



# The Physiologist

## White House Lauds APS for Mentoring Underrepresented Minorities in Bioscience

On Thursday May 6, APS was awarded the 2003 Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM). Executive Director **Martin Frank** received the award on behalf of APS in a ceremony at the Eisenhower Executive Office



Building in Washington, DC. Speakers at the award ceremony included John H. Marburger III, director of the Office of Science and Technology Policy and Arden L. Bement Jr., Acting Director of the National Science Foundation, which coordinates the PAESMEM program.

APS was one of eight institutions and nine individuals to receive the Presidential Award. The award includes a \$10,000 grant, which APS will use to help fund the Porter Program designed to encourage underrepresented minority students pursuing a doctorate in the physiological sciences.

Also attending the ceremony were APS President-Elect **Douglas Eaton**, **Pamela J. Gunter-Smith**, co-chair of the APS Porter Physiology Development Program, and APS Education Officer, **Marsha L. Matyas**, who developed the nomination document.

Based on APS' 40-year effort to bring underrepresented minorities into physiology, the Presidential Award citation said in part: "The American Physiological Society has undertaken initiatives across multiple levels of the education continuum to: develop long-term targeted programs for minority students and teachers; increase diversity among physiologists; and monitor the progress

of minorities in the field of physiology."

Frank observed that, "The Society's programs to promote physiology among underrepresented minority students from kindergarten through postdoctoral studies started in 1966 when the Porter Fellowship was refocused to encourage postdoctoral minority

students. That was followed in 1987 by the APS Minority Travel Fellowships for our scientific meetings and in 1990 with the establishment of the APS high school science teachers program."

According to Matyas, "The APS' efforts to increase the diversity of the physiology research and teaching community are truly a collective and collaborative effort, involving not just the APS staff, but volunteer time and expertise contributed by more than 100 APS members each year. Whether it involves hosting an undergraduate or high school teacher in one's lab, mentoring a minority student at an APS meeting, sharing lunch and giving a tour to high school students at the annual Experimental Biology meeting, or serving on a committee, APS members enthusiastically share their love of science and their interest in physiology."

Gunter-Smith, who after a sabbatical year will return in the fall as the Porter Professor of Physiology at Spelman College, added, "Most, if not all, of the minority physiologists who have successful careers in science can point to the APS as being pivotal in supporting their careers." A former Porter Fellow herself, Gunter-Smith said, "Without that support it would have been very

*(continued on page 102)*

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**COMING AUGUST 2004!**  
**News in Physiological Sciences (NIPS) will be renamed Physiology with a new cover and exciting new content.**

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## Association of Chairs of Departments of Physiology 2003 Survey Results

**Philip M. Best and Peter M. Cala**

Department of Molecular & Integrative Physiology,  
University of Illinois at Urbana-Champaign and  
Department of Human Physiology, University of California, Davis School of Medicine

The Association of Chairs of Departments of Physiology annual survey was mailed to 180 physiology departments throughout the US, Canada and Puerto Rico. A total of 81 surveys were returned, for a response rate of 46%. This rate is similar to that of the 2002 survey (45%). Of the 81 surveys returned, there were 42 public and 28 private medical schools, in addition to 11 other institutions.

The data provide the reader with general trends of faculty, salary, overall departmental budgets, and space available for research. Faculty salary information (Tables 1-3) is derived from the total compensation column, which includes any supplementary income but not fringe benefits. In addition to salary information, further data are provided on tenure, gender, ethnicity, and salary by number of years in rank.

The statistics are based on 81 responses (three from Canada) **but** the results of salary, tenure, gender, ethnicity, and number of years in rank are **calculated on the num-**

**ber of respondents providing this information.** However, two institutions did not provide any faculty salary information. In addition, results presented reflect responses from those institutions reporting, which may vary on a year-to-year basis.

Student/trainee information is provided by ethnicity for predoctoral and postdoctoral categories, as well as predoctoral trainee completions, stipends provided, and type of support.

Departmental budget information (Table 4) shows type of support, faculty salaries derived from grants along with negotiated indirect costs to the departments. Table 5 ranks responding Institutions according to their total dollars, research grant dollars, and departmental space. Space averages are presented as research, administration, teaching and other. ❖

**Table 1. Faculty Salaries for Fiscal Year 2003**

	Median	% Change From Previous Survey	Minimum	Maximum	No. of Faculty
<b>Chairperson</b>					
All Schools	\$180,600	5.13	\$75,000	\$492,960	73
Medical Public	185,190	3.19	75,000	492,960	39
Medical Private	201,800	11.16	123,036	339,900	20
Other	164,450	9.59	120,000	221,450	10
Female	149,464	0.25	78,147	260,169	4
<b>Professor</b>					
All Schools	119,762	-2.65	40,562	279,719	585
Medical Public	117,308	-8.31	40,562	279,719	265
Medical Private	123,000	1.67	41,616	268,834	153
Other	112,575	-5.22	43,031	209,069	76
Female	116,153	-2.62	54,316	203,831	91
<b>Associate Professor</b>					
All Schools	86,567	2.83	36,453	156,934	347
Medical Public	86,099	5.39	48,000	156,934	138
Medical Private	84,489	3.92	49,212	147,995	82
Other	86,608	-0.97	36,453	109,827	50
Female	91,404	3.86	44,581	153,104	77
<b>Assistant Professor</b>					
All Schools	71,400	2.53	32,000	134,521	307
Medical Public	69,999	0.46	32,000	105,840	90
Medical Private	75,000	6.22	38,480	134,521	81
Other	72,000	4.90	44,175	110,553	40
Female	70,000	0.46	33,475	115,000	96
<b>Instructor</b>					
All Schools	46,549	-1.77	30,769	69,999	63
Medical Public	43,634	8.38	30,769	69,999	18
Medical Private	53,764	9.13	31,450	66,950	16
Other	43,086	-33.38	38,172	48,000	2
Female	46,304	-6.30	32,000	69,095	27

**Table 2. Average Salary by Number of Years in Rank**

	Years					
	0-5	6-10	11-15	16-20	21-25	26+
<b>Chairpersons</b>						
Salary	\$192,971	\$173,150	\$195,127	\$187,419	\$232,026	\$158,079
# of Faculty	28	13	15	11	2	3
<b>Professors</b>						
Salary	117,072	123,050	119,970	129,841	116,067	129,230
# of Faculty	157	119	109	95	42	41
<b>Assoc. Professors</b>						
Salary	89,948	81,818	86,725	93,848	90,737	83,348
# of Faculty	180	78	42	10	14	12
<b>Asst. Professors</b>						
Salary	70,406	71,074	58,609	63,439	0	25,437
# of Faculty	244	42	10	2	0	1
<b>Instructors</b>						
Salary	46,766	43,552	47,909	0	0	0
#of Faculty	57	4	1	0	0	0

Space Controlled by Department	
Research	17,783
Administration	3,012
Teaching	2,681
Other	2,757
<b>Total space</b>	<b>23,880</b>

**Student/Trainee Summary**

*Total number of US citizen / resident alien pre- and postdoctoral students / trainees*

Predoctoral male	370	Postdoctoral male	176
Predoctoral female	367	Postdoctoral female	133

*Total number of foreign pre- and postdoctoral students / trainees*

Predoctoral male	245	Postdoctoral male	488
Predoctoral female	250	Postdoctoral female	287

**Ethnicity of each pre- and postdoctoral student/trainee**

	Predoctoral		Postdoctoral	
	Male	Female	Male	Female
American Indian/ Alaskan Native	5	4	3	2
Asian/Pacific Islander	33	38	21	15
Black, not Hispanic origin	18	35	10	8
Hispanic	11	11	8	9
White, not of Hispanic origin	303	279	134	99

**Number of foreign pre- and postdoctoral students/trainees**

	Predoctoral		Postdoctoral	
	Male	Female	Male	Female
African	3	3	10	3
Asian/Pacific Islander	136	154	311	131
Central and South American	13	9	18	21
European, Canadian, Australian	49	59	92	89
Middle Eastern	27	16	30	23
Other	7	5	20	12

**Number of foreign pre- or postdoctoral trainees whose primary source of support is:**

	Predoctoral	Postdoctoral
Institutional	159	39
Research grants	256	575
Private foundations	9	38
Home (foreign) governments	8	7
Other	14	15

**Foreign National predoctoral trainee completions:**

	Male	Female
African	1	0
Asian or Pacific Islander	20	24
Central or South American	2	1
European, Canadian, Australian	19	9
Middle Eastern	3	2
Other	1	0

**Predoctoral Trainee Completions**

Number of trainees who have completed doctoral work during the year ended June 30, 2003

<i>Predoctoral male</i>	119	<i>Predoctoral female</i>	117
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## Type of Institution (n = 81)

Support		Teaching Interactions			
Public	53	MD/DO	77	Pharmacy	23
Private	28	DDS	26	Other biomedical	50
		DVM	6	Life science	37
		Allied health	41	Bioengineering	29
				Other	17

## Tenure status of faculty by degree

	Tenured	Not Tenured	Not Eligible	Total
MD	32	13	2	47
PhD	863	337	46	1,246
Both	58	17	1	76
Other	13	20	1	34

## Faculty Summary (n = 1,390)

	Male	Female	Total
American Indian/ Alaskan Native	6	2	8
Asian/Pacific Islander	137	37	174
Black, not Hispanic origin	15	6	21
Hispanic	29	13	42
White, not of Hispanic origin	847	225	1,072
Foreign national	55	18	73
Total	1,089	301	1,390

## US citizen/resident alien predoctoral trainee completions:

	Male	Female
American Indian/Alaskan Native	2	2
Asian or Pacific Islander	3	10
Black, not of Hispanic origin	3	10
Hispanic	4	2
White, not of Hispanic origin	61	57

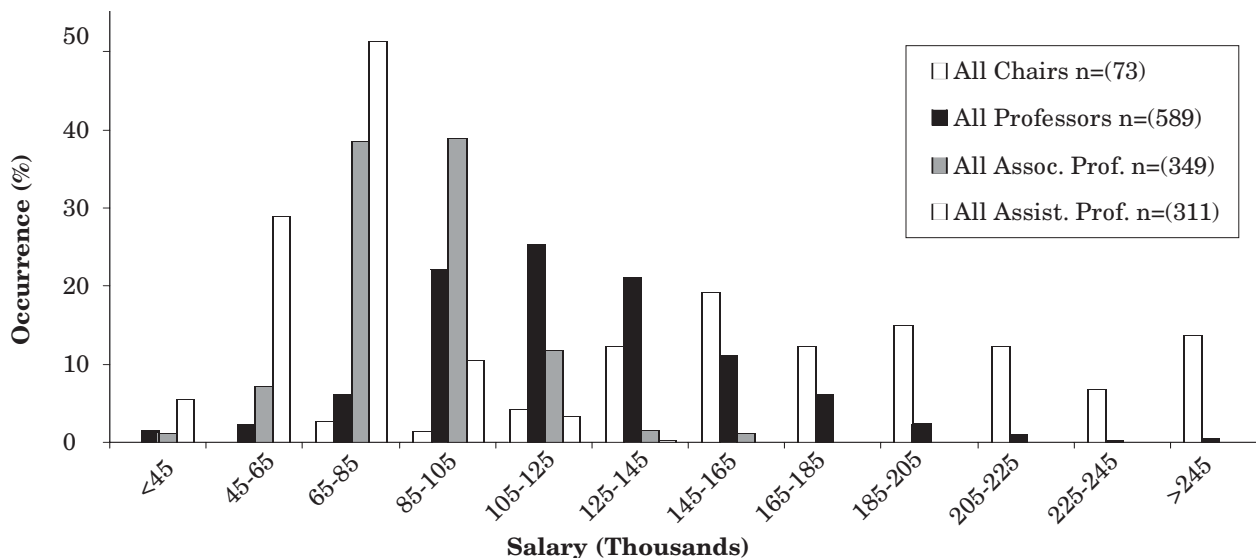
## Average annual starting stipend (in US dollars) for trainees:

Predoctoral	Postdoctoral
\$19,516	\$33,434

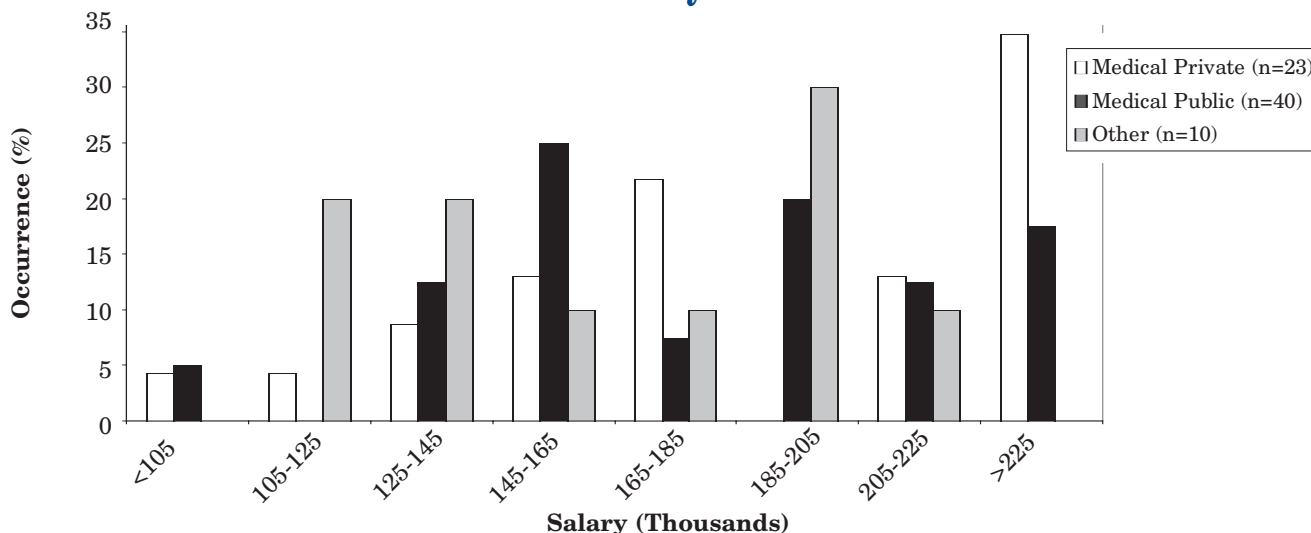
Table 3. Salaries by Region

Region	Average	Median	Minimum	Maximum	Total	
<b>Chairperson</b>						
Northeast	\$190,533	\$185,000	\$165,000	\$258,612	7	Northeast: ME, NH, VT, NY, MA, RI, CT, NJ, PA, MD, DE, DC
Midwest	191,382	180,600	139,073	280,000	11	
South	178,977	159,282	132,293	264,000	16	
West	167,078	152,700	123,224	239,688	4	
Canada/Puerto Rico	78,147	78,147	78,147	78,147	1	
<b>Professor</b>						
Northeast	121,335	120,242	40,562	234,708	76	Midwest: MI, OH, IN, IL, WI, IA, MO, KS, NE, ND, SD, MN
Midwest	130,933	127,839	50,049	278,410	106	
South	116,745	109,900	43,260	222,200	119	
West	106,397	100,980	22,384	221,268	43	
Canada/Puerto Rico	0	0	0	0	1	
<b>Associate Professor</b>						
Northeast	85,927	85,000	52,000	123,982	31	South: VA, WV, KY, TN, NC, SC, GA, FL, AL, MS, AR, LA, OK, TX
Midwest	87,367	90,182	50,000	117,480	73	
South	83,238	81,872	13,635	180,000	80	
West	79,602	78,420	63,973	107,268	15	
Canada/Puerto Rico	68,159	66,182	50,918	87,376	3	
<b>Assistant Professor</b>						
Northeast	65,611	70,000	22,425	99,129	27	West: AK, HI, MT, WY, CO, NM, AZ, ID, WA, OR, CA, UT
Midwest	72,074	71,700	44,175	134,521	38	
South	70,245	71,000	40,000	115,102	75	
West	70,152	64,577	50,000	93,504	21	
Canada/Puerto Rico	0	0	0	0	1	
<b>Instructor</b>						
Northeast	52,703	48,018	44,134	69,999	6	
Midwest	46,154	44,550	32,000	66,950	12	
South	42,376	39,908	19,718	60,412	17	
West	39,115	39,163	21,910	57,212	6	
Canada/Puerto Rico	0	0	0	0	1	

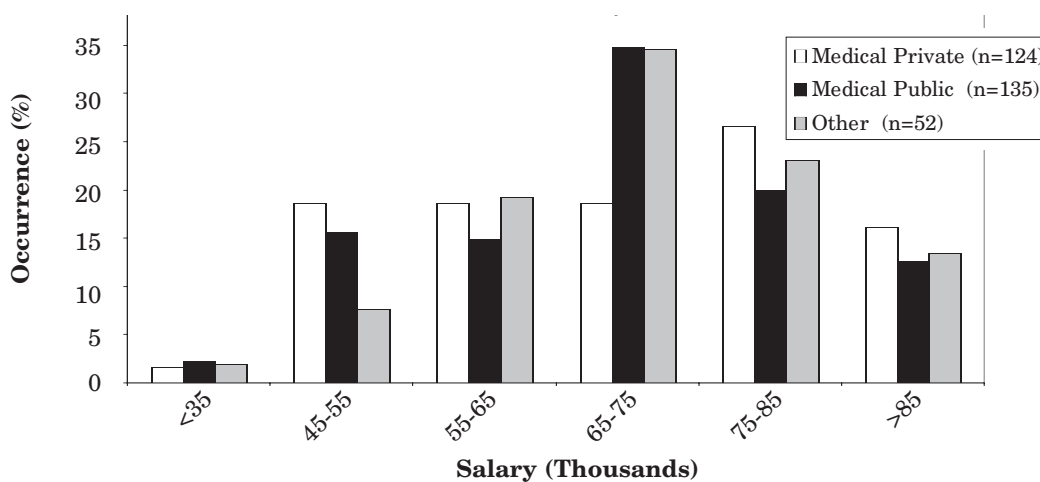
## Salary Comparison by Title



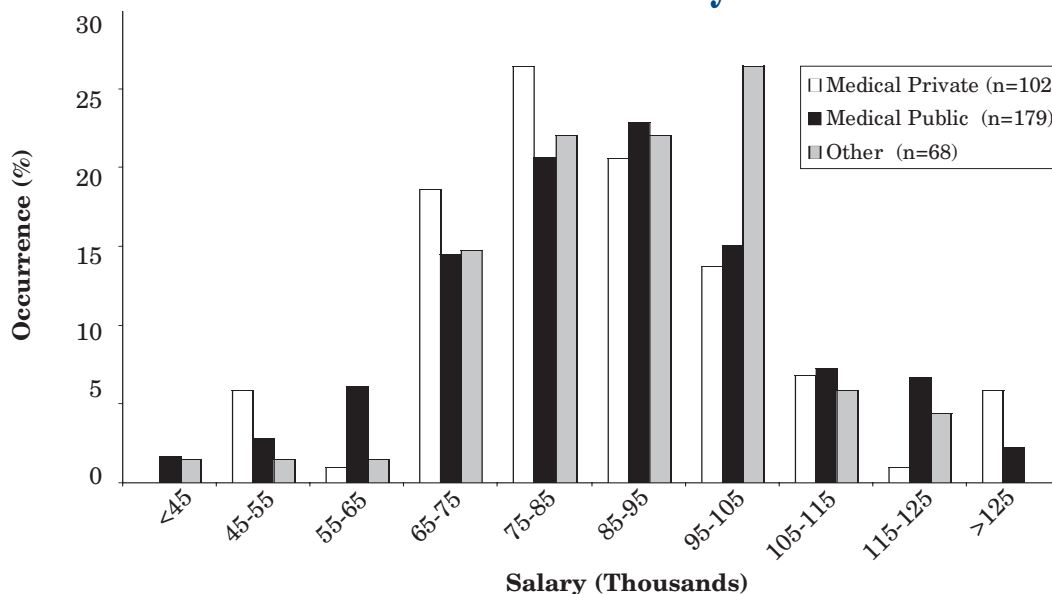
## Chairs by Institution



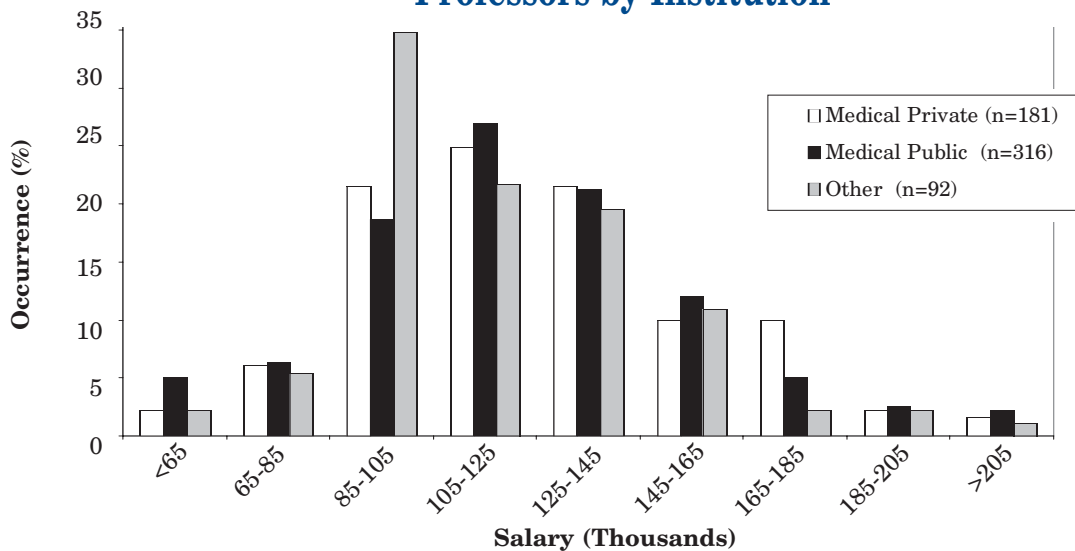
## Assistant Professors by Institution



## Associate Professors by Institution



## Professors by Institution



**Table 4. Budgets by Institutions**

	All Institutions	No.	Private Med.	No.	Public Med.	No.	Nonmed.	No.
Institutional	\$1,737,666	81	\$1,463,794	27	\$1,640,842	42	\$2,108,363	12
Outside Research Grants (direct costs)	4,310,502	80	4,642,448	27	3,455,695	42	4,833,363	11
Training Grants (direct costs only)	372,648	45	469,714	15	199,052	26	449,177	4
Endowments	246,750	33	508,508	10	143,100	19	88,643	4
Indirect Cost Recovery (amount to dept.)	504,644	43	1,129,455	6	199,819	31	184,658	6
Other Budget Support	434,015	56	780,450	16	240,389	35	281,206	5
Average Departmental Budget	6,870,464		7,269,009		5,632,305		6,927,717	

### Financial Information

Current fringe benefit rate most frequently used for Primary faculty	25.32	(n = 81)
Federally negotiated indirect cost rate for FY 03-04 off campus	26.91	(n = 58)
on campus	50.49	(n = 79)
Percentage of allocated faculty salary dollars raised from grants, etc., directly returned to your department	70.56	(n = 52)
Percentage of indirect costs returned to your department	19.32	(n = 45)
Percentage of total faculty salaries derived from research grants (does not include fringe benefits costs)	38.26	(n = 78)

Table 5. Complete Ranking According to Total Dollars

Rank	Total Dollars	Rank Research Grant Dollars	Research Grant Dollars	Rank Research Dollars/ Faculty	Research Dollars/ Faculty	Rank Total Research Space	Research Space (sq. ft.)	Rank Research Dollars/ sq. ft.	Research Dollars/ sq. ft.	No. of Faculty
1	\$22,173,790	1	\$18,990,796	2	\$ 654,855	1	54,435	10	\$349	29
2	20,720,264	2	15,057,187	1	1,003,812	10	31,125	4	484	15
3	19,846,070	3	10,818,778	5	432,751	28	20,812	2	520	25
4	13,837,268	4	10,707,641	9	356,921	15	26,333	7	407	30
5	11,299,711	7	7,261,763	33	242,059	23	23,039	19	315	30
6	11,212,508	5	8,352,864	3	491,345	27	21,662	8	386	17
7	10,981,588	15	5,865,645	24	266,620	19	24,297	31	241	22
8	10,832,040	9	6,652,000	8	369,556	64	9,649	1	689	18
9	10,827,760	6	7,866,942	12	342,041	6	32,805	32	240	23
10	9,737,998	13	6,052,461	16	318,551	3	36,245	50	167	19
11	9,644,124	14	5,877,999	21	293,900	2	37,578	53	156	20
12	9,319,219	8	6,904,000	19	300,174	13	28,537	30	242	23
13	9,317,884	11	6,518,976	42	217,299	14	28,005	34	233	30
14	9,306,119	12	6,331,493	14	333,236	8	32,665	44	194	19
15	9,059,325	17	5,583,822	22	279,191	11	30,887	47	181	20
16	8,792,575	19	5,456,214	39	218,249	18	24,522	38	223	25
17	8,561,316	10	6,535,604	15	326,780	33	18,426	9	355	20
18	8,491,882	30	4,488,986	62	149,633	35	17,737	29	253	30
19	8,464,000	26	4,719,000	6	429,000	5	34,000	63	139	11
20	8,417,848	18	5,550,604	45	191,400	17	25,403	40	219	29
21	8,246,090	57	2,595,077	48	185,363	44	15,600	51	166	14
22	8,119,288	16	5,713,319	18	300,701	37	17,479	15	327	19
23	7,909,396	23	5,045,362	29	252,268	42	16,128	20	313	20
24	7,761,376	20	5,312,900	10	354,193	21	23,932	39	222	15
25	7,409,719	25	4,952,604	44	198,104	20	24,141	43	205	25
26	7,301,780	49	2,865,493	26	260,499	73	8,231	11	348	11
27	7,216,319	34	3,777,482	60	151,099	50	13,479	25	280	25
28	7,151,850	21	5,289,760	34	240,444	36	17,529	21	302	22
29	6,990,230	32	3,906,949	57	162,790	4	34,837	71	112	24
30	6,895,153	27	4,642,854	7	386,905	26	22,028	42	211	12
31	6,727,782	36	3,652,180	49	182,609	53	12,578	22	290	20
32	6,471,058	47	2,953,748	36	227,211	32	19,573	56	151	13
33	6,142,462	50	2,833,257	54	166,662	16	25,963	73	109	17
34	6,055,916	43	3,119,569	65	124,783	12	30,500	74	102	25
35	6,030,413	53	2,804,268	46	186,951	31	20,104	61	139	15
36	5,940,840	44	3,006,434	13	334,048	41	16,251	46	185	9
37	5,928,983	42	3,266,159	56	163,308	25	22,390	58	146	20
38	5,870,064	31	4,413,699	20	294,247	61	10,257	6	430	15
39	5,773,724	33	3,818,702	27	254,580	71	8,385	5	455	15
40	5,544,690	22	5,175,083	32	246,433	34	17,828	23	290	21
41	5,338,035	52	2,811,489	68	104,129	22	23,555	69	119	27
42	5,284,658	46	2,961,278	31	246,773	38	17,259	49	172	12
43	5,194,702	35	3,684,077	17	307,006	49	13,512	27	273	12
44	5,079,511	54	2,794,145	47	186,276	29	20,269	64	138	15
45	5,042,227	38	3,423,982	11	342,398	54	12,500	26	274	10
46	4,791,358	48	2,913,943	37	224,149	30	20,195	59	144	13
47	4,739,622	58	2,504,137	51	178,867	59	10,941	35	229	14
48	4,635,830	55	2,665,423	59	156,790	72	8,350	18	319	17
49	4,613,207	39	3,362,434	35	240,174	47	14,097	33	239	14



Table 5. Complete Ranking According to Total Dollars

Rank	Total Dollars	Rank Research Grant Dollars	Research Grant Dollars	Rank Research Dollars/ Faculty	Research Dollars/ Faculty	Rank Total Research Space	Research Space (sq. ft.)	Rank Research Dollars/ sq. ft.	Research Dollars/ sq. ft.	No. of Faculty
50	\$4,530,410	41	\$3,295,751	28	\$253,519	65	9,558	12	\$345	13
51	4,293,977	60	2,371,748	63	139,515	45	15,511	55	153	17
52	4,282,954	29	4,497,768	25	264,575	48	13,648	14	330	17
53	4,267,449	56	2,643,454	64	125,879	39	16,699	52	158	21
54	4,189,023	40	3,320,000	23	276,667	46	14,857	37	223	12
55	4,155,204	59	2,397,746	41	217,977	51	12,749	45	188	11
56	3,934,532	45	2,972,485	30	247,707	67	9,118	16	326	12
57	3,857,921	64	1,964,008	40	218,223	69	8,608	36	228	9
58	3,666,584	37	3,549,590	43	208,799	57	11,027	17	322	17
59	3,604,446	65	1,813,209	67	106,659	60	10,526	48	172	17
60	3,595,938	69	1,415,575	71	101,113	58	10,991	67	129	14
61	3,508,463	61	2,342,497	50	180,192	68	8,872	28	264	13
62	3,457,124	62	2,264,407	53	174,185	76	7,928	24	286	13
63	3,386,806	51	2,811,622	66	117,151	7	32,761	75	86	24
64	2,985,902	67	1,473,112	72	98,207	63	9,809	57	150	15
65	2,961,333	78	207,833	77	25,979	74	8,102	77	26	8
66	2,809,421	76	785,151	76	41,324	52	12,715	76	62	19
67	2,712,354	75	844,042	75	46,891	78	6,165	65	137	18
68	2,670,130	68	1,435,625	74	89,727	56	11,573	68	124	16
69	2,600,337	73	1,019,000	73	92,636	66	9,131	72	112	11
70	2,570,692	71	1,227,645	69	102,304	75	8,023	54	153	12
71	2,466,187	72	1,117,967	70	101,633	62	9,882	70	113	11
72	2,408,776	77	345,700	79	20,335	40	16,292	78	21	17
73	2,334,899	66	1,658,315	55	165,832	55	12,470	66	133	10
74	2,003,146	70	1,294,113	58	161,764	79	3,760	13	344	8
75	1,176,571	80	136,726	80	15,192	77	7,291	81	19	9
76	1,155,139	79	165,714	78	20,714	70	8,483	79	20	8
77	1,088,880	74	886,357	38	221,589	81	1,828	3	485	4
78	799,591	81	50,000	81	8,333	80	2,600	80	19	6
79	73,726	24	4,960,858	52	177,174	24	22,823	41	217	28
80		28	4,506,672	61	150,222	9	32,159	60	140	30
81		63	2,226,846	4	445,369	43	16,000	62	139	5

## Moving?

If you have moved or changed your phone, fax or Email address, please notify the APS Membership Office at 301-634-7171 or Fax to 301-634-7241. Your membership

information can also be changed by visiting the Members Only portion of the APS Website at <http://www.the-aps.org>.

(continued from page 93)

difficult for me to get my PhD in physiology. One of the achievements of which I am most proud is that of my students who have completed their PhDs, two are physiologists and both are former Porter Fellows.”

Addressing a similar point, Matyas noted that, “The success of APS programs is due to the continued contributions of multiple “generations” of minority physiologists. Students who were initially participants in these efforts now serve as mentors, role models, and committee members, reaching out to the next generation of minority physiologists to offer guidance and encouragement. This heritage of diversity in physiology is the true measure of success of the APS efforts.”

The nomination package emphasized the APS’ long-standing efforts toward diversity, describing both APS’ targeted programs that specifically focus on minority participants and broader programs that emphasize excellence in science education and professional development for all students. The programs cited include:

**American Physiological Society  
2003 PAESMEM Award Citation**

The American Physiological Society has initiatives spanning multiple levels of the educational continuum to develop long-term targeted programs for minority students and teachers; increase diversity among physiologists; and monitor the progress of minorities in the field of physiology. For example, “Monitoring the Status of Minority Physiologists” provides data on the status of minorities in

- Porter Physiology Development Program (1967-present);
- Minority Travel Fellows Program (1987-present);
- APS Career Web (2003-present);
- Promoting Effective Program Evaluation (1997-2002);
- APS Undergraduate Summer Research Program (2000-present);
- Explorations in Biomedicine: Native Americans & Research Careers (1996-present);
- Physiology Insights: Undergraduate Faculty Enhancement Program

degree programs. The Porter Physiology Development (fellowship) Program is a multi-faceted effort that encourages peer mentoring through establishing a network of fellows, further supported by the APS Careers Web (<http://www.the-aps.org/careers.htm>). This cadre of programs also extends to undergraduate and K-12 students.

- (1996-2001);
  - APS Summer Research Program for Middle/High School Science Teachers (1990-present);
  - EB High School Teacher and Student Workshop (1990-present);
  - APS K-12 Local Outreach Team Program (1994-present); and
  - Health, My World Elementary Curriculum Development (1995-present).
- Information about each program can be accessed via the APS Education website (<http://www.the-aps.org/education>).



**John H. Marburger III, Director of the Office of Science and Technology Policy, presented the 2003 Presidential Award for Excellence in Science Mathematics and Engineering Mentoring (PAESMEM) to APS Executive Director Martin Frank, Pamela Gunter-Smith, co-chair of the APS Porter Physiology Development Program, Marsha Matyas, APS Education Officer, and APS President-Elect Douglas Eaton.**

Matyas said, "What sets the APS diversity efforts apart is that all of our programs—from preschool through graduate education—are carefully designed to encourage active participation by minority representatives and are evaluated regularly for their impact and effectiveness. As a result, APS efforts form a cohesive and coherent support network promoting both diversity and excellence in science education and biomedical research." For example, in a recent study, Matyas and Frank looked at the Porter Fellowship Program since 1967 when it changed its focus to foster minority study in physiology. They found that of the 73 Porter Fellowships awarded between 1967 and 2001, 64% were working in professional positions as physiologists, 20% were still completing their doctorate and 14% were in postdoctoral studies. Also, 42% were women, 67% were African-American and 29% were Hispanic. One Native

American and two Pacific Islanders also received awards.

As part of the qualifying process for the Presidential award, APS received letters of commendation from a number of individuals. In supporting the nomination, **L. Gabriel Navar**, Chair, Tulane University School of Medicine's Department of Physiology, wrote: "As a member of the APS for over 30 years and a Mexican-American, it has been extremely gratifying to see the development of a diverse collection of programs designed to enhance the participation of members of underrepresented groups in science in general and the physiological sciences, in particular."

Letters of support were also provided by Gunter-Smith, **Marvin H. Bernstein** of New Mexico State University's Minority Biomedical Research Support-Research Initiative for Scientific Enhancement Program, **Billie J. Foote** at Montana State

University's Center for Learning and Teaching in the West, **Martin Farias III** at the University of Washington School of Medicine, Department of Physiology and Biophysics, **Alice Avila-Villalobos** at the University of Rochester School of Medicine & Dentistry, Department of Environmental Medicine, and **Evangeline D. Motley** at Meharry Medical College, Department of Anatomy and Physiology.

Reflecting on receiving the PAES-MEM, Frank noted that the "American Physiological Society is one of the few scientific organizations that has developed programs to increase diversity among its professionals. I don't think a lot of people, especially APS members, realize how unusual it for an organization like APS to take a systemic approach to minority recruitment and development." ♦

## Physiology in Perspective Walter B. Cannon Memorial Lecture

The Cannon Memorial Lecture, sponsored by the Grass Foundation, honors Walter B. Cannon, President of the Society from 1913-1916, and is presented annually at the spring meeting to an outstanding physiological scientist, domestic or foreign, as selected by the President-Elect with the consent of council. The recipient presents a lecture on "Physiology in Perspective," addressing Cannon's concepts of "The Wisdom of the Body." The lecture is considered for publication in the Society journal of their choosing. The recipient receives an honorarium of \$4,000, a plaque, and reimbursement of expenses incurred in association with delivery of the lecture. The membership is invited to submit nominations for this lecture. A nomination shall be accompanied by a candidate's curriculum vitae and one letter detailing the individual's status and contributions.

More information on the award and nomination procedures are available at <http://www.the-aps.org>. Nominations must be submitted by **October 1**. Nominations should be sent to: The APS Cannon Lecture Award, c/o Linda Jean Dresser, 9650 Rockville Pike, Bethesda, MD 20814-3991.

## Bowditch Award Lecture

The Bowditch Lectureship is awarded to a regular member, under 42 years of age, for original and outstanding accomplishments in the field of physiology. Selected by the APS President, the recipient presents a lecture at the Experimental Biology meeting, which is considered for publication in the Society journal of their choosing. The recipient receives an honorarium of \$2,500, reimbursement of expenses incurred while participating in the Experimental Biology meeting, and a plaque. The membership is invited to submit nominations for the Bowditch Lecturer. A nomination shall be accompanied by a candidate's curriculum vitae and one letter detailing the individual's status, contributions, and potential.

More information on the award and nomination procedures are available at <http://www.the-aps.org>. Nominations should be sent to: The APS Bowditch Lecture Award, c/o Linda Jean Dresser, 9650 Rockville Pike, Bethesda, MD 20814-3991.

## Introducing Caroline Sussman

**Caroline R. Sussman** was selected by APS council as the first Chair of the newly created Trainee Advisory Committee (TAC). She is serving a two-year term which began January 1, 2004. Sussman recently completed a three-year term as Trainee Representative to the Cell and Molecular Physiology Section Steering Committee and a three-year term on the APS Membership Committee. The TAC is composed of the 12 trainee representatives from the Steering Committees of each APS disciplinary section plus the two ex officio trainee representatives from APS committees-at-large, Women in Physiology and Animal Care and Experimentation. Additional ex officio members include an Advisor and APS staff member. One TAC member serves as liaison to the Careers Committee.

The TAC was created in response to guidelines set forth by an APS Task Force on Trainees. The TAC was first convened during the fall of 2003 with a goal of increasing the participation of young scientists in their sections, and in APS as a whole. This helps both APS and trainees by keeping APS relevant to the needs and interests of the next generation of scientists and encouraging trainees to utilize the many resources provided by APS for them. An added benefit is that it provides tremendous opportunities to Trainee Representatives for networking and building leadership skills.

The creation of this committee comes at a time when there is a growing national consensus that the plight of young scientists in basic research has evolved to be largely untenable. Several studies have indicated that training periods exceeding 14 years are not unusual, and many are stuck indefinitely in the "postdoctoral training" phase of their careers. There is evidence that this unattractive situation has discouraged many of the best and brightest from pursuing or continuing careers in basic research. These issues have drawn the attention of several local and national groups, most notably the National Academies' Committee on Science, Engineering, and Public Policy (COSEPUP) which



**Caroline R. Sussman**

is actively engaged in implementing policy changes to rectify the situation. One important outgrowth of COSEPUP is the creation of the National Postdoctoral Association (NPA) which has also undertaken many activities to improve the postdoctoral landscape. To facilitate communication between the NPA and the TAC Sussman is also a member of the NPA Outreach Committee.

A multifaceted approach is needed to improve the training experience of young scientists, and the involvement of disciplinary societies is a crucial aspect. One over-riding goal for the TAC is to find its niche within the currently existing programs for trainees provided by the NPA and others. For example, the TAC will build on pre-existing resources provided by the Women in Physiology and the Career Opportunities in Physiology Committees, and not duplicate or replace them. The Committee will draw on the unique perspectives of trainees themselves to implement relevant activities which will include a session at EB beginning in 2006, modifications to the APS student newsletter to make it relevant to students and postdoctoral students, and modifications to the APS Careers web site. To facilitate representation of the interests of all APS members as the Committee embarks on these activities, the TAC will also be sending out to the APS membership a brief needs assessment survey.

Sussman is an Instructor in the Department of Physiology and Biophysics at Case Western Reserve University in Cleveland, OH. She received a PhD in Physiology from the University of Connecticut in Storrs, CT in 1997 under the guidance of J. Larry Renfro in the Department of Physiology and Neurobiology. Her thesis focused on the effects of heat-shock protein-inducing stresses on renal transepithelial transport in primary cultures of flounder renal proximal tubule and in the LLC-PK<sub>1</sub> renal cell line. Part of these studies involved optimizing conditions to promote maximally differentiated physiological characteristics of the LLC-PK<sub>1</sub> cells.

Through this aspect of the work Sussman developed an interest in the regulation of cellular proliferation and differentiation. To develop this interest she did postdoctoral work in the laboratory of Robert H. Miller in the Department of Neurosciences at Case Western Reserve University in Cleveland, OH where she examined the effects of a variety of regulatory factors on the development of oligodendrocytes, the myelinating cells of the CNS. Current work examines the roles of helix-loop-helix transcription factors in balancing cellular proliferation and differentiation during zebrafish development.

Sussman graduated *cum laude* in 1988 from Connecticut College with distinction in Biology and an award for excellence in Zoology. She received the CAMPS Procter and Gamble Professional Opportunity Award and two graduate student fellowships from the University of Connecticut for her graduate work. During her postdoctoral training she won a Young Investigator travel award from the Society for Neurochemistry and was the Case Western Reserve University nominee for the Burroughs Wellcome Fund Career Award in 2000. She received a postdoctoral fellowship from the National Multiple Sclerosis Society and an NRSA (declined). She was the first recipient of and is currently funded by a Young Investigator Award postdoctoral-to-PI bridge grant from the Wadsworth Foundation. ❖

## The XXXVth IUPS Congress is Upon Us

In 1997, the APS membership was informed that the United States had won the bid to host the IUPS Congress in 2005. The letter of invitation was issued by Bruce Alberts, President, National Academy of Sciences, on behalf of the US National Committee for the International Union of Physiological Sciences (USNC/IUPS), which is comprised of representatives from six societies devoted to the physiological sciences. These societies are the American Physiological Society, the Society for Neuroscience, the Society of General Physiologists, the Microcirculatory Society, the Biomedical Engineering Society, and the Society for Integrative and Comparative Biology. The letter was delivered to the IUPS General Assembly during the XXXIII Congress in St. Petersburg, Russia by **Stanley Schultz**, University of Texas Health Sciences Center, Houston, TX.

Now, seven years later, planning for the Congress has moved forward very well. The XXXV International Congress of Physiological Sciences will be held in San Diego, CA, March 31-April 5, 2005, concurrently and in conjunction with the Experimental Biology 2005 meeting. This meeting represents the first IUPS Congress in the new millennium and only the third time that the IUPS has selected the United States as the host country. The previous two Congresses in the United States were held in Boston (1929) and in Washington, DC (1968). Much has changed in the 36 years since the IUPS Congress was last held in the United States. Biological and biomedical research has grown and prospered. The human genome sequence has been completed and the next grand challenge is to elucidate the functions of the genes and their interactions. The unraveling of the genomes of multiple species (from *Drosophila*, to *C. Elegans*, to mice, rats and human) has provided an opportunity for a comparative understanding of how living organisms function. These exciting scientific advances that occurred at the end of the 20th and at the start of the 21st Centuries led to the adoption of "From Genomes to Functions" as the theme for the XXXV IUPS Congress.

**Description of the XXXV Congress**

The IUPS National Organizing Committee, chaired by **Shu Chien**, University of California, San Diego, is responsible for the planning of the Congress. The Congress is innovative in format, covering a wide-range of topics in physiology and pathophysiology, from genomic and molecular biology through cells, tissues and organ-systems to clinical and industrial applications. The Congress will span the breadth of the physiological sciences with an emphasis on emerging fields such as comparative genomics, ecophysiology, physiological informatics, and genomic bases of function and disease.

In planning the scientific program for the Congress, the International Scientific Program Committee, chaired by **Walter F. Boron**, Yale University, and co-chaired by **Ole Petersen**, University of Liverpool, UK, embodied an approach designed to stimulate genuine cross-disciplinary interaction. In addition, the format was designed to encourage active involvement from all who attend. The International Scientific Program Committee is comprised of the following scientists: **Harold Atwood**, Toronto, Canada; **Barbara A. Block**, Pacific Grove, CA; **William W. Chin**, Indianapolis, IN; **David E. Clapham**, Boston, MA; **Allen W. Cowley, Jr.**, Milwaukee, WI; **Malcolm Gordon**, Los Angeles, CA; **Peter Hunter**, Auckland, New Zealand; **Akimichi Kaneko**, Tokyo, Japan; **Yoshihisa Kurachi**, Osaka, Japan; **Richard P. Lifton**, New Haven, CT; **Jimmy Neill**, Birmingham, AL; **Roger A. Nicoll**, San Francisco, CA; **Denis Noble**, Oxford, UK; **Edward M. Ruben**, Berkeley, CA; **Bengt Saltin**, Copenhagen, Denmark; **Irene Schulz**, Homburg/Saar, Germany; **Ann Sefton**, Sydney, Australia; **Curt D. Sigmund**, Iowa City, IA and **Jo Rae Wright**, Durham, NC.

The scientific program will run for five full days. On average, there will be four distinguished lectures each day, featuring outstanding research scientists reviewing their field and presenting their latest findings. Throughout each day, there will be 10-

12 simultaneous two-hour sessions consisting of symposia on defined research areas and featured topics sessions designed to complement these symposia through the creation of sessions derived from submitted abstracts. In general, there will be over 30 sessions presented each day. In addition, there will be many poster sessions featuring work in related areas. The symposia, featured topics, and poster sessions will be highlighted as components of disciplinary tracks. A total of 15 tracks have been identified and include the following: Calcium Signaling, Cardiac, Ecophysiology for the 21st Century, Epithelia, Feeding, Fuel and Fat, Genomics, Mechano- and Chemo- transduction, Muscle and Exercise, Neural Control of Locomotion: From Genes to Behavior, Renal Control of Blood Pressure, the Regulatory Brain, Thermoregulation and Energetics, Tissue Dynamics in the Lung, and Vascular Physiology. In addition, there will be numerous sessions that do not relate directly to a specific track but represent important areas of physiology.

In planning the scientific program for the meeting, the organizing committee drew upon over 300 symposia suggestions received from all over the world. From these suggestions, the Committee identified the topics and organizers for over 150 symposia, featured topics, lectures and workshops. The symposia and lectures planned for the Congress are listed on pages 109-115. Free communications will be presented as posters, and highly rated abstracts will also be selected for oral presentation in featured topic sessions. This will provide the presenters with an opportunity to share their work with the scientific community in two formats, enhancing the opportunity for information exchange and providing graduate students and postdoctoral fellows with an opportunity to present their work in a platform session. Several workshops will be held during the week on topics including ethical issues and teaching methods. Continuing Medical Education (CME) will be available to those attendees requiring such credits.

*(continued on page 109)*

Surname \_\_\_\_\_

**XXXV IUPS CONGRESS TRAVEL GRANT PROGRAM**  
**San Diego, California USA**  
**March 31–April 5, 2005**

*The IUPS Congress Travel Award Program is designed to encourage the participation of students and physiologists who are within 15 years of receiving their doctoral degree. In addition, emphasis will be provided to physiologists from underdeveloped countries and underrepresented minorities from the United States who have submitted abstracts to the Congress.*

1. Name and Degree: \_\_\_\_\_ Year of highest degree: \_\_\_\_\_

2. Position or employment title: \_\_\_\_\_ Year of Birth: \_\_\_\_\_

3. Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

5. Email Address: \_\_\_\_\_

6. Country of citizenship: \_\_\_\_\_

7. **Optional** Underrepresented Minority Applicants [**For US applicants only**]:

Please circle ethnic group to which you belong:

African American    Hispanic    Native American    Pacific Islander

8. Male \_\_\_\_\_ Female \_\_\_\_\_

9. Attending entire Congress? Yes \_\_\_\_\_ No \_\_\_\_\_ If not, which days will you attend? \_\_\_\_\_

Do you plan to attend a satellite meeting? Yes \_\_\_\_\_ No \_\_\_\_\_

If so, please indicate which satellite meeting you plan on attending. \_\_\_\_\_

10. Do you intend to submit an abstract to the Congress? (If yes, please give title): \_\_\_\_\_  
\_\_\_\_\_

11. Please describe your area of specialty (e.g. cell physiology, neurophysiology, etc.):  
\_\_\_\_\_

12. List all physiological societies with which you are a member: \_\_\_\_\_  
\_\_\_\_\_

13. Are you employed by the U.S. federal government more than half-time? Yes \_\_\_\_\_ No \_\_\_\_\_

14. Travel:

a. City of departure: \_\_\_\_\_

b. Support requested \_\_\_\_\_

c. Amount of other support available (excluding personal) \_\_\_\_\_

15. Recent publications (not more than 5 titles, giving full refs). If listing manuscripts in press or abstracts, please indicate.

Surname \_\_\_\_\_

16. Anticipated abstract (Not more than 250 words on paper or poster you plan to present at the Congress, including names of author and coauthors and indicate presenter. If none, abstract of current work.)

17. Give a brief resume of the scientific purposes and goals of your trip in addition to attending the Congress, including other meetings, satellite symposia, laboratories you plan to visit, work on collaborations, etc.

(continued from page 106)

The XXXV IUPS Congress will be held in conjunction with the Experimental Biology '05 meeting, scheduled from April 2-6, which will include the participation of the American Society for Biochemistry and Molecular Biology, the American Society for Pharmacology and Experimental Therapeutics, the American Society for Investigative Pathology, the American Society for Nutritional Sciences, the American Association of Immunologists and the American Association of Anatomists. In so doing, the Congress will have the participation of the 4,500 physiologists that traditionally attend the Experimental Biology meeting, and IUPS, as well as EB registrants, can attend sessions provided by all participating societies without incurring an additional registration fee. One regis-

tration fee, whether listed as an EB or an IUPS registration fee, provides access to all sessions. In addition, the large and extensive exhibit programs, normally associated with the Experimental Biology meeting, will be accessible to the members of the international community attending the IUPS Congress.

There are more than a dozen satellite meetings linked to the main Congress. These meetings will be held within a 150-mile radius of San Diego in order to encourage all participants in the satellite meetings to attend the main Congress. The registration fees for the satellite meetings have been adjusted to encourage such participation. A listing of the satellite meetings approved for the XXXV IUPS Congress is available on page 115.

The organizers of the Congress and the APS leadership encourage you to

participate in the XXXV International Congress of Physiological Sciences to be held March 31-April 5, 2005 in San Diego. For those with limited funds, the USNC is providing a travel award program designed to encourage the participation of students and physiologists who are within 15 years of receiving their doctoral degree. Emphasis will be provided to physiologists from underdeveloped countries and underrepresented minorities from the United States who have submitted abstracts to the Congress. The application can be found on page 107.

Additional details and information will be published in future issues of *The Physiologist* and will be posted to the IUPS web site <http://www.IUPS2005.org>. Look forward to seeing you in San Diego at the 35th IUPS Congress. ♦

## Approved Distinguished Lectureships at 2005 IUPS Congress

### IUPS President's Lecture

*Allen W. Cowley*  
Medical College of Wisconsin

### The Wallace O. Fenn Lecture

*Peter Agre*  
Johns Hopkins Univ., MD

### Robert Pitts Lecture

*Jurgen Schnermann*  
NIDDK, NIH, MD

### 2nd Ernst Knobil Memorial Lecture

*Jan-Ake Gustafsson*  
Karolinska Institute, Sweden

### Physiology in Perspective— The Walter B. Cannon Memorial Award Lecture

*Gerald F. DiBona*  
Univ. of Iowa

### Walter C. Randall Lecture in Biomedical Ethics

TBA

### APS Henry Pickering Bowditch Lecture

*Ormond MacDougald*  
Univ. of Michigan

### Robert M. Berne Distinguished Lectureship of the APS Cardiovascular Section

*Roberto Bolli*  
Univ. of Louisville, KY

### Hugh Davson Distinguished Lectureship of the APS Cell & Molecular Physiology Section

*Randy Schekman*  
Univ. of California, Berkeley

### Joseph Erlanger Distinguished Lectureship of the APS Central Nervous System Section

*Seymour Benzer*  
California Institute of Technology

### August Krogh Distinguished Lectureship of the APS Comparative and Evolutionary Physiology Section and the Scandinavian Physiological Society

*Roy E. Weber*  
Univ. of Aarhus, Denmark

### Solomon A. Berson Distinguished Lectureship of the APS Endocrinology & Metabolism Section

*Amira Klip*  
Hospital for Sick Children, Toronto

### Edward F. Adolph Distinguished Lectureship of the APS Environmental & Exercise Physiology Section

*Erik A. Richter*  
Univ. of Copenhagen, Denmark

### Horace W. Davenport Distinguished Lectureship of the APS Gastrointestinal and Liver Physiology Section

*Ann Hubbard*  
Johns Hopkins University, MD

### Carl Ludwig Distinguished Lectureship of the APS Neural Control & Autonomic Regulation Section

*Julian Paton*  
Univ. of Bristol, UK



**Carl W. Gottschalk Distinguished Lectureship of the APS Renal Section**  
*Soren Nielsen*  
Univ. of Aarhus, Denmark

**Julius H. Comroe, Jr. Distinguished Lectureship of the APS Respiration Section**  
*Gabby Haddad*  
Albert Einstein College of Medicine, NY

**Claude Bernard Distinguished Lectureship of the APS Teaching of Physiology Section**  
*Ann J. Sefton*  
Univ. of Sydney, Australia

**Ernest H. Starling Distinguished Lectureship of the APS Water & Electrolyte Homeostasis Section**  
*Guiseppi Bianchi*  
Univ. of Milano, Italy  
"The genetic control of renal Na handling in primary hypertension"

**The Microcirculatory Society Landis Award Lecture**  
*Virginia Huxley*  
Univ. of Missouri School of Medicine

## IUPS 2005 Congress Tentative Scientific Program

### Calcium Signaling Track

*Symposia:*

**Integrative Aspects: Ca<sup>2+</sup> Signaling in the Nervous System**  
Chair: *Alex Verkhratsky*  
Univ. of Manchester, UK

**Molecular Basis of Disease**  
Chair: *Cecilia Hidalgo*  
Univ. of Chile, Santiago, Chile

**Proteins**  
Chair: *Andras Spät*  
Semmelweis Univ., Budapest, Hungary

*Featured Topics:*

**Overview: From Organelles to Organ**  
Chair: *Irene Schulz*  
Univ. of Saarlandes, Germany

**Techniques**  
Chair: *Tobias Meyer*  
Stanford Univ., CA

**Controversy: The Mechanism of Action of the Ca<sup>2+</sup> Releasing Messenger NAADP**  
Chair: *Luigia Santella*  
Stazione Zool. A. Dohrn, Naples, Italy

### Cardiac Track

*Symposia:*  
**Cardiac Electrophysiology and Arrhythmia Mechanisms**  
Chair: *TBA*

**Cardiac Remodeling**  
Chair: *Hugh Watkins*  
Oxford Univ., UK

**Excitation-Contraction Coupling**  
Chair: *TBA*

*Featured Topics:*

**Cardiac Mechanics**  
Chair: *Andrew McCullough*  
Univ. of California, San Diego

**Cardiac Metabolism and Energetics**  
Chair: *TBA*

**Regenerative Capacity of the Heart**  
Chair: *TBA*

### Ecophysiology for the 21st Century Track

*Symposia:*  
**Biologging: Monitoring the Ecophysiology of Animals in the Marine Environment**  
Chair: *Barbara A. Block*  
Hopkins Marine Station, Stanford Univ., CA

**Cardio-Respiratory Physiology of Diving: Extreme Physiology at Depth**  
Chair: *Patrick J. Butler*  
Univ. of Birmingham, UK

**Functional Genomics of Macromolecular Damage Responses and Environmental Stress Adaptation**

Chair: *George Somero*  
Hopkins Marine Station, Stanford Univ., CA

**Rescue Mechanisms from Hypoxia**  
Chair: *Peter Lutz*  
Florida Atlantic Univ.

*Featured Topic*  
**Molecular Physiology of Diving**  
Chair: *Terrie M. Williams*  
Univ. of California, Santa Cruz

### Education Sessions

*Refresher Course*  
**Integrating Genomics into Physiology Courses: A New Paradigm or Just More Information?**  
Chairs: *Daniel E. Lemons*  
City College of New York  
*Anne Kwitek*  
Medical College of Wisconsin

*Symposia:*  
**Effective Uses of Information Technologies in Physiology Education**  
Chair: *Simon Carlile*  
Univ. of Sydney, Australia

**Research in Physiology Education from the Classroom to the Teaching Community**  
Chair: *Harold Modell*  
Physiol. Educat. Res. Consortium, Seattle, USA

*Featured Topics:*

**The Many Faces of Problem-Based Learning:**

**A Framework for Integrative Physiology Education**

Chair: *Penny Hansen*  
Memorial Univ., St. John's, Canada  
and St. George's Univ., Grenada

**The Role of Student Practical Laboratories in Physiology Education**

Chairs: *Dee Silverthorn*  
Univ. of Texas, Austin  
*Maria Jose Alves da Rocha*  
Univ. of São Paulo, Brazil

## Epithelia Track

*Symposia:*

**Epithelial Cells and their Neighbors**

Chairs: *Hannah V. Carey*  
Univ. of Wisconsin at Madison  
*Helen E. Raybould*  
Univ. of California, Davis

**Epithelial Polarity: Development to Disease**

Chairs: *Catherine Fuller*  
Univ. of Alabama at Birmingham  
*Michael J. Caplan*  
Yale Univ., CT

**Novel Mechanisms of Transporter Regulation**

Chairs: *Rene Bindels*  
Univ. Med. Ctr., Nijmegen,  
The Netherlands  
*Irene Schulz*  
Univ. of Saarlandes, Homburg, Germany

**PDZ Domain Scaffolding Proteins and their Functions in Polarized Cells**

*Supported by the Journal of Physiology*

Chairs: *Mark Donowitz*  
Johns Hopkins Univ., MD  
*Yoshihisa Kurachi*  
Osaka Univ., Japan

*Featured Topics:*

**Epithelial Genomics, Proteomics and Genetic Models**

Chairs: *Mark A. Knepper*  
Natl. Inst. of Health, USA  
*J.E. Melvin*  
Univ. of Rochester, USA

**The Molecular Basis of Epithelial Disease**

Chair: *David N. Sheppard*  
Univ. of Bristol, UK

## Feeding, Fuel and Fat: Energy Metabolism Track

*Symposia:*

**Body Weight Regulation Throughout the Life Cycle**

Chair: *I. Caroline McMillen*  
Univ. of Adelaide, Australia

**Genetic Determinants of Obesity and Metabolic Disease**

Chair: *Claude Bouchard*  
Pennington Biomed. Res. Ctr.,  
Baton Rouge, LA

**Metabolic Syndrome: From Clinical Insights Into New Therapies**

Chair: *Christine Schnackenberg*  
GlaxoSmithKline, USA

**Molecular Bases of Energy Balance and Fuel Partitioning**

Chair: *J.M. Friedman*  
The Rockefeller Univ., NY

**Neural Control of Energy Balance**

Chair: *Roger Cone*  
Vollum Inst., Oregon Hlth. Sci. Inst.

*Featured Topics:*

**Adipose Tissue: Fat Depot, Fuel Stat, and Endocrine Organ**

Chair: *Susan K. Fried*  
Rutgers Univ., NJ

**Molecular Mechanisms of Fuel Sensing**

Chairs: *Luciano Rossetti*  
Albert Einstein College of Med., NY  
*D. Grahame Hardie*  
Univ. of Dundee, UK

## Genomics Track

*Tutorial Workshop:*

**Computational and Bioinformatic Applications to Systems Biology**

Chair: *Daniel Beard*  
Med. College of Wisconsin

*Symposia:*

**Discovery of Genes for Polycystic Kidney Disease**

Chair: *Julian A.T. Dow*  
Univ. of Glasgow, UK

**From Zebrafish to Human**

Chair: *TBA*

**Genomics of Circadian Clocks**

Chair: *Julian A.T. Dow*  
Univ. of Glasgow, UK

**Genomics of Transport and Sensory Functions**

Chair: *Julian A.T. Dow*  
Univ. of Glasgow, UK

*Featured Topics*

**Complex Pathway of Function and Disease Deduced from the Whole Genome Perspective**

Chair: *TBA*

**Genetic Basis of Cardiopulmonary Disorders**

Chair: *TBA*

## Mechano/ Chemotransduction Track

*Symposia:*

**Molecular Mechanisms of Thermosensation**

Chairs: *Makoto Tominaga*  
Mie Univ., Japan  
*Ardem Patapoutian*  
Scripps Res. Inst., La Jolla, CA

**Structure-Function of Mechano-Gated Ion Channels**

Chairs: *Masahiro Sokabe*  
Nagoya Univ., Japan  
*Frederick Sachs*  
State Univ. of New York, Buffalo, NY

*Featured Topic:*

**Regulatory Mechanisms of Mechanosensory Cells**

Chair: *Akimichi Kaneko*  
Seijoh Univ., Japan

## Muscle-Exercise Track

*Symposia:*

### Force Generation

Chair: *Jim Spudich*  
Stanford Univ., CA

### Skeletal Muscle Plasticity

Chair: *John Holloszy*  
Washington Univ., St. Louis, MO

### Spring Molecules

Chair: *Henk Granzier*  
Washington State Univ.

### Stem Cells of Striated and Skeletal Muscle

Chair: *TBA*

*Featured Topics:*

### Muscle as an Endocrine Organ

Chair: *Ronald Terjung*  
Univ. of Missouri, Columbia

### Muscle Dystrophies of the Dystrophin Complex

Chair: *TBA*

### Point/Counterpoint: Is the Creatine Shuttle Critical for Muscle Function?

Chair: *Martin Kushmerick*  
Univ. of Washington

## The Neural Control of Locomotion: From Genes to Behavior Track

*Symposia:*

### Initiation and Adaptation of the Locomotor Pattern

Chair: *Tatiana Deliagina*  
Karolinska Inst., Stockholm, Sweden

### Modulation of the Locomotor Pattern Generators by Neurotransmitters and by Sensory Afferents

Chair: *Keir G. Pearson*  
Univ. of Alberta, Canada

*Featured Topics:*

### Locomotor Pattern Generators: Developmental, Molecular and Cellular Organization in Vertebrates

Chair: *Sten Grillner*  
Karolinska Inst., Stockholm, Sweden

### Long Term Plasticity and Spinal Cord Injury

Chair: *Serge Rossignol*  
Univ. of Montreal, Canada

## The Regulatory Brain Track

*Symposia:*

### Disease and Pathology

Chair: *TBA*

### Integrative Neuronal Mechanisms for Thermoregulation

Chairs: *Kazuyuji Kanosue*  
Waseda Univ., Saitama, Japan  
*Ruediger Gerstberger*  
Univ. of Giessen, Germany

### Molecules and Genes: Brainstem Development Underlying Breathing

Chair: *Martyn Goulding*  
The Salk Inst., USA

### Neural Control of Energy Balance

Chair: *Steve C. Woods*  
Univ. of Cincinnati, OH

### Neural Control of the Circulation in Health and Disease

Chair: *Patrice Guyenet*  
Univ. of Virginia Hlth. Sci. Ctr.

*Featured Topics:*

### Respiratory Long-Term Facilitation: Mechanisms and Implications

Chair: *Gordon S. Mitchell*  
Univ. of Wisconsin, Madison

### The Phylogeny of Dual Respiratory Rhythm Generating Networks in Vertebrates

Chair: *William K. Milsom*  
Univ. of British Columbia, Canada

## Renal Control of Blood Pressure Track

*Lecture:*

### Ernest H. Starling Distinguished Lectureship of the APS Water & Electrolyte Homeostasis Section

Speaker: *Guiseppe Bianchi*  
San Raffaele Hosp., Milan, Italy

*Symposia:*

### Cell Biology of Sodium Transport in Kidney

Chairs: *Francois Verrey*  
Univ. of Zurich, Switzerland  
*Rebecca Hughey*  
Univ. of Pittsburgh, PA

### Comparative Genomics of Blood Pressure Control: Genetic Maps in Humans, Rats and Mice

Chairs: *Pierre Corvol*  
Col. of France, Paris, France  
*Anne Kwitek*  
Med. Col. of Wisconsin

### Renal NaCl Reabsorption: Molecular Insights into Human Blood Pressure Control

Chairs: *Sei Sasaki*  
Tokyo Med. & Dental Univ., Japan  
*Paul A. Welling*  
Univ. of Maryland, Baltimore

*Featured Topics:*

### Gender Effects on Arterial Pressure Regulation

Chair: *Chris Baylis*  
West Virginia Univ., USA

### Genetic Models of Hypertension

Chair: *Curt Sigmund*  
Univ. of Iowa

### IUPS Grand Rounds on Hypertension

Chair: *John Hall*  
Univ. of Mississippi

## Thermoregulation and Energetics Track

*Symposia:*

### Gene Regulation for Survival at Low Temperatures

Chair: *Jeremy H.A. Fields*  
Univ. of San Diego CA

### Integrative Neuronal Mechanisms for Thermoregulation

Chairs: *Kazuyuji Kanosue*  
Waseda Univ., Saitama, Japan  
*Ruediger Gerstberger*  
Univ. of Giessen, Germany

*Life and Death:*

### Metabolic Rate and Lifespan

Chairs: *Kim Hammond*  
Univ. of California, Riverside

## Scaling of Metabolic Rate with Body Size: How and Why?

Chairs: *Ewald R. Weibel*  
Univ. of Berne, Switzerland  
*Anthony J. Hulbert*  
Univ. of Wollongong, Australia

*Featured Topic:*

## Pryogen-Sensing and Suppressing Pathways Mediating the Febrile Response

Chair: *Clark M. Blatteis*  
Univ. of Tennessee

## Tissue Dynamics in the Lung Track

*Symposia:*

### Cellular and Molecular Determinants of Lung Diseases

Chair: *Rubin Tudor*  
Johns Hopkins Univ., MD

### Comparative Genomics of the Lung

Chair: *John S. Torday*  
Harbor-UCLA Med. Ctr., CA

### Genetic and Developmental Insights into Pulmonary Vascular Pathobiology

Chair: *Marlene Rabinovitch*  
Stanford Univ. Sch. of Med., CA

### The Making of the Vertebrate Lung

Chair: *Jeffrey A. Whitsett*  
Cincinnati Children's Hosp., OH

*Featured Topics:*

### Pro-Inflammatory Signaling in Lung Endothelial Cells

Chair: *Jahar Bhattacharya*  
Columbia Univ., NY

### Receptors and Signaling Pathways in Lung Injury and Repair

Chair: *Courtney Broaddus*  
San Francisco General Hosp., CA

## Vascular Physiology Track

*Symposia:*

### Angiogenesis

Chair: *Brant Weinstein*  
National Inst. of Health, MD

## The Central Role of Ion Channels in Regulation of Vascular Tone

Chair: *Mark T. Nelson*  
Univ. of Vermont

## Coordinating Interactions Between Endothelium and Smooth Muscle

Chair: *Ruddi Busse*  
Klin. der J.W. Goethe-Univ., Germany

## Emerging Modes of Ca<sup>2+</sup> Signaling in the Regulation of Smooth Muscle Contractile Proteins

Chair: *Avril V. Somlyo*  
Univ. of Virginia Health. System

## Stem Cells in Vascular Biology

Chair: *Keith March*  
Indiana Univ.-Purdue Univ.

*Featured Topics:*

### Atherosclerosis: The New Inflammatory Disease

Chair: *Gary K. Owens*  
Univ. of Virginia

### New Aspects of Endothelial Cell Matrix Interactions—The Glycocalyx

Chairs: *Herbert H. Lipowsky*  
Penn State Univ., PA  
*Fitz-Roy Curry*  
Univ. of California, Davis

## Free Standing (Non-Track) Sessions

*Symposia:*

### Atherosclerosis: Immune and Inflammatory Aspects

*Supported by The American Federation for Medical Research*  
Chair: *Allison B. Reiss*  
New York Univ.

### Calcium Channels, Tyrosine Kinases and Smooth Muscle Function

Chairs: *Hamid I. Akbarali*  
Univ. of Oklahoma Hlth. Sci. Ctr.  
*Michael J. Davis*  
Texas A&M Univ.

### Cellular and Molecular Mechanisms of Synaptic Plasticity

Chair: *Roger A. Nicoll*  
Univ. of California, San Francisco

## Computational Biology of Cardiac Arrhythmias: From Ion Channel to Therapy

*Supported by*  
The Biomedical Engineering Society  
Chairs: *Andrew McCulloch*  
Univ. of California, San Diego  
*Wayne Giles*  
Univ. of California, San Diego

## Diagnosis and Treatment Utilizing Natriuretic Peptides

*Supported by The American Federation for Medical Research*  
Chair: *David L. Vesely*  
Univ. of South Florida

## Epigenetic Regulation

Chair: *TBA*

## Gravity and Evolution: From Cells to Snakes

Chairs: *Alan R. Hargens*  
Univ. of California, San Diego, CA  
*Peter Norsk*  
Univ. of Copenhagen, Denmark

## How do Emotions and Motivations Interact with Autonomic Functions?

Chair: *Ruud M. Buijs*  
Netherlands Inst. for Brain Res., Amsterdam

## Inflammatory Aspects of Hypertension: Insights from the Microcirculation

Chairs: *Matthew A. Boegehold*  
West Virginia Univ.  
*Geert W. Schmid-Schonbein*  
Univ. of California, San Diego

## Lipid Rafts—Floating from Bench to Bedside

*Supported by The American Federation for Medical Research*  
Chair: *Jens Goebel*  
Cincinnati Children's Hosp., OH

## Molecular Mechanisms Linking Sodium Retention to Hypertension

*Supported by The American Federation for Medical Research*  
Chair: *Mordecai P. Blaustein*  
Univ. of Maryland, Baltimore

## Neural Regulation of Hydroelectrolytic Homeostasis

Supported by The Association of Latin  
American Physiological Societies  
Chairs: *José Antunes Rodrigues*  
Univ. of São Paulo, Brazil  
*Maria José Alves da Rocha*  
Univ. of São Paulo, Brazil

## New Advances in Understanding Control of the Cerebral Circulation

Chairs: *Donald D. Heistad*  
Univ. of Iowa  
*David R. Harder*  
Medical College of Wisconsin

## Nuclear Receptor Co-Regulators

Chair: *Roland Schule*  
Univ. of Freiberg, Germany

## Old Receptor: New Functions

Chair: *Jacques Samarut*  
Univ. of Lyon, France

## Oxygen Sensing and Hypoxia: Development, Adaptation and Disease

Chair: *Nanduri Prabhakar*  
Case Western Reserve Univ., OH

## Phospholipid Oxidative Signaling in Regulation of Apoptosis and Phagocytosis

Chair: *Valerian E. Kagan*  
Univ. of Pittsburgh, PA

## Phylogeny and Ontogeny of the Renin-Angiotensin System

Chairs: *Hiroko Nishimura*  
Univ. of Tennessee  
*Kenneth W. Gross*  
Roswell Park Cancer Inst., Buffalo, NY

## Physiological Proteomics

Supported by The Society for  
Experimental Biology and Medicine  
Chairs: *Charles A. Blake*  
Columbia, SC, USA  
*Steven R. Goodman*  
Univ. of Texas at Dallas

## Sex and Gender Differences in Pain and Analgesia

Chair: *Karen J. Berkley*  
Florida State Univ.

## Signaling Pathways in Gut Mechanosensitivity

Chairs: *Fievos Christofi*  
Ohio State Univ.  
*Michael Schemann*  
Technical Univ. of Munich, Germany

## Stem Cells in the Developing and Adult Brain

Chair: *Pasko Rakic*  
Yale Univ., CT

## TRP Channels: Physiological Genomics and Proteomics

Supported by The Journal of Physiology  
Chair: *Stewart O. Sage*  
Univ. of Cambridge, UK  
*Bernd Nilius*  
KU Leuven, Belgium

### Featured Topics:

#### Acid-Base Transporters

Chair: *Michael Romero*  
Case Western Reserve Univ., OH

#### Amino Acids/Peptides

Chair: *Yoshikatsu Kanai*  
Kyorin Univ., Japan

#### Choroid Plexus

Chair: *Peter Brown*  
Univ. of Manchester, UK

#### Current Ideas in Pulmonary Ventilation and Blood Flow

Chairs: *Mark Olfert*  
Univ. of California, San Diego  
*Kim Prisk*  
Univ. of California, San Diego

#### Endothelial Nitric Oxide and Cardiovascular Disease

Chairs: *David Lefler*  
Louisiana State Univ., Shreveport  
*Joseph Loscalzo*  
Boston Univ., MA

#### Gut Interactions with Pancreas and Liver

Chair: *Patricia L. Brubaker*  
Univ. of Toronto, Canada

#### HIF-1 and Molecular Regulation of Oxygen Homeostasis

Chair: *Gregg L. Semenza*  
Johns Hopkins Univ., MD

#### Impact of Gravity on Physiological Systems

Chair: *Robert W. Phillips*  
Colorado State Univ., Ft. Collins

## Mechanical Ventilation and Lung Injury

Chair: *Deborah Quinn*  
Massachusetts General Hosp.

## Mechanisms of Metabolic Depression: Comparative Aspects

Chair: *Gerhard Heldmaier*  
Philipps Univ., Marburg, Germany

## The Nature of Intestinal Adaptations: Cellular Diversity and Versatility

Chair: *Ronaldo P. Ferraris*  
UMDNJ-New Jersey Med. Sch.

## Reactive Oxygen Species in the Vasculature

Chairs: *Michael Wolin*  
New York Med. Col., Valhalla  
*Paul Vanhoutte*  
Hong Kong Univ., PRC

## Regulation of Skeletal Muscle and Coronary Circulation

Chair: *Jos A.E. Spaan*  
Univ. of Amsterdam, The Netherlands

## Role of Reactive Oxygen and Nitrogen Species in Lung Injury and Diseases

Chairs: *Bruce R. Pitt*  
Univ. of Pittsburgh, PA  
*Brooke T. Mossman*  
Univ. of Vermont

### Featured Topics:

#### Sensing Cardiovascular Homeostasis: Novel Molecules as Mechano- and Chemosensors

Chairs: *Donna H. Wang*  
Michigan State Univ.  
*Donald L. Gill*  
Univ. of Maryland, Baltimore

#### Sex/Gender, Hormones and Cardiovascular Function

Chairs: *Sue Duckles*  
Univ. of California, Irvine  
*Valerie Schini-Kerth*  
Univ. of Strasbourg, France

#### Transport: PKD, Cilium

Chair: *Michael Caplan*  
Yale Univ., CT

#### Urea Transporters in the Post Genomic Era

Chairs: *Craig P. Smith*  
Univ. of Manchester, UK  
*Jeff M. Sands*  
Emory Univ. GA

## IUPS 2005 Congress Official Satellite Symposia

### Pre-Congress Satellites

#### **Biophysical Adaptation and Bioinspired Engineering**

*Tuesday, March 29-Wednesday, March 30*  
California Institute of Technology,  
Pasadena

Contact: Malcolm S. Gordon  
Dept. of OBEE, Univ. of California,  
Box 951606, Los Angeles, CA 90095  
Tel.: 310-825-4579  
Fax: 310-206-3987  
Email: msgordon@ucla.edu

#### **Coordinating Hemodynamic, Filtration, and Reabsorptive Functions of the Kidney**

*Tuesday, March 29-Wednesday, March 30*  
UCSD Scripps Aquarium, La Jolla

Contact: Scott Thomson,  
Prof. of Medicine, Univ. of California-  
San Diego, 3350 La Jolla Village Dr.,  
San Diego, CA 92161-9151  
Tel.: 858-552-7528  
Fax: 585-552-7549  
Email: sthompson@ucsd.edu

#### **Dyspnea:**

#### **Mechanisms and Management**

*Tuesday, March 29-Wednesday, March 30*  
Town & Country Resort and

Convention Center, San Diego  
Contact: Andrew P. Binks, Physiology  
Program, Room 1-316, Harvard School  
of Public Health, 665 Huntington Ave.  
Boston, MA 02115  
Tel.: 617-432-1195  
Fax: 617-432-3468  
Email: abinks@hsph.harvard.edu

Contact (UK): Shakeeb H. Moosavi  
Faculty of Medicine, NHLLI, Guy  
Scadding Building, Dovehouse St.  
London SW3 6LY

Tel.: 44 (0)7834 083125  
Fax: 44 (0)207 351 8939  
Email: s.moosavi@imperial.ac.uk

#### **Mechanism of the Acupuncture Treatment on Some Diseases**

*Wednesday, March 30*

University of California, Irvine  
Contact: John C. Longhurst, Dept. of  
Medicine, Medical Science I C240, Univ.  
of California, Irvine, CA 92697-4075  
Tel.: 949-824-8560  
Fax: 949-824-2200  
Email: jcl@uci.edu

#### **New Directions in Exercise Physiology**

*Tuesday, March 29-Wednesday, March 30*

Hilton Hotel, Mission Bay  
Contact: Peter D. Wagner, Dept. of  
Medicine, 0623A, Univ. of California-  
San Diego, 9500 Gilman Drive  
La Jolla, CA 92093-0623  
Tel.: 858-534-9190  
Fax: 858-534-4812  
Email: pdwagner@ucsd.edu

#### **The Prenatal Environment, Programming and Postnatal Consequences**

*Tuesday, March 29-Wednesday, March 30*

Town & Country Resort and  
Convention Center, San Diego  
Contact: Kent Thornburg, Dept. of  
Physiology & Pharmacology, Oregon  
Health Sciences Univ., Portland, OR

97201-3098  
Tel.: 503-494-2382  
Fax: 403-494-4352  
Email: thornbur@ohsu.edu

#### **Urothelial Cell Physiology in Normal and Disease States**

*Tuesday, March 29-Wednesday, March 30*

San Diego Marriott Hotel & Marina  
Website: <http://www.urothelium2005.com>  
Contact: Ricardo Saban, Dept. of  
Physiology, Oklahoma Univ. Health  
Sciences Ctr., 940 S.L. Young Blvd.  
Oklahoma City, OK 73104  
Tel.: 405-721-2226 x228  
Fax: 405-271-3181  
Email: Ricardo-saban@ouhs.edu

### Post-Congress Satellites

#### **IUPS Teaching Workshop 2005**

*Thursday, April 7-Sunday, April 10*

California State University-Fullerton  
and Chase Suite Hotel, Fullerton  
Contact: Ann Sefton, Faculty of  
Medicine, Univ. of Sydney, Sydney,  
NSW 2006, Australia  
Tel.: (61) 2-9958-4562  
Fax: (61) 2-9405-5949  
Email: anns@gmp.usyd.edu.au

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\*transferred from student membership

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INSERM, France
- Declan W. Ali**  
Univ. of Alberta, Canada
- Antonio Andres**  
Univ. De Castilla-La Mancha, Spain
- Chikodi N. Anigbogu**  
Univ. of Kentucky
- Ragheb A. Assaly**  
Medical College of Ohio
- Samy Azer**  
Univ. of Melbourne, Australia
- James L. Bailey**  
Emory Univ. Sch. of Med., GA
- Sujit Basu**  
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- William J. Becker\***  
Strategic Analysis, Arlington, VA
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- Douglas M. Burns**  
Kansas Univ. Med. Sch., Kansas City
- Kenneth S. Campbell**  
Univ. of Wisconsin, Madison
- Jian-Xiong Chen**  
Vanderbilt Univ., TN
- Jin Chen**  
Univ. of Texas Southwestern Med. Ctr.
- Yuanna Cheng**  
Cleveland Clinic Foundation, OH
- Laura Lee Colgin**  
Univ. of California, Irvine
- Peter Dallos**  
Northwestern Univ., IL
- Haydar Ali Demirel\***  
Hacettepe Univ., Turkey
- Ralph A. DiCaprio**  
Ohio. Univ
- Allan Doctor**  
Univ. of Virginia
- Zheng Dong**  
Medical College of Georgia
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Northern Arizona Univ.
- Ana Yesenia Estevez\***  
Vanderbilt Univ. Med. Ctr., TN
- Kenneth B.E. Gagnon\***  
Vanderbilt Univ. Med. Ctr., TN
- Xiao-Bing Gao**  
Yale Univ. Sch. of Med., CT
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- Chen Jen-Tse**  
National Yang-Ming Univ., Taiwan
- Zhu-Qiu Jin**  
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- Susanne Jorgensen\***  
NeuroSearch A/S, Denmark
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- Michael James Ryan\***  
Univ. of Mississippi
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John Hopkins Univ., MD
- Dinesh M. Shah**  
Univ. of Louisville, KY

**Amir Sharafkhaneh**

Baylor College of Med., TX

**Wei Shi**

Children's Hospital, Los Angeles, CA

**Kenny J. Simansky**

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Laval Univ., Canada

**Quisheng Tong**

Univ. of Texas, San Antonio

**Kentarou Tsuruyama**

Nihon Univ., Japan

**Qing Wang**

Univ. Hospital (CHUV), Switzerland

**Weidong Wang**

Univ. of Aarhus, Denmark

**Mari A. Watanabe**

St Louis Univ. Med. Sch., MO

**Ora Anna Weisz**

Univ. of Pittsburgh, PA

**Yuihiro Yokoyama**

Nagoya Univ., Japan

**Ying-Yi Zhang**

Boston Univ., MA

**Xiangjian Zheng\***

Vanderbilt Univ., TN

**Jurgen Ziesmann**

Azusa Pacific Univ., CA

**Melissa Ann Cavallin**

Medical College of Georgia

**King Ho Cheung**

Chinese Univ. of Hong Kong

**Travis Conley**

Ball State Univ., IN

**John N. Dentel**

Michigan State Univ.

**Patrick J. Dougherty**

Texas A&M Univ.

**Scott N. Drum**

Univ. of Northern Colorado

**Thomas Joseph Dube**

Univ. of Central Florida

**Panagiotis Fakitsas**

Univ. of Zurich, Switzerland

**Hidemi Fujino**

Okayama Univ., Japan

**Bryan Grande**

Florida Atlantic Univ.

**Colleen M. Greenhalgh**

Florida Atlantic Univ.

## New Student Members

**Eudorah O. Ijezie**

Federal Univ. of Tech., Owerri, Nigeria

**Sharleen A. Iyahan**

Long Island Univ., NY

**Douglas S. Kalman**

Touro Univ. International, CA

**John Creigh Kostyak**

Pennsylvania State Univ.

**Anand Mangu**

Univ. of Arkansas

**Ann K. Mehl**

Univ. of South Carolina

**Teresa Ann Orth**

Univ. of Kansas Med. College

**Lauren Parish**

Texas Tech Univ.

**Matthew E. Patterson**

Tulane Univ. Sch. of Medicine, LA

**Maria Puigbonet**

Univ. of Toronto, Canada

**De-Lai Qiu**

Miyazaki Medical Coll., Japan

**Robert A. Rose**

Univ. of Calgary, Canada

**Elaine M. Smolock**

Drexel Univ., PA

**Radhika R. Tunstall**

North Dakota State Univ.

**Jacqueline E. Vigilance**

Univ. of the West Indies

**Wendy W. Weston**

CA State Polytechnic Univ., Pomona, CA

**Sarah Witkowski**

Univ. of Maryland

**Brett J. Wong**

Univ. of Oregon

**Traver J. Wright**

Texas A&M Univ., Galveston

**Mingyuan Wu**

Univ. of Oklahoma

**Abdulkadir Yusuf**

Ahmadu Bello Univ., Zaria, Nigeria

## New Affiliate Member

**Armando Lopez-Tristani**

Univ. of Puerto Rico

## Recently Deceased Members

**John Coleridge**

San Francisco, CA

**Paul F. Cranefield**

New York, NY

**Charles H. Hockman**

Atlanta, Ga

**Yoshiuki Honda**

Chiba, Japan

**Casey A. Kindig**

La Jolla, CA

**Irvin M. Korr**

Boulder, CO



## 2004 Teacher and Research Host Awards

APS is pleased to announce the recipients of the 2004 Frontiers in Physiology and Explorations in Biomedicine Professional Development Fellowship awards. These nationwide fellowship programs pair a middle or high school teacher with an APS member to conduct research during the summer. Other components of the fellowships include a weeklong teaching forum during which the teachers explore inquiry-based teaching, physiology lessons, the use of the Internet in the classroom and equity issues in science education. The fellowships continues after the summer as the teachers participate in online professional development units and field-test their own inquiry-based classroom activity and concludes when the teachers attend IUPS 2005.

The new Frontiers in Physiology grant also provides funding for local sites to select teacher/research host teams. These new Local Site Teams, one at Indiana University School of Medicine lead by **C. Subah Packer** and one at the University of Texas Health Science Center at San Antonio lead by **Duane Proppe**, selected seven teacher/researcher teams. Additionally, **George Tempel** from the Medical University of South Carolina is sponsoring three teams of teachers/research hosts as part of an NSF GK-12 grant program. In addition to funding from the APS, a grant from the National Institute of General Medical Sciences at the National Institutes of Health supports the Explorations in Biomedicine program. The Frontiers in Physiology program

receives funding from the National Center for Research Resources Science Education Partnership Awards (SEPA) and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) at the National Institutes of Health.

In total, the APS will have 26 Professional Development Fellows this year. Please join us in congratulating and welcoming the 2004 teacher and research host teams. More information about these fellowship programs is available at the Frontiers in Physiology (<http://www.the-aps.org/education/frontiers/index.htm>) and the Explorations in Biomedicine (<http://www.the-aps.org/education/expl/index.htm>) websites. ❖

### 2004 Explorations in Biomedicine Professional Development Fellows & Research Hosts

**Jesse Andres**

St. Labre Indian School, Ashland, MT

**Hosts: J. Joe Ford**

USDA/US Meat Animal Research Center

**Andrea S. Cupp**

Univ. of Nebraska

**John Hall**

Kayenta Middle School, Kayenta, AZ

**Host: Cheryl A. Dyer**

Northern Arizona Univ.

### 2004 Frontiers in Physiology Professional Development Fellows & Research Hosts San Antonio Local Site Team Awards

**Sandra Apolinar**

Thomas Jefferson High School, San Antonio, TX

**Host: Jeremiah Herlihy**

Univ. of Texas Health Science Center, San Antonio

**Dustin Graves**

S.J. Davis Middle School, San Antonio, TX

**Host: Dean Kellogg, Jr.,**

Univ. of Texas Health Science Center, San Antonio

**Megan Hollingsworth**

Fox Tech High School, San Antonio, TX

**Host: John Johnson**

Univ. of Texas Health Science Center, San Antonio

**Martha S. Jimenez**

John F. Kennedy High School, San Antonio, TX

**Host: Walter F. Ward,**

Univ. of Texas Health Science Center, San Antonio

**Amy Nichols**

O'Conner High School, San Antonio, TX

**Host: James D. Stockand**

Univ. of Texas Health Science Center, San Antonio

**2004 Frontiers in Physiology  
Professional Development Fellows & Research Hosts  
Indianapolis Local Site Team Awards**

**Rachel Pearce**

Arsenal Technical High School, Indianapolis, IN

**Host: David A. Suzuki**

Indiana University School of Medicine

**William White**

Arsenal Tech High School, Indianapolis, IN

**Host: C. Subah Packer**

Indiana University School of Medicine

**2004 Frontiers in Physiology  
Professional Development Fellows & Research Hosts  
Charleston Local Site Team Awards**

**Angelica Herron**

West Ashley Intermediate School, Charleston, SC

**Hosts: Charles Hossler/Carolyn Jenkins**

Medical University of South Carolina

**Kaci May**

North Charleston Elementary at McNair,

North Charleston, SC

**Hosts: Joe Rafalowski/Mark R. Collins**

College of Charleston

**Blondelle Tolliver**

James Island Elementary School, Charleston, SC

**Hosts: Jennifer Schepp/Dr. Jian-yun Dong**

Medical University of South Carolina

**2004 Frontiers in Physiology  
Professional Development Fellows & Research Hosts—National Awards**

**Charles Allen**

Custer High School, Milwaukee, WI

**Host: Michael B. Dwinell**

Medical College of Wisconsin

**Felicia Benson**

Osborn High School, Detroit, MI

**Host: Joseph C. Dunbar**

Wayne State University

**Brendan Callahan**

Dunedin High School, Dunedin, FL

**Host: Bruce G. Lindsey**

University of South Florida

**David Craymer**

Muskegon High School, Muskegon, MI

**Host: Christopher C. Barney**

Hope College

**Suzanne Goedecken**

Silver Lake High School, Roseland, NE

**Host: Janet E. Steele**

University of Nebraska-Kearney

**Jessica Kos**

Cutler Ridge Middle School, Miami, FL

**Host: John N. Barrett**

University of Miami

**Aurora Merry**

Salem High School, Salem, NH

**Host: Darlene A. Dartt**

Schepens Eye Research Inst., Harvard Medical School

**Leone Rochelle**

Ridge View High School, Columbia, SC

**Host: Janet L. Fisher**

University of South Carolina School of Medicine

**Betsy Scarborough**

Crayton Middle School, Columbia, SC

**Host: James A. Carson**

University of South Carolina

**Tammie Schrader**

Cheney Middle School, Cheney, WA

**Host: Dona F. Boggs**

Eastern Washington University

**Christopher Schrenk**

Green Brook Middle School, Green Brook, NJ

**Host: Nicola C. Partridge**

UMDNJ-Robert Wood Johnson Medical School

**Tonya Smith**

Southeast Middle School, Hopkins, SC

**Host: L. Britt Wilson**

University of South Carolina School of Medicine

**Adrienne Tavelinsky**

Dobbs Ferry High School, Dobbs Ferry, NY

**Host: John G. Edwards**

New York Medical College

**Elizabeth Zdrojewski**

West Allis Central High School, West Allis, WI

**Host: John B. Buckwalter**

Medical College of Wisconsin/VA Medical Center

## 2004 Undergraduate Summer Research Fellows and Hosts Announced

The American Physiological Society's Undergraduate Summer Research Fellowships program is sponsored by the APS Career Opportunities in Physiology Committee and funded by the APS Council. Up to 12 fellowships are funded each summer. The program was established in 2000, making this the fifth year of the program.

These fellowships are to support full-time undergraduate students to work in the laboratory of an established investigator. The intent of this program is to excite and encourage students to pursue a career as a basic research scientist. Faculty sponsors/advisors must be active members of

the APS in good standing but do not have to be US residents. Past awardees include students from Canada and South America.

These Fellowships provide a \$2,000 summer stipend to the student (10 weeks of support), a \$500 grant to the faculty sponsor/advisor, and up to \$1,000 to the student so that he/she may attend and present their data at the APS annual meeting (Experimental Biology) or an APS fall Conference.

This year 29 applicants vied for the 12 fellowships. ❖

Student/Student Institution	Research Host/Host Institution
<b>Patrick J. Brown</b> Juniata College, Huntingdon, PA	<b>Gregory L. Stahl</b> Brigham & Women's Hospital, Boston, MA
<b>Kelly N. Bulman</b> Univ. of New England, Biddeford, ME	<b>David J. Mokler</b> Univ. of New England, Biddeford, ME
<b>Marisol Chang</b> Univ. of Texas at Arlington	<b>Malgosia Wilk-Blaszczak</b> Univ. of Texas at Arlington
<b>Elizabeth F. Gluck</b> Williams College, Williamstown, MA	<b>Steven J. Swoap</b> Williams College, Williamstown, MA
<b>Sarah Jean Hemauer</b> Univ. of Wisconsin, Madison	<b>Jerome A. Dempsey</b> Univ. of Wisconsin, Madison
<b>Bryan P. Lloyd</b> Univ. of Nevada, Las Vegas	<b>Frank van Breukelen</b> Univ. of Nevada, Las Vegas
<b>Dewan S. A. Majid</b> Stanford Univ., Stanford, CA	<b>Robert A. Johnson</b> Tulane Univ. Hlth. Sci. Ctr., New Orleans, LA
<b>Kavita M. Ponnappa</b> Univ. of North Carolina at Charlotte	<b>Mark G. Clemens, Inna Sokolova</b> Univ. of North Carolina at Charlotte
<b>Lyndsay K. Roberts</b> Mississippi State Univ., Starkville, MS	<b>Joey P. Granger</b> Univ. of Mississippi, Jackson, MS
<b>Brian F. Sadacca</b> Univ. of Pittsburgh, Pittsburgh, PA	<b>Bill J. Yates</b> Univ. of Pittsburgh, Pittsburgh, PA
<b>Alison A. Staton</b> Univ. of Dayton, Dayton, OH	<b>Carissa M. Krane</b> Univ. of Dayton, Dayton, OH
<b>Florence Wu</b> Yale Univ., New Haven, CT	<b>Peter S. Aronson</b> Yale Univ. School of Medicine, New Haven, CT

## Porter Physiology Fellowship for Minorities

The Porter Physiology Fellowships for minorities are 1-year fellowships that provide a stipend of \$18,000. The fellowships are open to underrepresented ethnic minority applicants (African Americans, Hispanics, Native Americans, Native Alaskans, or Pacific Islanders) who are citizens or permanent residents of the United States or its territories. Applicants must have been accepted into or cur-

rently be enrolled in a graduate program pursuing an advanced degree in the physiological sciences. Next Deadline: **June 15, 2004**. For more information or an application, see the APS website at [http://www.the-aps.org/education/minority\\_prog/porterfell.htm](http://www.the-aps.org/education/minority_prog/porterfell.htm) or contact the APS Education Office at [education@the-aps.org](mailto:education@the-aps.org) or 301-634-7132. ❖

## Charles Geach Honored With Alan Shepard Technology in Education Award

**Charles Geach**, 1994 Frontiers in Physiology Summer Research Teacher and 2001 Curriculum Development Fellow, was recently honored with The Alan Shepard Technology in Education Award. Named after Alan Shepard, one of the original seven Mercury astronauts, this national award recognizes the educator who demonstrates excellence in the development and delivery of educational technology programs.

Geach is an administrator of instructional technology for the El Paso Independent School District (EPISD) in El Paso, TX. Inspired by NASA CONNECT™, an Emmy®-award-winning series of free integrated math, science and technology instructional programs for students in grades 6-8, Geach developed *NASA Connects to EPISD Live*, integrating interactive videoconferencing to deepen student learning. It was

this contribution to the field of K-12 educational technology that caught the attention of the AMF awards committee.

The Alan Shepard Technology in Education Award ceremony took place on May 2 at the Kennedy Space Center in Cape Canaveral, FL, in which astronaut Robert Crippen and Alan Shepard's daughter, Laura Shepard Churchley, presented the award. The AMF is a private not-for-profit organization founded in 1986 to honor all US astronauts who lost their lives on missions or while in training for missions.

As an APS Frontiers in Physiology Summer Research Teacher, Geach worked in the Human Performance Lab at The William Beaumont Army Medical Center in El Paso with **R. Jorge Zeballos** investigating anaerobic power. When he returned to teaching at Irvin High School, Geach expanded on his APS research

experience by developing "*Demonstrating and Predicting Aerobic Power*," a classroom laboratory activity. In 2001, Geach was selected as an APS Curriculum Development Fellow. Working with **Lisa Bidelsbach**, a 1995 Summer Research Teacher, he developed an online unit for high school students exploring the physiology of the sense of touch.

*Frontiers in Physiology* is a program of the American Physiological Society and is sponsored by APS, the National Center for Research Resources (NCRR), Science Education Partnership Awards (SEPA Grant #RR15251), and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK Grant #DK 39306) at the National Institutes of Health. For more information about Frontiers in Physiology, see the program web site (<http://www.the-aps.org/education/frontiers/index.htm>). ❖



### APS Archive of Teaching Resources

The APS Archive of Teaching Resources (<http://www.apsarchive.org>) continues to grow with the recruitment of a variety of new learning objects from educators all over the country. To date, there are over 360 items catalogued in the Archive from various sources.

However, more material is still needed. Please consider submitting material that you have developed to use to make your teaching more effective. These can be

**lecture or course outlines or PowerPoint slides** from a lecture that is particularly effective with your students;

**problems or cases** you've written for your classes;

**diagram(s)** that you've created to illustrate a specific pathway or process that seems to clarify it for your students;

**simulations or videos** you have

developed;

**web sites** you have discovered that have valuable information for your teaching;

**teaching tools/materials** that you are developing that would benefit from feedback from your colleagues;

**anything educational** related to physiology, pathophysiology, or clinical physiology.

By submitting learning objects that you have developed, you can help your colleagues in their efforts to find the best tools for introducing their students to the exciting discipline of physiology.

Here are some new items in the Archive contributed by APS and its first Archive Partner, the Human Anatomy and Physiology Society (HAPS). Take a moment and check out those that are most relevant to your teaching. Don't forget that you can comment on any of these items

through the comment section attached to each item, which can be found on its Fact Sheet.

#### APS Additions

*Comparing the Nervous and Endocrine Systems*

**Barb Goodman**

*WebHUMAN*

**Roy Meyers and Leo Geoffrion**

#### HAPS Additions

*Cooperative Education Part I: Three Types of Educational Environments*

**Murray Jensen**

*Cooperative Education Part II: The Cooperative Quiz*

**Murray Jensen**

*Human Anatomy and Physiology Society Newsletters (1987-2002)*

**HAPS** ❖

## Exploring New Frontiers: Using Subject Searching

For over a year now, *The Physiologist* has brought you brief descriptions and highlights of the features and tools offered by the portal site from Stanford's HighWire Library of the Sciences and Medicine, which allows you to search all text of Medline plus 350 journals' full text at once, including all of the APS research journals. We invite you to explore the site and try the features we have provided. The site is at <http://highwire.stanford.edu>.

When you encounter a new subject and want to see what literature resources cover that topic, typical keyword-search systems let you down. They might give you thousands of items that mention the keywords you use to name the topic but no sense of which articles are *fundamentally about* the topic and what other topics are *related* to your chosen topic. The

HighWire portal's subject searching feature does this for you automatically. Every time you do a keyword search, the keywords you give are checked against the 28,000 topics in the HighWire "taxonomy" and against nearly 100,000 phrases that denote those topics. Whenever a match is found between your keywords and HighWire's topics and phrases, the half-dozen best matching topics are shown to you. And with a click you can see more matching topics.

Suppose your interest is ubiquitin-mediated degradation by the proteasome. If your interest is very general, you might search using terms "ubiquitin," "ubiquitin degradation," or "proteasome." A good search strategy for broad subject searching is to enter a phrase that describes your topic but tell the system to allow ANY words to match, rather than requiring ALL

words to match. (The default is ALL but you can use the Advanced Search form to specify ANY or, instead, you can click on the ANY WORDS link on your search result page to shift from ALL to ANY if your initial search didn't return the results you would like to see.) An "Any Words" search for "ubiquitin-mediated degradation by the proteasome" gives the search result shown in Figure 1.

Note the hyperlinks in the top right-most column, labeled "Topics best matching my search." This is a list of the subjects that the system finds share the most words in common with your search terms. Whenever you are doing a broad subject search, it is a good idea to scan this list and see if any of the topics match your interests. If the topics shown seem promising, but not quite what you're interested in, click on the "more" link, and you'll

Figure 1.

The screenshot shows the HighWire search interface. At the top, there's a navigation bar with links like Home, Search, My Email Alerts, etc. Below that is a search form with fields for Author and Keyword(s), and a 'go' button. The search results section shows '1 to 10 of 85439 found'. The main content area is divided into several columns:

- Search Results:** Shows the search term 'ubiquitin-mediated degradation by the proteasome' and options for 'any words', 'all words', or 'phrase'.
- Instant Index of your top 500 results:** A list of related topics such as 'Ubiquitin-proteasome pathway (70 items)', 'Oxidative (33)', 'Cell cycle (30)', 'Viral virology (29)', 'Apoptosis: Apoptotic (25)', 'Low density lipoprotein (22)', 'Major histocompatibility complex class (18)', and 'Sulfate: Glucosaminoglycans (18)'.
- Topics best matching my search:** A list of related subjects including 'Protein Metabolism', 'Protein Degradation', 'Enzyme Metabolism', 'Enzyme Degradation', 'Enzyme Classification (E.C.)', 'Proteasome ATPase', 'Cellular Types', and 'Epithelial Cell Type by Anatomical Area'.

At the bottom, there are two article listings with their titles, authors, and publication details, along with links for 'Home', 'Abstract', 'Full text', and 'PDF'.

be shown more topics that potentially match your topic interest. When a topic matches your interest well, click on it, and you'll be shown a list of articles on that topic.

After you click on a topic, you are looking at a page listing articles for that topic, sorted so that the articles most applicable to that topic should be at the top of the list. However, other aspects of that page will help you narrow your results from a broad topic to a more focused set of articles, if you don't find the specific articles listed to be just what you want. Figure 2 shows two helpful features for focusing your subject-search.

Note the list of subjects shown on the page and see if any of the listed

subjects are closer to what you are seeking. First check the "bread-crumbs" *above* the word Proteasomes: perhaps a "higher level" subject, such as Subcellular Organelles, is more appropriate to your search. Then check the lower level subjects *under* the word Proteasomes; perhaps "Ubiquitin-Proteasome Pathway" is more focused on your interest. If you see a better matching topic, click on it.

Next, note the top radio button on the right of the Quick Search box. Once you've got an appropriate topic page, you can enter keywords in the Quick Search box and check the radio button next to your subject (in this example, the button says "In Proteasomes"). This will limit your

keyword search to the articles in that topic. From there, you can then use the subjects listed to the right of each article to do further search refinements, as described in the previous article in this series (*The Physiologist*, April 2004).

Subject searching is a type of exploration—not like following a recipe or a road-map—and it is often best to try several different approaches to gather articles that appear to be most relevant. We've tried to make this exploration easy in the HighWire portal by providing one-click hyperlinks that let you look at alternatives quickly. Let us know what you think of the tools we've provided. ❖

Figure 2.

The screenshot shows the HighWire search interface. At the top, there is a navigation bar with links: Home, Search, My Email Alerts, For Institutions, For Publishers, About, Contact, and Help. Below this, it indicates the user is signed in as John Sack and provides options to modify the account, sign in to journals, or sign out. The main search area includes a 'Quick search' box with fields for 'Author:' and 'Keyword(s):', a 'go' button, and a list of radio buttons for filtering results: 'In "Proteasomes"', 'In My Favorite Journals', 'In HighWire-hosted journals', and 'In HighWire-hosted journals + Medline' (which is selected). Below the search area, a breadcrumb trail shows the path: Home > Articles by Topic > Biochemistry > Cell Biology > Cellular Structures > Subcellular Organelles > Proteasomes. The main heading is 'Proteasomes', followed by sub-topics: '+ Proteasome Processes (3,110)', '+ Proteasome Structure (1,247)', and 'Ubiquitin-Proteasome Pathway (547)'. The results section is titled 'Articles in "Proteasomes"' and shows '1 to 10 of 3944 found' with a 'Next 10' link. At the bottom, there is a pagination control showing '10 | 25 | 40 | 60 | 80 / page'.

## Get Involved With APS Committees!

The American Physiological Society provides its membership with opportunities to be involved with the Society through service on its various committees. Committees and committee members are appointed by the Council of APS at the recommendation of the Committee on Committees.

Members are appointed to a three-year term commencing on January 1. Committee appointments are staggered so that only a limited number of the members rotate off a committee at the end of each year.

Members interested in committee service should complete the nomina-

tion form and submit it for consideration by the Committee on Committees and Council. The form is available to be downloaded at <http://www.the-aps.org/committees>.

Deadline for receipt of Candidate Information and Endorsement Forms is January 14, 2005. ❖

## New Rule on Research Misconduct Proposed

The Office of Research Integrity (ORI) published a notice of proposed rulemaking (NPRM) on April 16, 2004. The proposed rule would rewrite the policies and procedures under which ORI oversees investigations of alleged misconduct in research. It includes a revised definition of what constitutes research misconduct, expanded jurisdiction for ORI, and new procedures to govern how disputed findings of misconduct are adjudicated. The proposed rule may be found online at <http://ori.hhs.gov/multimedia/acrobat/42CFRParts50and93.pdf> and is open for comment by affected communities until June 15.

The current framework for the Public Health Service (PHS) policy on research misconduct was adopted in 1989. Various modifications have been made since then, but according to ORI, the proposed rule represents “substantial revisions” to “implement legislative and policy changes that have occurred since the [1989] regulation was issued.” The proposed rule includes changes in definition and terminology based upon the common definition of research misconduct that was issued by the Office of Science and Technology Policy in December 2000. This definition uses the narrower term “research misconduct” rather than the broader term “scientific misconduct” that was used in the 1989 PHS rule. The proposed rule would define research misconduct and the elements that comprise it as follows:

*Research misconduct* means fabrication, falsification, or plagiarism in proposing, performing or reviewing research, or in reporting research results.

(a) Fabrication is making up data or results and recording or reporting them.

(b) Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.

(c) Plagiarism is the appropriation of another person’s ideas, processes, results, or words without giving appropriate credit.

(d) Research misconduct does not include honest error or differences of opinion.

The definition further states that findings of research misconduct require that:

(a) There be a significant departure from accepted practices of the relevant research community; and

(b) The misconduct be committed intentionally, knowingly, or recklessly; and

(c) The allegation be proven by a preponderance of the evidence.

This wording includes some changes that narrow the scope of ORI’s authority and others that widen it. The proposed definition narrows the definition of research misconduct because it focuses solely on fabrication, falsification, or plagiarism and eliminates the phrase “other practices” that was intended to serve as a catch-all to permit ORI wider-ranging authority. Howard Garrison of FASEB’s Office of Public Affairs told *The Scientist* that the old wording was “vague and confusing and could lead to mistaken allegations of what is fair and not fair.”

On the other hand, the proposed rule widens ORI’s authority to include misconduct associated with the reporting of research findings and in scientific peer review. It would also extend ORI’s authority to include intramural research and to research conducted under contracts as well as grants.

Many in the scientific community welcomed the revised definition of research misconduct and the inclusion of intramural research and contracts. However, there may be problems with some of the proposed changes to procedures for adjudicating disputed allegations of misconduct.

According to ORI’s explanation of the proposed rule, “Once the institution or HHS makes a *prima facie* showing of research misconduct, the respondent has the burden of proving any affirmative defenses raised.” This would mean that if misconduct were alleged and research records were missing, the accused scientist would have to prove that no misconduct had taken place. Similarly, if erroneous data or conclusions were reported, the burden of proof would be on the scientist to prove that the cause was honest error.

The proposed rule would also eliminate the current practice of convening a three-judge panel of HHS Departmental Appeals Board that typically includes a scientist who can help the two administrative law judges sort through technical issues requiring scientific expertise. The proposed rule would instead have research misconduct cases heard before a single administrative law judge.

## Members of Congress To President: Ease Stem Cell Rules

On April 28, 205 Members of Congress urged President Bush to modify his stem cell research policy to permit federal funding of additional cell lines. Representatives Mark Castle (R-DE), Diana DeGette (D-CO), Randy “Duke” Cunningham (R-CA), and Calvin Dooley (D-CA) were co-authors of the letter that was signed by 36 Republicans and 169 Democrats.

“As you know, embryonic stem cells have the potential to be used to treat and better understand deadly and disabling diseases that affect more than 100 million Americans, such as cancer, heart disease, diabetes, Parkinson’s, Alzheimer’s, multiple sclerosis, spinal cord injury, and many others,” the letter said. “We would very much like to work with you to modify the current embryonic stem cell policy so that it provides this area of research the greatest opportunity to lead to the treatments and cures we are hoping for.”

Under the policy President Bush put into place on August 9, 2001, federal funds can only be used for research on stem cell lines created prior to that date. The signers pointed out that the administration originally claimed that 78 embryonic stem cell lines would be available to researchers, but in reality this number is closer to 19. Furthermore, these lines are all contaminated by mouse cells—making their usefulness uncertain. The letter also contends that the currently policy is making it difficult to recruit US scientists to undertake this research.

The scientific community applauded this effort. “This strong showing of bipartisan support is a gratifying and

clear indication that Congress realizes how important these research tools are to medical progress,” said Jordan Cohen, President of the Association of American Medical Colleges (AAMC) in a press statement. “Stem cell research is one of the most remarkable advances in the history of science. These cells offer real hope of life-affirming treatments for diabetes, damaged heart tissue, arthritis, Parkinson’s Alzheimer’s, ALS and spinal cord injuries to name but a few examples...”

Opponents of embryonic stem cell research object to the fact that in order to harvest stem cells, an early embryo must be destroyed. They assert that adult stem cells, which can be harmlessly obtained from adults, are just as promising as embryonic stem cells. “Instead of throwing more federal dollars into embryonic stem cell research, the administration should expand its support for adult stem cell research—research that is producing real results with real patients,” said the Washington based group Do No Harm. Representative David Weldon (R-FL) agreed. “If this controversial research has all the promise that its supporters claim, let the private sector fund it, because taxpayers shouldn’t have to pay for what many think is unethical.”

The Bush administration has showed no sign of moving to permit research with additional cell lines. In a brief statement on the letter, White House spokesman Trent Duffy said, the president “continues to believe” the policy is adequate.

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## NIH Panel Issues Conflict of Interest Report

Top NIH officials responsible for program funding decisions or grants management should be prohibited from engaging in consulting activities with pharmaceutical or biotech companies or paid academic consulting according to a blue ribbon panel convened to make recommendations to avoid conflict of interest at the NIH. The report, which was delivered to NIH Director Elias Zerhouni on May 6, suggested further that NIH employees who are allowed to

engage in consulting for industry should not be compensated through stock options or other forms of equity. Such payments “in essence make the NIH employee an owner of the company, in addition to coupling reward with outcomes, with consequences that could cause conflict of commitment as well as interest,” the panel noted.

Zerhouni appointed the Blue Ribbon Panel on Conflict of Interest Policies in response to news reports last fall suggesting that some senior employees of NIH had engaged in lucrative consulting arrangements with companies that could have influenced their work as government employees. Congressional hearings were also held to examine the conflict of interest allegations. The report of the Blue Ribbon Panel is available on the NIH web site page at [http://www.nih.gov/about/ethics\\_COI\\_panelreport.htm](http://www.nih.gov/about/ethics_COI_panelreport.htm).

Zerhouni asked the Blue Ribbon Panel to review current law and NIH procedures regarding conflicts of interest and to recommend improvements. The panel, co-chaired by National Academy of Sciences President Bruce Alberts and Lockheed-Martin Executive Committee Chair Norman Augustine, made a total of 18 recommendations. In its report, the panel said that it found “an extremely complex set of rules governing conflicts of interest at the NIH.” These rules “are widely misunderstood by some of the very people to whom they are intended to apply, thereby creating uncertainty as to allowable behavior and adversely affecting morale,” the panel noted further.

The guiding principle behind the panel’s recommendations was that “NIH employees must avoid conflicts of interest incompatible with the proper exercise of their authority and the proper performance of their duties.” Therefore, “Employees in a position to influence the financial interests of an outside entity such as a current or possible future recipient of an NIH grant or contract should neither receive financial benefits from that organization nor have significant financial interests in it.”

The panel advised NIH to require more employees to file financial disclosure forms or to disclose financial interests in some other fashion so that the agency will better be able to manage conflicts of interest. It recom-

mended that all requests for approval of outside activities be updated on an annual basis and that supervisors should be held accountable for the evaluation and approval of outside activity requests. It suggested providing NIH supervisors with enhanced training on how to evaluate potential conflicts and recommended that NIH publish an annual agency-wide statistical report on the number and types of outside activities approved for its employees to assist in more effective tracking of approved outside activities.

In an effort to keep NIH competitive with the private sector, the panel also suggested increasing the pay for senior employees. Given the current highly competitive market, the panel expressed concern that “the present ceiling is limiting the agency’s ability to recruit and retain the nation’s best scientists.”

The panel found that under current rules, NIH scientists were too often prevented from talking about their work at scientific meetings and some believed that they were not allowed to receive professional awards, which has left some NIH scientists feeling removed from the scientific community. To remedy this situation, the panel recommended that NIH intramural scientists be allowed to engage in compensated speaking, teaching, and writing for professional societies and for academic and research institutions as an outside activity. This approval was contingent on all ethics reviews and approval requirements being met.

Zerhouni praised the report as “very thoughtful and very thorough” and said he would weigh the recommendations carefully with an eye toward implementing them “the sooner the better.”

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## APS Submits Testimony on NSF, VA and NASA Funding

On May 5, 2004, the American Physiological Society (APS) submitted testimony calling on Congressional Appropriators to increase funding for the National Science Foundation (NSF), the VA Medical and Prosthetics Research Program (VA), and NASA’s Office of Biological and Physical

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Research (OBPR). The testimony can be found online at: <http://www.the-aps.org/pa/action/news/fy05NSF-test.htm>.

With a war raging in Iraq and fiscal conservatives in Congress fighting to hold the line on federal spending, many groups are competing for a smaller portion of the funding pie in fiscal year 2005. In its testimony, the APS highlighted how increased funding for NSF, VA and OBPR can contribute to the overall health and safety of our country. "We are living in challenging times and our national priorities must reflect these challenges," APS President **D. Neil Granger** wrote. "A strong commitment to science can help keep our nation safe and strong and help us meet future challenges."

For FY 2005, the APS made the following recommendations:

**National Science Foundation:**

The APS joins with the Federation of American Societies for Experimental Biology (FASEB) and the Coalition for National Science Funding (CNSF) in calling for a renewed commitment to the NSF and respectfully asks Congress to increase the FY 2005 funding level for this agency by 15% over the FY 2004 enacted level.

**VA Medical and Prosthetics Research Program:**

The APS supports FASEB and the Friends of VA Medical Care and Health Research (FOVA) recommendation that Congress appropriate \$460 million for VA research in FY 2005. This represents a \$54.4 million or 13% increase over current year funding.

**NASA's Office of Biological and Physical Research:**

For FY 2005 APS recommends that competitive peer-reviewed research and training be supported through increased funding to OBPR. To enhance the overall strength of NASA's research program, APS calls on Congress to appropriate the President's requested level of \$1.049 billion. This is a 6.4% increase over FY 2004 levels.

## **"Pet Safety" Bill Unneeded; Legislation Would Hamper Research**

Senator Daniel Akaka has again introduced legislation to block the use of non-purpose-bred dogs and cats in research, teaching, and testing. Akaka sponsored similar legislation in 1996, 1999, and 2001. The most recent bill is S. 2346, which Akaka calls the "Pet Safety and Protection Act of 2004." He introduced it on April 26, 2004 with no co-sponsors.

According to Akaka, S. 2346 is intended to "stop unethical animal dealers from selling stolen pets and strays to research facilities." The Hawaii Democrat said in a statement that the legislation is needed because the USDA "routinely fails to provide pets and pet owners reliable protection against the actions of disreputable animal dealers, also known as 'random source' dealers."

S. 2346 would prohibit USDA licensed Class B animal dealers from selling dogs and cats to research facilities and would require pounds and shelters to register with the USDA in order to provide unclaimed strays for research. (The Animal Welfare Act already requires pounds and shelters to hold strays for a minimum period to give owners time to locate lost pets.)

The provisions of S. 2346 would interfere with research on certain genetic diseases, physiological conditions, and problems associated with aging because it would make it more difficult for researchers to obtain appropriate animal subjects. Some research can be done with any animal, while research on some conditions requires animals with specific traits. Animal breeders can readily provide animals that are chronologically young, purebred, or come from small breeds. However, breeders cannot readily supply larger or older animals or those with specific physiological defects, genetic traits, or other diseases. S. 2346 would interfere with research on diseases or conditions that depend upon access to such animals.

Akaka claims that Class B dealers acquire "tens of thousands of dogs and cats," and that "many" of these ani-

mals are "family pets" obtained from middle-men who "resort to theft and deception as they collect animals and sell them to Class B dealers." It is unlikely however that any such complaints have emanated from Akaka's constituents since according to the USDA's most recent Animal Welfare Act annual report, only one cat and no dogs were used in research, teaching, or testing in the state of Hawaii in 2002.

Unfortunately, S. 2346 is predicated on many factual errors. Reading Akaka's statement, one might believe that there is a massive problem in this country of stolen pets ending up in research facilities. It is true that claims along these lines have been a rallying cry among animal activists since the 1960s. However, Congress, the USDA, and the research community have worked together since then to make significant changes that should reassure the American public about the safety of family pets.

Furthermore, even as provisions to assure pet safety have been implemented, the numbers of dogs and cats used in research has steadily declined. In 1973 when the USDA first collecting statistics, approximately 195,000 dogs and 66,000 cats were used in research, teaching, and testing. In 1993, that number had declined to 106,000 dogs and nearly 34,000 cats. By 2002, the numbers had declined further to some 68,000 dogs and 24,000 cats. These totals represent all dogs and cats, including those supplied by animal breeders, pounds and shelters, and random source animal dealers. The number of animals needed for research should also be compared with what is conservatively estimated as several million unwanted dogs and cats that are put to death in pounds each year.

Many research institutions are located where there are state laws, local ordinances, or internal policies to prohibit pounds and shelters from providing animals for research. Class B dealers provide a necessary service by supplying them with animals that breeders cannot produce. S. 2346 would not only prohibit Class B dealers from supplying these animals, it would also require pounds and shelters to register with the USDA in

order to do so. Going through a registration process in order to perform a public service may be one hurdle too many for hard-pressed pounds and shelters, and some may decide that it is not worth their effort.

The Laboratory Animal Welfare Act was originally passed in 1966 to protect family pets from unscrupulous animal dealers. Congress has since approved a number of new pet protection provisions as part of what is now known as the Animal Welfare Act. Over the past decade, the USDA has significantly stepped up its enforcement efforts, putting a number of non-compliant animal dealers out of business. This includes frequent inspections of problem dealers and audits of their records to trace dogs and cats back to the individuals listed on identification records as the original owner. The success rate of such trace back audits is now around 96%. These enforcement efforts should be continued, but no new legislation is needed to assure the safety of family pets.

### “Making Science News” Symposium Summaries

The “Making Science News” symposium was offered for the second consecutive year at EB 2004. Chaired by APS Communications Committee chair, **Andrea Gwosdow**, the goal of this symposium was to familiarize scientists with how the media works. APS invited three journalists to discuss the definition of “newsworthy,” the differences in print, radio and television news, and useful tips for getting scientific research reported by the media. A summary of the session follows. Complete handouts and media samples can be found at <http://www.the-aps.org/press/conference/eb04/sciencenews.htm>.

**Bethany Halford**, is an associate editor at *Chemical and Engineering News*. Dubbed “the news magazine of the chemical world,” *CEN* is published weekly by the American Chemical Society. A chemist by trade, Halford became a journalist after being an AAAS Mass Media Science and Engineering Fellow. Before joining *CEN*, Halford worked for the *St. Louis*

*Post-Dispatch* and *Prism* magazine.

#### “What Makes Print News?”

For print, newsworthy means subject matter that readers will find interesting, informative and/or entertaining. Halford looks for stories that are new and of broad interest. Print news will often times have more space for pictures and more overall space than radio and television, so they have the opportunity to tease out stories without regard to time. They like to receive graphics.

Knowing what makes news for individual media outlets is the first step to getting research reported. Many times, newsworthy topics for print publications can be found “in the name.” For example, the *St. Louis Post-Dispatch* looks for stories of interest to St. Louisans, while *CEN* looks for stories of interest to chemists. Speaking to a publications readership in a media pitch is also key to getting news covered. The audience for *CEN* differs from a general news audience because they are assumed to be scientists or others well-versed in chemistry. Therefore, research pitched to *CEN* should be closely related to chemistry and should supply a sufficient amount of technical detail. If pitching a trade publication, one should be sure the research is in line with the subject matter of that publication. For example, biomedical research pitches should be made to biomedical trade newspapers.

Some of the best ways to get Halford’s attention are to contact her before the research paper is released, send information that is related to her “beat” (subject matter that she typically writes about), and give her a concise rundown of what the research is and why it is exciting.

She also shared her list of tips for scientists in communicating with the press, including:

If you’re working with someone to develop a release about your research, ask to see the final version to make sure it’s accurate.

Always research the reporter who’s interviewing you

Accept that once the press release is distributed, you lose control over the type and amount of coverage that it will get.

### Bethany Halford’s Tips for Scientists in Communicating with the Press

Don’t go on vacation the week your paper comes out. The press wants to talk to you, not the P.R. person.

Don’t just give a powerpoint presentation.

Your work is interesting, but you must learn to talk to people who aren’t scientists. You do it all the time—family dinners, with your dentist, on airplanes. Reporters are just the same.

Just because someone doesn’t understand everything about your work, that doesn’t make them stupid. Just make it simple. Try to say it in a sentence or two.

An analogy or image—even if it is flawed—can really bring a point home. I have described the layers of the atmosphere like an onion, and self-assembling carbon nanotubes as Slinkys, Lifesavers candy and spiral staircases.

A good picture will get your work a lot of attention. People like cool things to look at.

Reporters don’t generally work on the same kinds of deadlines that you do. Respond as soon as you can. It would not be unusual for a reporter to have to turn something into a story within a few hours.

Reporters are also limited in terms of time and space.

They are not your advertising firm. A good reporter will write a balanced story. Don’t be afraid of that.

Be kind if a reporter makes a mistake. Often the error occurred sometime after the story left their hands. The editorial process is labyrinthine. A good reporter wants to be accurate, and if they’ve messed up, they’ll generally try to correct things, or get them right the next time they report. If you throw a fit, they’ll just find someone else to put in the paper ... and they’ll tell their friends.

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**Henry Fishman**, reports on the health and medical beat for AP Broadcast. Additionally, he is a medical reporter for WMAL, a Washington, DC news and talk radio station, and hosts a medical television series for PBS. Fishman is also a practicing allergist.

#### **“What Makes Radio News?”**

Even though dealing with the media can be daunting at first, Fishman asserted that it is a worthwhile undertaking for scientists. The information that trickles down from the media to regular people influences the public to support funding for science. Radio is a unique and fitting vehicle for conveying research. It has the advantage of a captive audience, since most people listen in their cars. In a distraction-free environment, listeners are more likely to comprehend and appreciate science news.

Radio likes topics that affect health, heart and wallet. Pitch them “news you can use”—stories that have immediate value and would make good conversation at the water cooler. All of Fishman’s news stories are between 60-90 seconds and each one must be short and tight. Often times, he has to distill extremely complex concepts into cute, simple clips that are easy to digest in a short time period. He cannot include every detail, so scientists must clearly and concisely explain the most important points of their research to him.

Fishman, too, stressed the importance of understanding media audiences. One should always attempt to answer the question “why does this matter to my listeners?” when pitching a reporter. The Associated Press, with its diverse audience, prefers news with universal implications that appeal to all ages. Conversely, WMAL’s has a very specific target audience between the ages of 35-55, affluent, Caucasian. They prefer stories that pertain to those listeners. A strong pitch will speak directly to a station’s audience.

He suggested that scientists work with their institutional PR departments to present research in a media-

ready format. Fishman also encouraged scientists to acquaint themselves with local reporters and share their research with them. By doing these two things, scientists can greatly increase the chances of getting their research covered.

**Kathy Fowler** is the medical and health reporter for WJLA-TV, the Washington, DC ABC affiliate. She has been nominated for two Emmys and has been honored with an Edward R. Murrow award for her reports about the worldwide organ trade from desperately poor donors in the Philippines. Fowler also does newsbreaks for the Discovery Health Channel.

#### **“What Makes Television News?”**

With television, one must always keep the visual element in mind. Television reporters are more likely to cover research that converts well to film. Controversial topics are more powerful when told with a human patient attached, so one of the first story elements she looks for is a patient. She likes her stories to have the “personal hook.” With typical television news story averaging about 90 seconds, time is also definitely a concern.

Though she does want the facts, she also wants scientists to play up some of the more exciting details of the research (neat ways they did the testing, the implications it could have toward curing/lessening the effects of a disease). In order to make a good television news story, there should be a certain level of excitement. She also encouraged interviewees not to worry about providing the perfect “sound byte.” A good sound byte is like an exclamation point on your story, but a clear and complete explanation of the research is what truly makes the story.

Fowler’s favorite interviews are those where the scientist has a patient who is concerned about their health, a new method or therapy that will potentially help that patient and a procedure that can be performed from start to finish on the air. Though having all these components is usually beneficial, they are not an automatic formula for a good news story. If the

test is too graphic or if the patient is drugged or incoherent, a significant amount of reworking may be required to get it broadcast-ready.

The best way to send your research to a television reporter is to email a one-pager on the research, do a follow-up call (be sure not to call within an hour of airtime). An attention-grabbing headline is also effective in garnering media interest. Since she gets hundreds of press releases a day, it is important to clearly state a relationship to other hot topics in the news. She encourages “outside of the box” thinking when pitching story ideas.

#### **Media Workshop**

The second part of the symposium was a workshop led by APS publicist **Donna Krupa**. She began with a summary of what the panelists highlighted as the fundamentals of media and what makes news. Krupa discussed who at news stations should receive press releases, the news cycle and the typical shelf life of a news story.

Krupa also outlined eight factors that denote newsworthiness: **Impact**—something that happens to a lot of people; **Topicality**—useful information people can begin to use right now or tomorrow; **Timeliness**—either it just happened or is about to take place; **Proximity**—all things being equal, something that occurs down the street is bigger news than something that takes place 1,000 miles away; **Sensation**—extreme emotions of shock, joy, pain, etc.; **Prominence**—big names attract big ratings; **Conflict**—one party makes a claim, the other party denies; and **Novelty**—if a dog bites a man, it’s not news—BUT—if a man bites a dog, that’s definitely news.

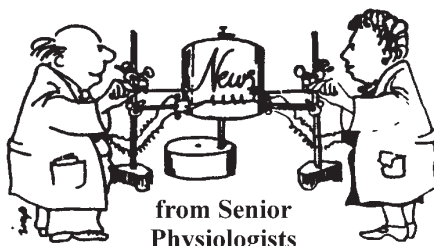
She especially stressed the importance of communicating research in context with familiar topics and recently reported stories in jargon-free language. Krupa demonstrated how she got media attention for newsworthy abstracts by rewording them into plain English. Finally, she walked participants through the progression of two highlighted research abstracts that were developed to press releases and were subsequently covered in *Newsweek* and on *CNN*. ❖

## Letters to Felix Bronner

**Keith Henley** writes: "Thanks for your letter. I have been 'retired' for more than 10 years but am working full time and asked not to be paid in exchange for an office. Can do what I like and have never been happier going to work.

"I am a hepatologist who recognized that it should be studied where most of the patients are, and this is not the US. I am, therefore, spending about 80% of my time working with my Vietnamese colleagues in education and research. Their appetite to learn is insatiable, and their talent is limited by language but nothing else. With 15,000 Dong to the \$ they have no money, the growing number of Mercedes vehicles notwithstanding. I have worked mainly with Prof. Ha van Mao in Hanoi, the only Western trained hepatologist in Vietnam. Other than educational work, (courses) we have done a couple of studies on H. Pylori and there is an association with the lab of Juanita Merchant at the U of Michigan. The development of Internal Medicine in Vietnam has been handicapped by the isolation of the country, the embargo, and that all the authority was invested in surgeons who survived the war and knew little medicine. This has now softened in Ho Chi Minh City and Hue, and even in Hanoi where the Dean who was openly indifferent to Medicine and even more to Western influences has now mercifully retired.

"As far as hepatology is concerned, I am working with Claudio Tiribelli from Trieste who has done an excellent prevalence study in Italy on the Framingham Model. It will be conducted at Linh Son village near Thai Nguyen in North Vietnam. For that we need an American trained hepatologist and a much better informed cadre of hepatologists to work with. For that we are conducting a course on hepatology literally as we speak involving 30 selected students from each of the major medical schools. (Reprints, informal interaction, no lectures, response very very positive). We will choose 10 of the best and give them extra tuition by e-mail so that they are ready to come to this country with little culture shock. There will also visiting Professors engaged in that pro-



gram. (No lack of volunteers there). Then and only then will we have the people on the ground to do that study and hopefully more.

"We focus on clinical hepatology with some pathophysiology thrown in. I don't know much about their teaching of physiology although it features in the curriculum, probably largely in lecture form. Any physiologist retired or otherwise who would like to know more is free to get in touch with me.

"Health has to be vigorously addressed by an annual H and P perhaps because I am so active and surrounded by younger people. Wife, son and grandsons (two) are very well living an hour away. Off next week for a family gathering in Cayman Brac (like Grand Cayman 100 years ago). My unique arrangement lets me get away whenever I want to."

**Franklin H. Epstein** writes: "It was great to hear from you. Thank you for your letter and for your invitation to send an update to *The Physiologist*.

"I'm still working full time in the Nephrology Division of the Department of Medicine at Beth Israel Deaconess Medical Center, Harvard Medical School in Boston, headed now by Vikas Sukhatme, a remarkable scientist and leader. I take my turn as a renal consultant and as a general medical doctor attending on the wards, and also visit the Medical Intensive Care Unit once a week. By the time I am through pontificating at various conferences and seeing my small group of outpatients, the not very strenuous week is over.

"I work July and August at the Mount Desert Island Biological Lab in Miami, where Patricio Silva (who now heads his own renal Division at Temple University) shares a laboratory with me, investigating chloride secretion by the rectal gland of the shark.

"I've always been interested in the medical complications of pregnancy, and an unexpected pleasure has been

the chance to participate in the recent discovery of what seems to be the major cause of preeclampsia, the production by the placenta of a circulating receptor for vascular growth factors. This is particularly exciting because it opens the real possibility of successful treatment.

"It seems to me that medical students and house officers are no less humane, hardworking, conscientious and intelligent than I remember them in the 1940's at Yale Medical School.

"It's a little startling to find that wonderful former fellows of mine are starting to retire. But, as I tell myself, they deserve it."

**Malcolm Holliday** writes: "Thank you for your nice letter. I am well, living in Berkeley and enjoying modest activities at both the Berkeley and SF campuses of the University of California. I retired in 1991 from the Department of Pediatrics, UCSF where I had been since 1963 and my wife and I lived ten years in Pt. Reyes, adjacent to the National Park. Wonderful. In that time I managed a few publications relating to history or commentary on body fluid physiology and growth. Now, less agile, live in Berkeley with three of the five children nearby.

"My fellowship was in Boston and New Haven (1948-51) with James Gamble and Dan Darrow and a host of my contemporaries who were taking advantage of the new opportunities to do clinical research. Some of us described ourselves glibly as 'whole body physiologists.' I felt, and still feel, that a strong basis in physiology was an asset in clinical practice involving sick children (and adults). It is alas, often neglected.

"I connected your name to the book *Mineral Metabolism*, successor to Alfred Shohl's book. Shohl had departed Gamble's lab sometime before I was a fellow but his book was constantly consulted as we set out to describe changes in body composition and metabolic rate with growth. We were particularly interested in the nature of ECF and the consequences of dehydration—still a problem but in a different setting. This interest I addressed in 1999 in writing a piece for my fellow pediatric nephrologists who had lost interest. Since I cited Elsie Widdowson's chapter from your book in that article, I thought you

might like to see how a retired pediatric nephrologist used that reference nearly 40 years on. Ernie Cotlove, another contributor to your book, whose death still pains me, was a coworker in Gamble's lab when I was there. Later, I used change in body composition data and organ metabolic activity to account for the decline in metabolic rate per Kg during growth—my most inspired and ignored article.

"If I were to have a wish it would be that Pediatrics and Physiology would find more common ground in the area of human growth and development. On the other hand, both Pediatrics and Physiology have a decidedly more communitarian and socially responsible outlook than other branches of either medicine or biological sciences. I feel fortunate to have had a place in each."

**William Ganong** writes: "Thank you for your recent letter. I am not quite 80 yet, but I will be in July. I stepped down as Chairman of the Department of Physiology at UCSF in 1987, I partially retired from the university in 1991, and completely retired in 1994. I still go to UCSF once every 1-2 weeks, but mostly stay at home and work on my books. As you may know, my main book, *Review of Medical Physiology*, comes out every two years and the 22nd edition of this book will be published by McGraw-Hill in February or March 2005. I also work on *Pathophysiology of Disease*, which Steve McPhee and I co-edit. Hopefully, the 5th edition of this book will come out in late 2005 or early 2006. When I am not writing, I'm involved with a local charity that provides scholarships for outstanding medical and dental students in the San Francisco Bay area. Ruth and I have twelve grandchildren and three great-grandchildren. Give my special regards to everyone in the APS."

**Ernest Foulkes** writes: "It was with great pleasure that I received your recent letter on the occasion of my impending 80th birthday; thank you for your good wishes. I remain in good shape, although no longer quite as active physically as previously. The stationary bicycle has now replaced some of my more active pursuits, and a sleep after lunch is always welcome.

"Some 25 years ago my wife recov-

ered from major surgery. We decided at that time that, instead of waiting for a healthy retirement which we might never reach, we would try to start traveling as widely as we could. This was one of the best decisions we have ever taken, and over the years it led us to five continents. We visited the Galapagos Islands, Kakadu National Park in Australia, Central China, India, the Nile, the East African wild life preserves, the Amazonian jungle, the Scottish Isles, etc. We followed the Ionian migrations into the Black Sea, the Crusaders from Italy to Jerusalem.

"Health problems have now reduced these activities. We were not even able to visit our latest grandchild in Germany. She is the latest of nine, and we have completely run out of wall and counter space for displaying their photos. Whether this will restrain our children in the future remains to be seen. The grandchildren, aged 1 to 28, are spread all over the world. The oldest, after two years in the Peace Corps, returned to the States with a Paraguayan bride. Every two years the whole family assembles for a reunion somewhere in North America, with the aid of a specially created Foundation.

"I officially retired from the University of Cincinnati some six years ago, after spending much time during the last few years in administration. My scientific focus had shifted to the heavy metals (one of my sons announced that 'my dad, he has gone into heavy metal'), and especially their effects on intestine and kidneys. Metals tend, of course, to be highly reactive, with great affinity for many biological molecules. This reactivity raises questions about attempts to explain the toxic action of metals by identifying specific target molecules or primary sensitive physiological processes.

"The University has enabled me to maintain my office, where on a part time basis I continue to pursue such toxicological problems, through editorial work, service on review groups, occasional lectures, etc. I also find, at last, sufficient time to catch up on long postponed reading (including 13 volumes of Proust), to attend concerts, lectures, the theater, etc. All this applies, of course, also to Valerie, who retired from the University faculty

(Comparative Literature) in the early nineties.

"Greetings to all of our friends, and thank you in particular for your personal interest."

## Letters to Alan Hoffman

**John Stirling Meyer** writes: "This letter is in reply to yours of April 27, 2004 and specifically answers your questions in the order you asked.

"I am still working in Academic Medicine and Medical Research at the age of 80 and  $\frac{1}{4}$ . I am a Professor of Neurology at Baylor College of Medicine and still see patients who are still referred to me and their records comprise the database for my research on early diagnosis, risk factor identification, prevention and treatment of cognitive impairments and the neurodegenerative dementias. Because with increasing life expectancy due to improved control of infectious and cardiovascular disease, the incidence of dementia in the elderly has become epidemic. Common causes of cognitive impairment are Vascular Dementia (VAD), Alzheimer's Disease (DAT), Parkinson's Disease (PDD) and rarer forms like Lewy Body and Fronto-temporal dementias. Mild cognitive impairment (MCI) can be detected as a prodrome in all, before dementia supervenes. MCI is detected by serial brief psychometric testing among the elderly with memory complaints, and we have contributed by publishing psychometric screening tests and showed that MCI is prodromal for VAD, as well as DAT. We have published quite a bit on this work, which is continuing. Control of vascular risk factors helps prevent all the neurodegenerative dementing disorders. We are also doing numerous drug trials for treatment of dementia, including three different cholinesterase inhibitors as well as NMDA receptor blockers and a new drug that allegedly restores the neurotransmitters ACH, NE, Dopamine and 5HT. I still enjoy this research with my research postdoctoral fellows and feel my patients and their families benefit.

"Looking back on my life with early training by Wilder Penfield and Herbert Jasper at Montreal Neurological Institute and with John Peters and John Fulton in Internal Medicine and Neurophysiology at Yale, and with

neurological and neurophysiological training at Harvard with Derek Denny-Brown, Raymond D. Adams and Miller Fisher. I would say that my contributions to the diagnosis of medical treatment and to the physiological mechanisms involved in stroke, migraine, and neurologic disorders in general, have been important. As an anecdote I do remember

"John Fulton complaining that: 'it costs me a thousand dollars (\$1,000) to operate on the brain of each of my chimpanzees for my experiments, while Wilder Penfield charges and gets paid \$1,000 for each of his published experiments on and from his grateful patients!'

"Regarding words of wisdom for younger colleagues: perhaps 'Don't be discouraged by any slings and arrows of academic politics or collegiate envy, just keep working, ultimately truth will win out.'

"My dearest professional colleague and friend was Niels Lassen of Copenhagen, Denmark who, with his mentor and friend, Seymour Kety made fundamental contributions to measuring and imaging physiological and pathological principles responsible for changes in human regional blood flow and metabolism both in health and disease, and there by began the whole field of cerebral neuroimaging."

**Ed Masoro** writes: "Thank you for your letter of April 27. I will try to answer all your questions.

"My current activities are: writing, editing, and consulting. I have written two books since retiring in 1996: *Challenges of Biological Aging*, Springer Publishing Co., New York, 1999; *Caloric Restriction: A Key to Understanding and Modulating Aging*, Elsevier, Amsterdam, 2002. Dr. Steven Austad and I have co-edited the fifth edition of the *Handbook of the Biology of Aging*, Academic Press, 2001 and we currently are in the process of co-editing the sixth edition. My consulting activities include serving on the external advisory boards of three NIH Nathan Shock Centers of Excellence in the Biology of Aging, the centers at the University of Michigan, the University of Texas Health Center at San Antonio, and the University of Washington. The last of my experimental work was published in a 2003

issue of the *Am. J. Physiol.*

"I believe the study we published in 1992 in the *Journal of Gerontology: Biological Sciences* (47: B202-B208, 1992) is my most important work. It showed that a caloric restriction regimen, that markedly extends the life span, also markedly alters the characteristics of carbohydrate metabolism. That paper is the forerunner of the current vigorous research of leading investigators on the role of insulin signaling in the aging process.

"In regard to a choice anecdote, my PhD mentor, I. Lyon Chaikoff, used to tell us that on Yom Kippur we should not start new work but rather spend the day finishing the old work. He conveyed in that the dedication that a scientist should give to research. I have lived by that and accordingly have viewed Christmas in the same light. And that is the word of wisdom I would pass to my younger colleagues. I hope you find this of use."

**Marshall A. Lichtman** writes: "Thank you for your letter. What a nice idea to maintain records of a member's career.

"In answer to your question, 'What am I doing?'

"I retain my full-time faculty appointment at the University of Rochester School of Medicine and Medical Center as Professor of Medicine and of Biochemistry and Biophysics. I continue teaching in the Cell Structure and Function Course for first year students and in the Pathophysiology course for second year students. I also am a member of the James P. Wilmot Cancer Center although I no longer see patients.

"I am in the midst of co-editing the seventh Edition of *Williams Hematology*, a principal text in the field. I am the lead editor for this edition. I am editor-in-chief of *Blood Cells, Molecules, and Diseases*, an electronic journal published by Elsevier. I also serve currently on the editorial board of two other hematology journals.

"I am also Executive Vice President for Research and Medical Programs for The Leukemia & Lymphoma Society. The Society has three research programs: Career Development, Translational Research, and Specialized Center of Research Programs. We award \$42 million dol-

lars per year for new and continuing grants. As an architect of the Specialized Center of Research Program, it is particularly gratifying to be supporting ten, multimillion dollar centers exploring ways to improve the lives of those stricken with leukemia, lymphoma, or myeloma. I call this the 'two hundred years war' since Hodgkin's description of Hodgkin lymphoma in 1832. In addition, I also serve in various capacities as the Society's medical expert.

"Several recent books that have been written or edited with colleagues include a) *Hematology: Landmark Papers of the Twentieth Century*, published by Academic Press in 2000, b) *Williams Hematology Sixth Edition* published by McGraw-Hill in 2001, and c) a précis of the *Sixth Edition of Williams Hematology*, entitled *Williams Manual of Hematology Sixth Edition* published by McGraw-Hill in 2003.

"I continue to write and publish scientific articles. Several recent papers that have been authored or co-authored by me are 'The stem cell in the pathogenesis and treatment of myelogenous leukemia' in *Leukemia* 15:489, 2001; 'Early gene activation in chronic lymphocytic leukemia lymphocytes induced toward a plasma cell phenotype' in *Blood Cells, Molecules, and Diseases* 30:277, 2003; 'Familial (inherited) leukemia, lymphoma, and myeloma' in *Blood Cells, Molecules, and Diseases* 32:246, 2004; 'The relationship of patient age to the pathobiology of the clonal myeloid diseases' in *Seminars in Oncology* 31:185, 2004.

"My research work has evolved through several fields including: red cells, hemoglobin physiology, leukocyte membranes, marrow ultrastructure and cell trafficking, hematopoiesis, and the pathophysiology of hematological malignancies, especially the myelogenous leukemias.

"A paper of some practical value, still in use by diagnostic laboratories nearly 30 years later is 'Detection of mutant hemoglobins with altered affinity for oxygen: a simplified technique,' *Annals of Internal Medicine* 84:517, 1976. There was controversy about the role of lymphocyte potassium in the proliferative response of lymphocytes in the late 1960's and

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early 1970's and a paper that was the culmination of about a dozen published by our laboratory was helpful in clarifying the relevant events: 'The regulation of sodium and potassium transport in phytohemagglutinin-stimulated human blood lymphocytes,' *Journal of Clinical Investigation* 64:834, 1976. Our laboratory also made some contribution to understanding calcium transport in lymphocytes and monocytes and among several papers in this area are 'Calcium transport and calcium ATPase activity of human lymphocyte plasma membranes,' *Journal of Biological Chemistry* 256:6148, 1981 and 'Calcium exchange and ionized cytoplasmic calcium in resting and activated human monocytes,' *Journal of Clinical Investigation* 74:589, 1984. We are still working on our description of a transport abnormality unique to chronic lymphocytic leukemic cells: 'Decreased L-amino acid transport in chronic lymphocytic leukemic cells,' *Journal of Biological Chemistry* 257:9225, 1982 and 'Phorbol ester restores L-system amino acid transport in chronic lymphocytic leukemic lymphocytes,' *Journal of Clinical Investigation* 81:32, 1988.

"Of many interesting professional experiences, several notable ones include participation on several grant review groups including the Hematology Study Section of the National Institutes of Health, service as a Governor of the American National Red Cross and chair of the American Red Cross Holland Laboratories Scientific Advisory Committee, President of the American Society of Hematology, and Dean of the University of Rochester School of Medicine and Dentistry.

"I have had the good fortune to work with many fine colleagues, research fellows, graduate students, and superb technologists all of whom contributed to any accomplishments of note. Few experiences are as exhilarating as the weekly lab meeting with collaborators, fellows, and students to discuss research results, to debate the validity and significance of the experimental findings, and to determine the next round of experiments. Few experiences are as rewarding as having a patient with leukemia respond to

therapy and recover good health, often for too short a time. The ability to have one leg in the lab and the other in the clinic is extremely stimulating and it is unfortunate that medicine and science have become too complicated for that to be a frequent opportunity for physicians in training.

"There are many anecdotes about life in the medical center. When I was just starting my research career, I was given the opportunity to have my lab in the Department of Radiation Biology and Biophysics, née the Atomic Energy Project at the University of Rochester. The department had co-chairs, each an extraordinary figure: William Neuman, an expert in bone and calcium metabolism (the hard cell group) and Aser Rothstein, an expert in membranes of yeast and later blood cells (the soft cell group). They rotated the chair every two years. Both were outstanding scientists, outstanding human beings, and had superb leadership qualities. I was asked to join Aser and Bill's tennis group. The Medical Center had tennis courts within a stone's throw of the Department location so we would play at lunch-time, frequently. There were five regulars in the group. I made six. Four players were usually available on any day. One day Aser asked if I would play singles with him; the rest of the group was not available that day. He had an important meeting and could only play for 45 minutes. After forty minutes of play I was ahead 4 to 1; he should have left. I said, 'Aser, it is time for your meeting should we stop.' He was too competitive to stop with me ahead. He missed his meeting and beat me 7 to 5. I still am not sure whether I let up to avoid beating the department chair. Much more likely was his unwillingness to lose and his determination to win against a much younger upstart. The members of our tennis group other than Aser and Bill included Leon Miller, a distinguished biochemist and physiologist, Louis Hempelmann, a renowned radiobiologist and radiologist, Taft Toribara, an outstanding chemist, and author of the third most cited scientific paper ever published. He also was a national squash champion six times and played at the national level into his 80's. Taft had a tennis stroke that was unconventional and a reflection of his commitment to squash but his shots were

marked by pinpoint accuracy and angle shots rarely seen in tennis. I was lucky to be associated with these extraordinary scientists and gentlemen. When the Medical Center decided to build on the site of the tennis courts, the influence of these highly respected faculty lead to replacement courts being a part of the construction project. The school's founding Dean George Whipple was an advocate of regular exercise and we have had a gym, basketball court, and squash courts in the basement of the medical school and hospital complex for over 70 years."

## Letter to Beverly Bishop

**Julio Cruz** writes: "What a surprise! Thank you for remembering that I will reach you in 10 more years. If I remember well, the last time I and my wife saw you and your husband was in Anaheim, CA at Experimental Biology 1994. We still attend Experimental Biology meetings. In fact, I had a couple of abstracts submitted for EB in Washington DC this year. Thus, I am still trying to understand alveolar gas mixing, what I started in Buffalo in 1964.

"Briefly, I retired from the Medical College of Ohio at Toledo in 1998. They did not want me any more after 15 years of work in the Anesthesia Department. I left my medical practice and moved to Columbus, OH to join Ohio State University at the School of Allied Medical Professions. I became an Adjunct Professor. In 2000, I got a Fulbright Scholarship and went to Universidad Nacional de Piura. The next year, I became an Honorary Professor and now I teach adhonoren, the subject of Respiratory Physiology at the Department of Anatomy and Physiology, Faculty of Human Medicine. The title belongs to the Center for Teaching, Research and Services, a non-profit organization that I founded in 1998 in order to attract young people to the field of science. So far, I got two new scientists, a pharmacologist and a molecular pathologist. This organization, CEIS, is located within the university campus. more details are available at <http://www.ong-ceis.org.pe>.

"Now my two great teachers are lost. I wish I could show them my progress in the field of alveolar gas mixing." ❖

## Fetal Growth and Development

Richard Harding and Alan D. Bocking (Editors). New York: Cambridge Univ. Press, 2001, 284 pp., illus., index, \$28.95.  
ISBN: 0-521-64543-3.

Fetal growth and development has always held the interest of scientists and clinicians concerned with maternal child health. The complex processes of cellular growth, differentiation and organogenesis have long been a fertile field of investigation into human development with obvious links to human birth defects. The interest in this field became heightened several years ago by the publication of work that the fetal environment can not only have short term consequences for infant growth, but have long term consequences on the development of illnesses years later such as hypertension and diabetes. Fetal physiology and development are difficult concepts of study, principally because they are not static. Cells are proliferating, differentiating and coming together to form a functional organ in preparation for post-natal life.

Then again to begin the next phase of development.

Harding and Bocking have made a tremendous contribution to the field with the publication of "Fetal growth and development." This relatively slim volume is a systems approach to fetal development. The chapters on specific organ systems are written by distinguished scientists in the field and present a comprehensive and lucid overview of the critical aspects of development. The authors detail the development and physiology of the human fetus and supplement this information with the large amounts of information from animal studies. Where animal and human fetal physiology differ, these differences are elegantly described. Importantly, the authors include, where appropriate, references to the enormous contributions of molecular biology to the understanding of the mechanisms of fetal growth. This provides a much more complete picture for the reader and, thus, combines the key elements of development: differentiation and physiology in one source.

An important aspect of this book is the inclusion of chapters describing the maternal changes of pregnancy

and parturition. These often overlooked areas are critically important for normal fetal growth and development. These excellent chapters provide a comprehensive, full circle approach to the analysis of fetal growth and development.

Of note is the liberal use of data tables and graphs to illustrate key physiologic features. My only detractor, and a minor one, in an otherwise excellent book is that the diagrams of tissue structure were often relatively flat line drawings in black and white. The use of more detail in these illustrations would be very helpful conveying the intricacies of tissue structure.

Harding and Bocking have done a considerable service to the field in compiling this timely primer. Although intended as a guide for undergraduate and graduate students, I feel it has a much broader appeal and will serve as a source to introduce this field to a broader audience of new clinicians, scientists and students. ❖

Allen Everett  
Johns Hopkins Hospital, MD

## Books Received

*Applied Mathematical Models in Human Physiology.*

Johnny T. Ottesen, Mette S. Olufsen, and Jesper K. Larsen.  
Philadelphia, PA: SIAM, 2004,  
298 pp., illus., index, \$71.00.  
ISBN: 0-89871-539-3.

*Body Heat: Temperature and Life on Earth.*

Mark S. Blumberg.  
Cambridge, MA: Harvard University Press, 2002, 240 pp., illus., index, \$15.95.  
ISBN: 0-674-01369-7.

*Dynamics of the Vascular System.*

John K-J Li.  
Series on Bioengineering &

Biomedical Engineering-Vol.1.

River Edge, NJ: World Scientific Publishing Co., Inc., 257 pp., illus., index, \$46.00.  
ISBN: 981-02-4907-1.

*Parkinson's: Everything You Need to Know.*

David A. Grimes.  
Buffalo, NY: Firefly Books, 2004,  
206 pp., illus., index, \$16.95.  
ISBN: 1-55297-890-7.

*The Pericardium.*

Ralph Shabetai.  
Norwell, MA: Kluwer Academic Publishers, 2003, 357 pp., illus., index, \$147.00.  
ISBN: 1-4020-7639-8.

*The Physiology of Truth: Neuroscience and Human Knowledge.*

Jean-Pierre Changeux. Translated by M.B. DeBevoise.  
Cambridge, MA: Harvard University Press, 2004, 324 pp., illus., index, \$45.00.  
ISBN: 0-674-01283-6.

*What Animals Want: Expertise and Advocacy in Laboratory Animal Welfare Policy.*

Larry Carbone.  
New York: Oxford University Press, 2004, 291 pp., illus., index, \$35.00.  
ISBN: 0-19-516196-3.



## Physiology of the Graafian Follicle and Ovulation

R.H.F. Hunter

New York: Cambridge University Press, 2003, 397 pp., illus., index, \$90.00

ISBN: 0-521-78198-1

This text is an excellent integration of the anatomy, histology and physiology of the Graafian follicle. The first Chapter was devoted to the history of earliest recorded studies on the ovary from 300 B.C. The author has concisely described the myths and false claims that were made in those early days. He has also given credit to those who developed remarkable concepts to understand the process of reproduction (e.g. unilateral ovariectomy). There is a good progression in dates and recordings of milestones in the history of reproductive research. The list of selected volumes concerned with ovarian function in mammals that were published in the twentieth century adds good flavor to this chapter. In Chapter 2, the reader's attention is drawn to the fact that female sex determination is an active process that is genetically regulated. The physiological events leading to the development of a competent oocyte from a germ cell were summarized, and the factors prompting recruitment of follicles from a pool of primordial follicles and the relationship between an oocyte and its surrounding cumulus cells were adequately discussed. Chapter 3 highlights the essential features of vascularization of the ovary. The relationship between ovarian and uterine vasculature were detailed in light of counter-current exchange of bioactive molecules, and the consequences of such an exchange for the regulation of ovarian function were described. The latter part of this chapter dwelt on two important aspects; the temperature gradient within the ovary and the reasons for a large Graafian follicle. In Chapter 4, the physical nature, chemical composition and formation of follicular fluid and its role in capacitation and acrosomal reaction were addressed. Due to the large amount of information on this topic, the author has resorted to presenting important aspects in tabular format. The author stressed the important influence that the chemical and hormonal environment within the follicle

has in determining the developmental potential of its oocyte, a caution to investigators who study the biology of oocyte without considering the potential role of its surrounding fluid. Chapter 5 dealt with the types of steroid, peptide and protein hormones produced by the follicle, and the regulation of their synthesis and functions in the ovary. Importantly, recent information about the roles of endorphins and enkephalins, thermimaging and nitric oxide were included. Chapter 6 was devoted to the current understanding of the process of follicular recruitment, selection and dominance. Also, the key roles of the oocyte in the regulation of cumulus cell function and follicle atresia were discussed. In Chapter 7, the roles of lesser known regulators of reproductive processes, such as GnSAF (gonadotropin surge attenuating factor), MPF (metaphase promoting factor), and MAS (meiosis activating substance) were discussed. Chapter 8 describes the recruitment of immune cells and the roles of their products on ovarian function (especially ovulation). One important message of this chapter is the fact that the process of ovulation following the gonadotropin surge is complex and is controlled by multiple factors. Hence, no single factor or class of factors may be considered as its sole regulator. The fate of follicular fluid following ovulation and the potential roles of a suspension of ovary-derived somatic cells in the fallopian tube were considered in Chapter 9. The next two Chapters (10 and 11) are directed towards the topics of anovulation and induction of ovulation. The genetic determinants of anovulation and their associated syndromes were summarized. The final Chapter is an excellent summary of the book, a recollection of the salient features of the physiology of the Graafian follicle.

The decision to focus on a well-defined aspect of ovarian physiology is an excellent one. The physiology of the Graafian follicle was handled in a manner that will benefit both student and teacher alike, especially those with interest in comparative aspects of ovarian function. The text contains few controversial findings in the field. When they occur, the author made the effort to provide clarifications for possible sources or causes of conflicting results and in other instances, the author provided personal opinion supported by

objective reasoning. This is very good, particularly for students.

The author covered a broad range of topics ranging from macroscopic and microscopic structure of the ovary, development of fetal ovary, development of follicles in the adult ovary, hormones and bioactive products of the ovary, ovulation and fate of the contents of the Graafian follicle following ovulation. In addition to these, the text also contained significant information about topics usually ignored such as ovarian lymphatics and temperature gradients. The summary section on each chapter is informative and thought provoking.

The handling of biochemistry and cell biological aspects of Graafian follicle function was not as strong as the handling of its physiology. This is probably intentional because of the scope of the text and presumably in order to focus the attention of the reader on whole tissue. The author introduced the topics anovulation and induction of ovulation, but some important and relevant information was not provided. Again, perhaps due to the scope of the text since the information on these areas is manifold and complex given the diversity in species.

The author made an excellent effort in the selection of tables, graphs, drawings, photomicrographs, histological and electron micrographical figures that enhance the understanding of the text and are very helpful in getting important information and concepts across to the reader. The use of figures, drawings and tables from original articles, especially of the earliest investigators, is a strong point of this work. On a few occasions, letters or symbols on the drawings or micrographs were not explained in the legends. However, this omission does not prevent the reader from following the text.

One major accomplishment of the author is the citation of the original articles and the significance of contributions of the earliest investigators in the field. The monograph stressed the history of the development of various areas and concepts in the field. ♦

*Augustine T. Peter  
Purdue University, IN*

*Elikplimi K. Asem  
Purdue University, IN*

## George Sachs Earns International Award for Medical Research

**George Sachs**, professor of medicine and physiology at the David Geffen School of Medicine at UCLA, is one of five scientists who will be presented with the 2004 International Awards by the Toronto-based Gairdner Foundation.

Considered one of the most prestigious honors in medical science, the award recognizes top researchers whose work has illuminated understanding of cellular function, reduced disease and enhanced the quality of human life. In the past, 61 of the 269 Gairdner winners have later earned the Nobel Prize.

In announcing the award, John Dirks, president of the Gairdner Foundation, praised Sachs as an ideal bench-to-bedside clinician.

“Dr. Sachs has made monumental contributions to improving the care of patients with peptic ulcer disease, gastroesophageal reflux disease, esophageal cancer and gastric cancer,” said Dirks. “Clinical therapies based on his research have led to a dramatic reduction in death and disease.”

In addition to holding the Wilshire Chair in Medicine at the David Geffen School of Medicine at UCLA, Sachs is

a staff physician at the VA of Greater Los Angeles Healthcare System in West Los Angeles. He earned his doctorate in biochemistry and medical degree from the University of Edinburgh.

The 2004 winners will receive their awards and a \$30,000 honorarium at a gala dinner October 21 in Toronto.

Established in 1957 by Toronto businessman James Gairdner, the Gairdner Foundation presented its first awards in 1959. ❖

## APS Members Elected to American Academy of Arts and Sciences

The American Academy of Arts and Sciences announced the election of 178 new Fellows and 24 new Foreign Honorary Members to Academy membership. The 202 men and women are world-renowned leaders in scholarship, business, the arts, and public affairs.

Three APS members were elected to the American Academy, two of them as Foreign Honorary Members. They include Peter L. Strick, University of Pittsburgh, who was elected to the

Neurosciences, Cognitive Sciences and Behavioral Biology Section of AAAS, **Sten Grillner**, Professor of Neurophysiology and Behavior, Karolinska Institute, Sweden and **Manuel Martínez-Maldonado**, President and Dean, Ponce School of Medicine, Puerto Rico.

The Academy was founded in 1780 “to cultivate every art and science which may tend to advance the interest, honor, dignity, and happiness of a

free, independent, and virtuous people.” The unique structure of the American Academy allows the Academy to conduct interdisciplinary studies on international security, social policy, education, and the humanities that draw on the range of academic and intellectual disciplines of its members. The current membership of over 4,500 includes more than 150 Nobel laureates and 50 Pulitzer Prize winners. ❖

## APS Members Elected to National Academy of Arts and Sciences



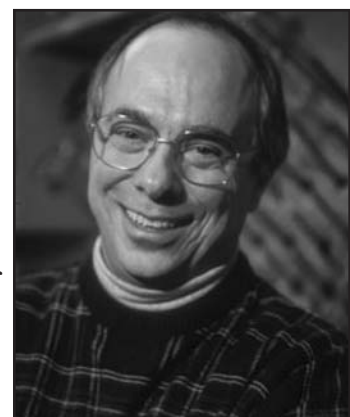
Riitta Hari

The National Academy of Arts and Sciences announced the election of 72 new fellows and 18 foreign associates for 2004. Among those elected are two APS members: **Kevin Campbell** and **Riitta Hari**.

Campbell is an investigator at the Howard Hughes Medical Institute; and Roy J. Carver Professor and chair, department of physiology and biophysics, and professor, department of neurology, Roy J. and Lucille A. Carver

College of Medicine, University of Iowa, Iowa City.

Hari is the director, Advanced Magnetic Imaging Centre, and head, Brain Research Unit Low Temperature Laboratory, Helsinki University of Technology (Finland).



Kevin Campbell

## Nephrologist Robert Alpern Named Dean of Yale School of Medicine

**Robert Alpern** has been appointed as dean of the Yale School of Medicine.

Alpern, who assumed the deanship at Yale June 1, was the Ruth W. and Milton P. Levy, Sr. Chair in Molecular Nephrology at Southwestern. He joined Southwestern as chief of nephrology in 1987 and became dean in 1998. He served his internship and residency in internal medicine at Columbia University and held a postdoctoral fellowship in nephrology and renal physiology at the Cardiovascular Research Institute at the University of California, San Francisco, where he also was an assistant professor of medicine from 1982 to 1987.

Alpern's research has focused on the regulation of kidney transport proteins. In his early years his work

helped to define the mechanisms by which the kidney transports acid. Subsequently his research has focused on the mechanisms by which kidney cells sense excess acid and initiate a signaling cascade that alters the expression, cellular location, and function of many proteins in the cell, resulting in enhanced acid transport and urinary excretion.

Nationally, Alpern has been elected to the American Society of Clinical Investigation and the Association of American Physicians, and now serves on the Advisory Council of the National Institute of Diabetes and Digestive and Kidney Diseases. He was on the Council of the American Society of Nephrology from 1995 to 2002 and served as its president in

2001. He has served as editor and been on the editorial boards of numerous journals, including the *Journal of Clinical Investigation*, the *American Journal of Physiology* and the *Annual Review of Physiology*.

As dean, Alpern has had an outstanding record in developing the scientific strength of the faculty while improving the educational program and increasing the quality and volume of clinical services.

Alpern is married to APS Member **Patricia Preisig**, a professor of internal medicine at Southwestern Medical Center. They have two children, Rachele and Kyle. ❖

## Dzau Duke's Chancellor for Health Affairs

**Victor J. Dzau**, chairman of the Department of Medicine, physician-in-chief and director of research at the Brigham and Women's Hospital, will become Duke University's next chancellor for health affairs. Dzau, 57, will succeed Ralph Snyderman, who announced in March 2003 his plans to step down at the end of June 2004 after 15 years as the universi-



**Victor Dzau**

ty's senior medical official. The chancellor for health affairs also serves as the president and chief executive officer of the Duke University Health System (DUHS). ❖

**Anupam Agarwal** has joined the Department of Medicine, Division of Nephrology, University of Alabama at Birmingham, Birmingham, AL. Agarwal was previously affiliated with the Department of Medicine, University of Florida, Gainesville, FL.

**John T. Barron** has affiliated with the Department of Medicine, Division of Cardiology, Loyola University Stritch School of Medicine, Maywood, IL. Barron was formerly associated with the Department of Medicine, Section of Cardiology, Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL.

**Lisa M. Harrison-Bernard** is presently associated with the Department of Physiology, Louisiana State University Health Science Center, New Orleans, LA. Harrison-Bernard was previously affiliated with the Department of Physiology, Tulane University Health Science Center, New Orleans, LA.

**Justin S. Catches** has currently a student affiliation with Northwestern University, Pensacola, Florida. Catches was formerly associated with the Department of Biology, Georgia Southern University, Statesboro, GA.

**Brahim Chaqour** has joined the Department of Anatomy and Cell Biology, SUNY Downstate Medical Center, Brooklyn, NY. Chaqour had been affiliated with the Department of Anatomy and Cell Biology, University of Pennsylvania, Philadelphia, PA.

**Pernille Bjorg Hansen** is now Assistant Professor, Department of Physiology and Pharmacology, University of Southern Denmark, Odense, Denmark. Formerly, Hansen had been a Postdoctoral Fellow with NIDDK, NIH, Bethesda, MD.

**Naoyuki Hayashi** has recently accepted the position of Associate

Professor, Kyushu University, Institute of Health Science, Fukuoka, Japan. Prior to his new position, Hayashi was affiliated with Osaka University, School of Health and Sport Sciences, Osaka, Japan.

**James M. Reynolds** is currently the Vice President for Academic Affairs, Midland Lutheran College, Fremont, NE. Reynolds had been associated with the Department of Pharmacology, College of Pharmacy and Health Science, Drake University, Des Moines, IA.

**Gary J. Schwartz** presently is Associate Professor, Department of Medicine, Albert Einstein College of Medicine, Bronx, NY. Schwartz had been affiliated with the Department of Psychiatry, Bourne Lab, Cornell University Weill Medical College, White Plains, NY. ❖

## Postdoctoral Positions

**Postdoctoral Position:** A postdoctoral position is available in the Department of Pathology at University of Washington School of Medicine to conduct projects funded by an NIH grant and other sources. The research addresses molecular pathogenesis of Parkinson's disease, particularly on the contribution of environmental toxicants to the disease. Experimental approaches involve quantitative proteomics (e.g. ICAT and 2-D gel followed by mass spectrometry and database search), rodent PD model, microdialysis, laser capture, and primary neuron/glia cell culture, cell transfection and gene silencing, and etc. Highly motivated individuals with strong background in molecular biochemistry and neurobiology will be considered. Salary is commensurate with experience and according to the current NIH postdoctoral levels; full benefits are available. Applicants should have PhD and/or MD degree and send their curriculum vitae and names of three references via email to: Jing Zhang, Assistant Professor of Pathology and Ophthalmology, University of Washington, Campus Box 359635, 325 9th Ave, Seattle, WA 98104-2499; Email: zhangj@u.washington.edu.

**Postdoctoral Position:** Regulation of ciliary function in the airways. An NIH-funded postdoctoral position is available for a recent doctorate interested in the function of cilia in the airways. The successful candidate will join a group of airway cell biologists in the Cystic Fibrosis/Pulmonary and Treatment Center, University of North Carolina, that is studying human respiratory cilia and primary ciliary dyskinesia (PCD) using genomic, proteomic, and physiologic approaches. One aspect of the research will use high-speed video microscopy to study ciliary activity and waveform patterns from PCD patients exhibiting a broad range of axonemal abnormalities. Another will use high-speed video microscopy concurrent with fluorescent imaging to measure  $Ca^{2+}$  and other cellular

parameters, to probe dysfunctions in the regulation of ciliated cells in PCD. For more information about the laboratory and group, visit, <http://www.med.unc.edu/cystfib/CFcent.htm>. If interested, please forward a Curriculum Vitae, contact information for three references, and a statement of career interests and goals to C\_Wm\_Davis@med.unc.edu.

**Postdoctoral Scientists:** The Biotechnology and Bioengineering Center at the Medical College of Wisconsin seeks postdoctoral scientists in computational biology and bioengineering to participate in collaborative projects aimed at developing mechanistic understandings of genetic, proteomic, and metabolic processes acting in the initiation, progress, and therapy of certain diseases. Opportunities exist for research in simulation and analysis of data on cardiovascular mass transport and metabolism, computational analysis of large-scale biochemical networks, and other projects. Applicants should have a PhD with training in biophysics, bioengineering, or related fields. A background in applied mathematics and/or computational science is essential. Interested candidates should contact Daniel Beard at [dbeard@mcw.edu](mailto:dbeard@mcw.edu). Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, WI 53226; <http://www.mcw.edu/hr>. [EOE M/F/D/V]

**Postdoctoral Position:** An NIH-funded postdoctoral position is available immediately in the laboratory of Thomas C. Resta to study influences of chronic hypoxia-induced pulmonary hypertension on vasoreactivity and vascular smooth muscle  $Ca^{2+}$  signaling. A variety of experimental approaches are utilized including dimensional analysis of isolated, pressurized small pulmonary arteries, ratiometric calcium imaging, laser scanning confocal microscopy; electrophysiology, isolated perfused lungs and molecular biology. A background in physiology is desirable. Salary is commensurate with experience and based on current NIH postdoctoral levels. Applicants should have a PhD or MD degree and send a cover letter,

CV and names of three references to: Thomas C. Resta, PhD, Vascular Physiology Group, Department of Cell Biology and Physiology, University of New Mexico Health Sciences Center, 915 Camino de Salud NE, MSC08 4750, Albuquerque, NM 87131-0001; Email: [tresta@salud.unm.edu](mailto:tresta@salud.unm.edu); Home Page: <http://hsc.unm.edu/som/cbp/resta.shtml>.

**Postdoctoral Position.** An NIH-funded Postdoctoral Position is available immediately in the laboratory of Dr. Vera A. Golovina to study  $Ca^{2+}$  signaling in primary cultured and acutely isolated cortical astrocytes, particularly during cell activation with cytokines (interleukin-1 $\beta$ , S100 $\beta$ ), and amyloid  $\beta$ -protein (A $\beta$ ) that are thought to play a major role in the pathogenesis of Alzheimer's disease. Experimental approaches include high resolution digital (fluorescence) microscopy for  $Ca^{2+}$  imaging, immunocytochemistry, immunoblotting, RNAi, and use of transgenic animals. Experience in  $Ca^{2+}$  imaging is highly desirable. Ph.D. is required. Applicants should have training in cellular physiology and, preferably, in Ca signaling. For information about the Department of Physiology at University of Maryland, Baltimore, and the current research program, see faculty pages at <http://physiology.umaryland.edu/>. Salary is commensurate with experience and according to the current NIH postdoctoral levels; full benefits are available. Please send curriculum vitae and names of three references (with email addresses and telephone numbers) via email to: Dr. Vera A. Golovina, Assistant Professor of Physiology, University of Maryland, Baltimore, 655 West Baltimore Street, Baltimore, MD 21201; email: [vgolovin@umaryland.edu](mailto:vgolovin@umaryland.edu).

**Postdoctoral Positions:** Several EPA-funded, North Carolina State University-affiliated postdoctoral positions are available immediately within the Particulate Matter (PM) Research Program at the US Environmental Protection Agency. The PM Research Group is a multidisciplinary group of scientists and engineers,

with expertise ranging from the cellular/molecular level to the awake intact animal. Areas for research include: *a*) Potential air pollutant-induced neural pathways and mechanisms linking pulmonary irritant and/or inflammatory responses with cardiac rhythm disturbances in rodent models; *b*) Toxicogenomic and Laser Capture Microdissection (LCM) and functional genomic analyses of lungs and airways from rats exposed to pollutants; *c*) Role of PM-associated oxidative/nitrosative stress in development and progression of atherosclerotic and cardiovascular disease; or *d*) Cardiopulmonary physiology responses associated with activation of sensory afferent receptor pathways in rodents exposed to PM-related irritants. Salary will be commensurate with experience and based on current NCSU postdoctoral levels. Applicants should have a PhD, DVM, or MD degree and must be a US citizen or Permanent Resident. Send a cover letter, CV, and names of three references to: Kenneth B. Adler, PhD, College of Veterinary Medicine, Department of Molecular Biomedical Sciences, NC State University, 4700 Hillsborough Street, Raleigh, NC 27606.

**Postdoctoral Position.** An NIH-funded postdoctoral position is available in the laboratory of Dr. Steven A. Weinman to study the role of mitochondria in the pathogenesis of Hepatitis C. This research is a component of a multidisciplinary Hepatitis C research effort involving molecular virology, cell biology, biochemistry and cell physiology approaches. A background in mitochondrial electron transport, apoptosis, cell signaling, or proteomics is desirable. Salary is commensurate with experience and based on current NIH postdoctoral levels. Applicants should have a PhD or MD degree and send a cover letter, CV and names of three references to: Dr. Steven Weinman, MD, PhD Department of Neuroscience and Cell Biology, University of Texas Medical Branch, Galveston, TX 77555-0641; Email: [sweinman@utmb.edu](mailto:sweinman@utmb.edu).

**Postdoctoral Fellowships.** Postdoctoral fellowships in translational research on aging in the areas of cerebrovascular physiology, neurodegenerative disease or clinical epidemiology, are now available for **July 1, 2004** at Beth Israel Deaconess Medical Center, Boston, MA. MD or PhD with US citizenship or green card required. Send cover letter expressing career goals and interest in aging; and resume to: [vnovak@bidmc.harvard.edu](mailto:vnovak@bidmc.harvard.edu) or Vera Novak, PhD, Gerontology Division, 110 Francis St. #1A, Boston, MA 02215.

**Postdoctoral Position.** Applications are invited for a postdoctoral position in the Vascular Physiology Group at the University of New Mexico. This position is funded for three years at NIH postdoctoral salary levels. Candidates will participate in ongoing studies in a rat model of sleep apnea-induced hypertension examining cellular and molecular mechanisms of augmented endothelin vasoconstriction with increased susceptibility to air pollution-induced vascular events. Approaches employed include ratio-metric and dimensional analysis of isolated, pressurized arterioles; molecular biology studies; biochemical assays; and radio telemetry hemodynamic studies. Cardiovascular or molecular physiology background is preferred and a PhD or MD required. Candidates should send a CV, brief statement of research interests and the names of three references to: Nancy L. Kanagy, PhD, Vascular Physiology Group, Dept of Cell Biology & Physiology, University of New Mexico Health Sciences Center, MSC 08-4750, Albuquerque, NM 87131; Website: <http://hsc.unm.edu/som/cbp/kanagy.shtml>; Email: [nkanagy@salud.unm.edu](mailto:nkanagy@salud.unm.edu).

**Postdoctoral Research Position.** Tulane University Medical School, Section of Gastroenterology has an NIH funded position available for a postdoctoral fellow interested in the pathogenesis of reflux esophagitis and Barrett's esophagus. Investigations are focused on studies of the structure and function of squamous and

Barrett's epithelium, both in vitro and in vivo, and utilize ion transport techniques, e.g., Ussing chambers, microelectrodes, fluorescence microscopy; and morphology. If interested, send a CV and two letters of recommendation to Roy C. Orlando, MD, Tulane University HSC (SL-35), 1430 Tulane Avenue, New Orleans, LA 70112; Email: [rorlando@tulane.edu](mailto:rorlando@tulane.edu). Position will remain open until a qualified candidate is selected. Minorities and women are encouraged to apply. [AA/EEO]

## Research Positions

**Research Assistant Professor, Department of Anesthesiology:** PhD or equivalent degree required with a minimum of one year of postdoctoral experience. Independent research skills are necessary in the molecular pathology of oxidative stress in the lungs or other organs including a demonstrated ability to perform real time PCR, *in situ* hybridization, and immunochemical localization studies in fixed tissue. Please send a written letter of inquiry and complete curriculum vitae to Dr. C.A. Piantadosi, Professor of Medicine and Director Center for Hyperbaric Medicine, Box 3823, Duke University Medical Center, Durham NC 27710.

**Assistant/Associate Professor, Physiology:** Mercer University School of Medicine, Macon, GA invites applications for a tenure-track faculty position in medical physiology at the Assistant/Associate Professor level. Applicants should have a PhD (or the equivalent) with at least two years of postdoctoral training. Our goal is to recruit a faculty member with broad, system-based training in medical physiology. Preference will be given to individuals with interest and experience in cardiovascular, renal, or pulmonary physiology. The successful candidate will participate in an integrated, multidisciplinary, problem-based medical education program that is organ systems-based. A strong commitment to excellence in educating students and developing medical cur-

riculum is expected. The successful candidate will be expected to establish independent and collaborative research programs that will attract extramural funding. Applicants with molecular, cellular, or systems-focused research interests are encouraged to apply. Interested candidates must apply online at website: <http://www.mercerjobs.com> and complete a brief online application and attach the following: (1) current curriculum vitae, (2) summary of teaching experience, including a statement of teaching goals and objectives, (3) statements of research goals and objectives, and (4) names and contact information for three references. [AA/EOE/ADA]

**Assistant Professor-Molecular Physiologist.** The Dept. of Physiology of the University of Maryland School of Medicine has several tenure-track faculty openings available at the Assistant Professor level. Candidates must have completed at least two years of postdoctoral training and developed an innovative research program employing cell biological, molecular, or genetic techniques to study the physiology or pathophysiology of the cardiovascular, endocrine, nervous, renal, or reproductive systems. Responsibilities include the establishment of an independent, funded research program and participation in team-taught graduate and medical student courses. Attractive startup packages, newly renovated laboratory space, and strong proteomics, Biacore, transgenic, genomics and imaging core facilities are offered. Additional information about the department and its faculty can be obtained at: <http://physiology.umaryland.edu>. Please submit before June 15th your curriculum vitae, a brief description of your proposed research program and career goals, and the names, addresses, tele-

phone numbers, and e-mail addresses of three references to Scott Thompson, PhD, Search Committee Chair, Email: [facultysearch@som.umaryland.edu](mailto:facultysearch@som.umaryland.edu).

**Anatomy & Physiology Probationary Lecturer** to teach lectures and coordinate laboratories in Anatomy & Physiology courses for health science and nursing majors. Qualified individuals must hold at least a Master's degree, with a Doctoral degree preferred, demonstrate expertise in the subject area, have at least two years teaching experience and the ability to effectively manage and communicate with students in large-enrollment classes. Please send a resume, a statement describing teaching experience and future goals and the names and contact information for three references we may contact, who can attest to your qualifications for this position, to: Chair, Anatomy and Physiology Search Committee, Department of Biological Sciences, University of Wisconsin-Milwaukee, P.O. Box 413, Milwaukee, WI 53201. Applications will be reviewed starting May 17, 2004 and continue until the position is filled. To obtain more specific information about this position, the department or UWM go to <http://www.uwm.edu/Dept/Biology/>. [AA/EEO]

**Research Assistant Professor.** Tulane University Medical School, Section of Gastroenterology is seeking a PhD or MD/PhD at the Research Assistant Professor level (non-tenure track) with an interest in translational research relating to the pathogenesis of reflux esophagitis and Barrett's esophagus. Expertise with cell and/or molecular biology techniques is desired to investigate the structure and function of esophageal squamous

epithelium and Barrett's epithelium. Preferred candidates should have a track record of publication and demonstrated skills in epithelial research. If interested, send a CV and 2 letters of recommendation to Roy C. Orlando, MD, Tulane University HSC (SL-35), 1430 Tulane Avenue, New Orleans, LA 70112; email: [rorlando@tulane.edu](mailto:rorlando@tulane.edu). Position will remain open until a qualified candidate is selected. Minorities and women are encouraged to apply. [AA/EEO]

**Research Assistant/Technician:** A full-time position as Research Assistant/Technician with an interest in human integrative physiology is open within the Laboratory of Human Cerebrovascular Physiology, in the Faculties of Medicine and Kinesiology at the University of Calgary. Research within the laboratory aims to better understand the physiological mechanisms by which the arterial blood gases regulate cerebral blood flow in young healthy humans, along with the age-related alterations in this regulation. Our research also aims to better understand the inter-relationships between the cerebrovascular, respiratory and cardiovascular systems. This person filling this position will be responsible for overseeing the daily operation of the research laboratory, including ordering the supplies and gases, maintaining and repairing specialized equipment such as the mass spectrometer, blood gas/electrolytes analyzer and for analyzing calibrating gases for the experiments. Duties also involve computer programming, general support and carrying out the ongoing development of the data acquisition and analysis software and mathematical models used in our studies, administering and maintaining the local network server and workstations, and providing general day-to-

## Advertise your job vacancy to over 11,000 members and subscribers!

Ads are accepted for either positions available or positions wanted under all categories. The charge is only \$75. All ads are also posted on the APS Career Opportunity Web page upon receipt for a three month period.

If you would like to have your ad listed in *The Physiologist* or on the APS Career Opportunities Web page (<http://www.the-aps.org/careers/careers1/posavail.htm>),

the following items are needed: a copy of the ad, the name of a contact person, and either a purchase order number, credit card number (with expiration date and name of cardholder) or billing address. Send the information to Linda Dresser (Email: [ldresser@the-aps.org](mailto:ldresser@the-aps.org); Tel: 301-634-7165; Fax: 301-634-7241).

day computing- and network-related assistance and advice to members of the research group. The experimental component involves helping other members of the research group with data collection, data analysis, learning the skills and the techniques necessary to carry out experiments, and preparation of manuscripts for submission to peer-reviewed journals. This position reports directly to the Principal Investigator of the research group. More information on the activities of the laboratory can be obtained from the website: <http://www.fp.ucalgary.ca/PoulinLab>. **Qualifications/Expertise:** An undergraduate or master's degrees in a related field of study an asset; Current Standard First Aid, Phlebotomist, WHMIS and CPR Basic rescuer certifications (or willingness to complete training courses); Significant experience in Information Technology, computer programming, software development, web-based applications; Good working knowledge of Microsoft Office applications (Word, Excel, Access, Powerpoint); and high proficiency in the understanding, application and the use of the UNIX operating system. Experience in budget and project management. Calgary is a vibrant, multicultural city (population ~1,000,000) near the Rocky Mountains, Banff National Park, and Lake Louise (<http://www.visitor.calgary.ab.ca>). Candidates should send (post or email accepted) a curriculum vitae, and the names and email addresses of three references to: Dr. Marc J. Poulin, Department of Physiology & Biophysics, Faculty of Medicine, University of Calgary, HMRB-212, 3330 Hospital Drive NW, Calgary Alberta T2N 4N1 Canada. The deadline for applications is **June 30, 2004**.

**Research Positions:** Research positions are immediately available in the Section of Gastroenterology, Department of Medicine at the Robert C. Byrd Health Sciences Center of West Virginia University. Applications are invited for one to two positions at the Research Senior Instructor level and three to four positions for postdoctoral fellows. Candidates should hold PhD, DVM or MBBS degree. Applicants for

the Research Senior Instructor position should have graduate and post-graduate background in physiology, cell biology or molecular biology. Expertise in molecular biology techniques, transport physiology and intracellular signaling is necessary. Applicants for post-doctoral positions should have graduated from physiology, cell biology, biochemistry or molecular biology programs. Expertise in molecular biology techniques, transport physiology and intracellular signaling is desirable. All applicants must be fluent in written and spoken English. Submit curriculum vitae and names with address of three references to: Dorothy Pesyna, Manager, Department of Medicine, Robert C. Byrd Health Sciences Center, West Virginia University, PO Box 9156, Morgantown, WV 26506; Email: [dpesyna@hsc.wvu.edu](mailto:dpesyna@hsc.wvu.edu); Tel.: 304 293-6019; Fax: 304 293-2710. [AA/EEO]

**Research Fellowship Position:** Pulmonary/Critical Care for Proteomics Studies, Cardiovascular Research Institute, University of California at San Francisco. We are seeking fellowship applicants for research training in proteomics with application to acute lung injury, beginning September 1, 2004. The Cardiovascular Research Institute and the Division of Pulmonary and Critical Care Medicine is seeking fellowship applications interested in translational studies of the role of proteomics in acute lung injury. This one or two year fellowship will provide experience in discovery proteomics, working closely with a UCSF Proteomics facility, as well as Dr. Matthay's acute lung injury research group. Prior research experience in protein assays would be of value, but not necessarily required. Interested individuals should submit a letter and a CV to: Michael A. Matthay, MD, UCSF, 505 Parnassus Ave., Moffitt Hospital, M-917, San Francisco, CA, 94143-0624. Email: [mmatt@itsa.ucsf.edu](mailto:mmatt@itsa.ucsf.edu).

**Drug Discovery Scientist/Senior Scientist** #0401887, Johnson & Johnson Pharmaceutical Research &



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Development, NAM-US-PA-Spring House. Small-Company Environment/Big-Company Impact. Pharmacology research position in the newly established Inflammation & Pulmonary Diseases Team. Responsible for independently designing, planning, prioritizing and conducting laboratory research experiments to support inflammation and pulmonary disease research efforts and contribute to the discovery of new drug products. Maintain written records of work in the form of notebooks, technical reports and protocols. Maintain constructive contacts with individuals within or outside company to solve problems. Maintain updated scientific literature related to project fields. Participate in scientific meetings and produce abstracts as well as scientific manuscripts for peer-reviewed journals as required. Qualifications: PhD/DVM or equivalent with 2+ years experience of demonstrated expertise in pulmonary physiology, immunology, tissue remodeling, and/or fibrosis research required. Ideal candidates must have expertise in vivo inflammatory/pulmonary disease models, with experience in one or more of the following areas preferred: in vitro pharmacology, cell/molecular biology, receptor pharmacology, cellular physiology, signal transduction, assay development, and/or protein biochemistry. Hands-on experience with in vivo disease models required. Must have previous pulmonary research experience. Strong oral presentation, writing, computer and data management skills required. Leadership or supervisory experience is a plus. It is essential that candidates be self-motivated, organized, and possess strong scientific problem solving skills in order to

excel in an environment fostering a cooperative team approach to science. As a valued team member, you will receive a competitive salary and great benefits including medical/dental, a 401(k), a pension plan and a comprehensive wellness program. If interested, please apply directly on-line at our web site <http://www.jnj.com/careers> noting Req. Code 0401887. Johnson & Johnson has a strong commitment to diversity and welcomes applications for all individuals. [EOE M/F/D/V]

**Research Fellowships.** Research Fellowships for qualified PhD, MD or equivalent in Molecular Medicine at the Institute for Environmental Medicine at the University of Pennsylvania. Programs are available immediately for US citizens/permanent residents in an NIH funded program. Candidates have a choice of 10 established laboratories in several departments. The focus of the research is transcription/translational control, gene therapy, protein trafficking, exo/endocytosis, developmental biology, cell membrane receptors, cell signaling, immunotargeting, oxidant injury, and related areas. We provide full benefits and stipend supplementation. Website: <http://www.med.upenn.edu/ifem/pep.htm>. Applications may be submitted by fax or electronically to S. Turbitt at (215) 898-0868 or [turbitt@mail.med.upenn.edu](mailto:turbitt@mail.med.upenn.edu). Qualified women and minority candidates are especially encouraged to apply. [EEO/AA]

**Sr. Biologist in Obesity Research.** You will lead a drug discovery focused laboratory to discover and develop

medications for the treatment of Obesity. We are looking to fill one or more of the following expertises: Expertise in operant/classical behavioral methods. Including, but not limited to operant behavior involving food and rewarding drug self-administration paradigms, classical conditioning, food conditioned locomotor activity. In vivo electrophysiologist with expertise in sympathetic (BAT SNA or RSNA) nerve recordings. Additional expertise in stereotaxic surgery, single-unit recording, and microiontophoresis desired. Expertise in adipose and/or skeletal muscle metabolism, with expertise in examining regulation of gene expression, in vitro measurement of metabolism, and small animal metabolism. Biophysicist with a special focus on metabolism studies using thermal or NMR imaging capabilities. Including, but not limited to MRI, NMR, and dual-photon microscopes. Skill Requirements: PhD, MD, DVM, or equivalent; postdoctoral training is preferred, but not required; ability to demonstrate a leadership role in compound and laboratory development. Lilly credits its exceptional employees for its successes, and knows the key to ongoing achievement lies in attracting and retaining the best people. More than 43,000 people work for Lilly in 159 countries. Our future depends on our global community of employees whose varied perspectives and experience provide the creativity and energy to fuel pharmaceutical innovation. To apply, please visit <http://www.lilly.com/careers> and search for Job ID 50169242. [EEO] ❖

## The Wiley Prize in Biomedical Sciences Seeks Nominations

The Wiley Prize in Biomedical Sciences is intended to recognize contributions that have opened new fields of research or advanced novel concepts or their applications in a particular biomedical discipline. The award may recognize a specific contribution or a series of contributions that demon-

strate the nominee's significant leadership in the development of research concepts or their clinical application.

The award will consist of a \$25,000 grant and each year's recipient will deliver a lecture at The Rockefeller University—the venue for the awards.

A distinguished panel of jurors will

select the scientists to be honored. The Wiley Prize in Biomedical Sciences will be awarded in the spring of 2005.

Nominations should be postmarked no later than July 30, 2004.

For more information and for complete nomination procedures, go to <http://www.wileyfoundation.org>. ❖



## Lake Cumberland Biological Transport Group Meeting

Make plans to attend the 2004 Lake Cumberland Biological Transport Group meeting (affiliated with APS). The theme is focused on biological transport systems and/or mechanisms. Presentations from all related areas are welcome. The meeting provides an outstanding forum for principal investigators, postdoctoral fellows, and graduate students alike to present data and obtain feedback. Scientific sessions are scheduled Sunday evening, June 13, through

Wednesday morning, June 16, with afternoons free for informal interactions that allow all to enjoy the many amenities available in the picturesque setting provided by the Lake Cumberland State Resort Park in Jamestown, KY. Further details can be obtained at the meeting web site (<http://iupucbio1.iupui.edu/cumberland/default.htm>).

Contact: Bruce D. Schultz, Meeting Chair, Assistant Professor, Department of Anatomy & Physiology,

Kansas State University, 1600 Denison Avenue, Manhattan, KS 66506; Tel.: 785-532-4839; Fax: 785-532-4557; Email: [bschultz@vet.ksu.edu](mailto:bschultz@vet.ksu.edu); Snezana Petrovic, Meeting Vice-Chair, Reserach Instructor, Division of Nephrology and Hypertension, University of Cincinnati College of Medicine, PO Box 670 585, Cincinnati, OH 45267-0585; Tel.: 513-861-3100 ext. 4441; Fax: 513-475-6415; Email: [snezana.petrovic@med.va.gov](mailto:snezana.petrovic@med.va.gov). ❖

## Fulbright Offers Lecturing/Research Grants in 140 Countries

The Fulbright Scholar Program is offering lecturing and research awards in some 140 countries for the 2005-2006 academic year.

Opportunities are available not only for college and university faculty and administrators but also for professionals from business and government, as well as artists, journalists, scientists, lawyers, independent scholars and many others.

Traditional Fulbright awards are available from two months to an academic year or longer. A short-term grants program—the Fulbright Senior Specialists Program—offers two- to

six-week grants in a variety of disciplines and fields.

While foreign language skills are needed in some countries, most Fulbright lecturing assignments are in English. Some 80% of the awards are for lecturing.

Application deadlines for 2005-2006 are:

**August 1, 2004** for Fulbright traditional lecturing and research grants worldwide;

**November 1, 2004** for the summer German Studies Seminar and for spring/summer seminars in Germany, Korea and Japan for academic and

international education administrators;

**Rolling deadline** for Fulbright Senior Specialists Program.

Get more information, register and apply online at <http://www.cies.org>. For more information about the Fulbright Scholar Program's traditional grants and other opportunities, visit the web site, Email [apprequest@cies.iie.org](mailto:apprequest@cies.iie.org) or call 202-686-7877.

The Fulbright Scholar Program is sponsored by the United States Department of State, Bureau of Educational and Cultural Affairs. ❖

## Johns Hopkins Sixth Annual Update in Pulmonary and Critical Care Medicine

July 31-August 4, 2004

Johns Hopkins University School of Medicine

Sponsored by the Department of Medicine at Johns Hopkins Medicine, this sixth annual course is designed for pulmonary and critical care, internal medicine and family physicians. The program will concentrate on the most recent innovations in pulmonary and critical care medicine to update knowledge in this field. Development of this program has evolved to meet the needs of practicing physicians who evaluate and manage patients with significant lung diseases and with critical illnesses. Emphasis will be placed on therapeutic advances in pulmonary disease and critical care medicine. This year we will again be offering an

optional workshop to teach or update practitioners about recent advances in bronchoscopic diagnostic and therapeutic techniques.

The Johns Hopkins University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The Johns Hopkins University School of Medicine takes responsibility for the content, quality and scientific integrity of this CME activity. The Johns Hopkins University School of Medicine designates this educational activity for a maximum of 17.50 category 1 credits toward the AMA Physician's Recognition Award. Bronchoscopy Workshop is designated for up to 7.75 category 1 credits. Each

physician should claim only those credits that he/she actually spent in the activity.

This activity has been reviewed and is acceptable for up to 23.25 Prescribed credits by the American Academy of Family Physicians.

Fee: Physicians: \$625

Residents, Fellows, and

Allied Health Professionals: \$450

For more information, contact: Johns Hopkins University School of Medicine, Office of Continuing Medical Education, Turner 20, 720 Rutland Avenue, Baltimore, MD 21205-2195; Tel.: 410-955-2959; Fax: 410-955-0807; Email: [cmenet@jhmi.edu](mailto:cmenet@jhmi.edu); <http://www.hopkinscme.org/cme>. ❖

## AAAS Awards

The following awards are conferred annually by the American Association for the Advancement of Science (AAAS) Board of Directors. For eligibility requirements and nomination procedures, contact each award's representative or visit <http://www.aaas.org>.

### AAAS Philip Hauge Abelson Prize

*Purpose:* Recognizes a public servant for sustained and exceptional contributions to advancing science, or a scientist whose career has been distinguished both for scientific achievement and for other notable services to the scientific community.

*Award:* A \$5,000 monetary prize and a commemorative medal.

*Contact:* Stephen Nelson: [snelson@aaas.org](mailto:snelson@aaas.org)

**Deadline: August 1, 2004**

### AAAS Award for International Scientific Cooperation

*Purpose:* Recognizes an individual, or a limited number of individuals working together, in the scientific or engineering community for outstanding contributions to furthering international cooperation in science and engineering.

*Award:* A \$5,000 monetary prize and a

commemorative medal.

*Contact:* Linda Stroud: [lstroud@aaas.org](mailto:lstroud@aaas.org)  
**Nomination deadline: August 1, 2004.**

### AAAS Mentor Awards

*Purpose:* Honors individuals who have demonstrated extraordinary leadership in increasing the participation of underrepresented groups in science and engineering fields and careers.

*Awards:* Two prizes which both include a \$5,000 monetary prize and a commemorative plaque.

*Contact:* Yolanda George: [ygeorge@aaas.org](mailto:ygeorge@aaas.org)

**Deadline: July 31, 2004**

### AAAS Newcomb Cleveland Prize

*Supported by Affymetrix*

*Purpose:* Recognize an outstanding paper or papers, published in the Research Articles or Reports sections of Science.

*Award:* Each recipient receives a bronze medal and a share of the \$25,000 prize.

*Contact:* Sylvia Kihara: [skihara@aaas.org](mailto:skihara@aaas.org)

**Deadline: June 30, 2004**

### AAAS Award for Public Understanding of Science and Technology

*Purpose:* Recognizes scientists and engineers who make outstanding contributions to the "popularization of science."

*Award:* Includes a \$5,000 monetary prize and a commemorative plaque.

*Contact:* Judy Kass: [jkass@aaas.org](mailto:jkass@aaas.org)

**Deadline: August 1, 2004**

### AAAS Science Journalism Awards

*Purpose:* Recognize outstanding reporting for a general audience and honor individuals (rather than institutions, publishers or employers) for their coverage of the sciences, engineering and mathematics.

*Award:* Includes a \$2,500 monetary prize.

*Contact:* Monica Amarello: [mamarello@aaas.org](mailto:mamarello@aaas.org)

**Nomination deadline: August 1, 2004.**

## Johns Hopkins Internal Medicine Review Course 2004

July 18-23, 2004

Johns Hopkins, Thomas B. Turner Building, Baltimore, MD

Sponsored by the Department of Medicine at Johns Hopkins Medicine, this six-day intensive course is designed to provide the internist an updated broad review of basic topics in internal medicine and its subspecialties. The course will also aid registrants in preparation for the 2004 American Board of Internal Medicine certification and recertification exams. Notable features of the course include speakers from the Johns Hopkins University School of Medicine, who were selected for their teaching

expertise. Special sessions will be devoted for review of chest X-rays, electrocardiograms, blood and bone marrow smears and optional sessions for additional questions and answer practice.

**Program Directors:** Bimal Ashar, Redonda Miller, Kimberly Peairs, Assistant Professor's of Medicine.

The Johns Hopkins University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The Johns Hopkins University School of Medicine designates this educational activity for a maximum of 52 cate-

gory 1 credits toward the AMA Physician's Recognition Award. Each physician should claim only those credits that he/she actually spent in the activity.

Fee: Physicians: \$950

Residents: \$900

Optional Course Textbook: \$80

For more information, contact: Johns Hopkins University School of Medicine, Office of Continuing Medical Education, Turner 20, 720 Rutland Avenue, Baltimore, MD 21205; Tel.: 410-955-2959; Fax: 410-955-0807; Email: [cmenet@jhmi.edu](mailto:cmenet@jhmi.edu); <http://www.hopkinscme.org/cme>. ❖

July 2-10

**4th International Congress of the African Association of Physiological Sciences, Tangier, Morocco.**

*Information:* Email: aapsmorocco04@yahoo.com.

July 4-9

**Gordon Conference: Metabolic Basis of Ecology, Bates College, ME.** *Information:* Internet: <http://www.grc.uri.edu/programs/2004/metbasis.htm>.

July 10-13

**Mid-Career Women Faculty Professional Development Seminar, The Fairmont Hotel, Washington, DC.** *Information:* Valarie Clark, Associate Director of Women in Medicine/Faculty Affairs, AAMC, Washington, DC. Tel: 202-828-0586; Email: vclark@aamc.org; Internet: <http://www.aamc.org/meetings/specmtgs/midwim04/start.htm>.

July 12-13

**World Obesity Congress & Expo, Washington, DC.** *Information:* Customer Service, Global Business Research, Ltd, Tel 203-975-2569, 800-868-7188; email: dmete@businessaccess.org; Internet: <http://www.global8.com/BA801/BA801intro.html>.

July 12-August 20

**Research at SEA—A Teacher Seminar, Woods Hole, MA.** *Information:* Sharon Sky Hawk Reidy, Enrollment Assistant, Sea Education Association, PO Box 6, Woods Hole, MA 02543. Tel.: 800-552-3633; Email: sreidy@sea.edu; Internet: <http://www.sea.edu>.

July 14-17

**The 1st International Conference of Chinese Physiological Scientists—Physiological Sciences in the Postgenomic Era, Beijing, China.** *Information:* Conference Secretariat, Neuroscience Research Institute, Peking University, 38# Xueyuan Road, Beijing 100083, P. R. China. Tel.: +86-10-82801119; Fax: +86-10-82801111; Email: ICCPS2004@bjmu.edu.cn; Internet: <http://www.caps-china.org/ICCPS.html>.

July 29-August 1

**AAMC Group on Faculty Practice and UHC Group Practice Council, The Westin Seattle, Seattle, WA.** *Information:* <http://www.aamc.org/meetings>.

August 8-13

**Workshop on Current Protocols in Stem Cell Biology, Bar Harbor, MA.** *Information:* Judi Alexander, The Jackson Laboratory, 600 Main Street, Bar Harbor, ME 04609-1500. Tel.: 207-288-6326; Fax: 207-288-6080; Email: judih@jax.org; Internet: <http://www.jax.org/courses/events/coursedetails.do?id=32&detail=scope>.

August 15-20

**Macromolecular Organization and Cell Function, Oxford, UK.** *Information:* Gordon Research Conferences, PO Box 984, West Kingston, RI 02892-0984. Email: hardinc@missouri.edu; Internet: <http://www.missouri.edu/~physch/GRC/GRC2004>.

August 25-27

**The 9th International Workshop on Developmental Nephrology: Fenomics and the Kidney—New Insights into Developmental Pathways and Disease, Barossa Valley, South Australia.** *Information:* IPNA 2004 Congress, Hartley Management Group Pty Ltd., PO Box 20 Kent Town South Australia 5071. Tel: +61 8 8363 4399; Fax: +61 8 8363 4577; Email: ipna2004@hartleygmt.com.au; Web: <http://www.ipna2004.com>.

August 29-September 2

**The Thirteenth Congress of the International Pediatric Nephrology Association, Adelaide, South Australia.** *Information:* IPNA 2004 Congress, Hartley Management Group Pty Ltd., PO Box 20 Kent Town South Australia 5071. Tel: +61 8 8363 4399; Fax: +61 8 8363 4577; Email: ipna2004@hartleygmt.com.au; Web: <http://www.ipna2004.com>.

August 31-September 4

**12th International Congress of Endocrinology, Lisbon, Portugal.** *Information:* Internet: <http://www.ice2004.com>.

September 4-8

**European Respiratory Society Annual Congress, Glasgow, Scotland.** *Information:* ERS Headquarters, 4, av. Sainte-Luce, CH-1003 Lausanne, Switzerland. Fax: 41 21 213 01 00. Internet: <http://www.ersnet.org>.

September 5-10

**The 15th International Chromosome Conference, London, England.** *Information:* 15th International Chromosome Conference Helpdesk. Tel.: ++44 (0) 1223 333438; Fax: ++44 (0) 1223 333438; Email: ICCXV@the-conference.com; Internet: <http://www.the-conference.com/2004/iccxv> or <http://www.brunel.ac.uk/iccxv>.

September 8-11

**Immunological and Pathophysiological Mechanisms in Inflammatory Bowel Disease, Snowmass Resort, CO.** *Information:* The American Physiological Society, 9650 Rockville Pike, Bethesda, MD 20814. Phone: 301-634-7967; Fax: 301-634-7241; Email: meetings@the-aps.org; Internet: <http://www.the-aps.org/meetings/aps/>.

September 19-21

**15th International Symposium on Regulatory Peptides, Toulouse, France.** *Information:* Email: reg-pep@toulouse.inserm.fr; Internet: <http://ifr31w3.toulouse.inserm.fr/regpep2004/>.

September 26-30

**Workshop on Techniques in Modeling Human Colon Cancer in Mice, Bar Harbor, ME.** *Information:* Judi Alexander, The Jackson Laboratory, 600 Main Street, Bar Harbor, ME 04609-1500. Tel.: 207-288-6326; Fax: 207-288-6080; Email: judih@jax.org; Internet: <http://www.jax.org/courses/events/coursedetails.do?id=37>.