Well, the Fall semester is almost over and many are busy writing or studying for final exams, and the rest are trying to finish research projects before a short holiday break. A lot has happened this year, as you will notice in this edition of our newsletter, the “Molecular View”.

Last week, we held our yearly Department Holiday Party. I really like this event as it draws everyone in the Department together. A few of our more ambitious grad students took it on themselves to give a more personal touch to “The Night Before Christmas” originally by Clement Clarke Moore. I have reproduced that adaptation inside, and I hope that you will enjoy it!

Happy Holidays, and wishing all our Chemistry friends the best in the New Year!

Bruce Koel
Chair of Chemistry
THE NIGHT BEFORE CHRISTMAS (A VISIT FROM ST. NICHOLAS)

(Twas the night before Christmas
when all through the lab
the students were busy,
'cept for those in rehab.
The stockings were hung by
the fume hood with care,
in hopes that some data
soon would be there.
The professors were nestled
all snug in their beds,
while visions of funding
danced in their heads.
And Michele in her office,
and Paul in his too,
had just settled down
to do whatever they do.
When out on the quad
there arose such a clatter,
I sprang from my seat
to see what was the matter.
Away to the window
I flew like a eagle,
tore open the foil
and pushed aside Segal.
The moon shining on
the sidewalk below.
gave the lustre of mid-day
with the sky all a-glow.
When, into my wondering
gaze should then dart,
but a Toyota Celica
which was trouble to start!
With a stark raving driver,
so lively and hale,
I knew in a moment
it must be Bruce Koel.
More rapid than turtles,
the professors they came,
and he whistled, and shouted, and
called them by name.
Now, WARSH E L!
Now, T H O M P S O N !
Now, S T E P H E N S
and W E B E R !
O n, W I T T I G !
O n R E I S L E R !
O n, B R A D F O R T H
and S I N G E R !

Now, F L O O D !
Now, P E T A S I S !
Now, M A K .
and D O W S !
O n, T A I L O R !
O n, K R Y L O V !
O n, B E A U D E T
and B A U !
O n P R A K A S H
On O L A H !
O n M C K E N N A
To the top of your field!
Answer my call!
Now write away!
Write away!
Write away all!
As dry leaves that before
the wild hurricane fly,
when met with a deadline
they mount to the sky.
So off to the post-office
the professors they flew,
with a truck full of drafts
and a few finished ones too.
And then, in a twinkling,
I heard in the hall,
the dancing and laughing
return of them all.
As I drew in my head,
and was turning around,
down the fume hood
Koel came with a bound.
His hair was unkept,
and patchy in places,
and his clothes were all tarnished
with carcinogen traces.
A bundle of checks he had
flung on his back,
and he looked like a peddler
just opening his pack.
His eyes — how they twinkled!
His dimples how merry!
His cheeks were like roses,
his nose like a cherry!

H is droll little mouth
was drawn up like a bow,
and the beard of his chin
was still waiting to grow.
The stump of a pencil
he held tight in his teeth,
and the papers encircled
his feet like a wreath.
A wink of his eye
as his signature he penned,
soon gave me to know
I had nothing to spend.
He spoke not a word,
but went straight to his work
and filled all the stockings,
then turned with a jerk.
And laying his finger
aside of his nose,
and giving a nod,
up the fume hood he rose.
He sprang to his Celica,
to his team gave a whistle,
and away they all flew
like the down of a thistle.
But I heard him exclaim,
ere he drove out of sight,
MERRY CHRISTMAS TO ALL,
AND TO ALL A GOOD-NIGHT!

DECEMBER, 1999

by Clement Clarke Moore
(adapted by David Conroy, Minda Suchan, and Linda Valachovic)
Dec 98: Professor Anna Krylov received the Landau Prize for her thesis work. This prize is awarded in Israel.

Feb 99: Professor George Olah was the Robbins Lecturer of 1999 at Pomona College. The Lectureship entails a series of seminars on “Hydrocarbons and Their Chemistry”.

Feb 99: Professor Arieh Warshel was commissioned by John Wiley & Sons to write five major items for the “Encyclopedia of Molecular Biology” including molecular simulation, molecular dynamics, molecular mechanics, free energy calculations as well as neural networks and genetic algorithms.

Aug 99: Professor James Warf continues to be an active author recently offering a review regarding conditions at Rocketdyne [“Hot Zone,” June 99, Los Angeles Magazine].

Sept 99: Professor Jim Haw has received the “George A. Olah Award in Hydrocarbon or Petroleum Chemistry” for 2000. This is a National ACS Award, sponsored by The Morris S. Smith Foundation and the Dow Chemical Company to recognize, encourage and stimulate outstanding research achievements in hydrocarbon or petroleum chemistry.

May 99: Heartiest congratulations to Professor Mark Thompson! Mark has been promoted to the rank of Full Professor of Chemistry, effective immediately. Mark has accomplished a great deal since he joined us as an Associate Professor in 1995. He has established a very large and productive research group of graduate students and postdocs, and he is currently the Inorganic-Biological Chemistry Section Liaison. 1998 was a particularly good year for Mark. He won the Distinguished Inventor of the Year Award presented by the R&D Council of New Jersey for multicolor organic light emitting devices.

Sept 99: Professor Arthur W. Adamson was awarded the 1999 Monie A. Ferst national award of Sigma Xi at a reception and dinner held on the USC campus on September 16, 1999. The Ferst award recognizes scientists who have made notable contributions to the motivation and encouragement of research through education. The award is made annually to an educator who has touched and inspired his or her research colleagues. The Ferst Award has been given a total of 22 times since 1977 and past Ferst awardees include 12 members of the National Academy of Sciences.

Oct 99: Professor Stephen E. Bradforth was awarded the David and Lucile Packard Foundation Fellowship. This five year grant will be instrumental in advancing Professor Bradforth’s research in leading to new insights in electron transfer processes in condensed environments and in energy transduction in biological and organic systems.

Oct 99: Professor George Olah was featured at the official dedication of Santa Monica College’s new science building, reported the L.A. Times. It stated that Prof. Olah spoke about “the continued relevance of science in creating a better world, and argued for the reconciliation of science with other fields of human knowledge, including religion.”

Oct 99: Professor Philip Stephens presented the first Schatz Lecture at the University of Virginia on Oct 15. This is a newly endowed Lectureship named in honor of Prof. Paul N. Schatz, now Emeritus Professor of Chemistry.

Oct 99: Ivar Ugi, an onetime USC Chemistry Department professor, now at the Technical University of Munich gave the George A. Olah Lecture in Chemistry this year. Professor Ugi spoke on “Recent Progress in Multi-Component Reactions.”
The Institute concluded another highly successful year of research and graduate (post-graduate) training. We maintain high visibility both at home and abroad. Institute Advisory Board member, Professor Arthur Adamson, received the Monie A. Ferst National Sigma Xi Award presented by the local chapter of Sigma Xi at a dinner meeting. Professor James Haw received the American Chemical Society’s George A. Olah Award in Petroleum Chemistry.

In August of 1999, a major milestone has been reached with a sub-licensing deal between Ballard Power Systems, DTI Energy, Caltech, and USC/LHI. The deal also allows for the establishment of a joint 50/50 USC-Caltech venture to further develop the JPL/LHI Direct Methanol Fuel Cell (DMFC) technology. Caltech had been given the role of a managing partner responsible for seeking venture capital and formation of a new company.

Dr. Roy Periana, (Ph.D. UC Berkeley, with Professor R. Bergman) formerly at Catalytica Inc., is joining the Chemistry Department and the Loker Institute at the beginning of January 2000, as an Associate Professor in the Organic Chemistry and Materials Division of the Department. He is well recognized for his imaginative work. One example is the direct catalytic conversion of methane to methanol. He will undoubtedly strengthen the Institute’s core work in hydrocarbon chemistry.

The Loker Hydrocarbon Research Institute Advisory Board awarded several summer scholarships to deserving Institute students and postdocs. LAS sponsored an event where the scholarship recipients were introduced to the respective donors. The Institute was well represented. Here is the list of this year’s Summer Scholarship recipients and a brief description of the endowments that enabled the awards.

The late Harold Moulton established this fellowship endowment in 1991 to promote excellence in hydrocarbon chemistry. His son, Tom Moulton, also a contributor to this scholarship endowment, continues his father’s philanthropic legacy and commitment to chemistry education at USC.

The following Loker Institute graduate students in chemistry are the recent Harold Moulton Summer Fellowship recipients:

Anthony Atti
Sougato Boral
Shashi Gupta
Jinbo Hu
Sudhakar Madhusoodhanan
Eric Marinez
Gennadi Nossarev
Zubin Patel
Jonathan Sargent
Weiguo Song

Income from an endowment that was established by the John Stauffer Charitable Trust in 1995 has helped the Loker Institute to attract top Ph.D. chemists from all over the world seeking postdoctoral training at USC.

Recent recipients are:
Dr. Steven Butala
Dr. Markus Etzkorn
Dr. Manfred Kroll
Dr. Thomas Matthew
Dr. Urs Welz-Biermann

In October the Institute held the second lecture of the George Olah Distinguished Lecture Series in Chemistry. We are envisioning a long tradition of outstanding lectures. The Lecture Series has been underwritten by the Loker Institute and the Olah family. This year, Professor Ivar Ugi, Technical University of Munich and a former USC Chemistry Department Professor gave an outstanding lecture about “The Genesis of Combinatorial Chemistry,” a field that he pioneered while at USC.
FOCUS ON STAFF
- STAFF PROFILE - JIM MERRITT
SCIENTIFIC GLASSBLOWER

“I have been at USC since 1980 when the Glass Shop was in SSC. I also planned and moved the Glass Shop to SGM in 1990. Over the years, I have constantly been working with grad students and researchers on glassblowing needs. Some items have returned to the same style over the years but the general trend is to make everything smaller to reduce waste. It is interesting to watch things evolve. We sometimes go back and build apparatus from 30-50 years ago. Glassblowing is a field of constant learning.

My personal motto is ‘the impossible only takes longer.’”

“I have been constantly involved with the American Scientific Glassblowing Society and served as President in 1989-90 and for the past two years have been Executive Secretary. Along the way, I have received awards from the Society. In 1986, I was awarded the Kermit Fischer Award for the best technical paper given at a Symposium; and in 1995 the J. Allen Alexander Award for outstanding contributions in furthering the aims and ideas of the Society.”

“My wife, Sharon, and I just returned from 23 days in Europe with 43 others from the Glass Society where we toured glassblowing shops and met other glassblowers. We have two grown sons, both married — one is a teacher for L.A. City Schools and the other is involved in the music industry (as are both daughters-in-law). Sharon is in management for a company that creates and markets software for hospitals and also maintains them.”

For any synthetic chemist, a visit to Jim Merritt’s Shop is routine. Jim is still creating extraordinary glass pieces and helping researchers make great strides in science. Jim can be contacted via e-mail at: jmerritt@chem1.usc.edu.

Outside of USC, I like to do as much skiing as possible. Since moving to Redondo Beach in the 1998, I spend time walking and biking along the beach. For the past 20-25 years I have also been involved in a non-profit housing project that has two properties in South Central L.A. One has 77 units and the other 17 units, and am now its current President of the Board — which means I spend free reading time looking over financial statements.”
GRADUATE STUDENT ACTIVITIES

- 1999 USC CHEMISTRY GRADUATE SYMPOSIUM HAILED AS GREAT SUCCESS

- CHEMISTRY DEPARTMENT SOFTBALL TEAM “THE ISOTOPES” A PERENNIAL CONTENDER IN REC DEPT. INTRAMURAL SOFTBALL LEAGUE

CATALINA SYMPOSIUM REPORT

The 1999 USC Chemistry Graduate Student Symposium took place over the weekend of September 10-12 at the Wrigley Marine Science Center on remote Catalina island. Forty-five students (19 first-year students) and two professors attended.

The weekend began in front of parking structure “A” (on the USC campus) at 6:00 am on Friday morning. Groggy eyed students loaded into cars for the journey down to San Pedro to catch the supply boat over to Catalina. Equipment and supplies were hoisted onto the boat “bucket-brigade style” and soon we were headed for open seas. We arrived, without serious incident, 2.6 hours later at the Wrigley Institute pier on the north end of the island. The weather was exceptional.

Upon arrival, the boat was relieved of its burden and we made our way to the housing facility. Rooms were assigned, an orientation lecture delivered, and finally, lunch was served (chili dogs). With the first session not scheduled to begin until 4:00 pm, we had a little free time on our hands. Hiking, swimming, boating, and sleeping were a few of the activities people chose to fill this void. At 4:05 pm, our first session began.

Dr. James Haw gave a brief inspirational introduction to kick off the event, after which he volunteered for lighting duties. His expertise in this area was appreciated. Four talks were delivered that first session, each from a different chemistry section. By 6:00 pm we were ready for dinner.

That evening, following the meal, we held a poster session in the large common-area section of the dining facility. Twelve submissions were displayed and discussed for the next 2.4 hours. “The posters were really top notch”, remarked committee member David Beck. “It’s obvious that a lot of thought and effort went into their preparation.” The late evening activities included power ping pong and uneven pool.

On Saturday morning we held our second session of talks and were treated to a wide assortment of topics ranging from nanotechnology to photovoltaics. The afternoon was scheduled for free time, and again attendees took advantage of the islands recreational opportunities. That evening, following an outdoor chicken barbecue, we held our last round of talks and sadly brought the conference to its conclusion.

On Sunday morning we packed up, loaded our gear onto the boat and headed back to the mainland. By 5:00 pm we were home.

Special thanks to the organizing committee. David Beck, Paul Boothe, Rachel Hauser, Jeremiah Kloepfer, Yuk Sham, Minda Suchan, Joelle Underwood, Professor James Haw, and assistant Professor Anna Krylov. Also, a very special thanks to Michele Dea and Professor/Chairman Bruce Koel.

Finally, thanks to all the professors for allowing the graduate students to take off on a Friday.

SOFTBALL by David Beck

The prevailing mythology of the unsportsman-like scientist may require re-evaluation here at the University of Southern California. Members of our Chemistry department routinely participate in a variety of organized sports including softball, basketball, soccer (football), racquetball, and tennis, and more often than not, are highly competitive.

This last spring, our reign of terror ended, and with it, our dreams of a three-peat. Although we made a good showing during the regular season, winning two of four, we were defeated in the playoffs and left the field with the T-shirts we wore in. However, just as every cloud has a silver lining, each season brings with it new challenges and accomplishments, ... and this season was no different. Overall, our level of play had improved, both individually, and as a team, and this was nowhere more evident than in our decisive victory over The Band (a team which had been the thorn in MY side for the past three years).

In baseball, winter is the “off-season”, and players use this time to train for the upcoming year. One might not expect that kind of commitment to an intramural softball team, but I have it on good authority that many of our players have been spotted in the gym and out on the track, obviously hoping to earn a position on the 2000 Isotopes team. Clearly, it’s not the academic discipline which determines one’s propensity for, or proficiency at sports...just the discipline.

“The Isotopes”, have won two championships in the last three years.
WHAT IS CTTC?

The Department of Chemistry at the University of Southern California will be hosting a Consortium for Technology in Teaching Chemistry, to start in 2000.

The goal of CTTC 2000 is to establish a consortium for Southern California teachers and institutions who are interested in implementing computer technologies in their high school science classrooms, in order to pool resources, share ideas, develop strategies, and provide continuing education.

PURPOSE OF THE PROGRAM

Classroom Technology: We will explore, contribute and share novel visualization and tutoring technologies made possible by multimedia and the web.

We will be able to share online resources (e.g., Java simulations, virtual labs and tutorials) developed at partner institutions and to browse some of the web resources developed at USC for our General Chemistry classes.

We will bring state-of-the-art technology for teaching chemistry and science to Southern California classrooms. For example, USC is developing an artificial-intelligence based tutor which will individually guide students through problems and concepts in chemistry.

Consortium Workshop: USC will host an annual workshop for those involved in teaching physical sciences, chemistry and AP chemistry.

The workshop will provide a forum to get to know peers at other schools and share effective strategies for enhancing the Chemistry curriculum. The 4 day workshop will feature hands-on sessions on how to implement multimedia in your classroom and in student assignments. Participants will learn how to put together their own chemistry pages including dynamic content like Chime chemical models and Java visualizations as well as tutorials and web quizzes.

It is our intention that the workshop will be free to all consortium members.

Community of Educators: Our goal is to get local science teachers together and continue this interaction throughout the academic year.

A newsletter will connect faculty at participating institutions and an email newsgroup will allow further opportunities to exchange ideas and experiences.

USC will provide free space on its web server to foster this community. Members may use the server for building their own class web sites or contributing new online materials for all. The server will also provide access to a range of teaching resources such as multimedia simulations, virtual labs, and homework and quiz questions.

WHO IS INVITED TO PARTICIPATE?

We welcome teachers at high schools throughout Southern California to partner with us in bringing these exciting technologies into the classroom. For more information consult the program home page or contact us.

The USC Department of Chemistry intends to secure external funding to support the CTTC 2000 program - we expect there will be no cost for schools joining the consortium or participating in the workshops.

For more information please visit:
http://michele.usc.edu/cttc/
or contact:
Professor Stephen Bradforth:
213-740-0461
bradfort@chem1.usc.edu
or contact:
Professor Chi Mak:
213-740-4101
mak@tyrosine.usc.edu

Did you know?
The Department of Chemistry and Biological Sciences has launched a new undergraduate degree program, the B.S. Degree in Biochemistry.

For more information, see our website:
http://www.usc.edu/dept/chemistry/bsbiochem.htm/
Dr. Mamoun BADER (Ph.D., 1990, Dalton) is currently Assistant Professor of Chemistry at Pennsylvania State University.

Mr. Ralph BLEDSOE (BS, 1983) is currently a chemistry teacher at Northfield Mount Hermon School in Northfield, MA. NMH is one of the top 10 preparatory schools in the U.S.

Dr. Roberta BURSI Buma (Ph.D., 1990, Stephens) is currently at Molecular Design and Informatics (The Netherlands).

Dr. Reinhold EGGER, former research associate with Professor Chi Mak, has just been named the recipient of the Gerhard-Hess-Prize in Germany. This is the highest prize for young scientists available in Germany.

Dr. John H. MENKES (BS, 1947; MS, 1951, Kloetzel) is currently the Director of Pediatric Neurology at Cedars-Sinai Medical Center. “Chemistry gave me a start in my research (copper, amino acids, etc.) and I look back fondly on my days in the basement of Science Building”.

Dr. Donald F. HODGSON (Ph.D., 1990; Amis), is now Vice President of Production for Syn Zyme Technologies in Irvine, CA. Don and Lori (Iwata Hodgson) are now proud parents of two little girls.

Dr. David SCOTT (Ph.D., 1993; Reisler), is now a Research Scientist at the CIT/JPL. You can check out his current research activities at http://laserweb.jpl.nasa.gov/