

NEWS 2003

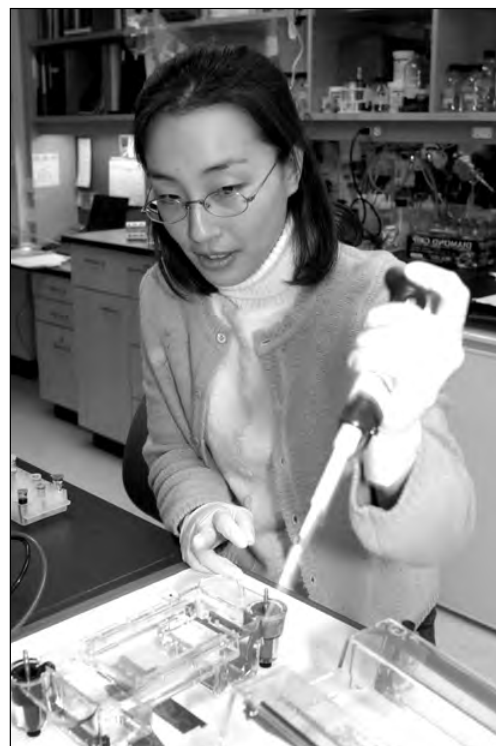
FROM THE CHAIRMAN: H.F. DeLuca

Dear alumni and friends of Biochemistry:

I send you my warmest greetings and hope that you have had an excellent year. I can say that the department has done well and has weathered a number of storms including the aftermath of the 9/11 financial downturn, and more recently, the Iraqi war. Of course, one of the fallouts of all of the above, especially the economic downturn, has been that the State of Wisconsin has moved very strongly into deficit spending. The result is that this year we will experience at least a 6.3 percent decrease in base budget from the State of Wisconsin. In Biochemistry, these cuts will be taken at the salary level of staff because we have virtually no supply and expense funds. As a result, we will have reduced staffing levels and some salary funding will need to be shifted to department money such as federal capital exercise funds that are collected from overhead on grants.

The good news, however, is the building program remains intact and Biochemistry will get its phase II addition which is supported 50% by State and 50% by WARF and UW Foundation funds. At the present time, the School of Medicine and Department of Bacteriology are occupying much of our vacated space in the old Biochemistry building. Of course, you will remember that our storeroom and our electronics and mechanical shops are still housed in the old 1939 and 1956 wings of Biochemistry. We expect to have new facilities in the Biochemistry Addition phase II building which is slated to be planned during the next academic year. Ground-breaking and destruction of the old Biochemistry building should begin sometime during 2005/2006. Hopefully, the new building will be available by 2007 to 2008. In that building will be housed the remaining tenants of the Enzyme Institute: Beinert, Cleland, Frey, Lardy, and Reed. The building will also provide new teaching and lecture facilities. In addition, it will house new faculty in the area of structural biology, as well as a few additional faculty members, hopefully that will be a part of Biochemistry. Finally, it will also house the Department of Biomolecular Chemistry. There are currently discussions underway to determine whether Biochemistry and Biomolecular Chemistry should join and become a single Department of Biochemistry. Those discussions are underway and I have no new information on that except to note that a committee is making progress in drafting a proposal for both departments and colleges to consider.

I mentioned last year that we were very fortunate to attract Elizabeth Craig into the Department of Biochemistry, and she currently has her laboratory on the fourth floor of the Biochemistry Addition. You will recall that Betty was Chair of Biomolecular Chemistry for many years. She is a National Academy member and was being courted by the University of Michigan to head the Biochemistry development there. We were lucky to be able to attract Betty to our department and retain her on the Madison campus. The Medical School was very cooperative in helping us accomplish that goal by transferring much of her salary. Unfortunately for us, Paul Ludden has left Biochemistry and the College of Agricultural and Life Sciences (CALS) where he served as Executive Associate Dean, and has assumed the Deanship of Natural Resources at the University of California at Berkeley. He is sorely missed both by the faculty of Biochemistry and CALS. Paul was able to maintain an outstanding research program, while at the same time serving as an outstanding administrator. We have asked for a replacement faculty FTE, but so far, the college has not yet allowed us to search for a replacement. The college has, however, added David Hogg of Ento-



Produced for friends of the Department of Biochemistry at the University of Wisconsin-Madison



mology as the new Executive Associate Dean. They have done well in their choice for that replacement.

Virtually all faculty members are supported by outside or federal funds in one form or another so the research efforts by Biochemistry are progressing very well. Of particular note is a large grant won by a group of our professors headed by John Markley and George Phillips. They attracted a multi-million dollar research grant from NIH to support proteomics of the Arabidopsis organism. This effort required the expertise of the crystallographers Ivan Rayment and George Phillips, together with Brian Fox who will generate the proteins, and of course, John Markley's group will work on nuclear magnetic resonance studies of the protein structures. This effort is being expanded and will represent a large effort by the Biochemistry Department.

In terms of the office staff, we have had a few changes although the stalwart remain, namely, Cheryl Adams, Carol Marth and Jim Shurts. We have added an excellent staff member who will manage the fiscal aspects of Biochemistry, namely Cathy Michael. Cathy came to us from the private sector and is doing a superb job of bringing our department into the 21st century in the area of financial management. To this group, we have added Steve Seiler, Lamin Touray, Robert McGuigan, and Terry Tarrow who will join Jule, Charlene and Alan. Of course, we still have great performers in the office staff that include Steve and Marcia at the receptionist desk, Carolyn who handles grant processing and general administrative tasks, and Carol Peterson and Kay Fitzgerald in payroll/personnel. Shirley Bredlau still manages to come in about once a week but is also happily enjoying retirement. One of the important jobs handled by Angela Trentadue is overseeing faculty searches and faculty nominations for awards. Dan

Barnish joined our office staff a couple years ago and has truly done an outstanding job in managing our undergraduate student population and providing up-to-date advising help, and also takes time to help with graduate recruiting. Of course, graduate recruiting is run by Colleen Clary who has truly done an outstanding job over many years. I would also like to mention the person who manages the Steenbock Symposia, lectures, and reimbursement, namely Janice Carberry who quietly goes about her job, and does an excellent and perhaps under-appreciated job. I am indebted to the entire office staff that keeps the department running and allows me to spend my time doing research and hopefully developing new pharmaceuticals.

Many of the alumni make donations during the year to help support Biochemistry in various ways. It does not matter how small the support might be. The thought of our alumni appreciating what Biochemistry has done for them in the past is of great comfort to me. It tells me that Biochemistry has done a pretty good job when the alumni are willing to come back and pat us on the back. Thank you very much!!

I am very excited about the future of Biochemistry, not only at the university, but what it will do in the future for mankind. A great deal of interaction has occurred through the cluster-hire process of the university in which the search for new faculty members is actually conducted by interdepartmental committees. They have brought forth an array of interesting new faculty additions to the university that ensure an interdisciplinary approach to research. It does, however, diminish the department's role in determining its own future. Somewhere between these two programs is the right mix. More recently, we have been heavy on the side of interdisciplinary hires and very light on the faculty hires that are done as a result of Biochemistry determining what they would like to see for the future of the department. The exciting additions of faculty members in recent years tells us that Biochemistry has a very rich future and I believe you can expect to see outstanding contributions continuing to flow from this department. In addition, I know you will be seeing the flow of well-trained students and postdocs coming from this department and to the nation's technology pool. I look forward to hearing from our alumni and would appreciate any comments you care to make that would be useful in determining the future of Biochemistry.

Thank you for your continued support!!
H.F. DeLuca, Chair

FROM THE FRONT OFFICE:

Cheryl Adams

As many of you probably know, the State of Wisconsin has been facing budget cuts and a reduction in funding available to the University. However, the front office has remained fairly steady during the past year. We have been analyzing our office processes to try and find ways to complete tasks more efficiently and with less people. Unfortunately, our list of duties seems to keep growing each year!

The biggest changes in the office staff during the past year occurred within the accounting group. Kelly Young left her position as the financial staff supervisor and we hired Cathy Michael to replace her. Cathy started in May 2002 and so far she has done an outstanding job! She has made noticeable improvements to the overall accounting and financial work that is completed by our office and has provided a great morale boost for the entire office. Welcome aboard Cathy! We also have some other new faces in the accounting group, namely Steve Seiler, Robert McGuigan and Terry Tarrow. Steve works on reconciliation of the accounts, Robert assists Jule with purchasing, and Terry provides help with general purchasing and accounting duties. We are happy to have them join our staff! Others in the accounting group include Charlene Entwistle, Jule Pauls, and Alan Rudrud who continue to offer valuable services to the department. Tiffany, our student worker, continues to provide much-needed assistance in between her busy class schedule. Cathy has also taken over supervision of the financial specialist assigned to the Enzyme Institute. Lamin Touray started in January 2003 and has been splitting his time between the Enzyme Institute and the Biochemistry front office. Lamin replaces Dave Hruby who was a long-term employee of the Institute. However, don't worry because Dave did not go far! He currently holds a position assisting the Center for Eukaryotic Structural Genomics which is a new project undertaken by several faculty members in the Department of Biochemistry. Janet Dewane remains at the Enzyme Institute and provides administrative support to the faculty members still housed there.

There were not any staff changes to the group managed by Carol Marth. She and her group continue to offer valuable assistance to the faculty and staff on graduate student recruitment, faculty recruitment and award nominations, grant processing, and many other tasks. Members of her group include: Colleen Clary, Carolyn Kunen, and Angela Trenadue. Shirley Bredlau continues to come in about once a week to make sure we are on track! She has

been very helpful in finishing up some long-term projects. In addition, the group recently changed the formatting of their recruitment Bucky Book to be "technologically correct" and this information is now sent out on CD rather than paper.

The payroll/front office staff has also remained unchanged during the past year. Dan Barnish, Marcia Bubrick, Janice Carberry, Kay Fitzgerald, Steve Noffle, and Carol Peterson all continue to make solid contributions to the work completed in the Department of Biochemistry. I am very pleased with the work that they help me complete and the positive environment in which they provide it.

Jim Shurts continues to work with faculty and staff on various building, facility, and departmental matters. However, you will probably need to wait in line if you actually want to talk with him in person!

We are all pleased that Hector has remained as Chair for another year. He provides great leadership and support for the front office, and we enjoy his personal interactions with the staff.

Overall, it has been a productive year and we look forward to hearing from many of you via phone calls, email or visits to the office.



Student Faculty Liaison Committee:

Luke Moe

Greetings UW biochemistry alums! This is Luke Moe, student-chair of the student faculty liaison committee (SFLC), and it is my pleasure to acquaint you with the SFLC and all of the activities and events that we sponsor. For those of you unfamiliar with our organization, the SFLC consists of biochemistry graduate students and participating faculty that meet monthly to discuss the interests of graduate students, and to provide a channel of communication between the faculty and graduate students. To this end, the SFLC has representatives on many departmental committees and encourages interactions by sponsoring a number of group events throughout the year.

This year, the SFLC has organized a summer barbecue and picnic, a holiday party, and our annual departmental art show. The art show, now in its second year, showcases the artistic talents of members of the department by turning the first floor atrium in the Biochemistry Addition into a gallery that houses the works of departmental members. This extraordinary event has been implemented and achieved success due primarily to the vision and hard work of the departmental art committee and SFLC member Michelle Soltero (Kiessling group). In addition, we are thankful to Professor Julian Davies for his donation which made the art show "grand opening" possible. Upcoming events include the popular egg-drop contest, which pits lab against lab in a friendly battle to create the most sturdy vehicle (made from common lab supplies) for safely landing an egg dropped from the upper floors of the building into the atrium.

Some current SFLC projects include developing an up-to-date alumni database, and organizing graduate student surveys to be completed both before and after graduation. Also, the SFLC is looking to start up two new departmental awards to honor outstanding teaching by a graduate student, and excellence in research. Ultimately, it is our goal to set up an honorarium that could be awarded on a yearly basis to graduate students outstanding in these qualities. If you would like to learn more about this, or provide a donation, then please contact me (lmoe@biochem.wisc.edu) or Professor Bill Reznikoff (reznikoff@biochem.wisc.edu) or you can send a check made payable to the Biochemistry graduate student fund:

c/o Jim Shurts

UW-Madison Dept. of Biochemistry

433 Babcock Dr.

Madison, WI 53706

Thanks, and best regards!

Luke Moe (Fox group)



US 2003

LAB



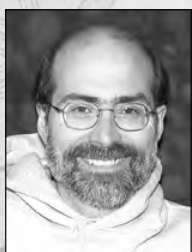
Julius Adler
Lab 457

Dear friends,

I am having a wonderful time exploring the brain of flies. Nine undergraduates and I are looking for *Drosophila* mutants that can't "think right," and I believe maybe we have found a few.

My studies of behavior came to a climax recently when I went on a Smithsonian trip to Kenya and Tanzania. We saw behaving mammals: zebra, giraffe, impala, wildebeest, buffalo, rhinoceros, elephant, hyena, cheetah, lion, leopard, jackal, various kinds of monkeys, etc., etc.; and behaving birds: ostrich, European stork, African stork, flamingo, etc., etc. All that remains is to work out the biochemistry of these behaviors.

My best wishes to you for happy behavior.



Rick Amasino
Lab 207

The mystery of how plants can distinguish the seasons continues to puzzle us, but we continue to identify pieces of this puzzle. One seasonal cue is changing day-length. This year Mark Doyle published in *Nature* his studies of an *Arabidopsis* mutant, early-flowering 4, *elf4*, that linked day-length sensing with circadian rhythms, and he provided a molecular model of how the *elf4* mutant perceived short days as long days (which are conducive to flowering). *ELF4* is required for the accuracy of the circadian clock. Interestingly Mark's work and that of other groups is revealing that most clock components are not conserved between plants and animals. *ELF4* is a small protein (111 amino acids) that is unique to plants (at least in primary structure) and we hope that our colleagues at the Center for Structural Genomics will determine its structure.

Another seasonal cue is the passing of winter and, as you know from gardening experience or past newsletters, many plants must pass through the prolonged cold of winter in order to release dormant buds or to flower the following spring. Plants that require winter exposure to flower the second year after planting are known as biennials. In *Arabidopsis* we had previously discovered a DNA-binding protein, *FLC*, that represses flowering in biennial types of *Arabidopsis* that have not been exposed to cold. We found that cold turns off the *FLC* gene and thus relieves the repression. An interesting feature of this cold-mediated turn off



is that it is permanent for the rest of the life cycle of the plant (i.e. FLC remains off during the warmer growing conditions following winter) but off course FLC is re-set to the on state in the next generation.

This past year Scott Michaels, Yoo-Sun Noh, Fritz Schomburg, Si-Bum Sung, Isabel Bezzera, and Colleen Bizzell have uncovered many of the players involved in the regulation of FLC. Not surprisingly some of these players are encode types of proteins involved in chromatin remodeling. The majority, however, are, like ELF4 discussed above, unique to the plant kingdom. Yuehui He has found several DNA sequences encoding regulatory elements of FLC in its large intron, and there appears to be separate regulatory elements for the various pathways that control FLC expression.



Alan Attie
Lab 563

It's been a fun year in the lab. We are thinking about our research in completely new ways. Our genetics work advances and we now feel like we are real geneticists. Thanks to our collaborations with Brian Yandell and Christina Kendzierski, we're at the cutting edge of quantitative genetics. **Hong Lan** recently helped me to write an ambitious grant to combine genetics and genomics by treating RNA abundance as a quantitative trait for gene mapping. The very best news of all, however, is **Susie Clee's** victory in her battle with Hodgkin's Lymphoma. Having Susie back with her full energy has been fantastic!

Comings and goings: **Trine Ranheim** came back from Norway again for a short visit, just 3 months. We're committed to try to find a way to capture her for a longer time. **Torey Browning** moved on to Jon Odorico's lab where she will apply her expertise with ES cells in type 1 diabetes research. **Pete Leland** got a job with Quintessence, Ron Raines' and Laura Kiessling's new company. Pete's wife, Jill, also had a baby, Jonah, at about the same time as his job came through—good timing! **Jake Mulligan** successfully defended his thesis and is now post-doc with Kurt Saupe in the Physiology Department. **Jonathan Stoehr** successfully defended his thesis and is now finishing the MD portion of his MD/PhD degree. His wife, Danielle, is due to have a baby soon. **Sam Nadler** will be graduating in June with his MD/Ph.D. degree and is off to Seattle for his medical internship/residency in internal medicine.

News from alumni

Darren Fast has moved to Lombard Life Sciences (managers of the Western Life Sciences Venture Fund LP) as Director, Project Management/Regulatory Affairs. The fund invests in early stage life science companies. In this new position, he is

We also have a fun project to create mutants in a rapid-cycling cabbage plant as an educational tool. Kelly Buono has done an incredible job of creating and characterizing these mutants. Check out her accomplishments at <http://www.biochem.wisc.edu/brassicaclassroomgenetics>.

We have a great team of undergraduates doing research projects: Melissa Keller, David Shall, Karen Piton, Utthara Nayar, Miguel Gallego, and Kim Engstrom.

This year we are sad that Yoo-Sun Noh has departed for a position in Korea. We will miss him and wish him well in his new position.

responsible for ensuring investee companies develop and execute plans for product development that will obtain regulatory approval and provide timely returns for shareholders. His family continues to flourish with both Noah (9) and Katryna (7) enjoying school, and Lin continuing to work in the pediatric intensive care unit of the Children's Hospital.

Scott Cooper is now in his 8th year teaching at the University of Wisconsin-La Crosse. There are three graduate students and numerous undergraduates in his lab, researching everything from the molecular mechanisms of blood clotting to perch parasites and trout genetics. He is really enjoying teaching, and now teaches four different courses each year (Introductory Biology, Molecular Biology, Bioinformatics, and Pathophysiology). The highlight of last summer was a two-week trip to Alaska, where he had the opportunity to meet up with a former graduate student from Scott's lab who is now pursuing his Ph.D. in genetics at UW-Madison. On the trip, Amy bought two new sled dogs for her team (most people buy smoked salmon in Alaska, Scott & Amy buy dogs). They are enjoying their favorite season (winter) now that they finally have some snow. Scott hopes to complete his 10th Birkebeiner ski race.

Bill Checovich: Well, yet again, PanVera is being purchased. This time by Invitrogen. The deal should be final in another 30-45 days. Bill is nearly 'last man standing' as all of the founders and Bob Lowery are now gone. As VP-Manufacturing, Bill has about half of the science operations reporting to him. Mary and the girls are doing well. Claire is 8 and Laura is 12. Both spend most of their time learning math and Irish Dancing. Laura recently competed in the Midwest Irish Dancing Champi-

onships and did well, placing in the top half of the field. Next month they are both performing with the professional dance company in Fort Worth, Texas. Bob Aiello, Scott Cooper, and Bill are recently on

the look-out for an old Eddie Murphy comedy tape that they played nearly every day in our lab for a year. If anyone has a copy, please let one of them know.



**Robert Burris
Emeritus**

This has been a year of transition. After living in our house in Shorewood Hills for 54 years, we sold it and moved to Oakwood Retirement center in west Madison. I even gave up my bike in the process. As our back lot line abutted on University property and the University playing field right next to a bike path to Lake Mendota, this location was such that it took

3 days to sell the place. Oakwood apartments are new and pleasant, and they make every effort to keep residents busy and happy. Standard equipment for residents is a cane or walker, but to this point I manage without them and get to the biochem lab about 3 days a week. I miss Paul Ludden and his research group, but try to keep up on a few journals.



**Mo Cleland
Labs 304 & 308
Enzyme**

The current members of the Cleland Group are Dr. Laurie Reinhardt (scientist), Dr. Mark Anderson (scientist), Dr. Kirk Wright (NIH Postdoctoral Fellow), first year graduate student Jeremy Van Vleet, and future graduate student Liu Yong.

Laurie is currently on maternity leave as she gave birth to a son, Evan Richard Steinmetz, on January 23rd. The kid is a sure bet to be a star in the sciences as his father, Eric Steinmetz, is also a Ph.D. scientist working for the Brow Group in Biomolecular Chemistry. On her return, Laurie will continue her work on the kinetic isotope effects (KIEs) on the reaction catalyzed by the enzymes OMP decarboxylase and oxalate oxidase.

Mark is currently working in collaboration with the Christopherson group at the University of Sydney to determine the KIEs in the reaction catalyzed by DHOase. He is also finishing up a study of the mechanism of hydrolysis of cyclic phosphotriesters. Outside of lab he is concerned mostly with the activities of his son, Erik, which include skateboarding and baseball among other things. Mark is also discovering the joys of owning a new home; shoveling snow, laying sod, planting grass, etc.

Kirk is presently finishing up two projects; the isotope studies of the hexokinase reaction and a collaborative effort with Don Hilvert at Zurich ETH on the mechanism of the reaction catalyzed by chorismate mutase. Kirk is an avid mountain, rock and ice climber. In the last year his climbing forays have taken him to Minnesota, Kentucky, Colorado, and Nepal. Also a fine photographer, Kirk was invited to give a slide presentation and talk at REI Outfitters on his trek through Nepal.

Jeremy came to Madison and the Cleland Group from East Lansing Michigan. His first project is a mechanistic study of OMP decarboxylase with guidance from Laurie. As a first year graduate student he doesn't have much free time but still manages to play a baritone (or euphonium) in the UW-Madison band.

Yong came to us from Beijing China. She received her bachelors degree from Beijing University of Chemical Technology and has applied to graduate school in biochemistry here at Madison. Her husband, Huang Kaisheng, is currently a post-doc in the Frey lab. Her initial project here is to assist Laurie in the study of the mechanism of oxalate oxidase. Outside lab Yong loves to read and travel.

Last January Laurie, Mark, Kirk, and Mo attended the Gordon Research Conference on Isotopes in Chemistry and Biochemistry in Ventura. Each member of the group presented a poster and Laurie was picked by the GRC committee to give a short presentation. The talk was on the mechanism of oxalate decarboxylate and was very well received. The meeting and weather were wonderful but unfortunately the schedule did not allow for a whale watching trip this year.

Mo and Kirk also attended the Enzymes Mechanism Conference in Galveston Texas earlier this year. Kirk presented a poster on the mechanism of chorismate mutase and Mo gave a talk titled "Use of Isotope Effects to Study Enzyme Mechanisms". While at the conference, Mo (and 350 of his friends) celebrated his 73rd birthday. Mo led the group in singing "Happy Birthday" after which everyone enjoyed a slice of birthday cake, courtesy of Frank Raushel (ex-grad student of Mo's) who organized the meeting.



Mike Cox
Lab 337

Comings: Two new graduate students, Julia Drees (Colby College) and Dennis Harris (Salisbury University), joined the Cox lab in December. We welcome both to our lab.

Julie and variants of that name seem to have become the standard in the lab. Presently, Julie Eggington, Julia Cox, and Julia Drees replace former lab "Julies" Julie Bork and Julie Senecoff.

Yuri Kil made another trip to the U.S. and worked in the lab briefly this Fall. He returned to Russia before the New Year.

Goings: Aimee Egger received her Ph.D. and is now at the National Academy of Sciences on a Christine Mirzayan Internship. She'll begin a postdoc after the internship has ended. But, she'll be back visiting Madison in the spring to attend the 2003 Commencement Ceremonies and has invited everyone to a huge celebratory party!

Awards: The Cox lab again won the Ornament Competition at the Biochemistry 2002 Holiday Party. Unfortunately, the ornament mysteriously disappeared after the competition and has not been seen again.

Current Lab News: Shelley Lusetti received her Ph.D. in May 2002. She's currently a postdoc in the Cox lab.

Stephen Abbott decided to obtain a Masters' Degree. He received his Masters' February 2003.

Mara Robu plans to defend her thesis in May 2003.

Past Lab News: Dave Dwyer and Karen Arnold have moved to the slightly colder climate of Sara-

nac Lake, New York, where Karen has begun a postdoc. This move is after a three-month traveling extravaganza in Europe after Karen's thesis defense in 2002.

Chris Fleming, a former Cox lab undergraduate has begun his second semester at the University of North Carolina. His first semester was made interestingly busy by his being a TA in two classes.

Julie Bork stopped by to visit the Cox lab during the Holidays while in Madison visiting her new Mother and Father-in-law. Yes, she and Todd Schultz were married in June 2002 and had an island honeymoon.

Kevin Rice and Anna Sessler will be new parents when this Newsletter is published. Their baby is due March 2003.

Tanya Arenson and Paul Marrione also will be having their first child in 2003.

Wendy Bedale is now working in a new company. She's a project manager at Powderject Vaccines in Madison. She'll be managing their DNA vaccine collaborations with GlaxoSmithKline. She has also happily announced her engagement to Duane Kaufman.

Alberto Roca has also announced his engagement to Nancy Aquilar who is a postdoc at UC-Irvine. They plan to marry May 24, 2003, and Alberto plans to begin a postdoc at UC-Irvine sometime during the summer of 2003.

Sarita Jain graduated from the Haas School of Business at UC-Berkeley, May 2002. She's begun work in the Business Development Department of Renovis, Inc., a neuroscience biotech start-up company in South San Francisco.

Lisa Iype and Varugis Kurien have sold their new house (lived in for 7 months) and have relocated across the country in Seattle, Washington. Varugis has begun work on a project at Microsoft. Lisa will begin a job search soon.

Leslie Waite is now an instructor for Berkeley Extension, teaching Molecular Biology, is a mentor for high school interns at UCSF, and is also a postdoc in the Center for Reproductive Sciences, which is associated with the Department of Obstetrics and Gynecology at UC-San Francisco. Keeping busy Leslie?



Julie Senecoff and Juan Navia have settled in Doylestown, Pennsylvania. Julie was accepted into the Masters in Genetic Counseling Program at Arcadia University in Glenside, PA.

John Taulien is now Director, Sales and Business Development at Eprogen, Inc.

Xiahong Qian has founded a company, GenePharm, in the San Francisco Bay area.



Betty Craig
Lab 419, 445

Greetings from the Craig Lab. We are now happily ensconced in our new labs on the 4th floor of the Biochemistry Addition. It's a credit to everyone in the lab and the staff in Biochemistry that the move went so smoothly and the "downtime" for lab work was remarkably short. Many thanks to **Willy Walter** who orchestrated the move.

Two lab members managed to time their departure to barely escape the work of moving the lab. **Nelson Lopez** finished his Ph.D in Bacteriology and departed for a year of postdoc at Yale. He is now headed for his new job at Amgen in Puerto Rico, happy to be back home with family (to say nothing about the warm weather!). **Jill Johnson** joined the faculty of the University of Idaho as an Assistant Professor. She reports that her lab is up and running, ready to take on the question of Hsp90 function, but the night life in Moscow, Idaho is a little slow.

Bob Seiser joined the lab as a postdoc, having just received his degree from Duke in Chris Nicchitta's lab. Bob's timing was a little questionable, arriving only a few weeks before the move, but he pitched in good naturedly. Also, **So-Young Kim** joined the lab as a postdoc. So-Young received her degree in Biotechnology from Yonsei University in Korea. She plans to put her experience with yeast to good use studying the physiological function of ribosome-associated chaperones. In addition, a new graduate student from the Biochemistry program, **Anne Provinzino**, joined the group. We welcome the three to the lab.

Qinglian Liu graduated in the fall. Qinglian set the record for shortest downtime during the move – less than 24 hours between the last experiment in the old lab to her first in the new lab. She is now doing her postdoc with Wayne Hendrickson at Columbia. We are waiting with baited breath for her first structure! **Patrick D'Silva**, with Willy's help, is continuing the mitochondrial import project. They and **Maverick Cheng** are making great progress in understanding Tim44.

At her graduation celebration Qinglian passed on the "lame duck" to **Helene Eisenman** who is on track to graduate in the summer. The "lame duck," the lab member who has been in the Craig lab the longest (with the exception of Betty, of course), who becomes the responsibility of the "eldest" graduate student is alive and doing well. Along with Helene, **Rebecca Aron**, **Heather Hundley** and **Peggy Huang** make up the remainder of the "B group", those who work on the mysteries of cytosolic Hsp70s, and constitute the "outpost" down the hall. Peggy put together the lab's new web site (check it out: <http://www.biochem.wisc.edu/craig/lab/>)

Brenda Schilke, **Sara Cheng**, **Kerman Aloria** and **Amy Andrew** continue the lab's venture into the world of iron. They obviously are doing something right - Betty has been invited to speak at a couple of "iron meetings" this year. They were joined for a few months this year, as usual, by **Jarek Marszalek**, a visiting Professor from the University of Gdansk, who has finally accepted that Betty is capable of making a decent cup of coffee.



Brian Fox
Lab 123

Hello from 141B Biochemistry Addition.

Lab alumni now moved to greener pastures include Brian Hoffman (Abbott Labs), Eric Eberhardt (Vassar College), Jeremie Pikus (well...), John Broadwater (U. of Minnesota Lipscomb lab), Joe Studts (Boehringer-Ingelheim, Groton CT), Jeff Haas (new position at Calgene, Davis CA), and Amanda Barry (Oregon Graduate Institute). Cory Rogge moved to Texas in the summer time, proving she is tough, cold weather or hot. No hockey in Houston, what does she do for outdoor fun now? Several of

the lab members are in Arizona as I write this letter to attend her wedding. We wish the best of luck to Cory and Kevin in their new married life. In another nuptial splendor, Thomas Malone was married to Carolina in Santiago, Chile last December. Congratulations to love birds everywhere.

Kevin Mitchell and Enrique Gomez finished their doctoral careers this year. Kevin has been here in town, working hard as a postdoctoral with Cory to get several years of isotope effect studies boiled down to 45,000 characters or less. Look for the

results shortly in a Proceeding of the National Academy special volume on bioinorganic chemistry. When Tracey finishes her Ph.D., they are off to postdoctoral studies in the land of dot.com busts and latent earthquakes, I meant San Francisco. Enrique finished his Ph.D. in grand style, with his father here in town to pass final approval on the work done. He made a great effort, placating the desires of two bosses while at the same time training 3T3-L1 cells, rats, mice, and rabbits. One pleasing development, the former immunology student has been doing some very nice mechanistic enzymology recently as a postdoctoral.

Karen Lyle completed her first round of rapid-mix work on the plant desaturase, and we submitted that paper about a month ago. Her demonstration of burst kinetics from turnover from one subunit and then the other is a textbook case. We are very pleased with the results, which provides a catalytic complement to Jeff's paper on the binding of fluorescent labeled ACPs, also published this year. In her spare time, Karen decided to take up cloning, and you'll be reading about those results in the next letter for sure. Luke has been making T4moH chew away at nearly every strained reaction probe he can get his hands on. Also, Luke recently showed that he learned something from all of his graduate-level methods lecturing, by taking up saturation mutagenesis/screening with Kevin. G103X is shaping up to be a real hotspot for catalytic variation. It also looks like the NMR structure of T4moC will be completed shortly, and several crystal forms of T4moD are being refined. Tom Malone is busy with the teaching requirements of the Molecular and

Environmental Toxicology program this semester, and he has been working with undergraduate Stacey Madson to clone the oxophytoene family of flavo-protein reductases from *Arabidopsis*. So far they have gotten three of the five cloned, with the goal of establishing a structure/function/phylogeny tree for the plant, bacterial, and fungal worlds. Paul Blommel from the Biophysics Program has been doing vector development, expression testing, and some flashy stuff on how to detect recombinant, tagged proteins in the structural genomics context. Paul must have done some serious study of fractional distillation in the past as evidenced by the bottle of white lightning he brought by one morning.

The UW Center for Eukaryotic Structural Genomics spent most of the first year on methods development research. In October, after the Berlin Protein Structure meeting, a new mantra of "pipeline, pipeline, pipeline..." began to pulse up and down the first floor halls. Russell Wrobel leads the cloning group, with help from Kate Zhao, Sandy Thao, and Todd Kimball. They PCR, recombine, transform, and cuss the robot and the genie into about 100 cloned genes per week. These clones move on to Ronnie Frederick, who peers into gels in an attempt to divine whether a recombinant protein has been expressed. If our highly refined decision process (yes, no, maybe) indicates yes, Sreenath and Kory Seder grow the cells in our latest and greatest of fermentation devices, the 2 liter pop bottle, minus the pop, of course. Bottom line, 5-20 g of recombinant cells with 4 to 8 different genes expressed per day! These cells move to the Protein Production Facility in 218 Old Biochemistry, where Won Bae Jeon and Dave Dyer (escapees from the mad dash to California by the Ludden group) and Scott Leisman use robotics and a bit of brute force to purify recombinant fusion proteins for the structural groups. So far, the group has generated 1 NMR structure, and proteins are starting to crystallize.

With all this research, we need good administrators. Craig Newman does the CESG scheduling and most of everything else, Dave Hruby (remember him), does the accounting and secured the pop bottles one thousand at a time, and Emilie Keen does the lab scheduling.

The home life of the lab alumni has evidently been busy in the past year: Octavio born to Enrique and Monica; Lindsey to Jeff and Lara, and Emma to John and Debbie. Congratulations to Moms and Dads and beautiful Babies. Now more of you understand the depth of my warnings about the lack of good methods to induce routine sleep in children.





Perry Frey
Lab 546B
Enzyme Institute

I hope you are happy and prospering in your current circumstances. This spring, May 28th until June 1st, George Reed and I are hosting the 29th Steenbock

Symposium, Coenzymes, Cofactors, and Catalysis here in Madison. It promises to be a great time to visit with old friends. Please try and attend.

It has been an exciting year for the Frey Lab. While much has changed, much remains the same. Ab Arabashahi and Frank Ruzicka continue to be the standard by which the Frey Lab runs, with a combined 32 years experience as the cornerstone of Frey Lab research. Drs. Dawei Chen and Kaisheng Huang remain among the group, working on a myriad of spectrophotometric and spectroscopic projects. Glen Hinckley is working ardently on the development of an electrochemical apparatus to study iron-sulfur clusters. Phillip Schwartz continues his work on model cobalamin chemistry. Both graduate students retain a tight collaboration with the Reed Lab, a lab whose offered assistance is more than common with the group. And every Saturday Adrian Hegeman can be seen haunting these old halls as he avidly assists in the writing of an inclusive work on enzymology, headed by Dr. Frey.

The lab has experienced a significant increase in trained personnel over the last year. Elham Behshad, once an undergraduate research assistant in the lab, has returned as a post-doctoral researcher after her graduate training at Penn State. Margaret Spivey comes to us from the Mayo Clinic in Rochester, MN to aid with technical expertise in engineering of

lysine 2,3 aminomutase. Susan Wang will soon join the lab after defending her thesis at the University of Texas, where she maintained a productive career under the supervision of Chris Whitman.

The lab also says goodbye to Kuo-Hsiang Tang, who successfully defended his thesis last November. He will be leaving the lab in June for a prestigious post-doc with Dan Herschlag at Stanford. Kuo is twice blessed this year, as he and his wife are the proud parents of a healthy baby boy. We wish the family well.

Of important note, this May the rich history of the Enzyme Institute is recognized as the brilliant career of Perry Frey is honored at this years Steenbock symposium. The Frey Lab will see the return of many old faces as friends, former students, and colleagues come to speak on the volumes of first-class research produced since their time here. The Symposium promises to be enlightening, with lectures by leading researchers in the field of radical and cofactor assisted biochemistry. All of the continuing lab members look forward to another productive year of research and collaboration within the Enzyme Institute and its community.



Jack Gorski
Emeritus

The past year has had it's ups and down's. We had two great trips to California; a Women's Health meeting which had some very interesting papers and a trip to San Luis Obispo, CA and California Polytechnic College where I started college. Meeting up with some old friends from over 50 years ago was a lot of fun. I have less and less to do with science but enjoy an occasional seminar and the Estrogen club meetings. Our dog, Nellie, and I have a fun job chasing geese off of a local golf course. On the down side, my liberal bias has had a tough time dealing with our countries current foreign and domestic policies. Problems with osteoporosis (probably due to previous rounds of chemotherapy) and a summer waylaid by Whooping Cough (Pertussis) which lasted from June till September for both Harriet and I were also downers.

The "Estrogen Club" at the University is going well. Jyoti Watters is now on the faculty as well

as taking care of her little boy. Mary Ozers, who works at PanVera, comes to the meetings but is now a Mom with her baby boy born in November. Linda Schuler, Reese Alarid, Mike Fritsch and Fern Murdoch round out the group. They have attracted an excellent group of students and postdocs and the interaction amongst the groups is great.

Chingwen Ying and her husband have spent the year on Sabbatical leave at Cornell University.. Joannie Jorgenson, Assist. Prof. U. Illinois, also had a baby last spring. Kataro Koneko is still at NIH and married in August with several former lab mates attending. Lee Ann Baxter Lowe is an investigator at the Cancer Research Center at the U. Cal-San Francisco Medical Center.

We always look forward to visiting with or hearing from you during the year.



Henry Lardy
Lab 303
Enzyme Institute

Creetings from the Lardy Lab at the Enzyme Institute! Much of my time since the 2002 department newsletter has been spent recovering from a serious car accident in early October. Recovery has taken a long time, but is going well. I appreciate all the heartening messages received from former lab associates. The most appreciated floral gift came from the Biochemistry Department faculty and staff. Thank you all!!

While attending to a healing pelvis and body wounds, my colleagues both here and at the University of Rochester kept producing novel structures and demonstrating their activity. I selected 20 steroids synthesized by Padma Marwah for Drs. Miyamoto and Chang to test as anti-androgens in prostate cancer cells. Jackpot! One turned out to perform better than currently used drugs and was turned over to WARF for possible development.

Many alumni of our group know Nancy Kneer. She retired at the end of 2002 after 37 years of research in our group. Because we can't operate without her, she has agreed to come back on an Emeritus, part-time appointment.

In addition to the joint anti-prostate cancer research, our group has made excellent progress toward finding the structure of an active hormone that is produced metabolically from DHEA. Dr. Ashok Marwah has found several new compounds that are produced from DHEA in rat liver (*J. Chromatog B* 767:285-299, 2002). A quantitatively minor product, but one of unique structure has been found and partially characterized. In next year's newsletter we will tell you whether it is important or artifact.

For a long time I have been suggesting that citizenship and voting rights should be limited to people who have had a basic course in physics. We all know about the cooks who turn up the heat under the boiling pot because they think they can raise the temperature above the boiling point.

Then there is the genius in the White House who proclaims that H₂-driven cars will abolish all air pollution. Where is he going to get the H₂ without burning coal, gas, or oil to make electricity to make H₂ and O₂ from water?



John Markley
Lab 171
NMRFAM

New Ph.D. degrees
Congratulations to **Sonay Kuloglu, Qin (Kate) Zhao, and Jikui Song.**

CESG

The Center for Eukaryotic Structural Genomics continues to grow and develop. Check out its web site <http://uwstructuralgenomics.org> for details.

BMRB and Sesame

Space opened up in Old Biochemistry, where the departmental financial offices used to be. **Eldon Ulrich** and his crew at BioMagResBank have moved from the former NMRFAM space in the 1985 wing into half of this space, and **Zsolt Zolnai** and his Sesame team have moved from NMRFAM space into the other half. This brings the two groups with similar interests together and gives them improved space with windows. BMRB launched a new deposition software package (ADIT-NMR) developed in collaboration with the Protein Data Bank and now has a site developed by **Jurgen Doreleijers** that makes NMR structural constraints available in a uniform format. Sesame is now being used heavily by CESG and most recently by another structural genomics pilot project (Structural Genomics of Parasitic Protozoa). Kudos to Zsolt and **Craig Newman** for their efforts in making this happen.

Comings

The Markley lab welcomed three new graduate students: **Liya Wang, Mike Birkeland, and Arash Bahrami.** Mike is working on iron sulfur proteins. Liya and Arash are developing new approaches for structure determination by NMR spectroscopy. We are pleased to introduce the new staff members who have joined NMRFAM: **Klaas Hallenga** (Assoc. Scientist) from the Purdue Interdepartmental NMR Facility, **Gabriel Cornilescu** (Asst. Researcher) from Marius Clore's laboratory at the NIH, and **Marco Tonelli** (Asst. Researcher) from Tom James' lab at UCSF. **Dave Hruby** (previously of the Enzyme Institute) joined the NMRFAM/CESG office staff to handle orders and financial matters. **Emilie Keen**, a new secretary with Brian Fox and Sam Butcher, is helping Dave with filing. **Jundong Lin** joined BMRB as an annotator.

Goings

Erika Gebel, who carried out undergraduate research in the lab, left to start graduate school at Johns Hopkins University. **Sonay Kuloglu** and her husband Mehmet Engin moved back to Turkey, where they both are Assistant Professors at Mugla University. **Winston (Wen-Jin) Wu**, left NMRFAM to take a position as Staff Scientist at the High-Field Biomacromolecular Solution NMR Center, Institute of Biomedical Sciences, Academia

Sinica, Taipei, Taiwan. **Kassandra Sojourner** left BMRB.

Visitors

Young Kee Chae spent two months in the lab last winter. He plans to come back for two months in the summer (with **Seol** this time). Young Kee is carrying out research on protein production for CESC. **Fred Pflueger**, who relocated to Madison to work for the FBI, is coming to the lab part time to complete work for his Ph.D. thesis, which will be awarded through Florida Atlantic University.

Fellowships

Hamid Eghbalian has received a Computers in Biology and Medicine senior fellowship. Tim Machonkin was successful in renewing his NIH postdoctoral fellowship for a third year.

Promotions

Qin (Kate) Zhao became an Asst. Researcher at CESC. **Fariba Assadi-Porter** was promoted to Assistant Scientist. Fariba is conducting collaborative research at NMRFAM. **Mark Anderson** was promoted to Associate Instrumentation Innovator, Research.

NMR lab and equipment

The fit-out of the new NMRFAM space is largely complete thanks to efforts by **Ed Mooberry** and others on the NMRFAM team. See the NMRFAM website <http://nmrfam.wisc.edu> for details. A second Varian 600 MHz NMR spectrometer delivered in 2002 brought the number of NMRFAM spectrometers to eight. After long waits the cryogenic

probes for the Bruker 600 and Varian 600 finally arrived and were installed during the same week in March. The remaining funds needed to purchase a 900 MHz spectrometer were awarded through a grant from the NIGMS. The Madison 900 magnet, which has been constructed and tested in Oxford UK, is slated to arrive at the end of summer 2003.

Honors

In 2002, John was elected Fellow of the American Association of American Science and Fellow of the Biophysical Society.

Travels

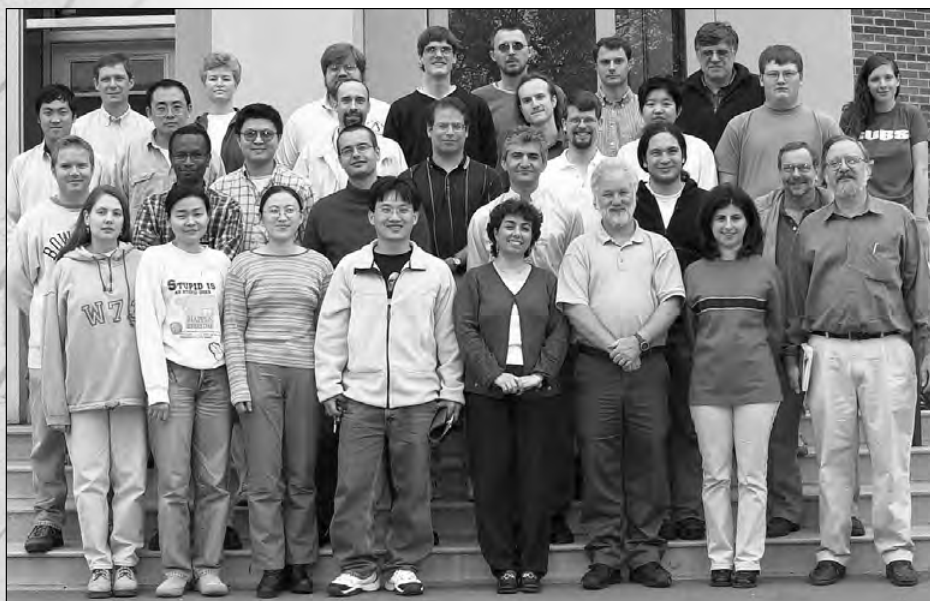
Over the past year, John and members of the lab may have been sighted at meetings in Asilomar and San Diego, CA, Bethesda, MD, Toronto, Paris, Berlin, Sicily, Florence, Tokyo and Matsuyama, Japan. John gave seminars at Washington State, Mayo Research Foundation, and Istanbul. Representing us at the 2003 ENC are **Frits Abildgaard**, **Heike Blad**, **Gabriel** and **Claudia Cornilescu**, and **Hongyang Yao**.

New babies

Congratulations to **Sonay** and Mehmet Engin, **Jing Li** and **Jikui Song**, and **Jianhua Zhang** and Peicheng Jing. Each couple has a new son.

Keep in touch with the Markley lab

Please note that the lab web site <http://www.nmrfam.wisc.edu/markley/> has a page for alums. If you are not represented or wish to update your listing, please send email to John or Craig Newman.





Anant Menon
Lab 473

The past year has seen many exciting changes in the Menon Lab. With several new additions to the lab, Anant, with his fresh troops, is taking the membrane world by force. Sadly though, the past year has also seen many of Anant's old troops leave.

Niki Baumann successfully defended her thesis last December, and, after a very difficult and gut wrenching departure, left for the Washington University School of Medicine in St. Louis. She is now a part of the Clinical Chemistry Fellowship program where, after four months of rotations in clinical chemistry, she will get to touch chemicals again soon.

Giovanni Miranda had enough of American cheeses and decided to return to Switzerland where the cheese is 'good.' Bill Watkins' engagement with the Mycoplasma flippase ended tragically when he decided to move on to bigger and better things. Fittingly, as some once predicted, he has found his calling in science writing in Schaumburg, IL. Dave Rancour is still enjoying the quiet life down on the 2nd floor in Sebastian Bednarek's lab. Sathya Gummadi decided to accept a faculty position at the Indian Institute of Technology. Sigrun Hrafnisdottir, who is now in Gerrit van Meer's lab in Utrecht, Netherlands, has become a mother since the last newsletter. Former lab member Cedric Simonot, still residing in France, has also recently become a parent, announcing the birth of his girl last fall.

Saulius Vainauskas (postdoc) has continued with his habit of beating everyone else into the lab each morning. Although we're all quietly angry at his attempts to make us look bad, we say nothing for with his early arrival comes the first pot of coffee in the morning.

Anita Pottekat (grad student) is still quietly toiling away at the intricacies of the PIG-L localization. With Niki's departure, Anita has become the senior grad student in the lab.

Terra Potocky (grad student) is currently with us in Biochemistry but really belongs in Sam Gelman's Lab in Chemistry. We've still got some time to convert her completely though.

Sandy Harding (grad student) is in a joint appointment with this lab and Hazel Holden's lab. She is dreaming of PIG-L crystals before she takes her prelim in April.

Qing Chang (postdoc), originally from Beijing, China, has recently joined us from UW Food Sciences. He has fallen in the ranks in the search for the elusive flippase. He and his wife, Hong, are pleased to announce the birth of their son, Kevin, in January.

Jane Walent joined us last fall to share her expertise in protein purification. She is lending her experience to the flippase team in hopes of uncovering the elusive protein (it IS a protein despite what Dr. Baumann says.)

The Menon lab acquired two new grad students this year, Tim Wertin and Dave Sullivan. Tim and Dave are just all around stand up outstanding guys. Tim is currently searching for a bacterial flippase, but will soon be playing with cow eyes to investigate retinal rhodopsin. Dave (also known as Dave A since Dave Rancour is Dave 1) on the other hand, has chosen to follow up Dr. Baumann's work on ergosterol transport.

Caleb Cresswell, having had enough of Anita's tutelage, is currently working on his own project. However, he has decided to make medicine his career and will be joining the med students here at UW next fall.

Jenny Cyrzan (sophomore undergrad) is currently working under Saulius. She is investigating the GPI-GlcNAcT, the first enzyme of the GPI pathway.





James Ntambi
Lab 407

This past year has been another rewarding year for the Ntambi lab. We have moved since the last time this newsletter was written from room 419 in the Biochemistry Addition to Room 407. To learn all we can, our lab has since grown to about thirteen researchers and undergraduates covering a wide range of the stearoyl-CoA desaturase (SCD) field.

Professor Ntambi is currently teaching Biochemistry 501, 508 and 511 while also keeping the lab in order. When not busy giving speeches to other institutions on the role of SCD in metabolism and cellular processes, he is also receiving awards for his excellence in teaching. Recently he was the proud recipient of the 2002 CALS Outstanding Teaching and Advisor Award which is given by the students to professors who are considered exemplary in their ability to teach and engage the students in thought.

Research scientist Makoto Miyazaki is currently investigating the interplay between all of the different SCD isoforms in the mouse system as well as the human cell model. This work also focuses on the effects that SCD's have on other cellular processes such as leptin effects.

Lab research associate Shaikh Mizanoor Rahman is hard at work studying the insulin-signalling pathway of the SCD1 knockout mice along as well as their glycogen metabolism. This is done using blood extracts from the mice, probing selective tissues for the presence of specific proteins that are involved in insulin signaling and glycogen synthesis. He uses gas chromatography analysis to determine specific components of the cell and how they change under different conditions.

One of the new post-doctoral fellows in our lab is Seong-ho Lee. He joined our lab in mid-June from Colorado State University. His work focuses mainly on thermogenesis, specifically the effect that SCD1 presence has on cellular processes involved in energy metabolism.

The other new post-doctoral fellow is Agnieszka Dobrzyn who has recently joined from Poland. Her work focuses on sphingomyelin signaling in cells of mice, specifically in the heart and muscle. Additionally, she is working on the metabolic pathways of phospholipids utilization in the liver.

Also, her husband Pawel Dobrzyn is working in our lab as a research specialist. His work focuses on the enzymes used in the cells for lipid biosynthesis and oxidation. He is studying this pathway in different tissues comparing the wild-type and knock-out mice.

Enrique Gomez, a graduate student from Brian Fox's lab, has recently defended his thesis on SCD regulation and expression using the 3T3L1 mouse cell line model system. This included exposing the cells to different compounds that are known to have effects on expression of SCD in other tissues to determine if they may affect white adipose tissue. [He will continue his collaboration with our laboratory as a post-doctoral fellow by studying the mechanism of SCD inactivation by fatty acid analogs.]

The lab's most senior graduate student Weng Chi Man is working on localizing the SCD1 protein. This includes the use of fractionation of cells to attain specific membrane components to the



utilization of fluorescent protein chimeric proteins to determine where the protein is localized to and what other proteins are found around it.

There is also second year graduate student Mark Jacobson. He is working on a protein found in the preputial gland of the mice that we believe is regulated by SCD expression.

One of the newest graduate students is Kiki Chu. Right now she is focusing on the regulatory mechanisms of the SCD genes using reporter gene vectors in tissue culture cell lines.

The other new graduate student is Harini Sampath from the Nutritional Sciences Department. She is focusing on the effects of different hormones on protein expression in the SCD knockout and wild-type mice comparing males and females.

There are three undergraduates in the lab: Yudi Soesanto, Felicia Loe and Matt Hunt. The first two

study the mechanisms of regulation of the human form of SCD while Matt has been learning from Rahman. Yudi is planning on attending graduate school in the coming year but has not decided where he will go yet. Felicia is applying for a research fellowship that the University of Wisconsin offers for undergraduates. Matt is taking the semester off from working in the lab to focus on school but will be returning soon.

Finally we were proud sponsors of three international students during the previous summer. Ana Velasco joined us for a time from University of Salamanca, Spain. While here she was studying relationship of SCD1 with other proteins in astrocytes. The second visitor was Lillian Bernardin from France who was working on making an expression vector form of SCD2. Also, during the fall term Alvaro Martinez joined us from Chile who came to learn about molecular biology and expression identification.



Ron Raines
Lab 371

Arrivals and departures. On September 19, 2002, Ken Woycechowsky successfully defended his Ph.D. thesis. To retain the Wisconsin climate both inside and out, Ken has moved to Don Hilvert's laboratory at the ETH in Zürich, Switzerland. The Raines lab is somehow...different...without Ken.

In August, postdoc Rob Hondal left Madison to accept a position as an *Assistant Professor* in the Department of Biochemistry at the College of Medicine of the University of Vermont. The Hondal lab is now busy using the techniques of protein semisynthesis to study protein structure-function relationships, especially of selenoproteins. Moreover, Rob is just thrilled to be in Burlington, which is no less progressive than Madison and even more rife with neo-hippies!

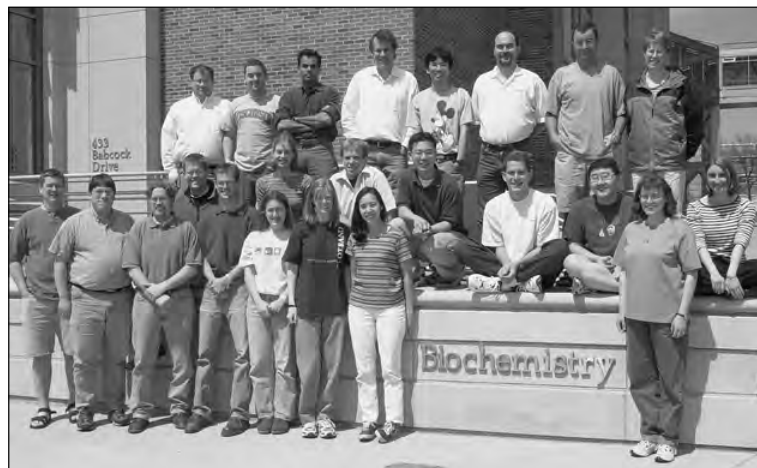
Also in August, former postdoc Uli Arnold visited from Martin-Luther University Halle-Wittenberg with graduate student Jens Köditz. The Madison-Halle connection will continue for several years because of Ron and Uli's joint grant from the NSF and its German counterpart.

In Fall 2002, Matt Hinderaker started business school at Wisconsin after receiving his M.S. degree in chemistry. And, Mark Danielson left for parts unknown.

Erin Kurten, who has been doing undergraduate research in the Raines lab since she was a Freshman, graduated in December but will stay on through Spring 2003 to complete her latest project. She will begin graduate school at Stanford in Fall 2004, following a year in Germany as a Fulbright Scholar.

Former graduate student Peter Chivers returned to the Middle West, now as an *Assistant Professor* in the Department of Biochemistry and Molecular Biophysics at the School of Medicine of Washington University in St. Louis. The Chivers lab is exploring the structure and function of NikR and other ribbon-helix-helix proteins.

We are delighted that four new graduate students joined the Raines lab in Fall 2002. Jeet Kalia and Jeremy Johnson are new to the biochemistry program. Eric Benedict and Annie Tam are new to the chemistry program. They have all gotten off to a good start!



Family business. On May 1, 2002, Rob and his wife Jane welcomed a baby girl, Mary Celine Hondal (5 lb, 13 oz). On January 28, 2003, recent alumna Marcia Haigis and her husband Kevin welcomed a baby boy, Michael Hebert Haigis (7 lb, 6 oz). Congratulations to all!

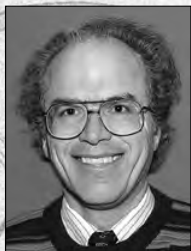
Sport. Once again, the athletic prowess of the Raines lab was valiantly displayed on the softball field last summer as Chumslick Bryan Smith and the Sharks reached the playoffs of the intramural softball league. Despite their enthusiasm and marked improvement over last season, the Sharks were eliminated in the 1st round. The team looks forward to another spirited season in 2003.

Fearing injury on the softball field, Kim Dickson decided it would be safer to take up triathlon and

participate in the inaugural "Ironman Wisconsin" in September 2002. She completed the 2.4-mile swim, 112-mile bike ride, and 26.2-mile run/walk/hobble in 13:38:29, finishing in 15th place among collegiate women and 1st place in the swim. Now able to walk again, Kim is still under the illusion that she made the right decision.

In arm-chair sports news, Josh took last (120th) place in the campus 2002 NCAA March Madness pool, while Steve Fuchs won the Raines lab Fantasy Football League.

Contact Us! As always, we are happy to welcome lab alumni to drop in for a visit and update us on life after the Raines lab. Otherwise, please send us an e-mail, and visit our lab website for more information: www.biochem.wisc.edu/raines.



Tom Record
Lab 4424

The Record lab sends its greetings and best wishes to all former members and Chem/Biochem 565/665 alumni. The lab welcomed two new graduate students this fall: Melissa Wittmer (Biophysics) and Caroline Davis (Biochemistry). Melissa joins Charles Anderson, Mike Capp, Scott Cayley, Dan Felitsky, Jiang Hong, and Jonathan Cannon in the lab's efforts to explore and define the rules for the interactions of small solutes with protein and DNA surfaces, with the goal of using these solutes as probes of changes in surface area in biopolymer processes. Carrie is joining the RNA polymerase team of Wayne Kontur, Marni Raffaele and Ruth Saecker. The calorimeters are getting a good work out from Kirk VanderMeulen (IHF, HU) and Dan (lac repressor DNA binding domain) as well as our collaborator Babis Kalodimos from the Kaptein lab in the Netherlands. The Kaptein lab has recently published a series of beautiful NMR papers demonstrating the structural details

of adaptation of lac repressor structure in DNA binding, which Tom and Mike Mossing proposed in the mid-80's as a key element of DNA recognition by lac repressor. Other active collaborations include work with biophysical groups in Chemistry on solute effects and on binding of IHF, and with the Gourse lab in Bacteriology on the conformational changes in DNA opening by RNA polymerase, which will be facilitated by their move to Biochemistry this spring while Fred Hall is demolished and rebuilt. In the last several years, Tom's contributions to the experimental and theoretical biophysical research and his standing in the field were recognized by the Founder's Award of the Biophysical Society (2001) and the Steenbock Professorship in Chemical Sciences. We're looking forward to another great year of progress, meetings in Vermont, Rhode Island and Spain, and exciting results. We encourage everyone to keep in touch.





Bill Reznikoff
Lab 319

Greetings from the RezLab! Please mark May 20-23, 2004 on your calendars! We are planning a meeting that will take place in Madison. This meeting will highlight the happenings of all who have been associated with the RezLab, including friends and collaborators. The meeting will be planned by Tricia Kiley, Paul Lambert and Xian-Ming Yu (all past members of the lab who also happen to be in Madison), Carol Pfeffer and Bill. It will be under the context of the Steenbock Symposium. If you think that we might not have your e-mail address please send it to Carol Pfeffer (pfeffer@biochem.wisc.edu). For example, we do not have current e-mail addresses for Bob Aline, Steve Rothstein, Teresa Field, Torsten Wiegand, Art Eschenlauer and Vince Schulz.

As usual, there have been lots of comings and goings. Greg Peterson finished up his work and is now preparing to enter medical school. Kamisha Green was here for the summer but is now a student at Stillman College. We hope that we convinced her to come back to Madison for graduate work. Mindy Steiniger-White defended her thesis but she has not moved far. In fact Mindy still has a desk in the lab although much of the time she is a Postdoc in Ivan

Rayment's lab. Amanda Bruegl is finishing up her senior thesis and will be off to Seattle for medical school. One new graduate student joined the lab, Rachel Sterling. There are also two new undergraduates in the laboratory, Allison Balke and John Simpkin.

Our work now involves two broad projects. Many of the people in the lab are studying various biochemical aspects of Tn5 transposition. The critical steps that have eluded our discovery involve those leading to formation of the synaptic complex (binding and dimerization). For instance which step occurs first? How does the transposase reconfigure itself to bind and dimerize? Where does the donor backbone lie, etc? We also don't know a great deal about how target capture occurs and how the strand transfer complex is disassembled. The other group in the lab is using Tn5 as a genomics tool, marking essential and dispensable genes, deleting random chunks of the genome, etc. All of this keeps us pretty busy. The work is challenging, fun and sometimes frustrating.

Hope to see you during May 04!

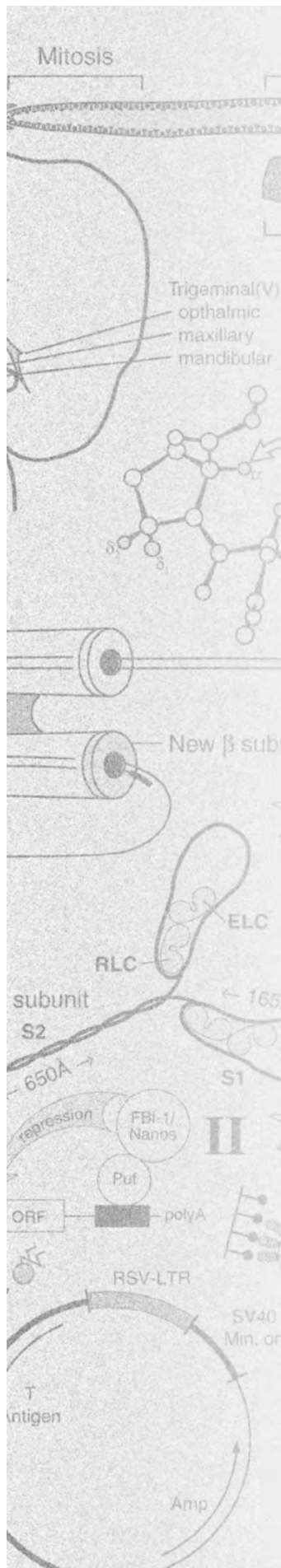


FACULTY PROFILE:

Christiane Wiese

I arrived in Madison in September of 2001, and set up my lab on the west side of the fourth floor in the new Biochemistry Addition. I feel very fortunate that my office has a terrific view of the lake without me having to get up on my desk and crane my neck, like some of my colleagues purportedly do! In the last year, I have been joined by a great bunch of people who make up my lab. They currently are: a very talented technician, Lori O'Brien, who has been keeping us organized, Wei Tao (a post-

doctoral fellow), who came to Madison straight from China (we've enjoyed being there when Tao experienced his first donut, and his first bagel; Tao says: "I think I like the donuts better!"), and three very hard-working graduate students: Karen Mansoorabadi, Annie Staten, and Lingling Liu. We all seem to really enjoy houseplants, and the lab looks like it might turn into a jungle before too long... Last but not least, we have had a number of undergraduate students join the lab at various times



to gain some research experience: Ryan Plamann (who joined as an undergraduate, then stayed in the lab as a technician; Ryan is currently a medical student here at the UW-Madison), James Enser, Gena Cooper, Eric Maciolek, Nonso Njokanma, Michael Dodge, Adam Haese, Javier Cepeda, Melody Sae-man, and Xiaolei Zhang.

I moved to Madison from Baltimore, where I first was a graduate student in the Cell Biology Department at the Johns Hopkins School of Medicine with Dr. Kathy Wilson, and later became a post-doc at the Department of Embryology of the Carnegie Institution of Washington, where I worked with Dr. Yixian Zheng. I am not originally from Baltimore, though: I grew up in a very small village named Egg (population ~350 back in my days) on the very southern tip of the Black Forest in Germany. So how did I end up here? When I was in high school, I spent an exchange year living with an American family and attending high school in a small town in central Kansas. After my exchange year, I returned to Egg to finish German high school, and then decided to take some time to explore the horizon. I came back to the US and traveled around the country for a few months. I then decided that I liked it here, and applied to and was accepted at the University of Kansas, where I obtained two Bachelor's degrees four years later. This makes me a Jayhawk, the fictional bird that is the mascot of the University of Kansas. Unlike most Jayhawks, I can say that the 'Egg' came first for me!

My current research focuses on two related questions: how the mitotic spindle is assembled and how microtubule nucleation is regulated throughout the cell cycle. The mitotic spindle is the structure that is responsible for pulling the duplicated chromosomes to opposite ends of the dividing cell so that each daughter cell ends up with the correct complement of genetic material. Mistakes in mitotic spindle assembly can lead to serious human diseases, including cancer and birth defects. We currently use two model systems for our research. To study spindle assembly, we make extracts from the eggs of the South African clawed frog - these frogs, by the way, really do have claws on their back legs! We use the egg extracts to reconstitute mitotic spindles in the test-tube, a process which I still find truly remarkable and awe-inspiringly beautiful every time I see it happen.

Our second model system is the fruit fly, *Drosophila melanogaster*. Unlike most fly labs, we do not keep hundreds of small bottles of flies. Instead, we keep 'population cages': plexiglass cubes about 17" on each side that hold upwards of 10,000 flies - or

should hold about that many flies. As we and our colleagues on the fourth floor of the Biochemistry Addition found out the hard way, when one of those cages fails to hold its charges, there are flies EVERYWHERE! And, yes, that peculiar smell that greets you when you get off the elevator on the fourth floor is the sweet smell of fly food. We try to look at it this way: time's fun when you're having flies!

We use the population cages to collect large amounts of fly embryos, which we grind up and use as starting material to purify a protein complex that is involved in nucleating microtubules. Fly embryos are a terrific source for biochemical amounts of proteins that are involved in cell biological processes, because early fly embryos undergo a series of rapid cleavages. The ability to cleave rapidly (each cell cycle in the early fly embryo lasts about 8 minutes - compare that to the cell cycle in rapidly dividing human cells, which lasts about 24 hours) is made possible only by the large stockpiles of all of the components necessary to assemble about 4,000 cells. As biochemists we take advantage of these stockpiles, since they are also a rich source of the protein complex whose function in microtubule nucleation we wish to explore.

The Biochemistry Department at the UW-Madison is a terrific place for me to carry out my research. I consider myself very lucky to have joined a department with truly awesome colleagues and role models, tremendous support, outstanding graduate students, fantastic undergraduate students, and a very pleasant work environment.



BIOCHEMISTRY DEGREE LISTING 2002

Degree	Name (Major Professor)	Thesis Title
PhD	Baumann, Nikola A (Menon)	Mechanisms of intracellular lipid transport
PhD	Broering, Teresa J (Nibert)	Initial characterizations of reovirus nonstructural protein μ NS and its activities
PhD	Cheong, Cheom-Gil (Rayment)	Crystal structures of cobalamin biosynthetic enzymes
PhD	Clise-Dwyer, Karen (Hayes)	Replacement of the C-terminal 8aa of BAFF-R inhibits both transitional B cell survival and maturation in the A/WySynJ immunodeficiency model
PhD	Eggler, Aimee L (Cox)	Dissecting the inhibitory and stimulatory effects of single-stranded DNA binding proteins on the activities of <i>S. cerevisiae</i> Rad51 protein and <i>E. coli</i> RecA protein
PhD	Gestwicki, Jason E (Kiessling)	Exploring receptor function using synthetic multivalent ligands with defined architectures
PhD	Haigis, Marcia C (Raines)	Dissecting the mechanism of a toxic ribonuclease
PhD	Jane-Valbuena, Judit (Nibert)	Analysis of the structural and dsRNA binding activities of reovirus protein σ 3
PhD	Jo, Sung-Ro (Martin)	Studies on exocytosis and endocytosis in PC12 cells
PhD	Kuloglu, E Sonay (Markley)	Structure-function studies of the human chemokine lymphotactin and its equilibrium between two highly divergent conformational states
PhD	Lusetti, Shelley L (Cox)	The role of the C-terminus of the <i>E. coli</i> RecA protein
PhD	Mitchell, Kevin H (Fox)	Mutagenesis studies revealing the complementary roles of effector protein binding and the hydroxylase active site in catalysis by toluene 4-monooxygenase
PhD	Rohde, Cynthia M (DeLuca)	Investigations into the interactions of vitamin A and vitamin D
PhD	Schomburg, Fritz M (Amasino)	The role of FPA in the regulation of floral induction in <i>Arabidopsis thaliana</i>
PhD	Song, Jikui (Markley)	Structure-function investigations of proteinase inhibitors and proteinases
PhD	Steiniger-White, Mindy M (Reznikoff)	Tn5 synaptic complex formation: The role of the C-terminal alpha helix of Tn5 transposase and the importance of position 4 of the recognition end sequence
PhD	Tang, Kuo-Hsiang (Frey)	Free radicals and lysine 5,6-aminomutase
PhD	Wang, Liaoteng (Kimble)	GLD-2, a P-granule associated novel poly(A) polymerase essential for germline fate decisions and early embryogenesis in <i>C. elegans</i>

<u>Degree</u>	<u>Name (Major Professor)</u>	<u>Thesis Title</u>
MS	Watkins, William E, III (Menon)	Phospholipid transbilayer movement in bacterial membranes
PhD	White, Robert Duncan (Fox)	Studies of the reaction and inhibition of the enzyme stearoyl-acyl carrier protein delta9 desaturase using heteroatom-substituted substrate analogs and preliminary nuclear magnetic resonance studies of acyl carrier protein
MS	Wolfe, Marcus T (Ludden)	Investigations into the hydroxylamine reductase activity of the hybrid cluster protein
PhD	Woycechowsky, Kenneth J (Raines)	Small-molecule catalysis of native disulfide bond formation in proteins
PhD	Zella, Julia B (DeLuca)	A therapeutic application of 1,25-dihydroxyvitamin D ₃ in the non-obese diabetic mouse model of type 1 diabetes
PhD	Zhang, Xiaodong (Martin)	The roles of SNAP-25 and synaptotagmin in the late stages of regulated exocytosis

IN MEMORIAM: 2002

Armstrong, John Brian

PhD 1968, Adler
Unknown

Bunkfeldt, Rudolf

MS 1939 & PhD 1943, Steenbock
Nov 2001

Clagett, Carl Owen

MS 1941 Tottingham; PhD 1947 Burris
June 2002

Derse, Philip Henry

MS 1947 Elvehjem
July 2002

Geyer, Beverly Ransone

MS 1946 Elvehjem
Mar 2000

Ghosh, Bhanu Prokash

PhD 1948 Burris
Nov 2000

Huang, Ming-Ta

PhD 1977 Lardy
Unknown

Kitzes, George

Chem Grad Stu w/Elvehjem
June 2001

Lie, Sturla

Grad Stu w/Johnson 1962-63
Unknown

Moriuchi, Sachiko

Postdoc w/DeLuca 7/71-12/73
Unknown

Mortimer, Donald Charles

MS 1947 & PhD 1950, Johnson
Feb 2000

Petering, Harold G

Grad Stu w/Link 1964
Unknown

Pisano, John J

Postdoc w/Williams & Elvehjem 1955-56
Unknown

Plaut, Gerhard Wolfgang Eugen

MS 1949 & PhD 1951 Lardy
2002

Sauberlich, Howerde Ed Win

MS 1946 & PhD 1948 Baumann
May 18, 2001

Stratman, Frederick William (Fritz)

Researcher w/Lardy; Instr/CALS Short
Crs
2002

Valdevia, Iris F (Elba Iris Porrata-Doria)

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Colleen Clary (608) 262-3899
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Undergraduate Program/Internships

Dan Barnish (608) 265-9846
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Steenbock Symposia

Janice Carberry (608) 262-7129
E-mail: carberry@biochem.wisc.edu

Gifts/Donations

Please contact the Chairman
Hector DeLuca 608/262-1620
Email: deluca@biochem.wisc.edu
Or contact
The Department of Biochemistry
(608) 262-3040
E-mail: donations@biochem.wisc.edu

CALLING ALL BIOCHEMISTRY...

GRADUATE STUDENT ALUMNI

The current graduate students are interested in contacting former graduate students that have embarked on their careers. If you are willing to be contacted regarding your career path, please send an e-mail to alumniKIT@biochem.wisc.edu.

Separately, the department would like to send out a survey regarding your graduate school experiences. If you would like to participate in the survey, just let us know in your e-mail. If you have any questions about the process, just include them in the body of your e-mail.

Thanks from the Biochem grads!

HONORS & AWARDS: 2002 – 2003

Faculty

Butcher, S. E.
Shaw Scientist,
The Greater Milwaukee Foundation - 2002-07

DeLuca, H. F.
Fellow, Wisconsin Academy of Sciences and a meeting organized in his honor at Taos New Mexico on June 15-19, 2002

Fox, B. G.
H.I. Romnes Faculty Fellowship,
UW-Madison - 2002-07

Kiessling, L. L.
Fellow, American Association
for the Advancement of Science

Ntambi, J. M.
2002 CALS Outstanding Teaching
and Advisor Award, CALS, UW-Madison

Raines, R. T.
Vilas Associate Award, Biological Sciences
Division, UW-Madison, 2002-04

Reznikoff, W. S.
2002 Spitz Land Grant Faculty Award
for Excellence, CALS, UW-Madison

Suttie, J. W.
2002 W. O. Atwater Memorial Lectureship,
USDA: Bristol-Myers Squibb/Mead Johnson
Award for Distinguished Achievement
in Nutrition Research

Wiese, C.
Kimmel Scholar Award - 2002-04

Postdoctorates

Eckmann, C. R.
Paul Boyer Award for Outstanding Postdoctoral
Studies in Biochemistry, 2003

Michaels, S. D.
Paul Boyer Award for Outstanding Postdoctoral
Studies in Biochemistry, 2003

Graduate Students

Dickson, K. A.
Marcia Moss Graduate Award
in Biochemistry, 2003

Soltero, M. L.
Sigrid Leirmo Memorial Award
in Biochemistry, 2003

Undergraduate Majors

Casey, R. P.
Mary Shine Peterson Scholarship, 2003

Fonkem, E.
Ezra L. Totten Scholarship, 2002

Knoll, A. T.
Kimberly Clark Scholarship, 2003

Mich, J. K.
Kimberly Clark Scholarship, 2003

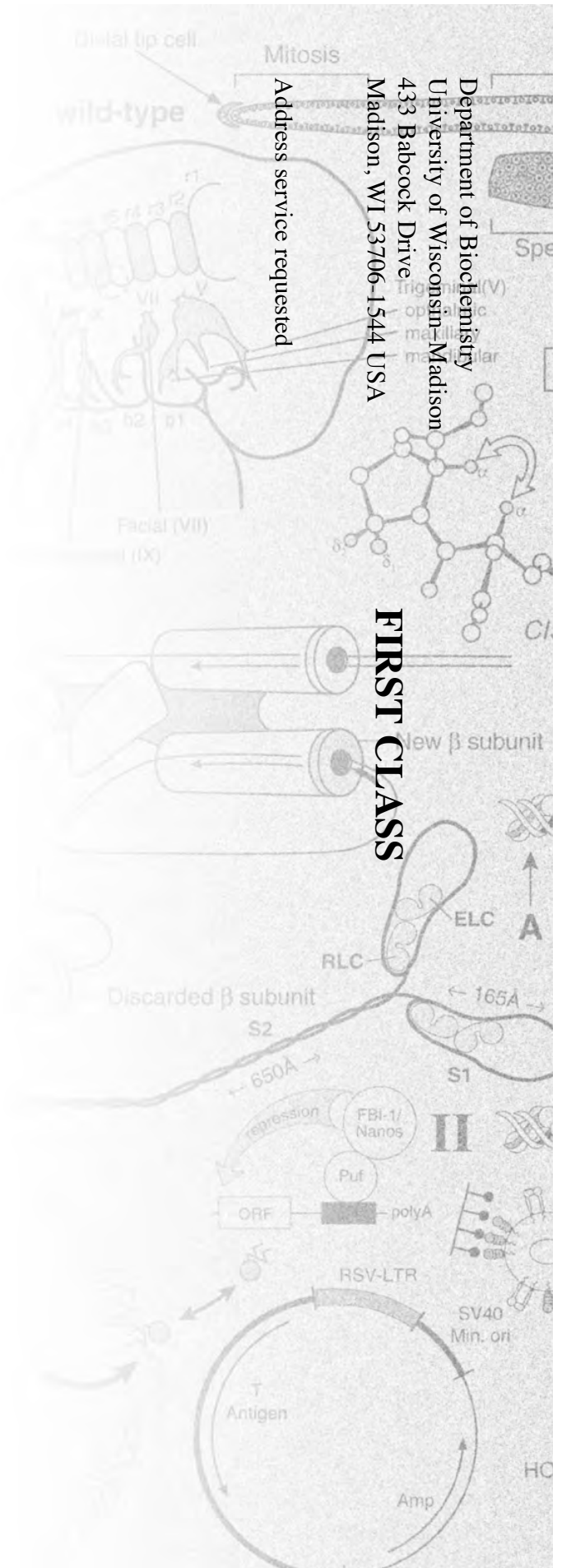
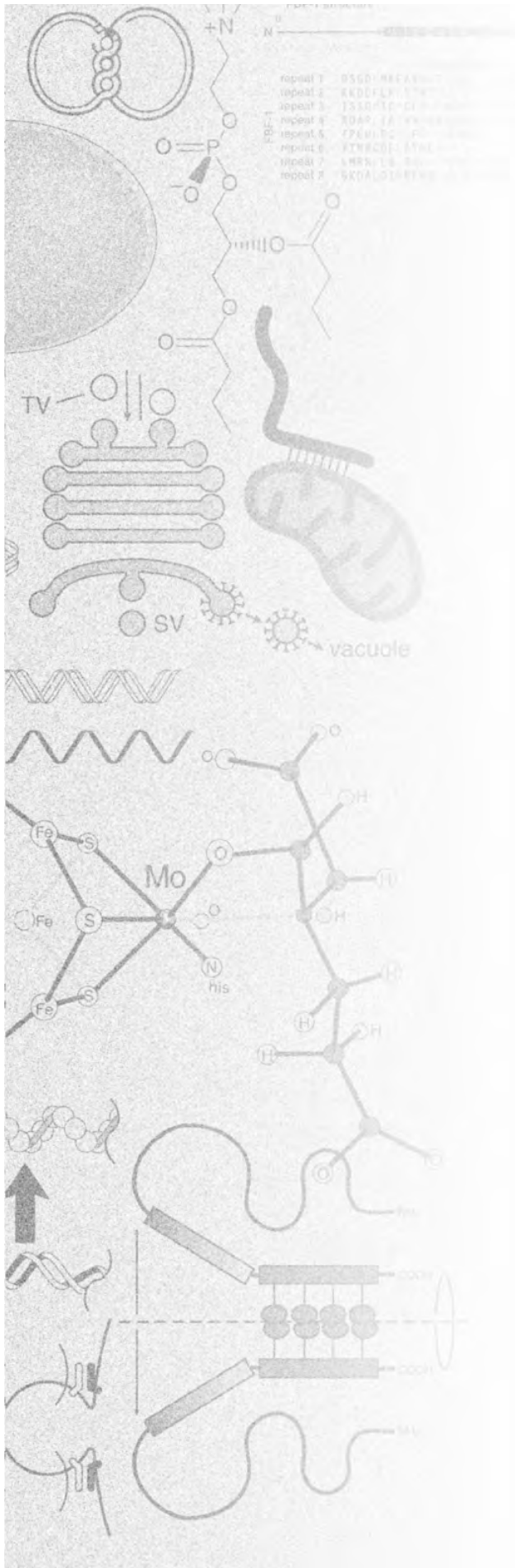
Njokanma, C. A.
Mary Shine Peterson Scholarship, 2003

Skarie, J. M.
Mary Shine Peterson Scholarship, 2003

Sokolowski, K. M.
Mary Shine Peterson Scholarship, 2003

Romsa, A. M.
Mary Shine Peterson Scholarship, 2003

Stadtmueller, B. M.
Mary Shine Peterson Scholarship, 2003



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