

# GSBS NEWS

Summer  
2002

Graduate School of Biomedical Sciences The University of Texas Health Science Center at Houston/M. D. Anderson Cancer Center

**Innovative education for 39 years**



*Announcing...*  
*the new*  
*joint institutional*  
**GSBS**  
*diploma!*



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*With much appreciation*

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**Benefactor News...**Special thanks to **WINGS** (Women Involved Nurturing Growth and Support) Chapter of the American Business Women's Association (ABWA) who have, along with the **Kennedy family**, started the Barbara L. Kennedy Endowed Memorial Scholarship for students in the GSBS genetic counseling program. Particularly inspiring to her friends and family, and as a medical technician at M. D. Anderson Cancer Center, **Barbara Kennedy** had begun her preliminary studies to become a genetic counselor at the time of her death. On hand for the presentation at the May meeting of WINGS are from left: WINGS members **Carole Smith, Hazel Cole**; Dr. Hope Northrup; GSBS Dean George Stancel; **Anne Kennedy**, WINGS president and one of Barbara Kennedy's sisters; Dr. Jacqueline Hecht; Rosemary Behrens, WINGS president-elect; Linda Carter, GSBS; Laura Davis, WINGS member. Drs. Northrup and Hecht hold joint appointments at UT Medical School and GSBS.

**R. W. Butcher; Cancer Answers Inc.; Harry S. and Isabel C. Cameron Foundation; Linda and Ronny Finger Foundation; John P. McGovern, M.D.; Dee and Patricia Osborne; Pharmacia Foundation; Schissler Foundation; The Shell Oil Co. Foundation; Sylvan Rodriguez Charities; Roberta and Jean Worsham**

**Special thanks** to those of you who participated (as of this printing) in the Adopt-A-Student program, the spring annual campaign, and ongoing support of the Graduate School:

Barbara Baldwin	James Gum	Alanna Morrison
Fariba Behbod	Steven Hanks	Emanuel Murgola
Arthur Bergh	Qiang He	Dillon Phan
Weimin Bi	Jacqueline Hecht	Heidi Porter
Carol Blanchard	Carol Helton	Aaron Roome
Sara Bowne	Jacqueline Horn	Grady Saunders
Joan Breuer-McHam	Jen Tzaw Huang	George Stancel
Karl Burgin	Faye Johnson	Jeannice Theriot
Carolyn Cannon	Lela Johnson	Elizabeth Travis
Linda Carter	Rick Kammerer	Steve Tomasovic
Robert Chamberlain	Bruce Kone	Deidre Vedder
Zhoufeng Chen	Robert Ku	Weiyue Wang
Leonard Cleary	Li Li	Yining Wang
Deborah Croft	Katherine Loveland	Kendra Woods
Paul Darlington	Jeanelle Martinez	Wan-Song Wun
Kimberly Dodge	William Moore	Ruth Zearfoss
Yizhong Gu	Kevin Morano	

**FRONT COVER:** *Clockwise:* **James Willerson, M.D.**, President of The University of Texas Health Science Center at Houston; **Representative Scott Hochberg**, Harris County, Texas; **Judith Craven, M.D.**, Regent, The University of Texas System; and **John Mendelsohn, M.D.**, President of The University of Texas M. D. Anderson Cancer Center.



## Dean's Notes...

Dear Colleagues and Friends:

Due to the nature of contemporary biomedical research we spend much of our time *highly focused* on our individual research projects. These efforts occur in the setting of our own offices, laboratories, and institutions, and within the context of our daily routines. Under these circumstances we may not always appreciate how others view us, either as individual biomedical research scientists, or collectively, as a Graduate School of Biomedical Sciences. This year's GSBS Commencement provided reminders of both.

The inaugural unveiling of a diploma bearing the names of both our parent institutions, and the words of our distinguished commencement speaker, Dr. Kathleen Matthews, were highlights of the ceremonies, and this newsletter contains more information about both. However, I was also struck by the words of Dr. Judith Craven who was kind enough to arrange a busy schedule to attend our commencement. Dr. Craven has been a long-time friend, colleague, and supporter of our UT institutions here in Houston. Even though her comments were relatively brief, she said two things that seemed enormously important to me, and I want to draw them to your attention.

First, she spoke to our graduates, "I know that you are well trained as biomedical scientists, and that you will bring credit and recognition to the Graduate School and The University of Texas System, both by your discovery of new knowledge, and its wise application for the common good." Her statement indicates the reputation for quality that our programs have achieved. This quality is also evident when one speaks to our graduates and learns of the outstanding institutions at which many of them have been offered postdoctoral positions.

In addition, Dr. Craven said something highly significant about the GSBS as an institution. "I also want to say how pleased I, and the other regents are, of the manner in which this Graduate School operates. The cooperation and sharing of resources for education and research, by all the schools and units of the Health Science Center, the M. D. Anderson Cancer Center, and faculty from the Texas A&M Institute of Biosciences and Technology, is unique and exemplary. As the problems we face become more and more complex, it is this type of collaboration and cooperation between scientists and institutions that will be necessary to find creative, and cost effective solutions. You are truly a model for other institutions in the state and nation to emulate."

We are a relatively young institution (we will celebrate our 40<sup>th</sup> Anniversary in the coming academic year), but Dr. Craven's comments indicate that we have already developed a reputation for quality training, and built an institution that the leaders of The University of Texas System consider to be a model. This is a tribute to the GSBS students, faculty, and leaders who have gone before us, and to a reputation in which we should take great pride while continually striving to enhance and maintain.

Best wishes for the summer and coming academic year,



## Commencement Message 2002 Jeanie B. McMillin, Ph.D.

Along with my colleagues on the Graduate Faculty, I am pleased to welcome you to this special commencement exercise. It is gratifying to see assembled such a talented and promising group of M.S. / Ph.D. candidates. It is even more poignant that these young scientists have experienced a year unlike any other in recent history.

As a result of tropical storm Allison, precious animal lines and chemicals were destroyed at the Texas Medical Center. Like “mad scientists” from a Robin Cook novel, faculty and students with face masks and dry ice wandered the Medical School waving flashlights in dark corridors. Thankfully, recovery was facilitated by our sister institutions. The School of Public Health and M.D. Anderson graciously provided laboratory space for those hardest hit. Because computers were down, emergency research meetings were held wherever a spot could be found (e.g., Borders’ Books... tables piled with papers and laptops). Camaraderie, always integral

to scientific progress, became the glue bringing recovery. We know the importance of the community at the center of our endeavors: The University of Texas and its Graduate School of Biomedical Sciences.

But you have learned that “Halcyon days, eternal ease, a golden age” is not your destiny! Epictetus, the Greek Stoic, said: “It is difficulties that show what we are (sic).” September 11 serves as a reminder that we as scientists and academics must take leadership to assure the continued vitality of intellectual freedom that allows us to question “accepted” dogma. John Nash, the mathematician, produced equilibrium bargaining approaches to Game Theory that challenged established paradigms. This new insight led to global economic benefit and the Nobel Prize. Against the prevailing opinion of nearly every physicist, Max Perutz determined the crystallographic structure of myoglobin. My message to you is that your own vision (or gyroscope) plus perseverance pay off!

The intuition of the intellect can be a sudden exposition of genius or, as often is the case, may require years of focus, determination, and, importantly, imperviousness to obstacles and (at times) peer ridicule. John Adams wrote to his son regarding the pettiness and hypocrisies John Quincy encountered during his university tenure. “Patience and perseverance will carry you with honor through all difficulties.”

All of you have matured since your first days of training as “embryo” scientists. As a teenager, Edna St. Vincent Millay wrote the perception of her apprenticeship...the translation of the artist’s senses into poetry, the instrument that shaped her release.

*All I could see from where I stood/ Was three long mountains and a wood;  
I turned and looked the other way/ And saw three islands in a bay.  
So with my eyes I traced the line/ Of the horizon, thin and fine,  
Straight back to where I started from;  
And all I saw from where I stood/ Was three long mountains and a wood.*

As developing scientists beginning your career of discovery, like Millay, you are emerging, leaving behind a more restricted view of the world. You are receptive to new ideas that are open to you by way of seminars, faculty, student colleagues, the internet and most importantly, your advisor (where at least one time in your career you were ready to throw a few towels in...or *at* each other)! Your committee members made certain you understood your experiments in depth and that you dug out the science behind those all-too-easy kits from Promega.

The familiarity provided by the environment that nurtured you gave you a home in which to express your ideas. It also provided the challenge and the security to encourage you in your personal intellectual journey. The degree awarded today is a symbol of this achievement and your dedication.

In the decades to come your sense of scale will again change. In this growth process, success is linked to creativity and imagination (sometimes coupled with sheer hubris). As Dante opined: “I love to doubt as well as to know.” The attainment of creative and intellectual freedom requires a life-long dedication to understanding the *reason* of things, asking the important biological question. At times, the demands of your chosen vocation will place you in a solitary world quite apart from ordinary life. The struggles you encounter may conflict with the consensus reality of the world around you. This struggle with blending in is even more acute for the rare creative geniuses in science as well as in the arts. Shelly wrote: “*I seem in a trance sublime and strange; To muse on my own separate fantasy.*” The quest for balance in your life will be to relate to others and to include conscientiously the people who stand at your side.

My parting words to you are: most importantly, publish your findings; demonstrate persistence. If you happen to fall down, it doesn’t matter as long as you grab a little something from the floor. I wish you courage, and remember the words of Oliver Wendell Holmes: “Man’s mind stretched to a new idea never goes back to its original dimension.” Thank you for your attention and the best of everything in your lives.

## COMMENCEMENT ADDRESS

May 11, 2002

“AT THE DAWN OF A NEW ERA”

**Kathleen S. Matthews, Ph.D.**



Presidents Mendelsohn and Willerson, Dean Stancel, Dr. Judith Craven, Regent of The University of Texas, Representative Scott Hochberg, Distinguished Guests, Faculty, Friends, and, of greatest importance, Graduates, I am delighted to be here with you today. This celebration marks a momentous culmination of your efforts as you receive your degree. But it also denotes a significant beginning as you embark on the exciting journey of your professional life. For most students, their graduate years are part of a key transition — from the apparently conflicting freedoms and restrictions of the educational years into the responsibilities and possibilities of having a “real job.” In retrospect, most find that these years are recalled as a very special time of life, full of the potential of the future and the accomplishments of the past, a fulcrum on which turns the image of self that persists through the years.

Ask most folks how they privately think about themselves inside, and the most common image that emerges will be of themselves sometime during their third decade of life. And that image does not change substantially as we age — despite the surprises when we view ourselves in the mirror each morning. This seemingly common experience may explain why the graduate years are often viewed as a unique and exceptional time in life. From my own experience and that of many students with whom I have been associated, this special period of study and friendship comes to hold an important role in our long-term self-understanding. This association is independent of whether the experience itself was enjoyable and engaging or challenging and difficult. The *process* itself is pivotal and forms an anchor for the future. Having spent my graduate years in Berkeley in the late sixties — often referred to at that time as the “center of the known universe”— it is perhaps not surprising that my imagined reflection in the mirror still has long hair, that I love paisley, and that I somehow feel at home when there is news of a protest in Sproul Plaza.

Your close associates in this rite of passage we call graduate school will likely remain a part of your future in many different ways. Some will be encountered at scientific meetings, where you will reminisce about people, courses, and events of this time. Others will be a part of your life-long journey and will be special because of the time that you have shared here. A large cadre of my friends flung across the globe came into my life in these pivotal graduate years.

Significant shared events of the era will also be indelibly marked in your consciousness. Your time at the Graduate School of Biomedical Sciences has seen momentous events in your schools, in Houston, and in the world. This academic year was the 60th anniversary for The University of Texas M. D. Anderson Cancer Center and the 30th anniversary for The University of Texas Health Science Center at Houston. This year M. D. Anderson was provided independent degree-granting ability by the Texas Legislature.

Just as the protest marches of Berkeley interweave my graduate school memories, your graduate career is marked by important societal events — the turn of the millennium, including the Y2K fears, the voting debacle of the 2000 election, Allison’s flood, the disaster of 9/11 — all of which will come to underscore the importance of these years in your life. I sometimes imagine how it will be in 30 years or so, when these times are referred to as “back at the turn of the century” and what we are doing now will seem primitive and very ancient to a new generation — despite our own perceptions of the importance of these times and the unimaginable advances seen over the past decade. No less Allison’s flood will be a pivotal memory, with its direct consequences for research activities and its indirect reminder that one’s efforts can be wiped out in a moment of nature’s fury.

Finally, the events of September 11 will be felt in ever-widening circles throughout your careers. Whether challenges with travel to meetings or shipping materials, difficulties with visas, shifts in funding opportunities in response to the global threat of biochemical or nuclear terrorism, or simply the personal realization of the consequences of this single terrorist act, the ripples from this event will flow into the future along many streams. Indeed, significant research efforts in the coming decades will surround our attempts to detect biological and chemical agents, to mitigate their consequences if deployed, and to prevent the spread of infectious agents. These directions will complement our continuing efforts to understand and stem disease processes, to gain insight into and mitigate the effects of aging (particularly important as the average life expectancy creeps higher), and to advance biosciences on many fronts. New and sometimes completely unanticipated developments will also emerge that will alter the direction of biomedical sciences in the decades ahead.

When we view the sources of discovery that have had major impact on biological sciences, our hubris in attempting to predict what will matter 2-3 decades hence is evident. Few of us would have anticipated in 1953 when the structure of DNA was proposed that a quarter of a century later we would be able to (quite literally) cut and paste pieces of the genome reproducibly. Indeed, the phenomenon of restriction in bacteria was hardly the research area one would have emphasized if searching for a means for specific DNA strand scission. Which is to say that we cannot identify *a priori* the research areas or even topics that will yield the ground-breaking discovery that revolutionizes how we think about biological systems. [My plug for the importance of basic

research as a continual activity — it is the source of new possibility in the sciences.] Indeed, the changes that the capacity to manipulate DNA sequences have wrought on biological sciences are staggering — not just in opening up the avenues that we view today as commonplace, but in altering the very face of the disciplines themselves. The traditional separation between genetics, microbiology, biochemistry, botany, zoology, physiology...all of the “ologies” is no longer viable. Using the tools of molecular biology to study analogous phenomena from the perspectives of these different subdisciplines, we are finding more common ground than was ever imagined, and as a consequence disciplinary barriers have collapsed within the biological sciences. Indeed, we are entering an age of collaboration across all of science and engineering that is unparalleled in the modern era.

Information technology, physics, chemistry, engineering all are key to new discovery in the biosciences. The sequencing of genomes, human and otherwise, the analysis of transcriptional activity across entire genomes and within different tissues and cells, deciphering structure at many levels by imaging — whether magnetic resonance, crystallography, or the various microscopies — all require tools provided by disciplines outside biology. David Baltimore, President of Caltech, wrote an article several years ago entitled, “Biology is now an information science,” citing the importance of managing large complexes of data as part of the challenge and opportunity that faces biosciences. Indeed, our 21st century laboratories are utterly dependent on the computer for gathering data, for analyzing it, for assembling it into manuscripts, for publication, and for finding papers that are relevant to our own work. What would I do without on-line Current Contents? The pace at which we are able to generate new data is rapidly outrunning our ability to incorporate and understand the information. One of the deep concerns that faces modern biosciences is that the knowledge of the past is being submerged to a degree that we may lose important expertise. For example, those who can identify subspecies of the fruitfly are largely retired, and their knowledge is retiring with them. A recent gathering at the fruitfly repository at the University of Arizona was designed to teach a new generation this capacity so that it would not be lost. Similarly, few modern biological scientists have a good grasp of metabolic pathways, and yet these pathways drive the very systems that we study so carefully. One of the fundamental challenges for the 21st century bio-scientist is to bring together the insights that are emerging daily with the knowledge that was carefully assembled over the 20th century.

One of the consequences of this new information-rich era is that the single investigator, laboring with a small cadre of students and post-docs, will be largely replaced by the team of investigators with complementary expertise, all focused on a significant problem of intense interest. Sometimes these investigators may not be at the same institution, much less in the same department. One of the tasks that you will face in your careers is to prepare your colleagues and your students (and yourself) for these emerging opportunities, to hone the tools of communication and cooperation that make **teamwork** across multiple disciplinary perspectives productive. Although its efficacy was demonstrated in the genome sequencing effort, this model is still largely new, and we will have to adapt wisely to compete effectively in this new setting.

Similarly, the rapid development of robotics offers significant promise and associated challenges. Since I’m sure many of you would agree that much of what one does in the lab could be done by a “trained dummy,” the prospect of robots that can take on much of that work, as has been achieved in the human genome project and much of modern genomics analysis, suggests that our minds can be freed for more productive activities. However, with the advancing power of computers (and hence the “brains” of robots), questions have been raised as to the potential role of humans as the computers/robots gain knowledge and processing power. Philosophers of science have raised the interesting question of where consciousness itself arises — and when my computer tells me “It’s not my fault,” one does begin to wonder....

Indeed, the science fiction folks (or perhaps just the futurists) among us predict some revolutionary changes. In fact it does not take much imagination to think that human-machine hybrids are in our not-too-distant future. Much work has been focused on connecting the electrical signals in neural systems to robotic devices that would allow those with damaged neural pathways to regain lost potentials such as movement and sight. Indeed, as an example, with a little imagination we can conceive of constructing an artificial lens that could accommodate, thereby obviating the need for reading glasses. Cochlear implants are now bringing sound to some who were deaf, and our imaginations can play on endlessly. Most of these developments will arise out of the interconnections between engineering, computational sciences, physics, chemistry, and biology. How far will this human/machine hybridization go? We simply do not know.

Many such avenues converge to raise deep issues about what is “natural” and the role of humankind in altering ourselves, the environment, and the planet. We can anticipate the ability of bioengineering to generate replacement tissues, genetic engineering to correct gene defects, and the pharmaceutical industry to generate drugs that are targeted even more exquisitely than presently. We observe the increasing impact of humans on other species, on both local and global environment, and even on evolutionary processes (for example, bacteria found near toxic sites have adapted to survive even in very hostile circumstances). These observations all raise profound questions that we must address in the coming decades. And, biological sciences will be at the center of these problems and their solutions, which is to say that *you* will be at the center of these problems and their solutions.

So, for you who are in the center of this universe, I will leave you with some fodder for further thought:

- First, take time to *think* about what you are doing, why you are doing it, how you will proceed, and what other options might exist. Always get all the information available on *anything* you do. A good literature search and lots of discussion with experts in the area for a new project; contact with the program managers or directors for a possible grant; review of manuscripts or grant applications by colleagues *before* submission. Find out about the process and requirements for promotion in your company or institution.
- Second, develop communication skills — clear thinking, effective writing, capable speaking — and **ALWAYS think before you speak**. Acquire strong teamwork skills — listening, reflecting, synthesizing ideas, knowing when to lead and when to let others lead, learning how to identify “good” partners and how to work with “bad” partners — these will be different for each person. Find those folks that *complement*, not duplicate, your own style and skills. They may bring different insights to the table. And, communicate whenever and wherever possible with non-scientists about your work.

We are privileged to pursue exciting and important problems — help inform those who support this work about the accomplishments and importance of biosciences.

- Third, place what you are doing in the larger context — of your unit or department, of the organization, of the discipline *and in your own life*. Be wise about what you pursue initially — ensure that you can succeed, but choose those problems that matter to you, about which you care. Once established, however, pick those things that are important, not just those that are easy or accessible. Your career will take a significant portion of your time, be sure that it engages you in a way that brings significance and meaning as well as a sense of satisfaction in your life.

□ Finally, remember that this is your professional career, not your life. Visit your grandparents. Play with your kids. Stay close to the friends you've met along your path. Always say please and thank you to folks. And treat people the way you would like to be treated.

A friend recently related the following story:

*I left Houston on I-10 headed for New Orleans, when I decided to stop at a comfort station. The first toilet stall was occupied, so I went into the second one. I was no sooner seated than I heard a voice from the next stall ask, "How are you doing?" Well, not the type to chat with strangers in highway comfort stations, I don't know what possessed me to say, a little embarrassed, "Not bad." And the stranger said, "What are you up to?" Well, talk about dumb questions! This was getting a little too weird. But I said, "Well, just like you, I'm driving east." Then, I heard the stranger, sounding upset, say, "Look, I'll call you right back. There's some idiot in the next stall answering every question I ask you."*

This experience reflects much of my advice in one brief space □ think about what you are doing communicate effectively, understand the larger context, and treat people with respect. So, I leave you to think about your future. Your career lies ahead □ a lifetime in which to achieve your dreams, your hopes, and your desires. Whatever your goals and objectives, your time at the Graduate School of Biomedical Sciences has been a preparation for your professional life. Build on this strong base to create the career that you have imagined, that fulfill your deepest aspirations. The future is open in a way that has never occurred before in the history of humankind. Your pathway through the future will be a part of how (or not) the human species comes to terms with the power that is at our fingertips. Use this power well. Thank you.



## John P. McGovern Outstanding Teacher for 2002

Henry W. Strobel, Ph.D.

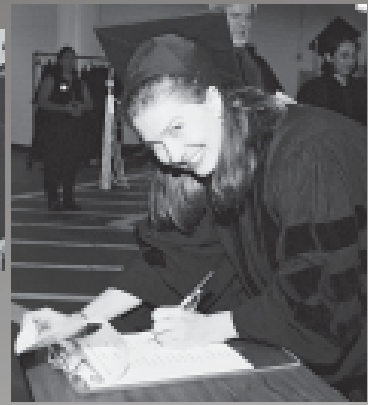
I would like to express my appreciation to the Graduate Students of the GSBS for honoring the role of teaching in our graduate school. Today, I am the vehicle for honoring teaching. I follow in the train of many distinguished teachers in our graduate program and I am honored deeply to be included in their company. Names like Norm Karin and George Weinstock come to mind.

I enjoy teaching. For that I have Dr. Jud Coon, my postdoctoral mentor, to thank for giving me my first opportunity to teach in an organized academic course. I thank Dr. Jack DeMoss, the founding chair of the Medical School Biochemistry Department for showing me how to prepare and deliver lectures. Above all though, and through all, I thank generations of students who with the insightful questions and most often gentle humor taught me about teaching others. I learned how important teaching aids are to make a point.

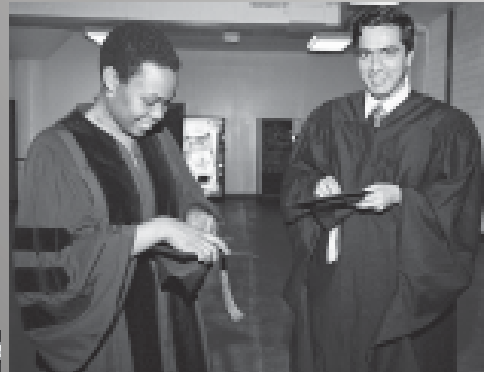
I would like to leave you with a point about teaching, so I brought a teaching aid. This is a Chinese calligraphy scroll. It is read from top to bottom and is pronounced something like "Tchur Quay Shur Fu." Its effective translation is when you share what you have you gain happiness. I like this saying and certainly it is true about teaching.

The actual meaning of "Tchur Quay Shur Fu" is a little different than my effective translation. It is "When you share something you have you have less of it but you gain happiness by sharing." But I have found that in teaching when you share what you know, you gain. You gain through the interaction with students. You gain in seeing others learn. There is no loss in teaching; there is only happiness because the true goal of teaching is that your students will know more than you do. Knowledge always expands. This is the job of teaching to help others learn more than you know!

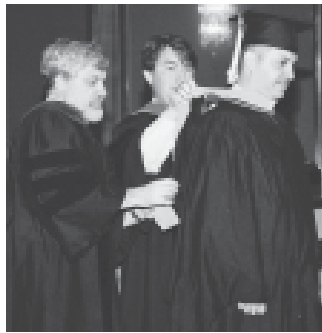
"Tchur Quay Shur Fu!"



# 20 Gradu









## GSBS Class of 2002 - MASTER OF SCIENCE

**Valerie Banks (Advisor: Manju Monga, M.D.)**

*Neural Tube Defect Prevention: Does Increase in Knowledge Mean Increased Utilization?*

**Jennifer Bayliss (Advisor: Manju Monga, M.D.)**

*Decision-making regarding amniocentesis in women of the Asian racial-ethnic group*

**Laura Butler (Advisor: George Starkschall, Ph.D.)**

*Dosimetric Benefits of Respiratory Gating*

**Christopher Cherry (Advisor: William Hanson, Ph.D.)**

*A Heterogeneous Thorax Phantom for Remote Verification of Three-Dimensional Conformal Radiotherapy*

**Mary Clark-Gay (Advisor: Hope Northrup, M.D.)**

*Psychosocial Impact of Genetic Testing for Tuberous Sclerosis Complex: A Result Disclosure Study*

**Robert Copenhagen (Advisor: Chinnaswamy Jagannath, Ph.D.)**

*Characterization of an antigen 85 A deficient mutant of Mycobacterium tuberculosis in macrophage infection: implications for the generation of adaptive immunity*

**Jennifer Givens (Advisor: Alicia Dombroski, Ph.D.)**

*Formation of Intermediate Transcription Initiation Complexes at pfl*i*D and PflgM by sigma28 RNA polymerase*

**Qiang He (Advisor: Lawrence Lachman, Ph.D.)**

*A Real-Time Quantitative PCR for Detecting Helicobacter pylori*

**Amanda Krintz (Advisor: David Followill, Ph.D.)**

*A Reanalysis of the Collaborative Ocular Melanoma Study Medium Tumor Trial Eye Plaque Dosimetry*

**Stephanie Manzo (Advisor: Hope Northrup, M.D.)**

*Health Beliefs and Attitudes of Individuals Affected with PKU and Diabetes*

**Amanda Martinelli (Advisor: Craig Mullen, M.D., Ph.D.)**

*Immune Response to Post-Bone Marrow Transplant Vaccine in Presence of Minimal Residual Disease*

**Meghan Minard (Advisor: Gary Gallick, Ph.D.)**

*Signal Transduction Pathways Involved in the Migration of Colorectal Carcinoma Cell Lines*

**Athanasia Panopoulos (Advisor: Stephanie Watowich, Ph.D.)**

*The Role of Stat3 in the Expression and Function of CD18 Integrins*

**Paraskevi Papageorgiou (Advisor: Charles Patrick, Ph.D.)**

*Development of an Assay for a Microsatellite Instability Analysis and its Application in T-Lymphocytes of Sezary Syndrome Patients*

**Aziz Poonawalla (Advisor: X. Joe Zhou, Ph.D.)**

*Technical Development and Optimization of Clinical Magnetic Resonance Tractography*

**Dee-Ann Radford (Advisor: David Followill, Ph.D.)**

*A standardized method of quality assurance for intensity modulated radiation therapy of the prostate*

**Gerardo Ramos (Advisor: Stephen Ullrich, Ph.D.)**

*Immunosuppressive Effects of Jet Fuel and its Mechanism of Action*

**Jennifer Seifert (Advisor: Hope Northrup, M.D.)**

*An Assessment of Understanding in Genetic Counseling Hispanic Patients*

**Kevin Spurgers (Advisor: Timothy McDonnell, M.D., Ph.D.)**

*Bcl-1 can Influence the Transcriptional Response to Ad-p53 Treatment in PC3 Prostate Cancer Cells*

**Cynthia Trajtenberg (Advisor: John Powers, Ph.D.)**

*Resin Bond Strength and Micromorphology of Human Teeth Prepared with an Erbium: YAG Laser*

**Laura Valentine (Advisor: Hope Northrup, M.D.)**

*X-Linked Hypophosphatemic Rickets: Descriptive Study of Growth Curve Pattern and PHEX Mutations Associated with Conventional Treatment*

**Zhiqing Wang (Advisor: Louvenia Carter-Dawson, Ph.D.)**

*Characteristics and Functional Regulation of Glutamate Uptake by GLAST in Cultured Rat Muller Cell*

**Melissa West (Advisor: Jagannadha Sastry, Ph.D.)**

*Comparison of the Mucosal Adjuvant Effects of Cholera Toxin with Aeromonus toxin - a Cytotoxic Enterotoxin Produced by A. hydrophila - for Induction of Cell Mediated Immune Responses*

**Amy Whitetree (Advisor: Louvenia Carter-Dawson, Ph.D.)**

*Nitric Oxide Production in Monkey Retina with Experimental Glaucoma*

**Ren Zhang (Advisor: Benoit de Crombrughe, M.D., Agrege)**

*Phosphorylation of SOX9 by P38 Mitogen-Activated Protein Kinase*

## GSBS Class of 2002 - DOCTOR OF PHILOSOPHY

**Luetta Allen (Advisor: Laurence Etkin, Ph.D.)**

*Mapping and Characterization of the XLSIRT P11 RNA CIS-Acting Localization Element*

**Nicole Baldwin (Advisor: Alicia Dombroski, Ph.D.)**

*An Analysis of the Function of Region 1.2 of the Primary Sigma Factor, Sigma 70, from Escherichia coli*

**Fariba Behbod (Advisor: Robert Kirken, Ph.D.)**

*Role of Janus Kinase-3 (JAK3) and Signal Transducer and Activator of Transcription 5 (Stat5) in T Lymphocyte Activation*

**Sharon Beresford (Advisor: Nicholas Donato, Ph.D.)**

*Cleavage and Activation of Calpain and its Substrate Caspase-7 in Prostate Cancer Cells: Evidence for a Role in Apoptotic Sensitization*

**Jennifer Bieszke (Advisor: Katherine Borkovich, Ph.D.)**

*Characterization of the NOP-1 opsin photoreceptor in the filamentous fungus Neurospora crassa*

**Matthew Browning (Advisor: Tahir Rizvi, Ph.D.)**

*Cross-Packaging Among Retroviruses and Characterization of the Feline Immunodeficiency Virus (FIV) Packaging Signal: Implications for the Development of FIV-Based Gene Transfer Systems*

**Denise Caruso (Advisor: Bradley McIntyre, Ph.D.)**

*Integrin mediated growth and apoptosis in human gastric adenocarcinoma*

**Rong Chen (Advisor: J. Arly Nelson, Ph.D.)**

*Role of Organic Cation Transporters in the Renal Secretion of Nucleoside Analogs*

**Jeannie Chin (Advisor: John Byrne, Ph.D.)**

*Mechanisms of TGF-beta-induced neuronal plasticity in Aplysia*

**Song Cho (Advisor: Timothy McDonnell, M.D., Ph.D.)**

*Participation of Bcl-2 and Bax in Epidermal Homeostasis and Non-melanoma Skin Cancer*

**Stacey Davis (Advisor: Magnus Hook, Ph.D.)**

*Studies of the Structure and Function of a Fibrinogen-binding Adhesin from Staphylococcus epidermidis*

**Christopher Hall (Advisor: Laurie Owen-Schaub, Ph.D.)**

*Fas Ligand and Soluble Fas: Opposing Molecules in Melanoma Lung Metastasis*

**Matthew Herynk (Advisor: Gary Gallick, Ph.D.)**

*Overexpression of c-Met Contributes to Tumorigenic Growth and Metastasis of Colon Tumor Cell Lines*

**Leslie Hodges (Advisor: Cheryl Walker, Ph.D.)**

*Critical Determinants of Estrogen Receptor-Mediated Agonist Activity*

**James Jabbur (Advisor: Wei Zhang, Ph.D.)**

*Regulation of p53 Antiproliferative Function by Transactivation Domain Phosphorylation at Threonine 18 and Serine 20*

**Lela Johnson (Advisor: Paul Gershon, Ph.D.)**

*RNA Binding Characteristics and Overall Topology of the Vaccinia Virus Polyadenylation Complex*

**Ann Kays (Advisor: Katherine Borkovich, Ph.D.)**

*Functional Analysis of the Ga Protein, GNA-3, in the Development of *Nuerospora Crassa* Using Biochemical and Genetic Studies*

**Zahid Lalani (Advisor: P.C. Jackie Duke, Ph.D.)**

*Characterization of healing tissue in a tooth extraction socket in a rabbit model*

**Yiu-Keung Lau (Advisor: Mien-Chie Hung, Ph.D.)**

*Emodin, a Tyrosine Kinase Inhibitor, and Human Cancers*

**Eunice Laurent (Advisor: Razelle Kurzrock, M.D.)**

*Impact of BCR-ABL on DNA repair*

**Xiaotao Li (Advisor: William Klein, Ph.D.)**

*Molecular Regulatory Mechanisms and Embryonic Tissue Specification in Sea Urchin Development*

**Hui-Wen Lo (Advisor: Francis Ali-Osman, D.Sc.)**

*Signaling Pathways in the Transcriptional and Post-Translational Regulation of the Human Glutathione S-Transferase P1 Gene*

**Piao Lo (Advisor: Richard Ford, M.D., Ph.D.)**

*The Role of SKI/SNO Oncoproteins as Negative Regulators of the TGF-beta/SMAD Signaling Pathway in B-Cell Non-Hodgkin's Lymphoma (NHL-B)*

**Kimberly Malone (Advisor: Stephen Daiger, Ph.D.)**

*From Gene to Protein: Investigating the Disease Etiology of Retinitis Pigmentosa*

**Eleni Maniatis (Advisor: Gailen Marshall, M.D., Ph.D.)**

*17-beta Estradiol and Progesterone-Induced Alterations in Human Type-1/Type-2 Cytokine Balance and the Role of Costimulatory and Apoptotic Mechanisms*

**Muling Mao (Advisor: Gordon Mills, M.D., Ph.D.)**

*Novel Mechanisms for PKC Family Enzymes to Regulate P13 Signaling Pathway*

**Marya McCarty (Advisor: Isaiah Fidler, D.V.M., Ph.D.)**

*The Role of IFN-beta in Cutaneous Melanoma: Consequences of Epidermal Hyperplasia*

**Yuko Miyamoto (Advisor: Bradley McIntyre, Ph.D.)**

*Functional and Physical Associations of beta1 Integrins in the Activation of Human T Lymphocytes*

**Stacey Mueller-Ortiz (Advisor: Steven Norris, Ph.D.)**

*Human complement component C3-binding proteins of *Mycobacterium tuberculosis**

**Melita Nasca (Advisor: Reuben Lotan, Ph.D.)**

*4HPR-X radiation mechanisms of interactions in Non Small Cell Lung Cancer (NSCLC) cells, in vitro*

**Laura Nelson (Advisor: Michael Van Dyke, Ph.D.)**

*The Yeast Stm1 Protein Binds G\*G Multiplex Nucleic Acids in vitro and Associates with Ribosomes in vivo*

**Leta Nutt (Advisor: David McConkey, Ph.D.)**

*The Role of Endoplasmic Reticular and Mitochondrial Calcium Changes During Apoptosis*

**Dmitry Ovchinnikov (Advisor: Richard Behringer, Ph.D.)**

*Analysis of BMP signalling through the receptor type IA in embryogenesis using conditional gene inactivation in mice*

**Jessica Pahler (Advisor: David McConkey, Ph.D.)**

*Molecular Mechanisms of Apoptosis Induction in Chronic Lymphocytic Leukemia*

**John Parant (Advisor: Guillermina Lozano, Ph.D.)**

*Rescue of Embryonic Lethality in MDMX Null Mice by Loss of P53 Suggests a Non-overlapping Pathway with MDM2 to Regulate P53*

**Dillon Phan (Advisor: Sue-Hwa Lin, Ph.D.)**

*Alteration of CEACAM1 Gene Transcription in Prostate Cancer Cell: The Role of AR, Sp2, and HDAC Activity*

**Carolyn Pressman (Advisor: Randy Johnson, Ph.D.)**

*The role of *lmx1b* and *pitx2* in anterior segment development and adult ocular function*

**Yibing Qyang (Advisor: Stevan Marcus, Ph.D.)**

*Characterization of Cellular and Molecular Functions of the p21-Activated Kinase *Shk1* in the Fission Yeast *Schizosaccharomyces Pombe**

**Jon Schwartz (Advisor: Peter Gascoyne, Ph.D.)**

*Dielectrophoretic Approaches to Sample Preparation and Analysis*

**Qian Shi (Advisor: Keping Xie, M.D., Ph.D.)**

*The Regulation of Vascular Endothelial Growth Factor Gene Expression in Human Pancreatic Cancer Cells*

**Roger Stafford (Advisor: John Hazle, Ph.D.)**

*Fast Magnetic Resonance Temperature Imaging for Focused Ultrasound Thermal Therapy*

**Qin Sun (Advisor: William Margolin, Ph.D.)**

*Temporal and Spatial Regulation of Cell Division by the Nucleoid in *Escherichia coli**

**Fang Teng (Advisor: George Weinstock, Ph.D.)**

*Identification and Characterization of Antigens and Potential Virulence Factors in *Enterococcus**

**Jody Vykoukal (Advisor: Peter Gascoyne, Ph.D.)**

*Dielectrophoresis-Based Analyte Separation and Analysis*

**Nancy Ward (Advisor: Catherine O'Brian, Ph.D.)**

*The Regulation of Protein Kinase C by Thiol Oxidation*

**Chad Wayne (Advisor: Miles Wilkinson, Ph.D.)**

*Function and Regulation of the *Pem* Homeobox Gene In Vivo*

**Yong Wen (Advisor: Mien-Chie Hung, Ph.D.)**

*p202, an Interferon-Inducible Protein, in Cancer Gene Therapy*

**Wen-Shu Wu (Advisor: Kun Sang Chang, Ph.D.)**

*PML Tumor Suppressor Potentiates Cell Death through Inhibition of NF-kappa B Survival Pathway*

**Shanghai Xie (Advisor: Ralph Arlinghaus, Ph.D.)**

*Requirement of the *Jak2* tyrosine kinase in BCR-Abl oncogenic transformation*

**Shenmin Yin (Advisor: David Goodrich, Ph.D.)**

*The Utility of N5 for Gene Therapy of Human Cancer*

**Nancy Zearfoss (Advisor: Laurence Etkin, Ph.D.)**

*Identification and Characterization of the Vegetally Localized *Hermes* mRNA*

**Minghang Zhang (Advisor: Dale Hereld, M.D., Ph.D.)**

*Constitutively Active cAMP Receptor Mutants Dominantly Inhibit Receptor-mediated Signaling Pathways in *Dictyostelium discoideum**

# Among the GSBS Stars



**Schissler Foundation Fellowships**

The Schissler Foundation has been a major contributor to the GSBS for the past five years supporting students involved in research in the human genetics of common diseases. Two fellowships of \$20,000 plus tuition were awarded to 2001-2002 Schissler Fellows, Sumera Hasham (Dianna Milewicz, M.D., Ph.D., advisor) and Hongyan Zhong (Michael Blackburn, Ph.D., advisor) who are shown here with Schissler Foundation Board members. Left to right, Laura Jenkins, Hongyan Zhong, Sumera Hasham, Steve Cordill, Nan Schissler, Dick Schissler, Lynn Red and Rick Schissler.

2001-2002 Presidents' Research Scholars are left to right, John Kurland (Ray Meyn, Ph.D., advisor), Hongyan Zhong (Michael Blackburn, Ph.D., advisor), Leta Nutt (David McConkey, Ph.D., advisor), and Yibing Qyang (Stevan Marcus, Ph.D., advisor). Through funding from President James T. Willerson, UT-H Health Science Center, and President John Mendelsohn, M. D. Anderson Cancer Center, this \$5,000 award is given to four advanced GSBS students who have demonstrated excellence in research. The applications are reviewed by a committee consisting of five past, present and future presidents of the Graduate Faculty. This year, the students presented a summation of their research studies at an informal symposium organized by the GSBS.



**2001-2002 Presidents' Research Scholars**



**Shell Oil Co. Foundation Scholars**

Shell Oil Co. Foundation Scholars for 2001-2002 are Jeff Waltersheid (Stephen Ullrich, Ph.D., advisor) and Leta Nutt (David McConkey, Ph.D., advisor) who each received \$2,000. This program awards students for excellence in research studies in toxicology. A symposium and retreat in regard to this award are planned for the summer.

# Among the GSBS Stars

In 1991 the Sowell and Huggins families established an endowment in the GSBS in appreciation for the particularly effective treatment received by their sons, Andy Sowell and Wade Huggins, at the M. D. Anderson Cancer Center. The endowment is used to award \$2,000 scholarships to GSBS students who are involved in cancer research. The Sowell-Huggins Endowed Scholarship Fund grew so that it is now able to support up to five Sowell-Huggins Scholarships annually and a renewable up-to-three years Professorship and Graduate Fellowship in cancer research. Shown here (left to right): David McConkey, Ph.D., advisor to Leta Nutt; Joann Sowell and Marcia Huggins Jahncke, founders of the endowment; 2001-2002 Sowell-Huggins Scholar Geetha Achanta (advised by Peng Huang, M.D., Ph.D., not present) and 2001-2002 Sowell-Huggins Scholar Leta Nutt.



**2001-2002 Sowell-Huggins Scholars**



**2001-2002 Sowell-Huggins Professorship and Graduate Fellowship**

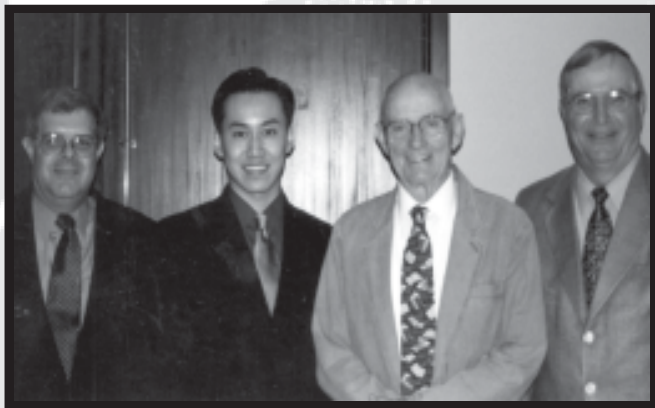
The Andrew Sowell-Wade Huggins Endowed Professorship and Graduate Fellowship in Cancer Research were presented for the first time in 2001. This joint award goes to a professor/graduate student team working in any area of cancer research who display distinguished experience, exemplary work, and excellence in research. The selected professor and graduate student receive funding of a year's stipend, and are named the Sowell-Huggins Professor and the Sowell-Huggins Fellow. The 2001-2002 award goes to student Yvonne Evrard (left) and her advisor, Sharon Dent, Ph.D. (right).



**Cancer Answers/Sylvan Rodriguez Scholarship**

The Cancer Answers/Sylvan Rodriguez Scholarship was established in the Graduate School of Biomedical Sciences in 1999-2000. The scholarship was named for the community-spirited Houston newscaster, Sylvan Rodriguez, who died of pancreatic cancer, and the Cancer Answers Foundation, created by the families of Andrew Sowell and Wade Huggins. The annual scholarship of \$2,000 is awarded to a student who has performed exceptional research in the area of cancer biology. The award also recognizes service provided by the student to biomedical science or the community at large. Shown here with several of the Sylvan Rodriguez Charities Inc. Board members, left to right: Bo Huggins, Maribelis Ruiz, 2001-2002 Cancer Answers/Sylvan Rodriguez Scholar; Shelley Sekula Rodriguez, M.D.; Sue Ellen Ruggles; Andy Plata, Board president; Gerald Rodriguez. (*Unable to attend, Menasche Bar-Eli, advisor to Maribelis Ruiz.*)

# Among the GSBS Stars



*R. W. Butcher Achievement Award*

On hand for the presentation of the R. W. Bill Butcher Achievement Award are left to right, Stephen Ullrich, Ph.D. advisor to Dat Nghiem, the 2001-2002 R. W. Butcher Scholar; R. W. Butcher, Ph.D., Dean Emeritus and GSBS Dean, George Stancel, Ph.D.

In 1946, Houston citizen Rosalie B. Hite left her entire estate to establish a fellowship program for cancer research. This award includes a stipend of \$19,000 per year, tuition and fees, and a single travel allowance up to \$850 for the student to present his/her research at a national meeting.

*Rosalie B. Hite Foundation  
Award Winners for 2002-2003 are:*

**Joshua Krumenacker**  
(Advisor: Ferid Murad, M.D., Ph.D.)

**Yun Lin**  
(Advisor: Robert Newman, Ph.D.)

**Meghan Minard**  
(Advisor: Gary Gallick, Ph.D.)

**Chi-Hui Tang**  
(Advisor: Elizabeth Grimm, Ph.D.)

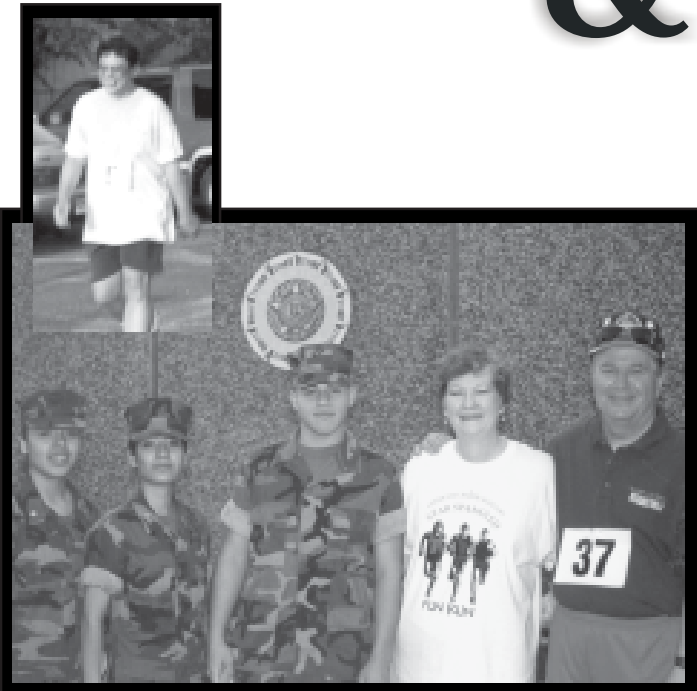
*Aaron Blanchard Research Award  
in Medical Physics  
Award Winner for 2002-2003 is:*

**Jason Stafford**  
(Advisor: John Hazle, Ph.D.)

- ★ **Chandra Bartholomeusy** will be going to Japan for the National Science Foundation Summer Program.
- ★ **Zahid S. Lalani** was selected by the Sigma Xi Society-Texas Medical Center and Rice University Chapter for the award of “best doctoral dissertation” in the medical faculties.
- ★ **Aditi Hazra**, won first place and **Leta Nutt**, tied for second place in the American Women in Science (AWIS) scholarship awards doctoral category.
- ★ **Susan Ritter** has been selected as NASA/Texas Space Grant Consortium Fellow for 2002-03.



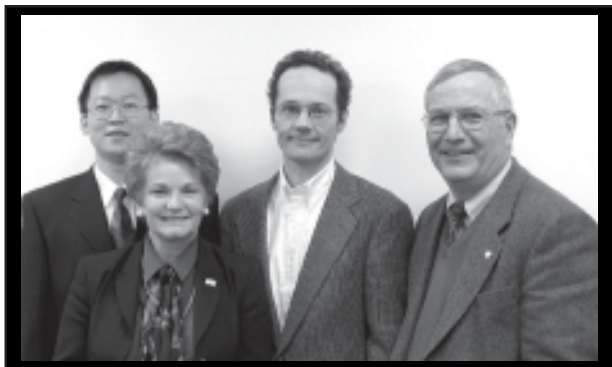
# News & Events



American Legion Auxiliary's organizer, **Carlene Ashworth**, is flanked by ROTC cadets in training on her right, and Dean George Stancel on her left. All were attending the ALA Fun Run in Pasadena, Texas, to raise funds and awareness for ALA charities including the Graduate School. *Inset:* Dr. Tom Goka placed third in the race.



GSBS graduate students volunteer to mentor Brookline Elementary School participants for the Scientist for a Day Program. Here, several tour and explore M. D. Anderson Cancer Center lab with **Hilary Marks** and **Kevin Spurgers** directing the group.



**Diane Guiberteau** joins Dean George Stancel for the presentation of the **Harry S. & Isabel C. Cameron Foundation** Award to Chengyu Liu and his advisor, James Martin, M.D., Ph.D. This \$10,000 stipend support encourages superior research in the field of Alzheimer's or cardiovascular disease.



Brain Awareness Week stars...GSBS students, faculty, and benefactors gather together following the awards presentation of the Dee S. and Patricia Osborne Endowed Scholarship in Neurosciences and the Roberta M. and Jean M. Worsham Endowed Scholarship in the Behavioral or Neurosciences. Shown here left to right: Dee Osborne; George Stancel, Ph.D.; (Jean Worsham, back); Jack Byrne, Ph.D.; (Sarah Nemanic, back); Jocelyne Bachevalier, Ph.D.; Dawn Marsh; Roberta Worsham; Pat Osborne; Linda Finger and Donald Dougherty, Ph.D.

# Special Thanks

## Outgoing Program Directors



**Richard Behringer, Ph.D.**  
Genes & Development



**Gary Gallick, Ph.D.**  
Cancer Biology



**Michael Siciliano, Ph.D., D.Sc. (Hon.)**  
Human & Molecular Genetics



**Jack Waymire, Ph.D.**  
Neuroscience

## Visitors



**Mavis Kelsey, Sr., M.D.**, presented his book, Doctoring in Houston, about the history of the Kelsey-Seybold Clinic to GSBS. *Front left to right:* George Stancel, Ph.D., Mavis Kelsey, M. D. *Back:* Stacey Davis, Ph.D.; Travis Hollomon M.D./Ph.D. candidate, and Cynthia Shirlee, Ph.D. candidate.



**David Jensen**, flanked by GSA officers Jennifer Brannan, President, and Marissa Shrader, was on hand for an informal seminar with students and program directors. He spoke about qualifications of formal career tracks for scientists as managers and alternatives to traditional academic scientific careers.

and

To the **P.E.O.** (Philanthropic and Educational Organization) for their nomination of Elizabeth Hileman for the national P.E.O. Scholarship for Exemplary Women in Higher Education.

To the new Graduate School **Advisory Council** members for their interest in the GSBS.

Council Members sharing their time and expertise include:

**Jim Crownover**, Chair

**Stacy Eastland**

**David Grimes**

**Beth Robertson**

**Bill Drushel**

**Harry Gee**

**Diana Hawkins**

**Ralph Thomas**



Hi, Alumni!

And hello again to you new alumni, whom I met at Graduation in May. It was a great pleasure for me to welcome you into the Alumni Association at the ceremony. As I was moved to say then (or blurted out), you can't buy your way into our illustrious organization; there are no dues. You are automatically a member when you earn your degree.

The Alumni Association gives all us graduates a chance to continue our relationship with GSBS, but as colleagues rather than students. The Association's programs will allow you to pass your expertise along to GSBS students and the community at large. You're not only an expert in a particular field of science but also an expert in your chosen career path, whether it's research, medicine, teaching, industry, public service, or one of the many other job tracks we GSBS alumni have taken. GSBS students want your advice on what your job is like. One way to help them is through the In-Reach Mentoring Program, our system for sharing job and career information and advice ([www.gsbs.gs.uth.tmc.edu/alumni/index.html](http://www.gsbs.gs.uth.tmc.edu/alumni/index.html)). Please sign up if you haven't already. You can help a lot simply by agreeing to answer students' questions about your career.

This year the Alumni Association also looked at ways in which alumni can assure that school children and their parents see how important science is and how much fun it can be. To do this, we have contacted some Houston-area schools and are now developing a program for the fall. If you have suggestions or would like to help, contact Linda Carter ([Linda.M.Carter@uth.tmc.edu](mailto:Linda.M.Carter@uth.tmc.edu); phone: 713-500-9865).

One of the regular tasks of the Alumni Association Steering Committee is to help Dean Stancel choose the Distinguished Alumni from the many candidates you alumni nominate. It's wonderful to see how successful GSBS graduates are, in a wide range of fields. This year's Distinguished Alumnus is Larry Deaven (1969), whose mentors were Elton Stubblefield and T.C. Hsu. After earning his degree and doing postdoctoral work at M. D. Anderson, Larry went to Los Alamos National Laboratory, where he is now Acting Center Director of the Center for Human Genome Studies. Larry's work with human chromosome-specific DNA libraries revolutionized gene mapping.

We will honor Larry at this fall's Reunion, where I will also pass the brick to President-Elect Brenda Whaley (1995). (The Alumni Association doesn't have a gavel; we use a brick from the old GSBS building.) We're planning the Reunion now, and when we've chosen a date and place, we'll let you know so that you can put it on your calendar. (Please make sure Linda Carter has your current contact information, especially your e-mail address.) The Reunion is a great time to catch up with old friends and make new ones. We're also headed into a special year for GSBS, which will turn 40 years old in 2003. Plan to be part of the GSBS community and help us celebrate.

Maureen E. Goode, Ph.D. (1985)  
President, GSBS Alumni Association

## **WE WANT TO BE LAST IN LINE...**

After taking care of your loved ones,  
please consider leaving your estate residual to  
The University of Texas Graduate School of  
Biomedical Sciences at Houston.  
For information contact Linda Carter at (713) 500-9865  
or [Linda.M.Carter@uth.tmc.edu](mailto:Linda.M.Carter@uth.tmc.edu)



### Newsletter

*Editor: Linda Carter      Graphic Design: Jeannice Theriot & Tami Sanders  
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