to the arts and humanities. In a way, it seems that we are spreading and sharing the wealth. However, instead of getting a smaller share of the wealth, our collaborations with other divisions have resulted in greater success in getting support from both on-campus and off-campus funding

sources. We used to have between 30 – 40 undergraduate research participants in chemistry each summer. Today, we still maintain the same number in chemistry, but our campus-wide undergraduate research program has almost tripled, with about 60% participants from the sciences, and 40% from the social sciences, arts and humanities. Our net worth has soared!

These fertile grounds have given me opportunities to take some key roles in promoting undergraduate research and scholarship nationwide. Occidental College has been the host institution for regional and national undergraduate research conferences.

As a Chinese-American, in a reflection of my 32 years in the chemistry profession – 4 in industry, and 28 in academia – the professional landscape today is very different from that when I first began working. When I came out of Caltech in 1972, the Chinese-American representation was minute in our profession. Today, I believe we have a significant share. Despite this advancement, and the changes in the public’s cultural as well as political acceptance, our success in this land remains to rely on three elements: Participation, Participation, Participation.

The time is also right for some of us to look beyond the Lily Pond, setting goals for a leadership role in our profession. When I first started my teaching career at Cal State L.A, my senior colleagues first introduced me to the committee structure on campus and gave me opportunities to embark on some visible roles, first at the department level, then the school, and finally the university level. Later, I also served on various Cal State system-wide committees and the State of California committees. The pattern at Oxy was quite similar. I have learned to participate. I have learned not to just sit through meetings when they become boring and the tone is negative. It only takes one person to make a difference in guiding the meeting tone and clearing the air. I had never thought of this in terms of leadership until many years later.

A leader may not necessarily be powerful and bossy, but simply be a positive influence. Let me share with you some of my favorite quotes on leadership:

“Leadership: The art of getting people to do what you want them to do because they want to do it.” — Dwight Eisenhower

“A leader is best
When people barely know he exists
... when his work is done, his aim fulfilled
they will say:
We did it ourselves.” — Lao Tsu

老 子 道 德 经 - 十 七 章

“太 上 无 为 而 治 之
... 成 功 事 遂 而 百姓 自 然 .”

“Effective leadership is not about making speeches or being liked; leadership is defined by results not attributes.” — Peter Drucker

These give a glimpse of wisdom at a philosophical level, but not necessarily tangible models. In fact, perhaps there is no tangible leadership model at all. But, there are certain qualities, gifted or learned, that a leader should have:

- A Clear Vision – This gives everyone in the organization a sense of involvement and significance. What happens when people are excited about what they do? They work harder. They have more fun. And they deliver.
- Trust – Leaders must gain the trust of their people by doing what they say they will do, and by being fair.
- Communication – This is usually done during conversations where they advance their agenda, share learning, and strengthens relationships.
- Listening Ability – This minimizes misunderstandings in person-to-person communication.
- Organization – This is the only way to survive.

In setting the goal for a leadership role, self-assessment of these qualities must be made, and the weaker areas may be augmented with proper training. As with all things, there are risks and benefits for assuming a leadership role. Understanding the costs of leadership is important to understanding the realities of leadership. Here are some of the risks a leader may face:

- Visibility can be both a benefit and a risk. The plus side is “name recognition.” The minus side is the ‘fishbowl’ phenomenon.
- Public duties – Making speeches and public relations responsibilities are generally inherent with a leadership role.
- Separation and less freedom of expression – it can be lonely at the top.
- Emotional strain and stamina refers to the mental and physical stability and strength required for a leadership role.
- Strains on family are genuine. Heavy workload, structured schedule, and business travels all have impacts.

On the other hand, in general, surveys have shown that the average person who occupies a position of leadership exceeds the average member of his or her group in the following aspects: (1) intelligence, (2) scholarship, (3) dependability in exercising responsibilities, (4) activity and social participation, and (5) socioeconomic status.

To me, the most important benefit of being a leader is that we are in a position not only to do the right thing, but also to make a difference. At the end of our days, the world would somehow be better because we have passed through it.

For those who prefer not to take administrative or leadership roles in the profession, as a Chinese-American, we can participate in our community. A science project with the junior high or high school student would inspire a young scientist before we know it. The time is also ripe for us to retain our culture for the next generation, and to advance the acceptance of our culture in the community. But remember, to tell the story of our own, we must first learn the stories of others. We can help the new arrivals to settle in this chosen land. The challenges and creativity of these endeavors are not any less significant than leadership in our profession. “A journey of a thousand miles begins with a single step.” We can cross the bridge. Just do it!

CACS wishes to thank the following members for their generous donations to the society (August 2004 – July 2005)

Dr. Robert Bau,	Monterey Park, CA	\$10
Dr. Chen-Hwa Chiu,	Houston, TX	\$50
Dr. John Hsu,	Berkeley, CA	\$20
Dr. C. Amy Smith,	San Diego, CA	\$50
Dr. Julia Chow Tai,	Carlsbad, CA	\$80
Dr. Nam Sun Wang,	College Park, MD	\$100
Dr. Shek Yu,	Oakland, CA	\$50
Dr. Nien-Chu Yang,	Chicago, IL	\$100

STATEMENT OF CACS OBJECTIVES

1. To promote fellowship among Chinese-American chemists, chemical engineers and those working in related professions.
2. To enhance communication and professional interaction among members.
3. To provide a forum for the discussion of issues of mutual interest and concern.
4. To create opportunities for members to share their professional experiences and to participate in joint research and business opportunities.
5. To provide a network for mutual professional enhancement and career development.
6. To provide career counseling for young people who are interested in science and engineering careers.
7. To encourage scholarly achievement in chemistry and chemical engineering, and to recognize those individuals who have made outstanding contributions to chemical science and technology and to the service of the chemical profession.
8. To facilitate interaction between CACS and other scientific organizations and communities.

華美化學與化工學會宗旨

1. 加強華人化學家,化學工程師,及相關科學專業人士的友誼.
2. 增進會員之間的連繫及合作.
3. 針對華裔科學家共同利益,提供公開發言討論的場地.
4. 促進專業經驗的交流與研究事業的合作.
5. 利用人才檔案的建立以提昇專業連繫的層面.
6. 對有意於科學工程的年青人能加以引領與指導.
7. 鼓勵化學化工方面的成就,表揚對化學化工相關研究有特出供獻的人士.
8. 達成本學會與其他科學學會對等的交流連繫.

Forthcoming CACS Activities

Members, Non-members, Friends, Students, Family Members Are All Welcome

230th ACS National Meeting Washington, DC Monday, August 29, 2005

Social Hour 5:00 – 6:00 PM Open to all ACS Attendees
Capital Hill, Hilton Garden Inn

**Banquet and
Keynote Speech** 7:00 – 9:30 PM Tony Cheng's Seafood Restaurant
619 H Street, NW, Washington, DC
Tel: 202-371-8669
Tickets at ACS Registration, \$25/Person

Keynote Speaker: Dr. Bert Ramsay
Emeritus Professor of Chemistry
Eastern Michigan University, Ypsilanti, MI

*Chinese Chemistry in Context: Some
Observations on the Early Introduction of
Chemical Nomenclature in China*
(See p.2 for Prof. Ramsay's abstract and bio)

AIChE 2005 Annual Meeting Cincinnati, OH Monday, October 31, 2005

**Banquet and
Keynote Speech** 7:00 - 10:00 PM The Wah Mee Restaurant
435 Elm Street, Cincinnati, OH
Tel: 513-578-8767
Tickets at AIChE Registration, \$25/Person

Keynote Speaker: Dr. John C. Chen
Carl R. Anderson Professor
Lehigh University, Bethlehem, PA
AIChE President-Elect, 2005

*Chemical Engineering and AIChE
– Today and Tomorrow*
(For Prof. Chen's abstract and bio, see p. 8)