

VOLUME NUMBER May 2004

Schmid Appointed MBC Editor-in-Chief



Sandra Schmid

structure.

Sandra Schmid of the Scripps Research Institute has been appointed Editor-in-Chief of *Molecular Biology of the Cell* effective January 1, 2005. She succeeds Keith Yamamoto of the University of California, San Francisco, who steps down as a result of increased professional responsibilities at his university.

In accepting the position, Schmid said, "I am aware of the importance of Molecular Biology of the Cell to the ASCB and of the Society's belief that MBC will continue to build on its al-

ready excellent reputation."

Initially, Schmid plans to focus on increasing the visibility of MBC within the cell biology community, revising guidelines for peer review and editorial decision-making, and evaluating the journal's editorial

Schmid is the third Editor-in-Chief of *MBC*, succeeding two of the journal's founders, Yamamoto, and David Botstein.



Special Feature: Minorities Affairs Fifty Years After *Brown v. Board of Education*: How Much Progress for Minority Scientists?

The May 1954 landmark case of Brown v. Board of Education of Topeka was a compilation of civil rights cases that argued for the elimination of the "separate but equal" principle that had affected the relationship between African Americans and whites, particularly in the South, since the Plessy v. Ferguson U.S. Supreme Court decision establishing the principle in 1896. It was understood that it would take another judicial rendering by the U.S. Supreme



Problem We All Live With by Norman Rockwell

Court to overturn Plessy. Therefore, the National Association for the Advancement of Colored People (NAACP) tactically accepted the Court's preference for historical precedent and debated educational reform by arguing that it violated the 14th amend-

See Brown v. Board of Education, page 18

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Look for the new Call for Abstracts in the mail



Abstract Submission Deadline: July 29

Wireless Internet **Access Available** at Annual Meeting

The Society will enable access to the Internet in designated areas of the Washington Convention Center for the duration of the ASCB Annual Meeting, December 4-8, 2004. This service is being provided without charge by the ASCB.

See www.ascb. org for laptop or PDA configuration requirements. ■

May 2004

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PRESIDENT'S COLUMN



Harvey Lodish

Two Cultures and the Revolution in Biotechnology

The two cultures of science are not those of C. P. Snow who forty years ago articulated the growing gulf between the humanists and ascendant scientists in the post-war period. They are the two groups of scientists — cell biologists in particular — who work in academe and in industry. Bridging the considerable gulfs between these

groups is important for the benefit of industry as well as for the support of university research.

One major problem is that basic science research faculty in general often undervalue the work done in industry and can make it difficult for their students

and fellows to pursue careers there. As noted in last month's President's Column, I've asked groups of graduate students and postdocs at a wide range of universities and research institutes about where they see themselves in ten years. Their answers are remarkably similar. Only a handful see themselves directing their own research program in an academic laboratory, and well over half plan to work in a pharmaceutical or biotech company.

On one hand we do a fair job educating these students and postdocs about the various career opportunities available to them. Many institutions have career days where alumni or local colleagues describe their careers in industrial research, patent law, scientific editing, laboratory administration, and many oth-

ers that require a strong background in science. The WICB Career Lunch at the ASCB

Annual Meeting is an outstanding example of this type of mentoring.

However, a critical problem exists between students/postdocs and their PIs. When I ask students or postdocs if they would feel comfortable asking their PI for help or advice in seeking employment outside of academia. I receive a universal and

emphatic "no". Part of this negativism results from the strong if outmoded notion that we, the research faculty, are training people only for careers in academic research — in essence to become our successors. Another part may result from the historically strong but

equally outmoded notion that the top students and postdocs go into academic careers and that only the less qualified individuals take industrial jobs.

But the negative attitude is largely attributed to the fact that only a handful of academics have even a basic knowledge of what goes on in a biotech or pharmaceutical company. Most have only vague notions of how research in a for-profit lab is organized and conducted and the kinds of ca-

reer paths one can have there. It would be interesting to accumulate some "hard data" on this point.

To solve this problem, companies themselves need to take the lead by holding research days or open houses to specifically target the faculty, not the students and fellows they are trying to recruit. These events

could include scientific talks focused on the company's research. Tours of indus-

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One major problem is

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search faculty in general

often undervalue the

work done in industry.

trial labs are also very useful. Most academics would be startled at the lab equipment in routine use in for-profit research labs, much of which is simply unavailable even in top academic labs. These can open the way for mutually profitable collaborations, assuming both sides can overcome the other gulfs that separate them. Interactions like these could also make our faculty realize the many advantages of non-academic careers for their own students.

I have found collaborating with industry very satisfying. One collaboration is now in its twelfth year, and I've been involved in two others of over four years. I stress the word "collaboration" as this is really the key to success. Interactions can result in significant research support for an academic laboratory, but can also result in true collaborative partnerships in which

both sides derive the benefits from the beginning.

One example was a long- term partnership to study a family of membrane fatty acid transport proteins we had cloned. We

helped the company generate lines of cultured mammalian cells overexpressing each of these proteins for their use in screening drug targets. In turn we worked together to generate several mouse knock-outs; the ac-

Industrial collaborations

with academe are most

likely to succeed when

both sides have a real in-

terest in the results of the

project, and when the

contact is at a PI- to PI-

level.

Companies should learn to seek not-for-profit labs in their fields of interest and develop long-term relationships with the key leaders.

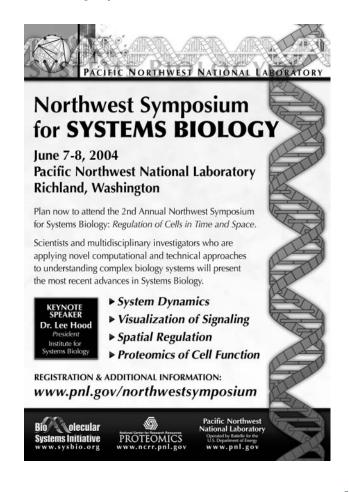
tual blastocyst injec-

tions and mouse husbandry was done by the company. Importantly, these mice have been given to many academic labs and have led to four papers in peer-reviewed journals.

A second example concerns a company that markets a particular protein hormone and recently gen-

erated a version having a longer half-life. In discussions with the company, we real-

TOOLS FOR GENE KNOCKDOWN Reliable & Specific **New & Exciting** versus Morpholinos siRNAs More than 500 publications YES YES Allows you to modify splicing YES NO Effective & specific in cells & embryos NO YES Largely free of off-target effects NO YES NO Free of interferon effects YES NO Typical first-try targeting success YES NO Functions in both cytosol & nucleus YES NO Complete stability & long-term efficacy YES Well understood mechanism NO YES Visit our website for a comprehensive searchable database of more than 500 papers using Morpholinos. Morpholinos from GENE TOOLS, LLC: Superior Technology, Comprehensive Service www.gene-tools.com Phone: (541) 929-7840



Vote!

Regular, postdoc and emeritus members may vote for ASCB Presidentelect and four members of Council at www.ascb.org. The deadline is June 30.

Election results will be announced in the July issue of the ASCB Newsletter. ized that essentially nothing is known

about the sites or mechanism of turnover of this or similar hormones in the body. I developed a hypothesis for hormone degradation that led to company support of a postdoc in my lab; in turn, the company has provided us a number

of mutant versions of the hormone that the company had made and purified in earlier studies. These reagents greatly en-

versities.

hance the power and speed of our own research and the company gets to know why their new drug works better than the old one.

In these and other collaborations students and postdocs were actively involved and made regular visits to the partner indus-

trial labs. In fact, they found these interactions a very stimulating aspect of their training.

Industrial collaborations with academe

are most likely to succeed when both sides have a real interest in the results of the Companies need to project, and when the conlighten up and undertact is at a PI- to PI-level. (In stand the free and open companies, PI's are often culture of research unicalled group leaders.) While the company may very much want to know the

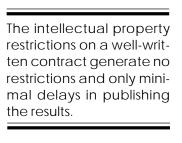
> result, it may not have the in-house expertise to work on the project or more likely, may not want to hire extra people just for a

> > specialized short-term project. Companies should learn to seek not-for-profit labs in their fields of interest and develop long-term relationships with the key leaders. Companies need to lighten up and understand the free and open culture of research universities. All

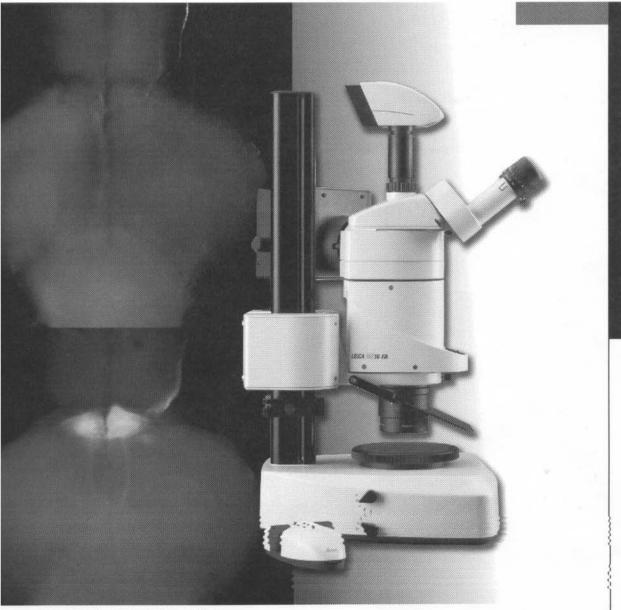
too frequently they try to place unreasonable restrictions on intellectual property and publications that consequently prevent the important research from being conducted.

Academic leaders should realize that there are many potential advantages to industrial collaborations additional to research funding. Companies can provide reagents and equipment that are simply unavailable elsewhere. Also, the intellectual property conditions on a well-written contract do not generate significant restrictions and only create minimal delays in publishing the results. Finally, increases in these activities should help make it easier for fellows and students to learn more about industry, and to be less intimidated about approaching their PI for advice in non-academic careers. ■

Comments are welcome and should be directed to president@ascb.org.







Dil and DiO labeling in a 4 week old zebrafish brain. Images courtesy of Yung-Shu Kuan and Marnie Halpern, Carnegie Institution Department of Embryology

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WOMEN IN CELL BIOLOGY

Me Write Pretty One Day: How to Write a Good Scientific Paper

If you think your discovery

might (in the future) prove

to be the explanation for

mystery X, don't make the

reader figure out the iden-

tity of mystery X.

The scientific literature is exploding in quantity even as it stands still in literary quality. In this article I suggest a few small steps that the individual can take to make his or her writing clear, straightforward, and digestible.

So....What was Your Point?

The first step with any manuscript is to

Non-experts will retain at most a single message. Make sure you have one, and then repeat it over and over again—at the end of the abstract, in the introduction, in the results, and in the discussion.

define your bottom line. Be realistic about how much the average reader will take away from an article. Nonexperts will retain at most a single message. Make sure you have one, and then repeat it over and over again—at the end of the abstract, in the introduction, in the results.

and in the discussion. In contrast, everything but this single sentence belongs in one section (introduction, results or discussion) only.

To uncover your bottom line, ask some questions: What was the mystery that

you wanted to answer at the start? Have you answered it? What first got you excited

about this area of research? With any luck, it was more than the idea that proteins X and Y might bind to each other—there was probably a bigger idea that motivated and intrigued you. Make sure you convey that reason and that excitement.

What is new? Break up the story into "It was previously shown that..." and "Now it is shown that...."

Is there a significant difference between the

two statements? Justify the interest of your work verbally to someone outside of your field. Your explanation should be compelling on a general, conceptual level, not grounded in minutiae with which your volunteer has no familiarity or interest.

Does the reader need help understanding the significance? If you think your discovery might (in the future) prove to be the explanation for mystery X, don't make the reader figure out the identity of mystery X. State it explicitly, make clear that the link is only speculation, and explain any basis for making the speculation. Remember that your readers are busy in their own field, and will not necessarily make the jumps in logic that are glaringly obvious to you. Make the jumps for them.

Show; don't tell. Not 'Our results are ex-

citing...' but. 'Our results double the number of known penguin species...'. If your readers don't think that is exciting, they won't be convinced by you stating that it is.

Finally, include different levels at which your results are significant (e.g., (a) we

have found a stem cell repressor, and (b) this may be one of many repressors for maintaining a generally dormant state in stem cells). This is particularly important for papers that you are trying to get into top tier journals.

The Anatomy of a Paper

Now that you have your bottom line, you need a roadmap for writing the paper. Remember throughout that everyone, even a scientist, thinks in narrative. Science is a story. Tell it.

To draft a paper, simply work out what the figures and tables would look like. Give each figure a simple, declarative title in the

Show; don't tell. Not 'Our results are exciting...' but 'Our results double the number of known penguin species...'. If your readers don't think that is exciting, they won't be convinced by you stating that it is.

form of a sentence. Most of the content of the paper should be evident from reading these few sentences alone. When the sentences look as if they both tell a story and have a bottom line, it's time to start writing.

A good paper is not a random accumulation of facts. Give your paper a narrative structure that links from one finding to another. This can be the logical order of why one experiment was done in response to another, or you can describe from the beginning to the end of a pathway. Build up this structure by writing notes, in any order, and then rearranging them so that there are logical links.

Start by drafting a title that is strong, direct, and as big-picture as the data can justify. But don't claim more than you have shown.

An abstract can and must pack in many elements:

background, a question, what was done, what was found, the conclusion/answer, and implications. Make it clear where the

background ends and the new work begins.

Arrange results either chronologically

(as they unfolded in the lab) or put the most important result first and secondary results later. The latter organization works best when organizing each paragraph.

To draft a paper, simply

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Everyone, even a scientist, thinks in narrative. Science is a story. Tell it.

Describe the data with only enough interpretation so that the reader can both see what logical path the writer is taking—how one experiment prompts the next—and understand what spin the writer is trying to put on the data

so that the reader can agree or disagree with this spin.

Start the *discussion* with a very brief 1-paragraph summary of the main results: first state the answer to the question, and then concisely add a broad-

brush version of the supporting evidence. Organize subsequent topics from most to least important, i.e., start with topics most



closely related to the answer. The first sentence of each paragraph should indicate the structure of the discussion.

Do NOT just repeat the results (or introduction) section, but discuss how the results affect the field.

> Reveal any large areas that remain

a complete mystery.

The introduction sets up the background for what we are about to learn (the

tion.

The introduction is not a

literature review but a

means to set up the ques-

Sentences should have

an active construction.

address one thought at a

time, and generally be kept short and to the

bottom line) and why it matters. Funnel from known (the big picture significance of the field) to unknown (the specific gaps in knowledge) to the specific question be-

ing asked by you. The introduction is not a literature review but a means to set up the question.

How to Write Clearly

Now that the text is down

paper. Sentences should have an active

construction, address one thought at a time, and generally be kept short and to the point. Treat each paragraph as a thought, with a single, clear message.

point.

More general style issues include signposts, flow, editing, and specificity. Sign-

posts tell the reader where you're going with the argument that follows. Many authors mistakenly feel that they have to build the entire case before telling us the conclusion.

> They list all their evidence before stating: "Thus, X =Y." But this leaves the reader scratching their head for sentence upon sentence. Put a preview first.

> Flow comes about when the writer makes connections between the end of

each sentence, paragraph or section and

the next. Make all transitions so there are no gaps in logic. Don't presume that the

> reader will do any work. Do the work for them.

> The main route to clarity is to cut, cut, cut. Chop out everything from single words to entire thoughts. "In spite of the fact that...." becomes "Although...". Only after chopping out text

will the average reader make it through your words without drowning.

Specificity means using only words with precise meanings. Replace lazy phrases such as "gives important insight into..." with words that actually mean something. Use the specific (dog not animal) but simple (girl not female child; used not utilized)

> and necessary ('X was examined and found to vary' becomes 'X varied').

> Stuffy writing is frequently used to disguise intellectual fuzziness. Think about what you really want to say. Be exact.

> Space precludes a full discussion of how to deal

with journals, but there is one Golden Rule: be polite to editors, no matter how you are provoked. Editors are trying to do a good job, and screaming at them will not advance your cause, and could well damage it. Be forceful, but civil. And good luck! ■

-William A. Wells

The above is a summary of a presentation by Wells at the 2003 ASCB Annual Meeting.

in rough form, tackle style issues. Think about each element used to construct the

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8

The American Society for Cell Biology

2004 Summer Meeting

Cytokinesis

July 22 - July 25 The University of Vermont

Organizer



Keynote: Thursday, July 22

Raymond Rappaport Mount Desert Island



Friday, July 23

Contractile Ring Assembly & Constriction

Thomas D. Pollard, Yale University Issei Mabuchi, University of Texas Speakers: John Pringle, University of North Carolina



Membrane Dynamics in Cytokinesis

David R. Burgess, Boston College Speakers: Fred Chang, Columbia University College of Physicians & Surgeons John White, University of Wisconsin



Saturday, July 24

The Mitotic Spindle and Cytokinesis

Bruce Bowerman, University of Oregon Speakers: Michael Glotzer, Research Institute of Molecular Pathology Edward Salmon, University of North Carolina



Novel Aspects of Cytokinesis

Yu-li Wang, University of Massachusetts Medical School

Speakers: Dannel McCollum, University of

Massachusetts Medical School Douglas Robinson, Johns Hopkins University School of Medicine



Sunday, July 25

Functional Genomic and Non-Genomic **Approaches**

Christine M. Field, Harvard Medical School Kathy Gould, Vanderbilt University Speakers: Patrick Hussey, University of

Durham, UK

James Spudich, Stanford University



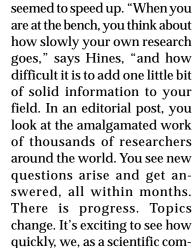
Additional speakers will be selected from submitted abstracts. Poster sessions are scheduled for Friday afternoon. For more information, see www.ascb.org.

May 2004

ASCB PROFILE

Pamela J. Hines

When Pamela Hines left the research lab to become an editor at *Science* in 1989, the world



Editors must always walk

a line between under-

playing a "breakthrough"

paper and overplaying

an "interesting" result.



Pamela Hines

new things."

Now Senior Editor at *Science*, Hines is credited by colleagues with widening the journal's coverage in new fields such as embryonic stem cells and by paying closer attention to areas such as plant physiology where

molecular techniques are breaking new and sometimes controversial ground. Hines embarked on a rapid self-education in plant biology to also expand coverage in that field.

munity, learn

Nature Immunology Editor Linda Miller, a colleague of Hines for a dozen years at Science, notes that editors must always walk a line between underplaying a "breakthrough"

Hines is credited by colleagues with widening the journal's coverage in new fields such as embryonic stem cells and by paying closer attention to areas such as plant physiology.

paper and overplaying an "interesting" result. The decision to publish is made through the journal's elaborate peer review system, but an editor's lay summation is critical to the paper's reception. "Pam is always cautious to avoid hype," says Miller. "You want to make a *Science* paper understandable to

those who don't follow every little step in the

field, but it's so easy as you simplify to lose the detailed context and to sound like you're trumpeting the paper. Pam is awfully good at not crossing that line. That's part of why she's such a good editor."

"It's the perfect position for Pam Hines," says Merrill Hille, a friend, colleague and fellow ASCB member at the University of Washington (Hines has been an ASCB member since 1985). "Pam has always enjoyed the breadth of science," says Hille, "plus she was always very interested in writing. Once she got to *Science*, Pam pushed for broader coverage of developmental biology and plant physiology. As an editor, she also has a way of seeing if there's something buried in a paper that could make it a *Science* article. Even if the authors haven't written it well, she'll work with them to make it acceptable."

The second of five children and the old-

est of three sisters, Pamela Hines was born in Detroit but grew up in suburban Chicago. Her father was a physics professor at Northwestern, which may explain, says Hines, why all three sisters became scientists. "As small children,

when we'd ask the standard questions like, 'Why is the sky blue?' my father would tell us in detail. He wanted to show us that we lived in an orderly universe."

A pianist, singer, and omnivorous reader, Hines spent her junior year of high school as a student at an English sixth form college in Cambridge. The experience contributed to her choice of a liberal arts college, Oberlin, with its special music program. Indeed, Hines has been an enthusiastic singer in choral groups from Seattle, Washington, to Washington, DC.

Biology, though, was her career choice. Hines earned a Masters at the University of Wisconsin and taught undergraduates at Purdue University before earning her doctorate with Robert Benbow at Johns Hopkins in 1983. The Benbow lab focused on chromatin and DNA replication. "By today's standards, we had only the bluntest of tools," Hines recalls, for studying how patterns of transcrip-

tion factors affected early development and how DNA replication functions in early embryos.

From Baltimore, Hines went to Seattle

for post-doctoral work, first with Amy Baaken in the Zoology Department at the University of Washington and then with George Stamatoyannopoulos at the UW Medical School. The Stamatoyannpoulos lab was working on gene switching in globin production, an amazingly complex process in mammals

because hematopoiesis moves from the peripheral yolk sack in embryos to the liver in fetuses and finally to the bone marrow in adults, switching genetic variants along the way. In the lab, Hines looked for higher order control functions that could produce the three variant patterns of globin gene expression, a knotty problem at the bench in the mid-1980s, but a background that would come in handy later when the embryonic stem cell burst upon the scene.

Hines edited some of the first ES papers to appear in *Science* and continues to closely cover stem cell work. "When you do research, you're most effective when you really dig down in one area," says Hines. "But editors must take a broader view of what's going. You have to look sideways at things and look for the ways that different things begin to connect."

She joined the *Science* staff in 1989. "This job has really held my interest in a good way. It's interesting to go to work every day and has been since the day I started at *Science*. I think that's worth a fair amount."

For years, Linda Miller watched in awe as Hines solicited writers, edited copy, and redesigned the entire production system for the magazine of the Association for Women in Science, all in her "spare" time. "I rank Pam as one of the finest time managers I've ever seen," says Miller. She's one of those people who announce that she's coming in at such a time and leaving at such a time. Then she gets everything done. Those of us who don't have her time management skills can't help wondering, 'How does she do that?'

Hines lives in northern Virginia with her husband, Robert Lerner, a market analyst in the information technology sector, and their two-and-a-half-year-old son, Alexander.

Hines volunteers a bare outline of her current activities, but her friends fill out the details of her skills as mother, seamstress, glacier and mountain climber, backpacker, musician, co-investigator on an NSF grant to create a secondary school web site about

controver-

ence, volunteer editor for the AWIS magazine, and membership on an NAS advisory committee looking at over-

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"I rank Pam as one of the finest time managers I've ever seen."

hauling American high school science labs. Only on the subject of Alexander does Hines volunteer a hint that science and real life have unexpected gaps. "How organisms develop never ceases to fascinate me," says Hines, "and I think embryos of all sorts are beautiful. Our youngster makes me even more fascinated with development, and with the vagaries of just how devious a two-year-old can be!"

Social to be Held at Women's Arts Musuem

The ASCB Local Arrangements Committee has chosen the National Museum of Women in the Arts for the 2004 ASCB Social. Located blocks from the Convention Center at 1250 New York Avenue, N.W. in Washington, DC, it is the only museum in the world dedicated exclu-



Great Hall at National Museum of Women in Arts

sively to recognizing the contributions of women artists.

The Social will be held during the ASCB Annual Meeting on Monday, December 6, at 7:30 pm.

To register for the ASCB Meeting and Social, go to www. ascb.org. Discounted prices are available until October 1. ■

May 2004 11

In Memory of Thomas Maciag

Thomas Maciag, Director of the Center for Molecular Medicine at Maine Medical Center Research Institute in Portland, Maine, died suddenly on March 8. He had been a member of the ASCB since 1982.

Tom's scientific legacy is great; he established methods



Thomas Maciag

for long-term culture of human endothelial cells, and used this technology to find important insights in endothelial cell morphogenesis, proliferation and senescence. He also discovered fibroblast growth factor (FGF) as an important endothelial cell mitogen, and forged ahead to purify it, clone it, and characterize its receptors and signaling pathways. In the days when the angiogenesis field lacked molecular characters, Tom's lab was one of the first to break open this chapter. He demonstrated that an-

giogenic factors induced site-directed neo-vessel formation *in vivo*, thereby furthering the concept that soluble angiogenic factors are involved in normal and pathologic angiogenic processes. He also showed that aberrant expression and/or secretion of angiogenic factors (the so-called angiogenic switch) contributes to inflammatory disease and neoplasia. These pioneering efforts are precursor to the successful launch of anti-angiogenic drugs of today.

His work also led to the demonstration that cyclooxygenase is an inducible enzyme. Tom's contribution

to the field of endothelial cell morphogenesis was the cloning of regulatory molecules, such as sphingosine 1-phosphate receptor-1 (EDG-1) and the Jagged gene. His latest pursuit, doggedly forged in the past 10 years or so, was the demonstration of the non-classical secretory pathway for signal-less growth factors and cytokines, such as FGF-1 and IL-1a. His lab singlehandedly worked out the molecular basis of this poorly-understood mechanism.

He was never modest in his quest for excellence and pushed technology

to new heights so that the truth about nature will emerge. Importantly, he was also not shy about forging ahead with concepts that are not in the mainstream. Many of us who knew Tom realize that the full impact of his contributions will not be felt for many more decades.

Tom Maciag was a quintessential builder of institutions and infrastructure, reminescent of an Ayn Rand character. He developed an academically-oriented department of Cell Biology at Revlon Health Sciences/Rorer Biotech in the mid-1980s. In late 80s and a good part of 90s, he established a world-class center of excellence in Vascular Biology at the

Jerome Holland Laboratory at the American Red Cross research labs in Rockville, MD. He then moved to Maine Medical Center in the late 1990s and established the Research Institute there as Director of the Center for Molecular Medicine. At every place, Tom challenged the normal paradigm and moved the people and the place to a higher level of performance and excellence.

Many young scientists and trainees who were impressed by Tom's vision and passion for science went through his lab over the years. The years spent under his tutelage were simply magical for many of us. He provided an environment where the passion for science, excellence, and innovation ruled the day. His unlimited enthusiasm and intensity was infectious and provided the fuel for the many innovative discoveries in his lab. Despite the fact that the angiogenesis and growth factor fields were rife with competitive spirit amongst the laboratories. Tom insisted that reagents, methods and data were to be shared openly, much to the angst of fellows and students. He told his trainees that "Science is the property of humanity and not of individual labs" and that contributions of individuals will be clarified over time as the fields evolved. Indeed, his lab was the major resource for gram quantities for FGF, numerous cDNA reagents and technology over the years.

In addition to his scientific achievements, Tom was also a respected artist. He painted still life and abstract art, much of which he generously gave as gifts to his colleagues. Some of his work is still on display at the Fore Street Galley in downtown Portland, Maine and in various institutions around the world. When asked why he developed and nurtured this passion later

in life, he said that this was a form of release for his creative energy and frustrations. His abstract paintings on Endocytosis, Traffic, Docking and Cell surface are simply stunning and give us a glimpse of his creative process at work. Tom was truly a gifted human being.

When I (TH) left Tom's department to take a faculty position in 1996, he gave me an abstract painting of shades of purple, grey and oak brown, compartmentalized by ashy white rays of light. At the back of the painting, he wrote the title, "EDG-1". It seems as though he knew that I would be spending much of

my career working on this molecule, which I cloned in his lab in 1990. His vision turned out to be prescient as we identified the ligand for that orphan receptor soon after.

Tom Maciag is survived by his wife Lorrie Maciag and son Andrei. Those of us in the cell biology community who knew Tom well are shocked and saddened by his untimely death. It is indeed a privilege to have known Tom Maciag as a mentor and a friend. He has given, contributed and taught so much. His legacy and his scientific soul will live on for many, many years to come.





Science in Maine by Thomas Maciag

PUBLIC POLICY B R I E F I N G

Congress Starts Work on 2005 Federal Budget

Both the U.S. House of Representatives and the Senate have begun the creation of the 2005 Federal budget by approving the 2005 Budget Resolution. Budget Resolutions serve as blueprints for the House and Senate Appropriations and tax writing committees as they construct the Federal budget.

The Senate version of the budget blueprint proposes a FY05 budget of \$2.36 trillion. The Senate bill also provides \$819.3 billion in spending for discretionary programs. The House bill proposes \$2.4 trillion for FY05 with \$818.73 billion for spending on discretionary programs.

During debate in the Senate, NIH champion Sen. Arlen Specter (R-PA) offered an amendment to increase spending for the National Institutes of Health. His amendment would have increased the NIH portion of the FY05 budget by \$1.3 billion from \$28.7 billion in FY04, to \$30 billion.

In arguing for his amendment, Sen. Specter listed examples of research advances enabled by NIH support, including progress against autism, diabetes, numerous cancers and Sudden Infant Death Syndrome. He also outlined ten areas of research that the NIH could not fund under the budget resolution, including clinical trials of medications to treat Parkinsons's disease, and chemical counterterrorism research to combat nerve agents. The Specter amendment passed 72-24.

In the House of Representatives, Rep. Tammy Baldwin (D-WI) offered an amendment to the House version of the budget resolution in the House Budget Committee. The amendment would increase funding for the NIH by \$360 million in FY 2005. It was defeated on a party-line vote of 17- 3.

Longtime NIH Proponent Lashes Out

During Senate debate of an amendment by Sen. Arlen Specter (R-PA) to increase FY05 spending for the National Institutes of Health (NIH), Sen. Pete Domenici (R-NM) spoke in opposition to the amendment and lashed out at the NIH and efforts to increase the NIH budget.

"The NIH is one of the best agencies in the world, but they have turned into pigs, pigs. They can't keep their 'oinks' closed. They send a Senator down here [to the Senate floor] to argue as if they are broke," Domenici shouted. Later in his remarks, Domenici continued, "It is never enough. Come to the [Senate] floor with another amendment saying: This isn't enough. Our 'oink' somehow is not full, and come down here and say: We can't do this; we can't do that [without additional funds]."

In defense of the NIH, Sen. Specter responded, "When I hear the Senator from New Mexico disagreeing with the research, I think about how many times he has come to me and I have helped him on funding for mental health. That is a very vital part of what NIH is doing, a matter of great importance to the Senator from New Mexico, just as so many of these maladies are important to every Senator in this Chamber."

FY 2005 Federal Budget Proposals Deficit Estimates (in billions)

	FY05	FY06	FY07	FY08	FY09	5 year total	10 year total
Previous estimated deficit ¹	323	197	182	183	170	1,055	905
Change under House plan ²	+29	+54	+50	+48	+61	+242	+1,524
Change under Senate plan ³	+18	+56	+41	+34	+30	+179	+1.309

¹Congressional Budget Office, March 2004 estimate ²per FY05 House Budget Resolution ³per FY05 Senate Budget Resolution

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Treasury Department Reverses Publishing Prohibition

The Institute of Electrical and Electronics Engineers (IEEE) has led a years-long fight to overturn U.S. Treasury Department regulations that limit the services U.S.-based professional societies can offer members and authors who live in countries under U.S. foreign trade embargoes. These countries include Cuba, Iran, Libya and the Sudan.

In response to a 2003 IEEE request, the

In order to peer review and publish research papers, American-based organizations would have to obtain a license. Treasury Department's Office of Foreign Assets Control (OFAC), ruled that in order to peer review and publish research papers, American-based organizations would have to obtain a license. Previously, OFAC regulations prohibited U.S. citizens and organizations based in the

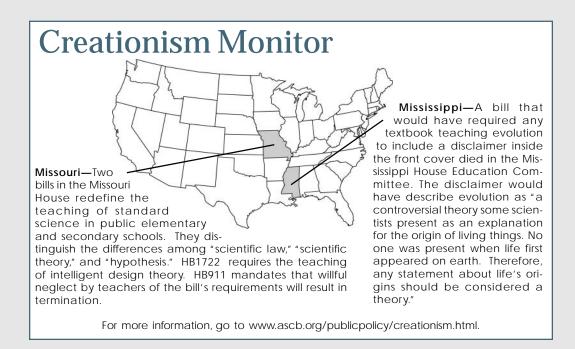
U.S. from providing any service to any person residing in a country under embargo.

The September 30, 2003 OFAC response to the IEEE specifically states that the "alterations or enhancements" of scientific manuscripts authored by researchers in Iran, Cuba, Libya and the Sudan could be

provided only if the publisher had obtained a license from the United States government. OFAC clarified which editorial services were and were not permissible. "U.S. persons may not provide the Iranian author substantive or artistic alterations or enhancements of the manuscript and the U.S. Entity may not facilitate the provision of such alterations or enhancements," the OFAC letter said. The ruling outlined the specific editorial services that were prohibited.

In response to the September 30 ruling, both the IEEE and the American Society for Microbiology (ASM) applied for licenses to offer editorial services to authors in sanctioned nations. In response, in April 2004, OFAC reversed its prior ruling. OFAC still prohibits the co-authorship of papers between U.S. scholars and scholars from a sanctioned nation.

The April 4 OFAC ruling is at www.ustreas.gov/offices/eotffc/ofac/rulings/ia040504.pdf; the September 30, 2003 OFAC ruling is at http://www.ustreas.gov/offices/eotffc/ofac/rulings/ia100203.pdf.



Foreign **Applications** Down, Visa Approval Time Up

Two recent studies report a sharp drop in the number of applications to American colleges and universities from international students for the Fall 2004 school term. At the same time, a government review indicates that the US State Department cannot estimate with any certainty the time it takes for a science student or scholar to obtain a visa to enter the United States.

In a Council of Graduate Schools (CGS) survey, 90% of American colleges and universities responding reported a reduced number of applications from international

students. Only 8% indicated an increase in international applications. A similar survey conducted by a number of university organizations also found a smaller drop in undergraduate applications.

The CGS survey also found a decline in applica-

tions for all major fields of study. The most striking decreases were in engineering, physical sciences and biological sciences,

with a 50% reduction in foreign applications.

A recent examination by the Federal General Accounting Office (GAO) found that the U.S. State Department is not able to identify with any confidence the amount of time it would

take for an international science student to obtain a visa to enter the United States. In its investigation, the GAO found that using Visas Mantis, the State Department's security check program, it took an average of 67 days for the applicant's security check to be processed and for the applicant's local State Department office to be notified. Of 71 cases studied as part of the GAO investigation, 67 had been completed. Three

of the 67 finished cases had taken over 180 days. Three of the four remaining cases had been pending for more than 150 days, and one was 240 days old.

The Council of Graduate Schools survey can be found at www.cgsnet.org/HotTopics/. ■

Daschle Attacks **Bush Science Policy**

In a speech on the floor of the US Senate, Senate Minority Leader Tom Daschle (D-ND) criticized funding decisions and science policy of the Bush Administration.

"The failure to adequately invest in America's research portfolio is taking a toll on the work of America's scientists," Daschle charged. He went on to assert that

> the lack of funding would have a harmful impact on all Americans, and that the main reason for the cut in R & D funding is to provide more tax cuts for wealthy Americans and large corporations.

Daschle criticized the scientific policy choices Bush has made as President. In his remarks, he made reference to a recent report by the Union

> of Concerned Scientists which charges the Bush Administration with a pattern of misuse of science. The statement was signed by over 60 scientists, in-

cluding 20 Nobel Laureates and 19 National Medal of

Science winners (see March 2004 ASCB *Newsletter*). The Senator also highlighted the decision by President Bush to remove former ASCB President Elizabeth Blackburn from the President's Council on Bioethics.

"This is not real science. This is 'vending machine science.' The administration thinks it can pull a lever and get the results

"This is not real science. wants," Daschle said.

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This is 'vending machine science.' The administration thinks it can pull a lever and get the results it

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it wants," Daschle said. "For the sake of short-term political gain, the administration is basing its decisions on weak science," the Minority Leader continued. ■

Senator Daschle's complete remarks are at http://thomas.loc.gov/cgi-bin/query/C?r108:./temp/~r1087mXAjW. The Union of Concerned Scientist report is at www.ucsusa.org.

Bush Administration Responds to 'Science Bias' Charges

John Marburger, Director of the White House Office of Science and Technology Policy (OSTP) has responded to charges by the Union of Concerned Scientists (UCS) that the Bush Administration has misused science for political reasons (see March 2004 ASCB Newsletter).

In a 20-page response, Marburger defends the Administration against charges, asserting that, "the accusations in the [UCS] document are inaccurate...In this administration, science strongly informs policy."

He did acknowledge that the Administration should not have used paragraphs prepared by energy industry lawyers in a regulation issued by the Environmental Protection Agency. Marburger refutes the claim by UCS that the National Cancer Institute kept information suggesting a link between abortion and breast cancer on its web site long after the science behind the claim had been disproved. Marburger says the information was removed "when it became clear that

there was conflicting information in the published literature."

Marburger tried to dismiss the UCS charge that litmus tests are used to hire scientific

advisory committee members by pointing out that the President hired him even though he is a Democrat.

He did acknowledge that the Administration should not have used paragraphs prepared by energy industry lawyers in a regulation issued by the Environmental Protection Agency. ■

The UCS Report is at www.ucsusa.org/global_environment/rsi/report.html; the response by Marburger is at www.ostp.gov/html/ucs.html.

USDA Initiates Fellowship Program

The US Department of Agriculture has announced the creation of a scientific training

program targeted to developing countries around the world, with a special emphasis on African, South American and Asian countries.

The Norman E. Borlaug International Science and Technology Fellowship Program, named after Nobel

Peace Prize winner Norman Borlaug, will promote the sharing of technologies to improve the availability of food around the world. The program will provide short-term training in the United States for about 100 fellows from developing countries. It will also support an exchange of researchers, faculty and policymakers.

With nearly 850 million people chronically malnourished, hunger is the leading cause of death world-wide. Experts recognize that agricultural technology will play an important role in reversing the situation. "Over the past five years, significant resources have been invested in sequencing plant genomes. The resulting additions to the database provide a valuable resource for making crop improvements, both through selective breeding and recombinant DNA technology," says ASCB Council member Daphne Preuss.

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Brown v. Board of Education, continued from page 1

ment protecting former slaves and their descendents from unconstitutional acts. The *Brown* victory dramatically reshaped policies on public education in the United States.

The Brown victory dramatically reshaped policies on public education in the United States. Framed by the opposition as little more than a liberal social experiment, the 1954 decision did more than allow minority and non-minority children the opportunity to be educated together without regard to ra-

The ASCB MAC remains

committed to goals that

support quality education

and training of minorities

in science, and has pro-

grams that target minority

scientists at both MSIs and

majority institutions.

cial distinction — it ensured that African American students would be legally entitled access to the same public academic

institutions as their white counterparts. Racial integration of postsecondary educational institutions had already been established by the Court to be legally permissible prior to *Brown*, but the argument for fair and equal access to quality education in all sectors (public, private, and independent) gained more

currency as *Brown* moved the education debate to center stage in the public discourse on race.

Where does this Bring Us Today?

When Martin Luther King, Jr. stood on the steps of the Lincoln Memorial in 1963 to "dream" of a better future for the nation's

Despite the Brown and Michigan decisions, a 2003 report released from the American Council on Education reveals that educational and employment gaps persist, and in some cases, are even widening.

children, he challenged citizens to create a democracy that would promote equality and capture the talents of all people regardless of racial heritage. Echoing this sentiment forty years later, the U.S. Supreme Court issued another landmark decision on affirmative action (actually two cases known jointly as the "Michigan decision") up-

holding the use, with constraints, of race in higher education admissions decisions.

Consistent with the policy goals of affirmative action, the Court concluded that, "effective participation by members of all racial and ethnic groups in the civic life of our nation is essential if the dream of one nation, indivisible, is to be realized."

Despite the *Brown* and *Michigan* decisions, a 2003 report released from the American Council on Education (ACE)¹, reveals that educational and employment gaps persist, and in some cases, are even widening. African Americans are underrepresented at all levels of the life sciences; Hispanics are faring a bit better than African Americans, but both groups are grossly underrepresented, as are Native Americans, whose numbers are almost negligible.

In the last forty years, the nation's attempt to achieve the principles of school integration has met with uneven academic success. There are many who argue for a modification to the ideal of racial integration in favor of a model that emphasizes desegregation's central goal: minority achievement.

How does the ASCB Contribute?

As we move even further into the new century, the ASCB, through the Minorities Affairs Committee, remains committed to goals that support quality education and training of minorities in science, and has programs that target minority scientists at both Minority-Serving Institutions (MSIs) and majority institutions.

The ASCB's Minorities Affairs Committee was established in 1985. Many ASCB members may not be aware of the MAC's ongoing programs to attract minorities to science and to increase the success of those already in the pipeline. All programs are fully or partially funded by NIH/NIGMS MARC grants.

■ The ASCB MAC's Visiting Professors program matches ASCB members with faculty from MSIs to work for six to eight weeks each summer in an ASCB member's lab. Last year, the ASCB MAC funded six pairings of scientists around the country. The

Visiting Professors program promotes scientific integration as a collaboration of scientists from different types of institutions, different ethnic backgrounds, and different areas of research.

- The ASCB MAC's Linkage Fellows program provides faculty from MSIs with the opportunity to attend the ASCB Annual Meeting and to discuss science as well as professional development with colleagues.
- Travel awards are given to students and faculty to attend the ASCB Annual Meeting and present posters. The MAC also provides travel awardees with the opportunity to attend a MAC hosted Saturday
- Mentoring Symposium, MAC poster award luncheon, and the annual ASCB MAC E.E. Just Lecture. The Travel Awards and Linkage Fellows programs allow students and faculty the opportunity to network with each other and the larger science community at the ASCB Annual Meeting and other meetings.
- Students are sponsored to attend summer courses at the Marine Biological Laboratory, Friday Harbor Laboratory, and workshops offered by the Histochemical Society. ■

MEMBERS IN THE NEWS



Seymour Benzer

Lander



Elizabeth Blackburn



Shinya Inoué



Sandra Murray



George Palade

Seymour Benzer of the California Institute of Technology, an ASCB member since 2002, received the 2004 Bower Award and Prize for Achievement in Science from the Franklin Institute.

Elizabeth Blackburn of the University of California, San Francisco, 1998 President and an ASCB member since 1978, received the 2004 Dr. A.H. Heineken Prize for Medicine from the Royal Netherlands Academy of Arts and Sciences.

Shinya Inoué of the Marine Biological Laboratory, an ASCB member since 1967, was selected one of the Cape and Islands' "100 Intriguing

People," in the 25th Anniversary issue of Cape Cod Life Magazine

Eric Lander of the Whitehead Institute Center for Genome Research, an ASCB member since 1997, was awarded Research! America's 2004 Advocacy Award. He was also named one of the "Time 100": the magazine's list of the most influential people in the world today.

Sandra A. Murray of the University of Pittsburgh School of Medicine, an ASCB member since 1981, received a Trailblazer Award in Health Education and Research from the City Council of Pittsburgh. The Award pays tribute to African Americans who have made positive and pioneering contributions to the community.

George Palade, of the University of California, San Diego, a founding member of the ASCB and 1976 President, was the guest of honor at the naming of the George Palade Laboratories for Cellular and Molecular Medicine at UCSD.

ASCB Job Service Free to Members

The American Society for Cell Biology Job Board invites ASCB members to post their CV free of charge. Individuals who post their CV may control access to identifying information. CVs are accessible and searchable without charge. Employers pay a nominal fee to list positions. Employers and job seekers contact each other directly; interviews may be scheduled by mutual convenience at any time throughout the year or at the ASCB Annual Meeting Career Center. For more information or to post your CV, go to www.ascb.org/careers.

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¹ www.acenet.edu/bookstore/pubInfo.cfm?pubID=234



DEAR LABBY

Dear Labby,

I am a postdoc. I like my project and respect my PI. My problem is that I do not get along with one of the other postdocs in the lab. She has an exciting project, but approaches it all wrong and wastes lab resources. When I give suggestions, she simply ignores them. My PI has intervened and attempted to make our discussions about the work positive and productive, but nothing has been effective. The situation has gotten so bad that we do not talk, which really poisons the whole lab atmosphere. I find it a less and less pleasant place to work and have been considering looking for another job. Do you have any suggestions?

-Frustrated Postdoc

Dear Postdoc:

You may suggest that she spend some productive time in a collaborator's lab, but only of course if you want to lose the collaborator. Or you can simply grow up, stop whining, and concentrate on your own project. If your and her projects do not overlap, minimize your interactions. You can still be pleasant without wanting to hear about her wisdom tooth extraction. It is harder if you actually have to share reagents and discuss results, but you are a grown-up and can be polite, right? How she does her experiments is actually none of your business and it is up to the PI to decide whether her approaches and wastefulness can be tolerated. You will get a chance to be the boss in your own lab if you bring your project to a glorious completion, instead of wasting precious energy on hissy-fits now. If she really is as bad as you say, in a few years she will be flipping burgers, while you are accepting your Nobel Prize.

It is true that working in a lab where everyone gets along and works toward a common goal is the best possible situation. But it seldom occurs without significant effort. Now that your situation has gotten to the poisonous state, I can suggest three things. Most important, have a frank talk with the other postdoc and see if she sees things as you do. This conversation might include a neutral party to mediate; it sounds in this case as if that might be necessary. Next, focus on making the best of an imperfect interpersonal work relationship. It probably will not be the only time in your life that this will happen. Finally, lighten up and focus on your own experiments.

As far as leaving the lab, think carefully. If you have just started, a move might be fine since you will not have much invested in your project. But if you are one experiment away from curing the common cold, do not be hasty—you should consider finishing the project. If despite perfect behavior on your part things are still bad, get your project done ASAP, publish a great paper, and get out.

—Labby ■

Direct your questions to labby@ascb.org. Authors of questions chosen for publication may indicate whether or not they wish to be identified. Submissions may be edited for space and style.

GRANTS & OPPORTUNITIES

Burroughs Wellcome Fund and Howard Hughes Medical Institute Guide. *Making the Right Moves:* A Practical Guide to Scientific Management for Postdocs and New Faculty is available at www.hhmi.org/labmanagement.

Fulbright Scholarship. Applications being accepted for a traditional Fulbright research award in Molecular Biology at University College in Dublin. Deadline: August 1, 2004. See www.cies.org/us_scholars/.

NIH Virtual Career Center. The NIH Office of Education offers resources for exploring employment options and career development opportunities in health sciences. See www.training.nih.gov/careers/careercenter/index.html.

NIAID Fellowships. The NIH National Institute of Allergy and Infectious Diseases solicits applications from biodefense training and development researchers of prevention, detection, diagnosis and treatment of diseases caused by potential bioterrorism agents. Grants, fellowships and career development awards. See www.niaid.nih. gov/biodefense/research/funding.htm.

NIGMS Grants. The National Institute of General Medical Sciences offers exploratory Center Grants for Human Embryonic Stem Cell Research. Deadline: October 20, 2004. See http://grants.nih.gov/grants/guide/rfa-files/RFA-GM-05-004.html. ■

LETTERS TO THE EDITOR

Kudos to Society Publishing Policies



To the Editor:

In the course of researching an article on open access alternatives, I can't help but notice how your society sticks out. Online content freely available and archived on PubMed Central after only two months. A reasonable institutional subscription rate. VERY reasonable membership rates (less than my Medical Library Association dues]. Lower author page and color image fees than other societies, and the willingness to waive those fees in cases of need. ASCB rocks!

I've read several claims that the per article costs of publishing are much higher than the author fees proposed by *BMC* or *PLOS. JCB* quotes \$8,000 for selective journals!¹

And by the way, my library has not cancelled its MBC subscription. While we support *BMC* and *PLOS*, we will also continue to support societies that 'get it'. Thanks!

-Mary E. Youngkin, University of Utah

Risk Taking: It is Possible

To the Editor:

I enjoyed Harvey Lodish's April President's Column and agree with the sentiment about risk taking. Risk taking is our bread and butter: after all, most or many experiments/ideas do not really work out. It is how we respond that matters.

Concerning the Racker quote: I met and socialized with Arthur Clarke and Stanley Kubrick while they were writing the screenplay for "2001: A Space Odyssey" in New York. Arthur reminded me of one of 'Clarke's Laws': When an older scientist says something is impossible, and a young scientist says it is possible, it is probable. Clarke was disbelieved for years concerning earth-synchronous communications satellites.

Finally, because there are many more students, post-docs and others in early career stages, I think it is appropriate to discuss and advise them as best we can in Society publications and to devote considerable space to that goal. However, as I have aged, I have wondered why there seems to be essentially no discussion about the challenges faced by those in late career stages. This is not entirely self-serving—I have come across a fairly large number of more senior scientists that want and need good basic advice concerning options and ideas. My guess is that their numbers will increase.

—Jeremy B. Tuttle, University of Virginia Health System

Defending Cytokinesis

To the Editor:

The organizing committee of the ASCB 2004 Summer Meeting would like to commend David Gardiner for recognizing the contributions of female scientists in cell biology ("ASCB Should Practice What It Preaches", ASCB Newsletter, March 2004). Like Dr. Gardiner, we are disappointed with the number of female speakers confirmed on the preliminary program, but expect the final program to have a higher fraction of female speakers. Unfortunately, a number of excellent female speakers declined our invitations due to other commitments.

While cytokinesis is one of the oldest problems in cell biology, only in the past ten years has the field expanded due to the introduction of new experimental systems and methods. The field is riddled with numerous paradoxes and conflicting models, yet the most recent meeting on the subject in the United States was held in 1989. Given this historic context, our primary goal in organizing the 2004 ASCB Summer Meeting was to create a program that would give the participants an overview of the key discoveries over the past century and to sort out common principles from the diverse model systems and approaches.

Continued on page 22

Gifts

The ASCB is grateful to the following member who has recently given a gift to support Society activities:

Adam Hammond

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¹ Mellman, I, J Cell Biol, April 12, 2004, 165(1):19-20.

Thus, the invited session chairs and plenary speakers are challenged with the task of providing their perspectives on the historical development of various key ideas and on current scientific controversies, as well as presenting some new results. To facilitate the selection, we compiled a list of more than 100 potential speakers, including group leaders at all levels. As in other fields, the distribution of female investigators among the topics to be covered is uneven. When two female invitees could not accept our invitation, the committee carefully considered the options, and decided to place the balance of topics and areas of expertise above an arbitrary gender quota in filling these places.

The remaining speakers (45%), to be chosen from submitted abstracts, will focus on current research. We hope that the distribution of these speakers will reflect more broadly the shared vision of the Society, with regard to the importance of women, minorities and young investigators.

From the very early stage, the 2004 ASCB Summer Meeting has been organized through extensive discussions among the co-chairs, which include a female, an Asian, and an underrepresented minority among its five members. Several of us have served on ASCB panels and contributed to the Society's progressive gender and diversity policies, and all of us have advocated similar policies at home institutions and outside advisory committees. While the organizing committee shares Dr. Gardiner's sentiment, it is not always reliable, or productive, to rely on a simple tally to assess a complicated situation.

Bruce Bowerman University of Oregon Christine Field Harvard Medical School Yu-li Wang University of Massachusetts Medical School

David Burgess
Boston College

Tom Pollard

Yale University

2004 ASCB Summer Meeting Co-Chairs

Eight ASCB Members Elected to National Academy of Sciences

The following ASCB members were among the 72 scientists from across all disciplines who were elected to membership in the National Academy of Sciences at its Annual Meeting last month.



Kevin Campbell HHMI/University of Iowa



Martin Chalfie
Columbia University



Shaun Coughlin University of California San Francisco



Dan Littman HHMI/New York University



Erin O'Shea HHMI/University of California, San Francisco



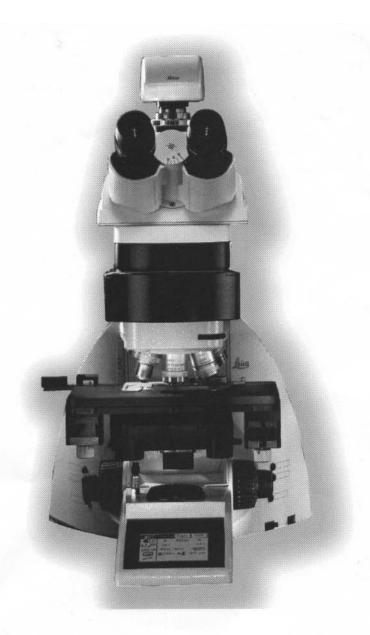
George Oster University of California, Berkeley



Peter Walter HHMI/University of California, San Francisco



lan Wilmut Roslin Insitute United Kingdom



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ASCB Annual Meetings

2004

Washington, DC December 4-8

2005

San Francisco December 10-14

2006

San Diego December 9-13

2007

Washington, DC December 1-5

2008

San Francisco December 13-17

2009

San Diego December 5-9

MEETINGS CALENDAR

July 11-16. New London, NH.

Gordon Conference on "Proprotein Processing, Trafficking, and Secretion" See http://www.grc.uri.edu/programs/2004/proprot.htm.

July 18-22. Glasgow, UK.

BioScience2004-From Molecules to Organisms. See www.BioScience2004.org.

July 19-23. Innsbruck, Austria

Penn State biotechnology workshop, "Advanced PCR Techniques." See www.dnatech. com.

July 22-25. Burlington, VT.

ASCB Summer Meeting on "Cytokinesis." See www.ascb.org.

July 24-29. Tucson, AZ.

FASEB Summer Research Conference on "Protein Lipidation, Signaling and Membrane Domains." See http://src.faseb.org.

July 31-August 5. Tucson, AZ.

FASEB Summer Conference, "Steroid Hormone Receptors: Integration of Plasma Membrane-and Nuclear-Initiated Signaling in Hormone Action." See http://src.faseb.org.

August 9-13. York, PA.

Penn State biotechnology workshop, "Advanced PCR Techniques." See www.dnatech.com.

August 14-19. Saxtons River, VT.

FASEB Summer Research Conference on "Transcriptional Regulation During Cell Growth, Differentiation, and Development." See hhtp://src.faseb.org.

August 15-20. Andover, NH.

Gordon Research Conference, "Plant and Fungal Cytoskeleton." See www.grc.org.

August 23-27. Gothenburg, Sweden.

5th International Conference in Biological Physics. Abstract submission deadline: May 31. See http://fy.chalmers.se/icbp2004 or info@ inspiro event. se.

September 8-11. Snowmass Village, CO.

American Physiological Society conference: Immunological and Pathophysiological Mechanisms in Inflammatory Bowel Disease. See www. the-aps.org.

September 16-19. Ames, IA.

Stem Cell Biology:Development and Plasticity. Abstract deadline: July 16. See www.bb.iastate. edu/~gfst/phomepg.html. ■

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