



The Physiologist

Association of Chairs of Departments of Physiology 2012 Survey Results

Susan DeMesquita and Muthu Periasamy
Department of Neuroscience and Physiology
American Univ. of the Caribbean School of Medicine;
and Department of Physiology and Cell Biology
Ohio State Univ., College of Medicine

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The Association of Chairs of Departments of Physiology annual survey was sent electronically to 191 physiology departments throughout the US,

Canada, Mexico, and Puerto Rico. A total of 42 surveys were returned, for a response rate of 22%. This rate is similar to previous years. Of the 42 surveys returned, there were 11 private and 31 public medical schools.

The data provide the reader with general trends of faculty demographics and distribution, overall departmental budgets, and space available for research. As a reminder, beginning in 2004, ACDP decided not to include faculty salary information in this report. AAMC salary data is more generally used, so the ACDP Council decided to no longer collect or report this data. Data are still collected on tenure status, gender, and ethnicity of faculty members (Table 1). Table 1 also includes information on the average number of teaching contact hours

for faculty and on the type of medical physiology course being taught.

Table 2 provides student/trainee information, including ethnicity for predoctoral and postdoctoral categories, as well as predoctoral trainee completions, stipends provided, and type of support.

Institutional information is provided in Table 3. Departmental budget information (Table 4) shows type of support, faculty salaries derived from grants along with negotiated indirect costs to the departments. New for this year is the mean number of faculty in those 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.

For an update of AAMC salary data, please see the accompanying article.



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Headquarters phone: 301-634-7118
Fax: 301-634-7241
Email: webmaster@the-aps.org
<http://www.the-aps.org>
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Table 1. Faculty Information

Faculty Summary (n=808)

	Male	Female	Total
Asian/Pacific Islander	95	39	134
Black (not Hispanic)	11	10	21
Hispanic	37	11	48
White (not Hispanic)	411	144	555
Foreign National	34	16	50
Total	588	220	808

Medical Physiology Course Type

	Yes	No	Total Responded
Integrated Disciplines	31	11	42
Traditional	31	12	43
Within Traditional	21	20	41

Tenure Status in each department by degree

	Tenured	Not Tenured	Not Eligible	Total
MD	15	0	9	24
PhD	451	1	283	735
2 Doctorates	36	1	11	48
Other	5	0	0	5
Total	507	2	303	812

For your faculty, what is the average number of hours of student contact (per year) for:

	Student Type	Average (hours)	Number (inst.)
Lab Hours	Graduate	359	23
	Medical	30	26
	Other	71	10
Lectures	Graduate	89	41
	Medical	55	42
	Other	96	24
Small Group	Graduate	34	22
	Medical	35	37
	Other	31	11

Teaching Interactions

MD/DO	42
DDS	17
DVM	4
Allied Health	23
Pharmacy	11
Other Biomedical	30
Life Science	22
Bioengineering	19
Other	15

Table 2. Student/Trainee Information

Student/Trainee Summary

<i>US citizen/resident aliens</i>			
Predoctoral male	207	Postdoctoral male	110
Predoctoral female	196	Postdoctoral female	86
<i>Foreign</i>			
Predoctoral male	80	Postdoctoral male	149
Predoctoral female	90	Postdoctoral female	110

Ethnicity of each pre- and postdoctoral student/trainee

	Pre-doctoral		Postdoctoral	
	Male	Female	Male	Female
Native American	1	0	0	0
Asian/Pacific Islander	15	29	12	19
Black (not Hispanic)	8	19	4	9
Hispanic	13	19	7	4
White (not Hispanic)	170	129	87	54

US Citizen/Resident alien postdoctoral trainee completions:

	Male	Female
Native American	1	0
Asian/Pacific Islander	6	7
Black (not Hispanic)	1	7
Hispanic	0	3
White (not Hispanic)	25	27
Total	33	44

Average Annual Stipend (US \$)

	Average	Number
Postdoctoral	\$40,824	39
Pre-doctoral	\$24,261	40

Predoctoral Trainee Completions Trainees completing doctoral work during year ending 6/30/2012.

Total	
Female	65
Male	62
Total	127

Foreign National predoctoral trainee completions:

	Male	Female
African	2	1
Asian/Pacific Islander	16	13
Central/South American	2	4
European/Canadian, etc.	2	1
Middle Eastern	7	1
Total	29	20

Table 2. Student/Trainee Information (continued)

Number of Foreign Pre- & Postdoctoral Students/Trainees					Number of Foreign Pre- & Postdoctoral trainees whose primary source of support is:		
	Predoctoral		Postdoctoral			Pre-doctoral	Postdoctoral
	Male	Female	Male	Female			
African	3	2	1	2	Institutional	65	13
Asian/Pacific Islander	52	59	99	57	Research Grants	117	217
Central/South American	3	7	11	10	Private Foundations	6	6
European/Canadian, etc.	6	13	18	25	Home (foreign) Gov.	2	10
Middle Eastern	15	9	16	6	Other	7	8
Other	1	4	0	10	Total	197	254
Total	80	94	145	110			

Table 3. Institution Summary

Type of Institution	(n=42)
Private	11
Public	31
Total	42

Space Controlled by Department

	Average
Research Space	18,575
Administrative Space	3,300
Teaching Space	2,108
Other Space:	3,269
Total Space	27,253

Table 4. Institutional Financial Information

Budget by Institution

	All Institutions	No. Institutions	Private Medical	No. Institutions	Public Medical	No. Institutions	Non-medical	No. Institutions
Institutional (Hard money, e.g, operating costs, state allocations)	\$2,221,151	42	\$1,881,063	11	\$2,177,530	25	\$2,604,859	6
Outside Research Grants and Contracts (direct costs only)	4,058,738	42	3,758,631	11	4,333,324	25	4,084,259	6
Training Grants (direct costs only)	346,015	20	406,174	4	307,932	15	323,938	1
Endowments	308,946	26	221,215	4	611,457	17	94,168	5
Indirect Cost Recovery (amount returned to your department)	167,171	27	14,000	1	275,253	21	212,259	5
Other Budget Support (identify)	1,499,016	35	2,841,360	8	1,098,854	21	556,833	6
Average Departmental Budget	7,119,134		6,518,589		7,300,238		7,644,076	

Financial Information

Current fringe benefit rate most frequently used for Primary faculty	30.45	(n=44)
Federally negotiated indirect cost rate for FY 12-13 off campus	26.82	(n=38)
Federally negotiated indirect cost rate for FY 12-13 on campus	50.84	(n=44)
Percentage of allocated salary dollars directly returned to your department	72.93	(n=30)
Percentage of indirect costs returned to your department	22.50	(n=32)
Percentage of total faculty salaries derived from research grants (does not include fringe benefits costs)	34.45	(n=42)

Table 5. Complete Ranking According to Total Dollars

Rank Total Dollars	Total Dollars	Rank Research Grant Dollars	Research Grant Dollars	Rank Research Dollars/ Faculty	Research Dollars/ Faculty	Rank Total Research Space	Total Research Space	Rank Research Dollars/ sq ft	Research Dollars/ sq ft	No. of faculty
1	\$23,659,053	1	\$14,964,488	2	\$ 680,204	5	36,041	3	\$415	22
2	17,761,566	2	11,103,846	7	370,128	4	36,732	9	302	30
3	11,905,886	4	7,255,178	5	381,851	2	39,104	27	186	19
4	11,516,495	5	7,190,094	10	287,604	14	20,530	5	350	25
5	10,305,243	12	5,265,482	27	181,568	11	24,166	20	218	29
6	10,238,535	6	6,360,768	3	489,290	6	34,468	29	185	13
7	9,473,065	3	8,065,455	8	336,061	1	40,900	23	197	24
8	8,686,532	9	5,535,372	21	205,014	15	20,058	11	276	27
9	8,640,509	17	4,347,698	18	228,826	9	26,926	34	161	19
10	8,604,157	13	5,121,090	22	204,844	27	13,932	4	368	25
11	8,573,209	29	3,179,086	29	167,320	39	10,486	8	303	19
12	8,489,672	10	5,323,913	28	177,464	33	12,729	2	418	30
13	8,426,846	11	5,319,383	17	231,278	17	19,147	10	278	23
14	8,359,049	8	5,695,669	4	406,834	23	16,401	6	347	14
15	8,293,212	7	6,305,292	12	274,143	8	27,510	18	229	23
16	8,098,620	23	3,423,059	31	163,003	3	37,289	39	92	21
17	7,944,542	26	3,366,952	24	198,056	20	16,975	22	198	17
18	7,848,063	18	4,221,112	33	150,754	13	21,422	24	197	28
19	7,439,600	16	4,397,194	25	191,182	19	18,799	16	234	23
20	7,415,767	15	4,578,294	16	240,963	18	19,040	14	240	19
21	7,013,376	24	3,413,106	20	227,540	22	16,569	21	206	15
22	6,917,695	30	3,107,925	14	258,994	24	15,924	25	195	12
23	6,873,688	14	4,807,520	1	1,602,507	7	30,000	35	160	3
24	6,832,587	31	2,984,897	23	198,993	10	25,288	38	118	15
25	6,775,598	19	3,912,066	9	326,006	12	21,463	30	182	12
26	6,129,917	22	3,785,814	13	270,415	16	19,848	26	191	14
27	5,947,797	33	2,256,448	36	118,760	28	13,922	33	162	19
28	5,947,468	27	3,274,665	34	130,987	26	14,492	19	226	25
29	5,864,508	34	2,198,607	38	81,430	35	11,903	28	185	27
30	5,803,687	25	3,398,818	11	283,235	32	12,994	13	262	12
31	5,666,020	20	3,890,984	15	243,187	21	16,905	17	230	16
32	5,179,841	21	3,811,252	6	381,125	37	11,236	7	339	10
33	4,961,131	32	2,816,638	26	187,776	44	3,395	1	830	15
34	4,794,061	28	3,199,040	19	228,503	31	13,391	15	239	14
35	4,445,683	35	2,075,996	35	129,750	34	12,484	32	166	16
36	4,417,195	36	2,031,901	32	156,300	25	14,774	37	138	13
37	4,305,630	42	150,000	42	7,500	38	10,526	42	14	20
38	4,036,077	38	1,664,729	39	72,380	40	6,165	12	270	23
39	3,779,450	39	1,124,982	40	70,311	30	13,500	40	83	16
40	3,772,065	37	1,971,977	30	164,331	36	11,329	31	174	12
41	3,382,954	41	692,889	41	40,758	29	13,583	41	51	17
42	2,124,839	40	741,345	37	82,372	41	5,283	36	140	9
43	909,627	43	58,000	43	7,250	42	5,064	43	11	8
44	844,649	44	23,000	44	5,750	43	4,613	44	5	4

AAMC Medical School Faculty Compensation Survey

Each year the American Association of Medical Colleges (AAMC) surveys all the US medical schools as to faculty compensation. Because of this, the ACDP (see associated article) decided to no longer collect the same data from its members.

As a supplement to the ACDP survey, the AAMC has agreed to allow the APS to publish selected results from their survey.

Table 1 shows the regional distribution of medical schools responding to the AAMC survey in terms of public medical and private medical. Also shown is the number of physiology departments in those regions that responded.

Summary statistics on faculty compensation in physiology departments for Ph.D. faculty are given in Table 2.

Table 3 shows the changes in salary that have occurred over the past 3 years. The summary statistics for separate regions of the country are given in Table 4.

Table 5 shows the salary comparison between Ph.D. faculty in all basic science departments vs. those in physiology departments. ❖

Table 1. Distribution of Medical Schools Responding to AAMC Medical School Faculty Compensation Survey.

		Northeast	Midwest	South	West	TOTAL
All	Private Medical	26	11	13	3	53
	Public Medical	12	22	36	13	83
Physiology	All Medical Schools	18	17	24	8	67

Table 2. Summary Statistics on Physiology Department PhD Faculty Compensation.

		25th	Median	75th	Mean	Number of Faculty
Chair	All Schools	225,000	256,000	296,000	266,200	67
	Medical Public	216,000	245,000	277,000	246,500	44
	Medical Private	244,000	293,000	389,000	304,000	23
Professor	All Schools	133,000	156,000	183,000	161,500	540
	Medical Public	133,000	156,000	183,000	161,800	379
	Medical Private	132,000	158,000	184,000	160,700	161
Associate Professor	All Schools	95,000	108,000	124,000	110,900	309
	Medical Public	94,000	108,000	122,000	109,200	204
	Medical Private	98,000	110,000	129,000	114,000	105
Assistant Professor	All Schools	69,000	85,000	95,000	84,000	395
	Medical Public	68,000	83,000	93,000	81,600	265
	Medical Private	72,000	90,000	102,000	88,900	130
Instructor	All Schools	46,000	52,000	64,000	55,500	61
	Medical Public	46,000	50,000	60,000	54,100	44
	Medical Private	51,000	60,000	69,000	59,200	17

Table 3. Change in Total Compensation for Physiology Department PhD Faculty.

2011-2012		2010-2011		2009-2010		% Change 2009-2010 to 2010-2011	
Mean	Median	Mean	Median	Mean	Median	Mean	Median
124,300	115,000	123,200	114,000	122,100	112,000	1.0	1.8

Mean and median values were combined for Assistant, Associate, and Professor.

Table 4. Summary Statistics on Physiology Department PhD Faculty Compensation by Region.

		Northeast	Midwest	South	West
Chair	25th	230,000	224,000	200,000	261,000
	Median	248,000	255,000	250,000	283,000
	75th	311,000	303,000	285,000	299,000
	Mean	277,400	282,200	243,100	276,500
	Total Faculty	18	17	24	8
Professor	25th	143,000	131,000	124,000	144,000
	Median	165,000	152,000	148,000	164,000
	75th	186,000	181,000	176,000	204,000
	Mean	165,200	158,200	153,200	181,400
	Total Faculty	112	144	199	85
Associate Professor	25th	104,000	94,000	92,000	104,000
	Median	115,000	106,000	103,000	112,000
	75th	129,000	123,000	119,000	136,000
	Mean	117,400	110,500	105,000	117,800
	Total Faculty	73	94	112	30
Assistant Professor	25th	74,000	70,000	65,000	75,000
	Median	93,000	85,000	81,000	91,000
	75th	103,000	93,000	91,000	96,000
	Mean	90,400	85,400	78,800	87,600
	Total Faculty	79	117	157	42
Instructor	25th	52,000	48,000	46,000	44,000
	Median	62,000	61,000	51,000	47,000
	75th	66,000	74,000	61,000	54,000
	Mean	59,600	60,800	54,700	50,100
	Total Faculty	11	5	37	8

Table 5. Salary comparison between all basic science departments and physiology departments

		All Basic Science Depts.	Physiology
Chair	25th	214,000	225,000
	Median	263,000	256,000
	75th	315,000	296,000
	Mean	268,400	266,200
	Total Faculty	546	67
Professor	25th	134,000	133,000
	Median	161,000	156,000
	75th	196,000	183,000
	Mean	171,200	161,500
	Total Faculty	4,291	540
Associate Professor	25th	97,000	95,000
	Median	112,000	108,000
	75th	130,000	124,000
	Mean	115,200	110,900
	Total Faculty	3,141	309
Assistant Professor	25th	73,000	69,000
	Median	88,000	85,000
	75th	100,000	95,000
	Mean	88,200	84,000
	Total Faculty	3,959	395
Instructor	25th	50,000	46,000
	Median	55,000	52,000
	75th	66,000	64,000
	Mean	60,400	55,500
	Total Faculty	624	61

Time: 5:45 PM
Tuesday, April 23, 2013
Place: Boston, MA

I. Call to Order

The meeting was called to order at 5:45 PM by President Susan M. Barman who welcomed the members to the 166th Business Meeting of the American Physiological Society.

II. Election of Officers

President Barman announced the results of the election. The new President-elect is David M. Pollock, Georgia Regents Univ. (April 24, 2013 – April 6, 2016). The three newly elected Councillors are John Chatham, Univ. of Alabama, Birmingham; M. Harold Laughlin, Univ. of Missouri; and Marshall “Chip” Montrose, Univ. of Cincinnati (April 24, 2013 – April 6, 2016). The newly elected Councillors will serve a three-year term. All newly elected officers will assume office at the close of EB2013.

III. Membership

A. Summary of the Membership Status

President-Elect Kim Barrett reported on the status of the Society membership. As of March 15, 2013, the current membership of the Society is 11,215, of which 8,252 are regular members, 24 are honorary members, 1,035 are emeritus members, 73 are affiliate members, 1,626 are graduate student members, and 205 are undergraduate student members.

B. Deaths Reported Since the Last Meeting

A list of the names of those members whose deaths had been reported since the last meeting was displayed. Barrett asked the membership to stand and to observe a moment of silence in tribute to their deceased colleagues.

IV. State of the Society

President Barman addressed the membership and spoke on the state of the Society. Before beginning, she asked everyone to stand for a moment of silence for the victims of the Boston Marathon bombing.

Expenses and Revenue

Barman said that the Society is financially sound with the current revenue at \$19,670,000 and expenses totaling \$19,165,000. The majority of

the revenue is generated by the Publications Department, while Meetings/Membership, Education and the reserves account for the majority of the remaining revenue.

Barman said that the APS funds total \$46 million, the reserve funds total \$38 million, and there is \$4 million in the Endowment fund. She said that \$1.44 million will be used from the reserves in 2013 to support the APS annual operating budget, while the endowment fund will be used to support various APS awards.

Membership Trends

The APS has 11,215 members of which 27% are women, 26% reside outside of the United States, 10% are emeritus, and 39% are under the age of 45. Barman said that all APS members should encourage others to join the Society.

Barman said that the APS Porter Physiology Development Committee and the Women in Physiology Committee are conducting the “Be Counted” campaign. This campaign encourages all APS members to go the APS website and complete their member profile, including information on gender, racial and ethnic group, and interest area.

APS Chapter Program

Barman said that although this program was established many years ago, there was a surge in the creation of chapters beginning in 2008 when the Chapter Advisory Committee was established. There are now 13 chapters, with the establishment of the Missouri chapter in 2013. Barman said that the chapters provide a good opportunity to get new members and to promote the discipline of physiology.

APS Initiatives

Publications

Barman said that APS and The Physiology Society (TPS) are publishing an open access journal entitled *Physiological Reports*. The first 100 articles submitted will be published for free. Susan Wray is the Editor-in-Chief and Thomas Kleyman is the Deputy Editor.

Barman said that all of the journals are doing well. For the 14 published journals, 6700 manuscripts were received and 3,654 were published. The time to first decision has been reduced to 22 days, and the time from accept-

ance to publication is 2 months. There are three new editors beginning their terms on July 1, 2013. They include Willis K. Samson, *AJP-Regu*; P. Darwin Bell, *AJP-Renal*; and David Pollock, *Comprehensive Physiology*.

Barman said that APS will be developing a virtual journal—*apsTEN*—that will highlight and promote the top 10 papers accepted each month in the 10 APS research journals. Each highlighted paper will retain the original citation from the journal in which it was published. These papers will be accompanied by an editorial.

Education Programs

Barman said that the APS Education programs help to promote excellence in science teaching and learning, and help to train future physiologists. The Education Department is responsible for managing many of the awards that are provided by the APS; and provides resources for K-12 Education, Undergraduates, Graduates/Professionals, Continuing Education, and Minority Scientists.

Barman reported that the Education Department has received funding for several new programs including the Step Up program, Ethics Education in Science and Engineering, the “Stride” Program (short-term research education program to increase diversity in health-related research program); the IOSP Fellows Program (Integrative Organismal Systems); and a program in collaboration with the Council for Undergraduate Research and the Leadership Alliance to identify URM talent in IOS fields and provide mentoring at the successive stages of the academic pathway.

Barman said that after 25 years of funding, NIDDK has terminated funding for the successful APS-NIDDK Minority Travel Fellows Program that provided support for Minority travel fellowships to APS meetings, K-12 Minority Outreach Fellows, Minority Summer Research Fellows, and Frontiers in Physiology Research Teachers. The APS Council has agreed to provide funding for this program. The Council has also voted to increase support for the Caroline tum Suden Professional Opportunity Award, increasing the number of awards from the current 36 awards (effective EB 2014), and to include an award of \$100 for up to 30 David S. Bruce Outstanding Undergraduate Abstract Awards (effective at EB 2013).

Science Policy

Barman said that APS is working closely with FASEB, the Ad Hoc Group for Medical Research Funding, Research!America, and other funding advocates. APS is also working with Americans for Medical Progress, National Association for Biomedical Research on issues of animal advocacy, and has recently responded to NIH RFI's regarding the Biomedical Workforce. Barman said that members of Council and the Science Policy Committee try to go to the Hill as often as possible to discuss federal funding for biological research, publications access, peer review, humane use of animals in research, and to strengthen the relationship with funding agencies such as NIH and NSF.

The Science Policy Committee has established the Early Career Advocacy Fellowship. This fellowship will engage early career investigators in advocacy activities and provide skills to become long-term advocates for scientific research. The Committee has also developed SP-News, a monthly email bulletin of advocacy-oriented information and is working with the Animal Care and Experimentation Committee on the Chapter Advocacy Program. This program will provide PowerPoint presentations and travel expenses for an APS speaker to attend a chapter meeting to discuss policies.

International Outreach

Barman said that the APS Leadership has been invited to, and has participated in several international meetings including the Sociedade Brasileira de Fisiologia (SBFis), September 2012; Chinese Association for Physiological Sciences (CAPS), November 2012; Japanese Physiological Society, March 2013; Covian Symposium, May 2013; and the SPFis, September 2013. APS will be presenting a workshop at the Covian Symposium entitled Writing and Reviewing for Scientific Journals. This is supported in part by the APS Latin American Initiative.

For the IUPS 2013 Congress, APS will provide approximately 70 travel awards of up to \$1,000 for participation in the meeting. These awards are supported in part by grants from NSF (comparative physiologists) and NIH (underrepresented minorities, women, and junior faculty). Barman said that APS will also be participating in the

first PanAmerican Congress of Physiological Sciences in August 2014. The meeting is organized by the physiology societies of Argentina, Brazil, Canada, Chile, Cuba, Mexico, USA, and the Latin-American Association of Physiological Sciences.

VI. Awards and Presentations

A. Ray G. Daggs Award

Ray G. Daggs was the APS Executive Secretary-Treasurer between 1956 and 1972. In tribute to his devotion to the Society, the Ray G. Daggs Award was established, and is given annually to a physiologist for distinguished service to the Society and to the discipline of physiology. The 2013 Daggs Awardee is Dr. James A. Schafer.

Schafer has spent essentially his entire academic career in the Departments of Physiology & Biophysics and Medicine at Univ. of Alabama at Birmingham where he is currently Professor Emeritus.

Schafer's research has explored the fundamental steps in the transport of solutes across cell membranes, primarily in renal tubules. One of his most significant contributions was quantitatively defining the process by which isosmotic water reabsorption is coupled to sodium and chloride reabsorption in the proximal renal tubule. He might be considered as one of the first "systems biologists" since his research involved predictive mathematical modeling of physiological mechanisms in an attempt to produce an integrated picture of physiological function.

Schafer served on APS's Publications Committee and was the Editor-in-Chief of *AJP: Renal* and an Associate Editor of *News in Physiological Sciences*.

Schafer has been formally recognized for his research achievements by receipt of several awards and honors including the Robert W. Berliner Award of the APS Renal Section, the Carl W. Gottschalk Distinguished Lectureship Award, the Homer W. Smith Award from the American Society of Neph-

rology, the Robert F. Pitts Memorial Award, the Thomas E. Andreoli Lectureship Award from the Nephrology Research & Training Center at UAB, and, with his collaborator Prof. Eberhard Schlatter, the Max-Planck Prize of the Max-Planck Society and the von Humboldt Foundation.

Schafer has been a very active APS member as evidenced by serving as Secretary of the Renal Section and Chair of the Epithelial Transport Group Steering Committee. He also served on the FASEB Board and Executive Committee and the Public Affairs Executive Committee. He served as an APS Councillor and the Society's President in 1995-1996.

B. Arthur C. Guyton Teacher of the Year Award

The Arthur C. Guyton Physiology Teacher of the Year Award is selected by the Teaching Section (chaired this year by David Harris) and is supported by Elsevier.

APS is pleased to recognize this year's awardee Timothy I. Musch.

C. Dale Benos Early Career Professional Service Award

The Early Career Professional Service Award honors an APS member at an early stage in their career who has demonstrated dedication and commitment to furthering the broader goals of the physiology community through activities such as serving on professional committees, participating in K-12 education outreach, or participating in scientific advocacy.



APS President Susan Barman presents the Ray G. Daggs Award to James Schafer.



Ryuji Ueno Sachiko Kuno, and APS President Susan Barman present Oleh Pochynyuk with the S&R Foundation Award.



APS President Susan Barman presents Eric Schmidt and David Stoltz with the Giles F. Filley Memorial Award.

This award was established to recognize Dale Benos, the Society's 79th President, Chair of Physiology at the Univ. of Alabama, Birmingham and a distinguished physiologist. The award recognizes Dale's dedication and commitment to excellence in the training and mentoring of young physiologists and colleagues. APS is pleased to recognize Erica Wehrwein, Michigan State Univ., as the 2013 Awardee.

D. S&R Foundation Ryuji Ueno Award for Ion Channels or Barrier Function Research

The S&R Foundation Ryuji Ueno Award for Ion Channels or Barrier Function Research was established thanks to the generous support of Drs.

Ryuji Ueno and Sachiko Kuno and the S&R Foundation. Drs. Ueno and Kuno are founders of Sucampo Pharmaceuticals and S&R Foundation, both in Bethesda. This Award recognizes an APS member who has demonstrated outstanding research promise. The award of \$30,000 is designated for use in the recipient's ion channels or epithelial barrier function research program. APS is pleased to recognize this year's awardee Oleh Pochynyuk, Univ. of Texas Health Sciences Center, Houston.

E. Giles F. Filley Memorial Awards

As a result of a bequest from the family of Giles F. Filley, a memorial fund was established to recognize excellence in research in respiratory physiology

and medicine. Two annual awards of \$12,000 are made to a junior faculty member (that is, at an academic rank no higher than assistant professor). APS is pleased to recognize this year's awardees David Anthony Stoltz, Univ. of Iowa and Eric Peter Schmidt, Univ. of Colorado School of Medicine.

F. Lazaro J. Mandel Young Investigator Award

As a result of a bequest from the wife of Lazaro J. Mandel, a memorial fund was established to recognize excellence in epithelial or renal physiology. An award is made to a junior faculty member who has demonstrated outstanding research promise. The award is \$4,000 and is designated for use in the awardee's research program. This year's



APS President Susan Barman presents the Lazaro J. Mandel Young Investigator Award to Jennifer M. Bomberger.



APS President Susan Barman presents the Shih-Chun Wang Young Investigator Award to Richard Wainford.



APS President Susan Barman and Colleen Whelan, DSI present the Dean Franklin Young Award to Jennifer Mayberry Sasser.

awardee is Jennifer M. Bomberger, Univ. of Pittsburgh School of Medicine.

G. Shih-Chun Wang Young Investigator Award

As a result of a bequest from the wife of Shih-Chun Wang, a memorial fund was established to recognize excellence in physiology. An annual award is made to a junior faculty member who has demonstrated outstanding research promise. The award of \$4,000 is designated for the use in the awardee's research program. APS is pleased to recognize this year's awardee Richard Wainford, Boston Univ., School of Medicine.

H. Dean Franklin Young Investigator

The Dean Franklin Young Investigator Award was established by Data Sciences International (DSI) in

recognition of Franklin's role in the development of instrumentation to monitor physiological function in conscious research animals and humans. The award recognizes a post-doctoral scientist or junior faculty member who is pursuing in vivo physiological research and is in the process of establishing an independent laboratory. The award recipient receives a travel award of \$1,500 to

attend the EB meeting to present his/her work, and a DSI instrumentation starter kit valued at approximately \$20,000. Colleen Whelan, DSI, joined Barman on stage to recognize this year's awardee, Jennifer Mayberry Sasser, Univ. of Mississippi Medical Center.

I. Arthur C. Guyton Young Investigator Award

The Arthur C. Guyton Award Fund was established to recognize the contributions of Dr. Guyton and his interests in feedback, modeling, and integrative physiology. The awards are made to an independent, junior investigator pursuing research that uses integrative approaches to the study of physiological function and explores the role of feedback regulation in physiological function. The award is for \$15,000 and is designated for use in the awardee's

research program. This year's awardee is Marcus Amann, Univ. of Utah.

J. Annual Reviews Award for Scientific Reviewing

The Annual Reviews Award for Scientific Reviewing is given for excellence in providing systematic, periodic examinations of scholarly advances, and provoking discussion that will lead to new research activity.

The award recognizes an APS member who has written scientific reviews and has helped provide an enhanced understanding of the area of physiology reviewed. The award recipient receives an award of \$2000, and up to \$2000 towards travel to attend the EB meeting. APS is pleased to recognize this year's awardee, Frank W. Booth.

K. International Early Career Physiologist Travel Awards

The International Early Career Physiologist Travel Award program was established for graduate students, postdoctoral fellows and junior faculty members who work outside the United States. The intent of this award is to assist with the travel expenses for international early career physiologists who are attending the EB meeting to present their work. This year's awardees are Pooneh Bagher, Univ. of Oxford; Andre Henrique Freiria-Oliveira, Federal Univ. of Goias; James Peter Garnett, Univ. of London; Yu Kitaoka, McMaster Univ.; Kyungjoon Lim, Baker IDI Heart & Diabetes Institute; Jolyane Meloche, Laval Univ.; Davi José De Almeida Moraes, Univ. Federal De Sao Paulo,



APS President Susan Barman presents the Arthur C. Guyton Young Investigator Award to Marcus Amann.



APS President Susan Barman presents the Annual Reviews Award for Scientific Reviewing to Frank W. Booth.



APS President Susan Barman and Peter Horvath present the Steven M. Horvath Professional Opportunity Awards to Rodrigo Maranon and Bruno Roseguini.

Paula Nunes, Univ. de Genève; Bruno T. Roseguini, Univ. Federal De Sao Paulo; Leonardo Tanaka, Heart Institute, HCFMUSP; Lauro C. Vianna, Fluminense Federal Univ.; Emma C. Hart, Univ. of Bristol; and Leucio Duarte Vieira-Filho, Univ. Federal De Pernambuco.

L. Physiologists in Industry Committee Awards

The Physiologists in Industry Awards are given to a graduate student and a postdoctoral fellow submitting the best abstract describing a novel disease model. This award is sponsored by the Physiologists in Industry Committee and by Plato Biopharma. The 2013 Awards will be presented by Committee representative Eugene

Shek and Plato Biopharma President and CEO Craig Plato. The recipients of this year's awardees are Catherine Clark, Cornell Univ., and Katrin Hollinger, Iowa State Univ.

M. Macknight Progressive Educator Award

The ADInstruments Macknight Progressive Educator Award is named in honor of Anthony Macknight, an APS member and founder of ADInstruments. The Award honors an APS member who demonstrates the greatest potential for incorporating innovative teaching techniques and effectively using technology resources in engaging undergraduate students in physiology education. The awardee receives a \$1,500 Travel Award to attend the EB meeting and an

Institutional Grant providing the award recipient's institution with a PowerLab LabTutor Physiology Teaching Bundle or equivalent. This year the Society is pleased to recognize Margarita Curras-Collazo, Univ. of California, Riverside, as the ADInstruments Macknight Progressive Educator Awardee.

N. Caroline tum Suden/Frances Hellebrandt Professional Opportunity Awards

The recipients of the Caroline tum Suden awards are selected by the Women in Physiology Committee chaired by Angela Grippo. This year's 36 awards were made possible by the bequests of Caroline tum Suden and Frances Hellebrandt, who were long-



APS President Susan Barman presents the Gabor Kaley Professional Opportunity Awards to Brett Kirby and Annie Crecelius.



APS President Susan Barman presents the Fleur Strand Professional Opportunity Awards to Junie Warrington.



APS President Susan Barman presents J. Michael Wyss, outgoing Central Nervous System Chair, and Robert Hester, outgoing Cardiovascular Section Chair with a certificate of appreciation.



APS President Susan Barman presents Bill Yates, outgoing Animal Care & Experimentation Committee Chair, and Thomas Pressley, outgoing Education Committee Chair with a certificate of appreciation.



APS President Susan Barman presents Alan Sved, Ken Baldwin, and Ida Llewellyn-Smith, outgoing Councillors, with a certificate of appreciation.

time members of the Society. Awards are open to graduate students or post-doctoral fellows who have first-author abstracts and present papers at the EB meeting. Recipients receive a \$500 check and paid registration.

O. Steven M. Horvath Professional Opportunity Awards

The Steven M. Horvath Award is given to the top two applications from minority candidates. This award is a reflection of Dr. Horvath's long-term commitment to the training of minority physiologists. These awards are made possible by a bequest of the family of Steven M. Horvath. The son of Steven Horvath, Peter Horvath, joined Barman to recognize this year's awardees Rodrigo Maranon, Univ. of Mississippi Medical Center and Bruno Roseguini, Federal Univ. of Sao Paulo.

P. Gabor Kaley Professional Opportunity Awards

The Gabor Kaley Professional Opportunity Awards are given to the top two applicants for the tum Suden Award. The awards are presented in recognition of Gabor Kaley's long-standing service to the discipline of physiology, having served as the Chair of Physiology at New York Medical College for nearly 40 years, and for his significant contributions to our understanding of vascular regulation and microcirculation. APS is pleased to recognize this year's awardees Annie Crecelius, Colorado State Univ.

College of Medicine, and Brett Kirby, Duke Univ.

Q. Fleur Strand Professional Opportunity Award

The Fleur L Strand Award was established to recognize the achievements of a young physiologist (graduate student or postdoctoral), enabling the recipient to attend the EB meeting. The Award is named in honor of the late Dr. Fleur Strand who was a Professor at New York Univ. She was the first to show that stress-evoked hormone such as ACTH can have a direct effect on peripheral systems, such as muscle, independent of the adrenal gland. It had been thought that ACTH could only act through the adrenal gland. The award is open to a physiologist working in any area of research. The awardee receives \$1,000 and complimentary registration for the EB meeting. APS is pleased to recognize this year's awardee Junie Warrington, Univ. of Mississippi Medical Center.

R. Recognition of Outgoing Section Chairs

Robert Hester, Chair of the Cardiovascular Section, Scott Powers, Chair of the Exercise & Environmental Physiology Section, Eric Delpire, Chair of the Cell & Molecular Physiology Section, and J. Michael Wyss, Chair of the Central Nervous System Section completed their terms at the close of the EB13 meeting. Barman thanked them for their service to their sections and to APS.

S. Recognition of Outgoing Committee Chairs

Bill Yates, Chair of the Animal Care & Experimentation Committee, Thomas Schmidt, Chair of the Career Opportunities in Physiology Committee, James Hicks, Chair of the Communications Committee, Thomas Pressley, Chair of the Education Committee, and John Chatham, Chair of the Science Policy completed their terms at the close of the EB13 meeting. Barman thanked them for their service to their respective committees and to APS.

T. Recognition of Outgoing Councillors

Councillors Ken Baldwin, Ida Llewellyn-Smith, and Alan Sved completed their terms at the close of the EB13 meeting. Barman thanked them for their service to the Society.

U. Recognition of Past President Joey Granger

Barman said "Please join me in thanking Joey for the past three years of service as APS President. He has been a strong supporter for the next generation of physiologists and I have enjoyed interacting with him over the past two years." She thanked Granger for his enthusiasm and hard work, and pointed out the fact that he is the first APS president to serve with two women on the Executive Cabinet. Granger thanked Barman and Barrett and said that "My years have been very enjoyable and that APS has great Councillors that continually work to improve the Society. APS also has a

great staff; there is no one else that has such a staff."

V. Conclusion

Barman said that she "has had a wonderful time serving as president. The APS staff is wonderful. I want to offer a special thanks to Joey, Kim and Marty and thank you to my colleagues at Michigan State Univ. I will remember this opportunity the rest of my life. Thank you."

VII. Passing of the Gavel

Barman then passed the gavel to Kim Barrett, Univ. of California, San Diego, incoming President of the American Physiological Society. Barrett, upon accepting the gavel said "please join me in thanking Sue for this past year. I don't think anyone could match Sue for her passion and enthusiasm for the Society. She has been very passionate and dedicated to the APS like no one else."

VIII. New Business

No new business.

There being no new business, the meeting was adjourned at 6:47 PM, April 23, 2013. ❖

*Kim Barrett
President-Elect*



APS President Susan Barman presents a plaque to Joey Granger, APS Past President.



APS President Susan Barman passes the APS gavel to President-elect Kim Barrett.



APS Council: Front Row: Jeff Sands, Jane Reckelhoff, Dennis Brown, Ida Llewellyn-Smith; Middle row: Hershel Raff, Patricia Molina, Joey Granger, Sue Barman, Kim Barrett, David Pollock, Ann Schreihofer; Back Row: Alan Sved, William Talman, J. Michael Wyss, Hannah Carey, Ron Lynch, Ken Baldwin, Marilyn Merker.



APS Section Advisory Committee: Front Row: Joshua C. Anthony, Eric Delpire, Siribhinya Benyajati, Ann M. Schreihof, Sean David Stocker, Martha E. O'Donnell; Back Row: Wolfgang M. Kuebler, Barbara E. Goodman, Heddwen Brooks, Jennifer S. Pollock, Scott K. Powers, Jerrold R. Turner, Harold D. Schultz.



APS Past President Joey Granger presents Johnathan Tune with the Henry Pickering Bowditch Award.



APS President Susan Barman presents Michael J. Joyner with the Walter B. Cannon Memorial Award.



APS Presidents at EB 2013: Front Row: Shu Chien, Hannah Carey, Joey Granger, Susan Barman, Kim Barrett, Barbara Horwitz; Back Row: David Pollock, Walter Boron, James Schafer, Peter Wagner, Gary Sieck, John Williams, John West, L. Gabriel Navar, William Dantzler, Irving Zucker, Allen Cowley.

Dempsey Receives Schmidt-Nielsen Distinguished Mentor and Scientist Award at EB 2013

The APS Women in Physiology Committee hosted a reception at Experimental Biology 2013 to honor Jerome A. Dempsey, John Robert Sutton Professor (Emeritus) of Population Health Sciences, Univ. of Wisconsin, Madison, Department of Population Health Sciences, John Rankin Laboratory of Pulmonary Medicine, who was selected as the 10th recipient of the Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award.

Over 90 colleagues, trainees, and EB awardees gathered to celebrate and

hear Dempsey's award lecture entitled, "Mentoring through Teamwork: Lessons Learned." The talk will be published in a future issue of *The Physiologist* and posted on the APS Mentoring Forum web site (<http://www.the-aps.org/career>). Hubert Forster, Medical College of Wisconsin, who coordinated the nomination of Dempsey for the award, was present to introduce him. Barbara Alexander, Women in Physiology Committee Member, gave the award presentation introduction and Sue Barman, President of the APS, gave the award to Dempsey.

Jerome A. Dempsey was born and raised in London, Ontario, Canada. He gained his BS degree at the Univ. of Western Ontario, taught and coached briefly at the high school level in Hamilton, Ontario and then continued onto graduate schools at the University of Alberta (MS) and the University of Wisconsin (PhD). His entire faculty career has been at the Univ. of Wisconsin, Madison (1968-2008). He continues his research as the John Robert Sutton Professor (Emeritus) of Population Health Sciences and director of the John Rankin Laboratory of Pulmonary Medicine. Sabbatical leaves included Sahlgrenska Univ. (Goteberg, Sweden) and McGill Univ. (Montreal, Canada). Research in the Rankin Lab has focused on mechanisms underlying the physiology and pathophysiology of the respiratory system and cardiorespiratory interactions during wakefulness, sleep and exercise, in acute and chronic hypoxia and in trained athletes



Sue Barman, APS President, presenting the 2013 Schmidt-Nielsen Award to Jerry Dempsey, and Bert Forster, nominator.



Jerome Dempsey presenting the Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award Lecture entitled, "Mentoring through Teamwork: Lessons Learned."

as well as COPD, asthma, CHF and sleep apnea. Both humans and chronically instrumented animal models are used. His research has been supported since 1972 by NHLBI, AHA, DOD and the UW. Dempsey has published 340 original research articles and book chapters, has an honorary degree from Waterloo Univ. and several awards and named lectureships for scientific contributions and mentoring from the APS, ACSM, British Physiologic Society, Canadian Thoracic Society and Canadian Society for Exercise Physiology and has several undergraduate and medical school teaching awards. Dempsey and his colleagues in the Rankin Lab have supervised the research training of 68 pre- and post-doctoral fellows in physiology, medicine, kinesiology, biomedical engineering and zoology and veterinary science. About 80-90 undergraduates also underwent research training in his laboratory.

APS members are encouraged to nominate members for the 2014 Bodil Schmidt-Nielsen Award. For more information, see the APS website (<http://www.the-aps.org/education/schmidt-nielsen>). Application deadline is September 15, 2013. ♦



Members of Jerry Dempsey's Lab.

Wehrwein Receives Dale J. Benos Early Career Professional Service Award

Erica Wehrwein, assistant professor in the Department of Physiology, Michigan State Univ. was selected as the 2013 Dale J. Benos Early Career Professional Service Awardee. Wehrwein was selected based on her remarkable level of teaching, service and mentoring with students at the graduate/professional, undergraduate and K-12 levels, as well as with members of her community. She has won many awards for both her teaching and research throughout her career to date.

Teaching: As an undergraduate student, Wehrwein worked with other undergraduate students in the Academic Skills Center at Western Michigan Univ., tutoring them in several biology courses.

As a graduate student, Wehrwein worked with underrepresented minority undergraduate students as an Instructor of Scientific Research Methods and Writing for the Natural Sciences in the McNair/SROP Scholars Program (summer research program). She taught physiology to Gifted and Talented middle school students at a summer camp and gave guest lectures in several undergraduate courses.

As a postdoc, she lectured at Winona State Univ. and served as a Research Mentor/Project Consultant for a laboratory.

As a faculty member at Michigan State Univ., Wehrwein functions as the Course Director and Professor for PSL

475 Capstone Laboratory and is an Instructor for the Medical Student Laboratory Experiences in Physiology. She also serves as a Guest Lecturer for Pre-professional Student Club.

Service: As a graduate student, Wehrwein served as President of Biological Sciences Graduate Student Organization, was the student representative for departmental faculty search, and was the Co-founder and Secretary for Teaching Circle (a group of teaching assistants in Biological Sciences with the goal of improving quality of teaching). Nationally, she served as a judge for the Young Investigator Travel Award given by Society for Experimental Biology in Medicine at EB.

As a postdoctoral fellow Wehrwein served on the Postdoctoral Affairs Committee for Mayo. She organized a career workshop for graduate students and fellow postdocs and Co-Organized the Graduate Student and Postdoctoral Writing Support Group in Departmental of Physiology & Biomedical Engineering. She has served as a consultant on career and teaching development workshops to the Mayo Research Fellows Association since 2008. She began working with Gregory D Fink on the Faculty of 1000 Biology Website as an Associate Faculty Member and evaluation contributor for physiology since 2009. Nationally, as a member and then

Chair of the Trainee Advisory Committee, Wehrwein volunteered to give presentations at the APS Undergraduate Orientation Session during EB and has assisted with the APS Undergraduate Poster Session since 2008.

As a new faculty member, Wehrwein is the Faculty Mentor to the Physiology Society Club and the Human Biology Club. She serves on the Physiology Undergraduate Curriculum Committee and the Biology Initiative Committee, which is tasked with developing transformative changes to the Physiology undergraduate experience at MSU. Nationally, she has judged abstracts for both the International Research Congress on Integrative Medicine and Health and the APS David Bruce Awards at EB. She recently participated in the APS Publications Task Force.

Throughout her career, Wehrwein has served her local community as a Michigan Science Olympiad State Tournament judge, Elementary Science Fair coach and reviewer, Celebration of Research Day participant, Building a Healthier Community InSciEd Out participant. She was the lead organizer of the MSU Science Festival and this year organized an APS Physiology Understanding (PhUn) Day at the Impression 5 Science Center with over 1000 participants. She is a member of the Founding Committee for the new APS Chapter, Michigan Physiology Society.

Mentoring: Wehrwein has mentored undergraduates, post-baccalaureate, and medical students, as well as teaching assistants and technicians. To date, she has mentored 26 students.

Wehrwein accepted the 2013 Dale J. Benos Early Career Professional Service Award at the Experimental Biology meeting. ❖



Trainee Advisory Committee Chair Jennifer Sasser, awardee Erica Wehrwein, and President Susan M. Barman.

Curras-Collazo Receives Third ADInstruments Macknight Progressive Educator Award

Margarita Curras-Collazo, PhD, from the Department of Cell Biology & Neuroscience at the Univ. of California, Riverside (UCR) received the third ADInstruments Macknight Progressive Educator Award. Curras-Collazo was selected based on the course she developed, "Educational Training in Neuroscience Outreach," to empower senior neuroscience majors at UCR with teaching skills and her use of various types of technology in the classroom.

This award honors an APS member who demonstrates the greatest potential for incorporating innovative teaching techniques and effectively utilizing technology resources in engaging undergraduate students in physiology education. It is sponsored by ADInstruments in honor of its co-founder, Tony Macknight.

The APS Education Committee chaired by J. Michael Wyss (Univ. of Alabama, Birmingham) selected Curras-Collazo from the pool of applicants. She was chosen based on a 2- to 3-page description of a laboratory experiment or activity that exemplifies innovative use of technology in physi-



Tony Macknight from ADInstruments, awardee Margarita Curras-Collazo, and APS President Susan M. Barman.

ology education, an explanation of how this activity/technique can be integrated in the curriculum to best benefit students, a CV, and a letter of recommendation from her Department Chair or administrator.

Curras-Collazo received a \$1,500 Travel Award to attend Experimental Biology, a certificate of recognition, and an Institutional Grant providing the award recipient's institution with a

PowerLab PTB 4152 LabTutor Physiology Teaching Bundle or its equivalent.

Curras-Collazo presented a poster at EB on her work and will submit an article to *Advances in Physiology Education*. She received the ADInstruments Macknight Progressive Educator Award at the Experimental Biology meeting. ❖

Novel Disease Model Awards Granted to Graduate Student and Postdoctoral Fellow

Predoctoral students and postdoctoral fellows who were first authors on an abstract submitted to Experimental Biology 2013 in Boston, MA were eligible to apply for the Novel Disease Model Awards.

The APS Physiologists in Industry Committee chaired by Kelly Pitts, from Corgenix Medical Corporation, selected a predoctoral and a postdoctoral awardee from the applicants. Awardees were chosen based on the novelty of the model and the potential utility of the system for future research related to a disease process.

The predoctoral awardee received \$500, a certificate of recognition, and complimentary advanced registration for the EB 2013 meeting. The postdoctoral awardee received \$800, a certificate of recognition, and complimentary advanced registration for the EB 2013 meeting. Beginning in 2011, the Novel

Disease Model Awards were sponsored by Plato BioPharma, Inc.

The Predoctoral Awardee was Katrin Hollinger, Iowa State Univ., for her abstract entitled "Dystrophin insufficiency causes a Becker muscular dystrophy-like phenotype in swine."

The Postdoctoral Awardee was

Catharine G. Clark, PhD, Cornell Univ., for her abstract entitled "Ultrasonic actuation (UA) reduces the brain inflammatory response to neural microelectrode insertion."

Awards were presented at EB during the APS Business Meeting. APS congratulates these awardees. ❖



Eugene W. Shek (representative of Physiologists in Industry Committee), Craig F. Plato (President & CEO of Plato BioPharma, Inc.), Katrin Hollinger (Predoctoral Awardee), Catharine G. Clark (Postdoctoral Awardee), and President Susan M. Barman.

Graduate Students and Postdoctoral Fellows Receive tum Suden/Hellebrandt Professional Opportunity Awards

Graduate students and postdoctoral fellows who were first authors on an abstract submitted to Experimental Biology 2013 in were eligible to apply for the Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Award. A fund established to honor the memory of Steven M. Horvath, a distinguished APS member, provides support for the top two underrepresented minority awardees. Two additional funds have been established to honor the memories of Fleur Strand and Gabor Kaley, which provide support for the highest ranked applicant and two additionally highest ranked applications, respectively.

The APS Women in Physiology Committee chaired by Angela Grippo, at Northern Illinois Univ., selected 42 awardees from a pool of 154 applicants. Applicants were required to be APS members (either student or regular) and could not have won the award previously as a graduate student or as a postdoctoral fellow if currently a postdoctoral fellow. Applicants were chosen based on the quality and novelty of their abstracts, and letters written by the candidates describing their career goals, research, and why they were particularly deserving of the award. Each awardee received \$500, a certificate of recognition, and complimentary advanced registration for the EB 2011 meeting; the Fleur Strand Awardee receives \$1000.

The Fleur Strand Award was presented to J. Paula Warrington for having the highest ranked application. The Steven Horvath Awards were presented to Rodrigo Maranon and Bruno Roseguini. The Gabor Kaley Awards were presented to Anne Crecelius and Brett Kirby.

For information about applying for the 2014 Caroline tum Suden/Frances Hellebrandt Professional Opportunity Awards, visit <http://www.the-aps.org/tumsudenstudent> (graduate student applicants) <http://www.theaps.org/tumsudenpostdoc> (postdoctoral fellow applicants); or contact education@the-aps.org. The application deadline for the 2014 awards is November 8, 2013 (<https://www.the-aps.org/awardapps>).

Awards were presented during the APS Business Meeting to: **Urmí Basu**, Univ. of Nebraska Medical Center; **Melissa Bates**, Univ. of Wisconsin; **Marisa Benson**, Syracuse Univ.; **Krystal Brinson**, Georgia Health Sciences Univ.; **Casey Carmichael**, Boston Univ. School of Medicine; **Daniel Collier**, Univ. of Iowa Carver College of Medicine; **Anne Crecelius**, Colorado State Univ.; **Carmen De Miguel**, Georgia Health Sciences Univ.; **Travis Doggett**, Louisiana State Univ. Health Sci. Center; **Jennifer DuPont**, Univ. of Delaware; **Michael Flister**, Medical College of Wisconsin; **Emily Gilbert**, Univ. of Mississippi Medical Center; **John Harrell**, Univ. of Wisconsin, Madison;

Peter Hosick, Univ. of Mississippi Medical Center; **Chunyan Hu**, Roy J. & Lucille A. Carver College of Medicine, Univ. of Iowa; **Stephen Ives**, Univ. of Utah; **Timothy Just**, Univ. of Alberta; **Georgios Kararigas**, Charite Univ. Hospital; **Paige Katz**, Louisiana State Univ. Health Sci. Center; **Ekaterina Khramsotova**, Univ. of Chicago; **Annet Kirabo**, Vanderbilt Univ. School of Medicine; **Brett Kirby**, Duke Univ.; **Allison Kleiber**, Univ. of Missouri; **Rodrigo Maranon**, Univ. of Mississippi Medical Center; **Christopher Martens**, Univ. of Delaware; **Jennifer Miner**, Univ. of Oregon; **Patricio Mujica**, Univ. of Medicine and Dentistry, NJ; **Rebecca Murray**, Univ. of Louisville; **Kenjiro Muta**, Univ. of Iowa; **Ankit Patel**, Weill Cornell Medical College; **Martin Picard**, Children's Hospital of Philadelphia and Univ. of Pennsylvania; **Bruno Roseguini**, Federal Univ. of Sao Paulo; **Joshua Scallan**, Univ. of Missouri at Columbia; **Alicia Schiller**, Univ. of Nebraska Medical Center; **Blythe Shepard**, Johns Hopkins Univ. School of Medicine; **Matthew Socha**, Univ. of Missouri; **J. Paula Warrington**, Univ. of Mississippi Medical Center; **Erika Westcott**, Univ. of Missouri; **James White**, Harvard Medical School; **Shenghua Yuan**, Univ. of Missouri; **Dong Yuan**, West Virginia Univ.; and **Wuqiang Zhu**, Indiana Univ. School of Medicine. ♦



Sue Barman and Kim Barrett with the Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Awardees.

2013 APS Minority Travel Fellows Attend Experimental Biology in Boston, MA

The APS regularly awards Travel Fellowships for underrepresented minority scientists and students to attend APS scientific meetings with funds provided by APS and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). These Fellowships provide funds for reimbursement of registration, transportation, meals, and lodging expenses for travel to a meeting location. Thirty Fellows attended the APS' annual meeting, Experimental Biology (EB) in Boston from April 20-24, 2013.

Fellows in the Minority Travel program not only received financial support to attend these meetings, but were also provided professional guidance through pairings with APS members who served as "meeting mentors" to the Fellows for the duration of the conference. Thanks to the time and expertise offered by mentor volunteers, Fellows were able to expand their network of professional colleagues.

During EB, several events were offered as part of the Minority Travel program including an orientation and reception on Saturday afternoon, a networking breakfast on Monday, and a luncheon on Wednesday. All events were very well-attended by Fellows, meeting mentors, Porter Physiology Development and Minority Affairs Committee members, members of the APS leadership including APS President, Sue Barman, APS President-Elect, Kim Barrett, Past President, Neil Granger, and Executive Director, Marty Frank. During the networking breakfast on Monday, students and meeting mentors had the opportunity to interact with one another again to exchange contact information, provide career-related answers or advice, and introduce students to other possible mentors in their particular research areas and/or geographical areas. This year the early morning networking breakfast program included roundtable discussion topics, with discussion leaders:

Travel Fellows were also given handouts on each topic provided by the APS Archive of Teaching Resources. The breakfast was very well attended and productive.

The Wednesday luncheon consistently provides another opportunity for students and mentors to solidify their interaction and discuss or clarify concepts learned and acquired during the meeting. The highlight of the luncheon was the keynote address given by Eric Floyd,

Vice President Regulatory Affairs and Quality Assurance, Lundbeck A/S.

Floyd received a BS in Biology from Univ. of Illinois at Urbana-Champaign, a MSc in Neuroscience from Tennessee State Univ., a PhD in Neurophysiology from Meharry Medical College and an Executive MBA in Pharmaceutical Marketing from Saint Joseph's Univ. Floyd is a past Porter Physiology Development Fellow and a past APS Minority Travel Fellow.

Floyd's speech, "Making the Transition from Academia into Industry: Crossing the Divide," highlighted the differences between academia and industry and provided advice on how to prepare for a transition. His inspiring talk provided an honest look at the positives and negatives of both career tracks and reinforced the fact that the skills and training the students are gaining and receiving now are transferable. His presentation will be available online later this summer at www.the-aps.org/diversity.

The APS' Minority Travel Fellowship Awards are open to graduate students, postdoctoral students, and early career faculty from minority groups underrepresented in science (i.e., African



Eric Floyd, Minority Travel Fellow Luncheon Speaker at EB 2013.

Americans, Hispanics, Native Americans, and Pacific Islanders). Applicants must be attending US Institutions and conducting research within the 50 states and US Territories. The specific intent of this award is to increase participation of pre- and post-doctoral minority students in the physiological sciences. For more information, contact Brooke Bruthers in the APS Education Office at 301-634-7132 or bbruthers@the-aps.org, or visit www.the-aps.org/MTF. ❖

Discussion Topic	Discussion Leader
Perfecting Your CV	Barbara T. Alexander Univ. of Mississippi Medical Center
Finding Grant Opportunities	Eric Lazartigues Louisiana State Univ., Health Science Center
Interviewing Skills	Jan M. Williams Univ. of Mississippi Medical Center
Tips on Writing and Defending a Dissertation	Dexter L. Lee Howard Univ.
Mentor Selection	Norma B. Ojeda Univ. of Mississippi Medical Center
Networking: How to Keep in Touch	Johana Vallejo-Elias Midwestern Univ. of Osteopathic Medicine



APS Minority Travel Fellows at the EB 2013 Luncheon.

APS Travel Fellows and Meeting Mentors at Experimental Biology 2013

Travel Fellow	Meeting Mentor
Joshua Avila, Texas A&M Univ.	Farah Ramirez-Marrero, Univ. of Puerto Rico
Krystal Brinson, Georgia Regents Univ.	Aaron Polichnowski, Hines VA Hospital
Denise Cornelius, Univ. of Mississippi Medical Center	Eugene Shek, Abbott Laboratories
Ruan Cox, Jr., Univ. of South Florida	Havovi Chichger, Brown Univ.
Kristine DeLeon, Univ. of Texas HSC, San Antonio	A. Martin Gerdes, New York Institute of Technology, College of Osteopathic Medicine
Cynthia Franklin, Univ. of the Incarnate Word	Keisa Mathis, Univ. of Mississippi Medical Center
Victor Garcia, New York Medical College	Debebe Gebremedhin, Medical College of Wisconsin
Ronee Harvey, Mayo Clinic	Norma Ojeda, Univ. of Mississippi Medical Center
Angelina Hernandez, Indiana Univ. School of Medicine	Barbara Hansen, Univ. of South Florida
Debra Irsik, Univ. of Nebraska Medical Center	Dexter Lee, Howard Univ.
Erica Jarrett, Des Moines Univ.	Annelyn Torres-Reveron, Ponce School of Med. and Health Sci.
Tahisha Buck, Univ. of Oregon	Naomi Brooks, Univ. of Stirling
Jennifer Colon, Univ. of Puerto Rico	Maggie Curras-Collazo, Univ. of California, Riverside
Folami Lamoake, Georgia Regents Univ.	Tracy Dodd, Louisiana State Univ.
Kathryn Lanphere, Univ. of New Mexico	Michael Massett, Texas A&M Univ.
Keisa Mathis, Univ. of Mississippi Medical Center	Meeting Mentor to Cynthia Franklin
Jamie Mayo, Idaho State Univ.	Jerome Breslin, Univ. of South Florida
Heidi Medford, Washington State Univ.	Flavia Souza, Louisiana State Univ.
Mariela Mendez, Henry Ford Hospital	Larry Alexander, Midwestern Univ.
Tanecia Mitchell, Univ. of Alabama, Birmingham	Jan Michael Williams, Univ. of Mississippi Medical Center
Gilberto Moralez, Univ. of North Texas HSC	Jacqueline Limberg, Mayo Clinic
Jaume Padilla, Univ. of Missouri	Ryan Harris, Georgia Regents Univ.
Alexis Jones, Oklahoma State Univ.	Layla Al-Nakkash, Midwestern Univ.
Annet Kirabo, Vanderbilt Univ.	Paul Marvar, Bristol Heart Institute
Vanitra Richardson, Univ. of Arizona	Alice Villalobos, Texas A&M Univ.
Steven Romero, Univ. of Oregon	Nathan Jenkins, Univ. of Missouri
Tiffani Slaughter, Univ. of Mississippi Medical Center	Ulla Kopp, Univ. of Iowa Carver College of Medicine
Lakeisha Tillery, Meharry Medical College	TanYa Gwathmey-Williams, Wake Forest Univ.
Ashlee Tipton, Georgia Regents Univ.	Catherine Uyehara-Yamauchi, Tripler Army Med. Center
Matthew Valdez, Univ. of California, Riverside	Pamela Hornby, Janssen Pharmaceutical Companies of Johnson & Johnson

MD or DO Students Receive First Excellence in Professional Student Research Travel Awards

MD or DO students who were first authors on an abstract submitted to Experimental Biology 2013 in Boston, MA were eligible to apply for the newly created Excellence in Professional Student Research Travel Awards.

The APS Career Opportunities in Physiology Committee chaired by Kathy Ryan, from US Army Institute of Surgical Research, selected eight awardees from the applicants. Awardees were chosen based on the quality of their abstract; a one-page letter discussing their role in the research, the significance of the research, and their career plans; and a recommendation letter from their research advisor.

The awardees received a certificate of recognition and \$1,800 travel allowance and complimentary advanced registration for the EB 2013 meeting. They also received a meeting mentor who was a professional in their field of research for the EB meeting.

Students received their awards and met with their meeting mentors at an orientation session at EB. Career Opportunities in Physiology Committee Chair Ryan and member Babette LaMarca (Univ. of Mississippi)

spoke to the students about APS, translational research opportunities, and navigating the EB meeting.

The 2013 Excellence in Professional Student Research Travel Awardees are: Jessica Dahmus, Pennsylvania State Univ.; Leia A. Edenfield, Georgia Regents Univ.; Jonathan E. Grudis, Univ. of Colorado School of Medicine;

Nathalie L. A. Holme, Univ. of Oslo Institute of Basic Medical Sciences; Amanda J. Jepson, Des Moines Univ. College of Osteopathic Medicine; Nikhil V. Kamat, Univ. of Southern California Keck School of Medicine; Carlo J. Milani, Tulane Univ.; Noud van Helmond, Radboud Univ. Nijmegen Medical Centre.



Career Opportunities in Physiology Committee Chair Kathy Ryan (left) and member Babette LaMarca (right) with the 2013 Excellence in Professional Student Research Travel Awardees.

Inspire the Next Generation of Physiologists

Physiology Understanding Week (PhUn Week) is November 4-8, 2013



Start Planning your Event Now! Deadline: October 1st

- The theme for PhUn Week is Exercise & Health.
- APS provides resources to support and plan your event.
- APS Members and teachers partner NOW for preliminary planning before the school year begins!
- Online submission request form for PhUn Week Event planners is now open.



www.PhUnWeek.org

Undergraduate Students Receive David S. Bruce Awards for Excellence in Undergraduate Research

Undergraduate students who were first authors on an abstract submitted to Experimental Biology 2013 in Boston, MA were eligible to apply for the David S. Bruce Awards. The Bruce Awards are split into two awards: the Outstanding Undergraduate Abstract Award and the Excellence in Undergraduate Research Awards.

The APS Education Committee, chaired by J. Michael Wyss, Univ. of Alabama, Birmingham, selected 26 Outstanding Undergraduate Abstract Awardees from a pool of 80 applicants. Awardees were chosen based on the quality and novelty of their abstracts and letters written by the candidates describing their career goals, research, and why they were particularly deserving of the award.

Awardees receive \$100, 2 years of APS undergraduate membership and a certificate of recognition.

These students were then eligible for the Bruce Excellence in Undergraduate Research Awards. They were required to make oral presentations of their posters to a subcommittee of Education Committee members and other APS members. All 26 Abstract Awardees competed, from which 13 Research Awardees were selected based on their knowledge of their research project. Each awardee received \$400 and a certi-

ficate of recognition. This year, for the first time, funds were received and earmarked to award an additional \$350 to the top Research Awardee. This year APS was pleased to receive support for the Bruce Awards again from Dr. Isis, and APS Members Marlowe W. Eldridge, John M. Horowitz, Barbara A. Horwitz, Ida J. Llewellyn-Smith, and Thomas A. Pressley. Awards were presented by President Susan M. Barman during the special APS Undergraduate Poster Session.

Jennifer C. Schanzle, Univ. of Missouri-Columbia, was named the top Bruce Excellence in Undergraduate Research awardee.

APS congratulates all these students on the quality of their research and presentations.

The awards are named in honor of APS member David S. Bruce (1939–2000), who served as Chair of the APS Teaching Section and was a professor of physiology at Wheaton College from 1978–2000. Dr. Bruce was a dedicated physiology educator who had a particular interest in engaging undergraduate students in scientific research. Dr. Bruce not only encouraged and supported his students in participating in research, but he also regularly brought undergraduate students to the Experimental Biology meeting, often to present their research findings. ♦



President Susan M. Barman with the 2013 Bruce Outstanding Undergraduate Abstract Awardees.



President Susan M. Barman with the 2013 Bruce Excellence in Undergraduate Research Awardees.

Outstanding Abstract Awardees

Tamara M. Armstrong, Univ. of Arizona
Jonathan D. Bomar, Michigan State Univ.
Timothy W. Brodsky, Skidmore Coll.
Theresa Cao, Tulane Univ.
T. Taylor Coleman, Univ. of Mississippi
William S. Foster, Queen's Univ.
Michael A. Francisco, Univ. of Oregon
Greg Frye, Univ. of Florida
Amy Galvin, Ursinus Coll.
Haley E. Gillham, Univ. of Oregon
Zulqarnain Khan, Univ. of Maryland, Baltimore Co.
Susan Lang, Pennsylvania State Univ.
Rebecca L. Maher, Williams Coll.
Alexandra Mikhailova, Univ. of California, Davis
Sofia K.H. Morsing, Karolinska Institutet
Jenn Nhan, Univ. of Utah
Emmanuel Nwadozi, York Univ.
Uttara Partap, Williams Coll.
Carolyn P. Sawicki, Western Univ.
Jennifer C. Schanzle, Univ. of Missouri-Columbia
Christine E. Schindler, Williams Coll.
Aman Shah, Univ. of Kentucky
Lorrie Sims, Eastern Kentucky Univ.
Daniel Spearman, Univ. of Florida
Rosa Torres, Michigan State Univ.
Kirsten A. Wood, Loyola Univ. New Orleans

Lab Host

Thomas L. Pannabecker, Univ. of Arizona
James J. Galligan, Michigan State Univ.
Thomas H. Reynolds, Skidmore College
Yumei Feng, Tulane Univ.
Michael J. Ryan, Univ. of Mississippi
Michael E. Tschakovsky, Queen's Univ.
Christopher T. Minson, Univ. of Oregon
Leonardo F. Ferreira, Univ. of Florida
Beth A. Bailey, Ursinus College
Jeffrey S. Gilbert, Univ. of Oregon
Andrea L. Meredith, Univ. of Maryland
Sean D. Stocker, Pennsylvania State Univ.
Steven J. Swoap, Williams College
Barbara A. Horwitz, Univ. of California, Davis
Jennifer S. Pollock, Georgia Regents Univ.
J. David Symons, Univ. of Utah Sch. Med.
Tara L. Haas, York Univ.
Steven J. Swoap, Williams College
J. Kevin Shoemaker, Univ. of Western Ontario
Paul J. Fadel, Univ. of Missouri-Columbia
Steven J. Swoap, Williams College
Esther E. Dupont-Versteegden, Univ. of Kentucky
Francisco H. Andrade, Univ. of Kentucky
Donald C. Bolser, Univ. of Florida
Stephanie W. Watts, Michigan State Univ.
Lisa M. Harrison-Bernard, Louisiana State Univ.

Bruce Excellence in Undergraduate Research Awardees

Jonathan D. Bomar, Michigan State Univ.
Timothy W. Brodsky, Skidmore College
William S. Foster, Queen's Univ.
Amy Galvin, Ursinus College
Haley E. Gillham, Univ. of Oregon
Zulqarnain Khan, Univ. of Maryland, Baltimore Co.
Susan Lang, Pennsylvania State Univ.
Rebecca L. Maher, Williams College
Emmanuel Nwadozi, York Univ.
Uttara Partap, Williams College
Jennifer C. Schanzle, Univ. of Missouri-Columbia
Christine E. Schindler, Williams College
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Steven J. Swoap, Williams College
Tara L. Haas, York Univ.
Steven J. Swoap, Williams College
Paul J. Fadel, Univ. of Missouri-Columbia
Steven J. Swoap, Williams College
Esther E. Dupont-Versteegden, Univ. of Kentucky

David S. Bruce Awards for Undergraduate Students

Eligibility:

1) First author on a submitted abstract for Experimental Biology; 2) working with an APS member; 3) enrolled as an undergraduate student at time of application and EB meeting

Deadlines:

November 8: EB Abstract due
 January 12: Application due
 Selection of Abstract Awardees is based both on the abstract and letter of application, plus letter of recommendation. Selection of Research

Awardees is based on interview and poster presentation at EB.

Awards: *Abstract Award*: \$100 + 1 year complimentary APS membership; *Research Award*: \$400.

Undergraduate Summer Research Fellows Attend EB

The 2012 Undergraduate Summer Research Fellows (UGSRFs) came to the 2013 Experimental Biology meeting held in Boston, MA to report on their research findings from last summer.

Twenty-two of the 24 UGSRFs attended the meeting. Twenty of the UGSRFs were first authors on 22 abstracts submitted to the meeting. Susan Barman, APS President, and Kim E. Barrett, APS President-elect congratulated the UGSRFs on their scientific research efforts and presented them with certificates for completing

their fellowship.

All undergraduates in physiology who had first-author posters were invited to a special Undergraduate Orientation Session. The UGSRFs were joined by the David S. Bruce Outstanding Undergraduate Abstract Awardees, in addition to approximately 30 other undergraduates for the session. Kathy Ryan, Chair of the Career Opportunities in Physiology Committee, welcomed the undergraduates and introduced the UGSRFs. J. Michael Wyss, Chair of the Education

Committee, introduced the Bruce Abstract Awardees and reminded the undergraduates about the special Undergraduate Poster Session on Sunday. Erica Wehrwein, member of the Career Opportunities in Physiology Committee, gave a presentation on attending a scientific meeting and how to get the most out of being there, both in terms of science and career talks, as well as social activities. Vanesa Ramseyer, member of the Trainee Advisory Committee, gave a talk on poster presentations and hints for making that a positive experience. Members of the Career Opportunities in Physiology and Trainee Advisory Committees attended the session and sat among the undergraduates to offer their own advice.

On Sunday, the UGSRFs participated in the APS Undergraduate Poster Session and presented their posters to APS members, in addition to their regularly scheduled scientific session.

Overall, the UGSRFs saw the EB meeting as being a very positive learning experience and appreciated the opportunity to come and present their research. ♦



Kathy Ryan, Chair of the Career Opportunities in Physiology Committee, and the 2012 Undergraduate Summer Research Fellows (not all present).

Augusta State Univ. Undergraduates Win Third Video Contest

Michael Ridlehoover, Alexis Wren, Zachary Minter of Augusta State Univ. are the recipients of the APS Presents...Phantastic Physiology Voyage 2013: "Function Follows Form Video Contest First Place) Award. Their video was entitled "Hillbilly Hypoglycemia."

In addition, for the first time, Ridlehoover, Wren and Minter also won the Viewers' Choice Award for the contest, receiving over 1,750 hits on their video.

The video contest encourages undergraduate and graduate students to creatively connect with physiology and engages them with the broader public through a short video contest. These videos would creatively demonstrate and/or explore a specific physiological function in five minutes or less. Videos can be staged as a short play, commercial, news broadcast, talk show, music video, documentary etc.

The APS Career Opportunities in Physiology Committee chaired by Kathy Ryan (from US Army Institute of Surgical Research) selected the award-winning video from the applicants. The

winning video was chosen based on originality, creativity, and quality of the video; whether the video explained the scientific principle at issue clearly and accurately; whether the video made physiology more interesting and relevant; and overall impact.

Finalist videos were then advertised on the APS website and Facebook pages to encourage members and guests to review and vote for their favorite on YouTube. Voting was closed during the EB meeting and the Viewers' Choice Award given based on the total number of YouTube views.

The award-winning video team received \$750 and certificates of recognition. For the Viewer's Choice Award, the team received an

additional \$250 and certificates of recognition.

Awards were presented during the Undergraduate Poster Session held during EB. ♦



President Susan M. Barman congratulates 2013 1st-Place and Viewer's Choice Video Contest awardees Zachary Minter, Michael Ridlehoover, and Alexis Wren, from Augusta State Univ.

Undergraduate Research Highlighted at Special EB Session

EB 2013 provided the setting for the 10th annual APS Undergraduate Poster Session. This special session highlights the contributions of undergraduate students to physiology research. Students present their poster at both their regularly scheduled poster session and the special Undergraduate Poster Session. This year it was held again on Sunday afternoon and culminated with the presentation of the David S. Bruce Excellence in Undergraduate Research Awards and the awards for the third APS Video Contest: APS Presents...Phantastic Physiology Voyage: "Function Follows Form."

Of the 196 undergraduate first authors invited to present at the APS Undergraduate Poster Session, 125 accepted the invitation and took advantage of the opportunity to display their poster and present it to interested scientists and guests. In addition, APS was joined for a third year by undergraduate students from the American Association of Anatomists (AAA). Twelve anatomy undergraduate presenters were there to participate in the session along with AAA society members. Approximately 200 APS and AAA members and guests were in attendance at the session, with many comments heard as to the high quality of research being presented by the students. The students and their research were highlighted again this year in a special printed program distributed during the session.

The session not only provided all these undergraduate students with an



Undergraduates discuss their research with APS members.

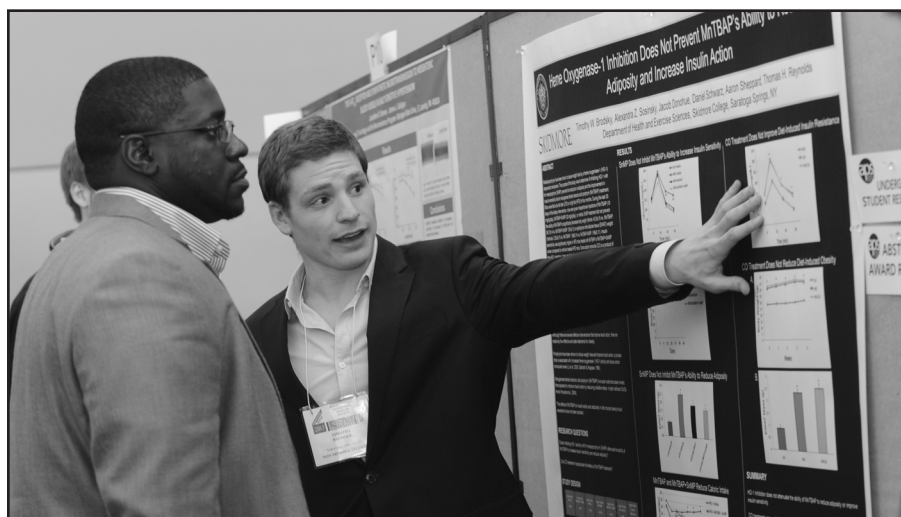
opportunity to highlight their research but also to meet faculty from many graduate schools and medical schools to discuss their future plans. This is the seventh year that graduate departments were invited to sponsor the session and display promotional materials for their departments to those undergraduates considering graduate school. The departments and students arrived 30 minutes before the session to allow the students to spend time with the departments without having to leave their posters. The following 11 schools or programs participated: Univ. of California, Davis, Molecular, Cellular, and Integrative Physiology Graduate Group; Univ. of Cincinnati, Systems

Biology and Physiology Program; Univ. of Florida, Department of Physiology & Functional Genomics; Indiana Univ. School of Medicine, Department of Cellular and Integrative Physiology; Mayo Clinic College of Medicine, Physiology and Biomedical Engineering Graduate Program; Medical College of Wisconsin, Department of Physiology; Meharry Medical College, Physiology Program; Michigan State Univ., Department of Physiology; Univ. of Missouri, Department of Biomedical Sciences; Saint Louis Univ., Graduate Program in the Biomedical Sciences; Virginia Commonwealth Univ. School of Medicine, Department of Physiology and Biophysics.

The departments also received a list of undergraduate presenters who indicated they were interested in being contacted about attending graduate school.

APS looks forward to hosting APS Undergraduate Poster Sessions at future Experimental Biology meetings and encourages undergraduate students doing research in physiology to submit abstracts for EB, apply for the David Bruce award, and attend the poster session in 2014.

Departments who are interested in sponsoring the 2014 Undergraduate Poster Session and displaying materials for their departments are encouraged to contact the APS Education Office (education@the-aps.org). ❖



Undergraduates discuss their research with APS members.

Promoting PhUn with Physiology During the PhUn Week Poster Session at Experimental Biology 2013

Twenty three poster presenters described strategies for outreach and hands-on physiology-related activities across primary, elementary, middle, and high school levels at the Physiology Understanding (PhUn) Week Poster Session at EB 2013. The poster session was introduced two years ago to foster a community of sharing best practices and grassroots

outreach efforts by APS members who participate in the APS annual Physiology Understanding Week (PhUn Week) outreach program every November (www.PhUnWeek.org). In addition to classroom activities, topics included teaching pre-school children about the heart, the magic of body functions, hands on experiments for elementary and middle school students

and organizing special community events. APS Education Committee member Kim Henige organized and opened the poster session. Approximately 50 attendees flowed through the ninety-minute open poster session. The continental breakfast session was co-sponsored by the APS and ADInstruments, Inc. ❖

PhUn Poster Titles and Presenters

Title	Presenter
Teaching Preschool Children About the Heart	Kim Henige
PhUn Day at the Boston Children's Museum	Andrea Gwosdow
Heart Electricity and Second Grade Students	Emily Barret
A Day with Physiologists: The Lung-o-meter Experiment in a Fifth Grade Science Class	Mark Cunningham
Teaching 4th Graders to Measure Lung Capacity	Carmen De Miguel
The Magic of Body Functions: Prepare to be Amazed!	Alvaro Gurovich
Assessment of 4th Grade PhUn Week Experiment on the Cardiovascular System	Patricia Halpin
Interactive DNA Modeling and the Effects of Genes and Environment on Health: Milwaukee Elementary Charter School Visit for Phun Week 2012	Diane Munzenmaier
Exploring Renal Physiology in Elementary School: A Game to Demonstrate How Urine is Made and Excreted	Christine Schnackenberg
Organizing a Large-Scale PhUN Week Event at a Science Center	Erica Wehrwein
Engaging Elementary Students in Physiology Through Multifaceted Collaboration	Laramie Wieseman
Germ Transmission: Does "Covering" Really Matter?	Margaret Zimmerman
PhUn Dramatization of O ₂ and CO ₂ Transport at Rest and Exercise	Helena Carvalho
PhUn Week 2012	Robert Manriquez
Hands-on Activities to Teach Elementary and Middle School Students about Heart, Lung and Kidney Function.	Michael Ryan
Physiology Outreach to K-5th Grade Students	J. Michael Wyss
Making Heart Health Hands-On	Meredith Owen
Utilizing the NPS Physiology Outreach Resource Kit to Enhance PhUn Week Activities	Karla Haack
Discovering the World of Physiology	Cynthia Ann Jackson
Cardiovascular Concepts Taught by Medical Students in Medical Education Scholarly Concentration	William Johnson
Prevalence and Health Risks Associated with Metabolic Syndrome	Dexter Lee
Posture and Blood Pressure Regulation: Integrative PhUn for High School Students	Anna Stanhewicz
Adaptation of Physiology Activities for pre-K-12 Students	Alicia Schiller

2012 Frontiers in Physiology Teachers Complete Fellowship

Frontiers in Physiology Research Teacher Fellows completed their fellowship year in April with their attendance at EB2013 in Boston. Fourteen middle and high school teachers from across the nation began this course in April of 2012 and progressed through the online professional development lessons for nine months. The Frontiers in Physiology Program was made available with a NCCR Science Education Partnership Award (SEPA) grant and generous support from APS. Teachers participated in reading, sharing of resources, experimental design, poster sessions, discussion boards, lesson development, peer reviews, production of Bench-to-Bedside Primers, and pre- and post- fellowship content surveys and physiology tests. Lead Mentor Instructor Robert Manriquez (2005) was assisted by Mentor Instructor Charlie Geach (1997) in leading the online forum of modeling inquiry methods for use in the classroom. Overall, teachers from nine states completed

this rigorous professional development course, learning not only about physiology but about the best ways to help their students learn science via the scientific method.

The teachers completing the program include: Shelia Banks, John Ehret High School, Marrero, LA (Lauri O. Byerley, Louisiana State Univ.);

Mahera, Beidas, Proviso Math & Science Academy, Forest Park, IL (Sakthivel Sadayappan, Loyola Univ.);

Laura Decker, Mandeville High School, Mandeville, LA (Nicole LeCapitane, and Patricia Molina, Louisiana State Univ.);

Ariel Delos Reyes, Memorial High School, Houston, TX (Rolando E. Rumbaut, Baylor College of Medicine)

Alton Dozier, Ouachita Parish School System, Jena, LA (D. Neil Granger, Louisiana State Univ.);

Kyle Duhon, Lake Elementary, Gonzales, LA (Jason D. Gardner, Louisiana State Univ.)

Kathleen Dwyer, Maplewood

Richmond Heights High School, Maplewood, MO (Mark Knuepfer, St. Louis University);

Melissa Fauchaux, Lake Pontchartrain Elementary, LaPlace, LA (Nicholas Gilpin, Louisiana State Univ.);

Rebecca Hite, Carrboro High School, Carrboro, NC (Monte Willis, Univ. of North Carolina);

Jennifer Giannou-Moore, Austin High School, Austin, TX (Hirofumi Tanaka, Univ. of Texas, Austin, TX);

Jodi Sanchez, Lusher Charter School, New Orleans, LA (L. Gabriel Navar, Tulane Univ.);

Cecelia Shelton, Hornedo Middle School, El Paso, TX (Kristin Grosselink, Univ. of Texas, El Paso, TX);

Julie Smith, Greenhills School, Ann Arbor, MI (Linda Samuelson Univ. of Michigan, Ann Arbor, MI);

Amy Zienteck, Union Grove High School, Burlington, WI (Dr. Julian Lombard, Medical College of Wisconsin, Wauwatosa). ❖

High School Students and Science Teachers Explore Physiology at EB 2013

Education Committee member Jessica Dominguez Reig coordinated the 2013 APS Workshop for High School Teachers and Students at EB. Even with the extraordinary events prior to EB there were 70 area high school teachers and their students in attendance at the workshop on April 22, along with APS members and 2012-2013 Frontiers Research Teachers.

As students arrived, they were engaged in interactive demonstrations by APS members, K 12 Outreach Fellows, and representatives from ADInstruments, who set up examples of equipment used in teaching and research laboratories. The keynote talk, "Redefining Snake Oil: Cardioprotective Mechanism in Burmese Pythons" was given by APS member Leslie Leinwand, Univ. of Colorado, Boulder. Her talk was followed by a Careers Panel that included Leinwand, TanYa Gwathmey Williams, Wake Forest School of Medicine, and Colin Young, Cornell Univ. The panel was moderated by 2012 Lead Mentor Instructor, Robert Manriquez. Twelve APS members served as tour guides during lunch where they took teachers and students through the exhibits and

posters and shared a box lunch while discussing physiology careers.

The afternoon student session was led by Patricia Halpin, Univ. of New Hampshire, along with Frontiers Mentor Instructors Robert Manriquez and Charlie Geach. Students used the "Junkyard Digestion" activity on modeling the digestive system with common household items, while their teachers and APS teacher fellows conducted "Kidney Under Pressure," an exercise in differential diagnosis led by Barbara Goodman, Univ. of South Dakota.

As in the past, feedback from both teachers and students was very positive and students were especially excited to meet physiologists one-on-one during the lunch hour tour to the exhibit hall and scientific posters. In addition to the APS, donations for door prizes and resources were provided by ADInstruments, AAAS, the Howard Hughes Medical Institute, the National Association of Biology Teachers, and VWR Education. The APS Education Committee is planning to continue the workshop program for high school students and teachers at EB 2014 in San Diego, CA. ❖



High School students from around the Boston area participate in the hands on workshop "Junkyard Digestion" during the Teacher Student Workshop at EB 2013.

APS Council Holds Summer Meeting in Bethesda

The APS Council held its annual summer meeting in Bethesda, MD, July 10-12, 2013, at the Bethesda Marriott Hotel. Each summer, the Council invites the APS Committee Chairs to the summer meeting to present their annual committee reports to Council. The committee reports will be published in the November issue of *The Physiologist* and will be posted to each committee's web page.

Prior to the beginning of the joint Council/Committee Chairs meeting, APS President Kim Barrett, President-elect David Pollock, Past President Sue Barman, Councillor John Chatham, and APS Science Policy Committee Chair Kevin Kregel visited several NIH Institute directors. These directors included Chris Austin, Director, National Center for Advancing Translational Sciences (NCATS); James Batty, Director, National Institute on Deafness and Other Communication Disorders (NIDCD); Story Landis, Director, National Institute of Neurological Disorders and Stroke (NINDS); Jim Anderson, Deputy Director, Program Coordination, Planning, and Strategic Initiatives; and Yvonne Maddox, Deputy Director, National Institute of Child Health and Human Development (NICHD). As a result of these meetings, Maddox and Austin were invited

to write articles for publication in *The Physiologist*. Additionally, APS will be working with Maddox on the possibility of developing joint APS-NICHD programs.

Council approved a funding request from the Education Department to plan a meeting for physiology course directors to be held in conjunction with the 2013 Ohio Chapter meeting. This would be a planning meeting to develop a plan for a subsequent national meeting of course directors. The Education Committee believes that a national meeting dedicated to the needs and interests of physiology course directors/coordinators would significantly enhance the presence of physiology in the curriculum of health related schools and improve the quality of medical physiology education by increasing the awareness of and access to resources for instructional enhancement and faculty development.

The APS Council has approved the formation of a new committee—Committee on Honors. The duties of this Committee will be to coordinate the nomination process of APS members to National Academy of Sciences (NAS), National Academy of Engineering (NAE), Institute of Medicine (IOM), or organizations of similar stature and to coordinate the nomination process of APS members

for major scientific awards.

In addition to presenting their reports, the chairs discussed the highlights of their committees' activities and programs during the past year, and updated Council on the committee's goals and plans for the coming year. The chairs also submit requests for new committee programs to Council for their approval. If the program requires new financial support, a New Programs Fund request is included with the request.

The APS Council approved the bylaws for the newly established Missouri Chapter as recommended by the Chapter Advisory Committee (CAC). The CAC also recommended that Council approve the proposal from the Indiana Chapter for the Chapter Activity Grant in the full amount of \$2,000; Council approved this recommendation.

The International Committee presented a proposal to Council to expand the Latin American Initiative Program into a full International Outreach Program. This program would provide funds to support educational, training, research, or public outreach events outside of the USA. The goals of the program include: 1) promote interactions and exchange between APS members, sister societies, and other international physiologists; 2) foster education, scien-



APS Council: Front Row: Ann Schreihof, Susan Barman, Kim Barrett, David Pollock, Patricia Molina; Middle Row: Hershel Raff, Jeff Sands, Pam Carmines, Hannah Carey, Marilyn Merker, John Chatham, Kevin Kregel; Back Row: Dennis Brown, Marshall Montrose, Ron Lynch, Jane Reckelhoff, Michael Wyss, William Talman, Harold Laughlin.



APS Committee Chairs: Front Row: Harald Stauss, Robert Brock, Christine Maric-Bilkan, Dexter Lee; Back Row: Bryan Mackenzie, Jennifer Sasser, Barbara Goodman, Gaylen Edwards, Kathy Ryan, Angela Grippo.

tific research, and dissemination of information in the physiological sciences; 3) support underrepresented regions; and 4) raise the global stature of the APS. Up to six awards would be given annually, each with a budget of up to \$7,500. The program would begin in 2014. Council approved the creation of this program.

The Porter Development Committee submitted a concept proposal to Council for the development of a new award—the A. Clifford Barger Underrepresented Minority Mentorship Award. This award is to honor those individuals who demonstrate outstanding leadership, guidance, and mentorship to increase the participation of underrepresented minority groups in physiological sciences in the US. Council approved the concept of the award and the Committee will bring a final proposal back to

Council for approval.

As requested by the Publications Committee, Council approved the proposal to allow submissions of manuscripts to the Journal of Neurophysiology that had been previously been posted to a preprint server, such as ArXiv.

Each year during the Council/Committee Chairs meeting, APS hosts an employee appreciation reception. The reception provides an opportunity for members of Council and the committee chairs to meet with

the APS staff. During the reception, APS President Kim Barrett thanked the staff saying, “first I want to thank Marty Frank. It is his leadership that makes APS such a wonderful society.” Barrett went on to say, “I have been a member of APS for 25 years, and know that it is the APS staff that makes APS run,” and that “the staff ensures that the ideas that Council and the Chairs have become a reality. No other society has such a staff as APS.”

The highlight of the reception every year is the recognition of those staff members who have worked for APS for five years or more (anniversary is based on five-year intervals). Each employee celebrating an anniversary receives a certificate of appreciation and a gift certificate. This year APS President Kim Barrett presented a 20-year certificate to Marsha Matyas (Director, Education Programs); 15-year certificates to Michael Gentry (Online Production Editor), Coleen Kitaguchi (Webmaster), Geraldine Marklin (Membership), Michael Quinn (Database Manager), Georgia Stine (Membership); 10-year certificates to Gale DeSouza (Accountant), Damon Hurbon (Art Editor), Charmon Kight (Publications); and a 5-year certificate to Rita Scheman (Director of Publications). ❖



APS Staff: Front Row: Damon Hurbon, Gale DeSouza, Charmon Kight, Coleen Kitaguchi, Rita Scheman; Back Row: Martin Frank, Mike Quinn, Mike Gentry, Georgia Stine, Marsha Matyas, Kim Barrett. Not Pictured: Gerry Marklin.

APS John F. Perkins Memorial Award Travel Report 2013

Kyungjoon Lim, Baker IDI Heart & Diabetes Institute

Overview: It was an honor to receive the John F. Perkins Memorial Award which allowed me to travel to Omaha, NE and visit Dr. Irving Zucker's lab at Nebraska's health science center, Department of Cellular and Integrative Physiology at the Univ. of Nebraska.

During my stay, I was involved in surgical training for attaching a cardiac pacemaker to the rabbit heart. Furthermore, there was in-depth training for using the Western Blotting and Real-time PCR.

As my current research interest is on obesity related hypertension and the association of increased sympathetic nerve activity, it was a great opportunity to discuss and exchange ideas on how to approach and measure sympathetic nerve activity in conscious animals as Dr. Zucker's lab also records renal sympathetic nerve activity.

Outcomes: After returning from Dr. Zucker's lab, I have started setting up the Western Blot and real time PCR in our lab. For the surgical techniques I have learnt, this information and experience will be directly related to our future grant writing to the National Health and Medical research (NH&MRC) in Australia. With the techniques I have acquired in Molecular based analysis, it will give us an in-depth understanding of the mechanism of sympathetic nerve activity in obesity related hypertension.

Thank you: I would like to personally acknowledge the generosity of APS to make these opportunities available to

me. Furthermore, I would like to thank Dr. Zucker and all the staff and students at Department of Cellular and Integrative Physiology of UNMC for their warm hospitality and dedicated service, teaching and discussing all the techniques with me. In particular, I would like to extend my thanks to Dr. Karla Haack, Dr. Erika Boesen, Dr.

Matthew Haack, Peter Pellegrino, Alicia Schiller, Bryan McMahon, Pamela Curry, Johnnie Hackley and Kaye Talbitzer.

This has greatly enhanced my understanding of the type of research possible and necessary so that the mechanisms responsible for generating high blood pressure can be determined. ❖



APS Supports Local and Regional Science Fairs



Would you like to be a science fair judge at your local school and present an APS award?



Each year the APS sponsors awards at local and regional science fairs on a first come, first serve basis. The APS awardee receives an APS t-shirt, pin, and a Certificate of Achievement for the best physiology-related project. The student's teacher receives a copy of the APS book, *Women Life Scientists: Past, Present, and Future* and an APS teacher resource packet. Any APS member who participates as a judge in a local or regional science fair at an elementary, middle, or high school is eligible to apply and receive APS support for one award per year.

To request an award package, visit the APS Science Fair website or contact Scarlett Whitsett (swhitsett@the-aps.org) at the APS Education Office.

the-aps.org/education/sciencefair

New Regular Members

*transferred from student membership

Christopher M. Adams
Univ. of Iowa

Francois Alhenc-Gelas
INSERM U872, Paris, France

Paul Avan
Univ. of Auvergne, France

Cynthia M. Beall
Case Western Reserve Univ., OH

Bastien Berret
Univ. of Paris-Sud, Orsay, France

Kim Blackwell
George Mason Univ., Fairfax, VA

Hanna Johnson Broome
Univ. of Mississippi Med. Ctr.

Edward M. Callaway
Salk Institute, La Jolla, CA

Joann Chang
Arizona Western College

H. Steven Colburn
Boston Univ., MA

Jennifer Dearolf
Hendrix College, Conway, AR

Shengyuan Ding
Univ. of Tennessee HSC, Memphis

Torsten Eken
Oslo Univ. Hospital, Norway

Ricardo Fernandez
Univ. Andres Bello, Santiago, Chile

Shunichi Fukuda
Nat'l. Hosp., Kyoto Med. Ctr., Japan

Tomas Ganz
Univ. of California, Los Angeles

Romain Harmancey
Univ. of Texas Med. Sch., Houston

Chou P. Hung
Georgetown Univ., Washington, DC

Sachindra Raj Joshi
Univ. of South Alabama, Mobile

Alexey Kamenskiy
Univ. of Nebraska Med. Center

Jeremy Mikhail Kellawan
Univ. of Wisconsin, Madison

Max J. Kurz
Univ. of Nebraska Med. Center

Justin La Favor
Johns Hopkins Sch. Med., MD

Avigdor Leftin
Weizmann Inst. Sci., Rehovot, Israel

Jun Li*
Univ. of Alabama, Birmingham

Par Mohammadian
Los Angeles Mission College, CA

Kanigula Mubagwa
Univ. of Leuven, Belgium

Ramon Munoz-Chapuli
Univ. of Málaga, Spain

Todd Andrew Nolan
LECOM, Bradenton, FL

Takeshi Otsuka
Nat'l Inst. for Physiol. Scis., Japan

Nicole A. Pearson
Univ. of Iowa

Susan Marie Perry
Uniformed Services Univ., MD

Jill Anne Rahnert*
Emory Univ., GA

Toyin Mohammed Salman
Univ of Ilorin, Nigeria

Srikanth Singamsetty
Univ. of Pittsburgh, PA

Alexandra Soto-Pina*
Univ. Autónoma Del Estado De México

John Arthur Thompson
Univ. of Colorado Sch. Med., Aurora

Nathan Roger Tykocki*
Univ. of Vermont, Burlington

Valerie Urbach
Our Lady's Children's Hosp., Ireland

Scott Visovatti
Univ. of Michigan, Ann Arbor

Robert Walker
Univ. of Otago, Dunedin, New Zealand

Shuxia Wang
Univ. of Kentucky, Lexington

Shunguang Wei
Univ. of Iowa

G. William Wong
Johns Hopkins Univ., Baltimore, MD

David C. Wright
Univ. of Guelph, Ontario, Canada

Carlos H. Xavier Custodio*
Fed. Univ. of Goias, Goiania, Brazil

Tetsuo Yamaguchi
Univ. of Tokushima, Japan

Rachel L. Zemans
National Jewish Health, Denver, CO

New Graduate Student Members

William Adams
Univ. of Connecticut

Nasreen Akhtar
Maulana Azad Med. College, India

Magda Bunea
Univ. of Med & Pharmacy, Romania

Jason Cory Casey
Univ. of Alabama

Gerald Cirilo Claghorn
Univ. of California, Riverside

Brian S. Comer
Univ. of South Alabama

Jeffrey Daniel Covington
Pennington Biomedical Res. Ctr., LA

Colin M. Demill
Univ. of Toronto, Canada

Joshua Downer
Univ. of California, Davis

Joshua Phillip Garrett
Albany Medical College, NY

Keyona N. King-Medina
Wayne State Univ., MI

Frederico S.M. Machado
Fed. Univ. of Minas Gerais, Brazil

John Maxi
Louisiana State Univ., HSC

Jacques Pierre Mayeux
Louisiana State Univ., HSC

Alan Mouton
Louisiana State Univ., HSC

Lina María Salazar
Univ. Compromiso Con La
Excelencia, Colombia

Kristin Kim Sellers
Univ. of North Carolina, Chapel Hill

Joshua R. Smith
Kansas State Univ.

John-Mary Vianney
Western Michigan Univ.

Chen Zhang
Cornell Univ., NY

New Undergraduate Student Members

Alex Shepherd
Creighton Univ., MN

Jenna Tosto
William Paterson Univ., NJ

New Affiliate Members

Craig Coronado
Contra Costa College

Hudson Araujo
NASA, Brazil

Recently Deceased Members

Eleanor R. Adair
Hamden, CT

Franz Halberg
St. Paul, MN

Brij B. Saxena
New York, NY

APS and the Brazilian Society of Physiology Collaborate to Host a “Writing and Reviewing for Scientific Journals” Workshop in Brazil

APS and the Brazilian Society of Physiology (SBFis) collaborated to hold a live training course at the School of Medicine of Ribeirão Preto, Univ. of São Paulo (USP), May 14-17, 2013. During this three day “Writing and Reviewing for Scientific Journals” workshop, students from Brazil and Chile learned the essentials of manuscript writing and reviewing, while gaining valuable opportunities for networking and collaboration. APS members with experience in leading previous live workshops served as instructors for the course and also trained faculty members from various institutions in Brazil to hold future workshops themselves. This is the first time that this APS Professional Skills Training course has been held outside of the USA. This was made possible thanks to generous funding from SBFis, Coordenação de Aperfeiçoamento de Pessoal de Nível

Superior (CAPES), the School of Medicine of Ribeirão Preto, USP, and the APS Latin American Initiative. APS would also like to thank Physiology Department Chair Wamberto Varanda and SBFis President Benedito Machado, both from the School of Medicine of Ribeirão Preto, USP, for their assistance in planning and hosting the workshop

The following APS members kindly served as instructors for the course: APS President Kim Barrett, Univ. of California San Diego; APS Past-President Sue Barman, Michigan State Univ.; Heddwen Brooks, Univ. of Arizona; Barbara Horwitz, Univ. of California, San Diego; and Mark Knuepfer, Saint Louis Univ. School of Medicine. In addition, Fernando Abdulkader (Institute of Biomedical Sciences, USP); Sergio Cravo (São Paulo School of Medicine, Federal Univ.

of São Paulo); Christopher Kushmerick (School of Medicine of Ribeirão Preto, USP); Manoel Miranda (Federal Univ. of São Paulo); and Luiz Navegantes (School of Medicine of Ribeirão Preto, USP) donated their time to serve as observers with the intent that they can lead future workshops in Brazil

Twenty-one trainees took part in the course:

- Gabriel Alves, Univ. Federal de São Paulo, Escola Paulista de Medicina;
- Mateus Amorim, Faculdade de Medicina de Ribeirão Preto, Univ. de São Paulo;
- Bárbara Barna, Univ. de São Paulo;
- Rogério Barros, Federal Fluminense Univ.;
- Gláucia Carneiro, Univ. Federal de São Paulo;
- Fernanda Carvalho, Faculdade



Instructors and participants of the 2013 Writing and Reviewing for Scientific Journals Workshop at the School of Medicine of Ribeirão Preto, Univ. of São Paulo, Brazil.

de Medicina de Ribeirão Preto, Univ. de São Paulo;

- Marina Cavalleri, Institute of Biomedical Sciences, Univ. of São Paulo;
- Andre Luiz Dagostin, Faculdade de Medicina de Ribeirão Preto, Univ. de São Paulo;
- Richard David, Physiology Department of the School of Dentistry, UNESP;
- Vitor De Melo, Univ. Federal de Sergipe;
- Flávia Graça, Faculdade de Medicina de Ribeirão Preto, Univ. de São Paulo;
- Adriana Moreno, Faculdade de Medicina de Ribeirão Preto, Univ. de São Paulo;
- Aline Pansani, Univ. Federal de São Paulo;
- Raphael Perim, Faculdade de Medicina de Ribeirão Preto, Univ. de São Paulo;
- Jose Pino, P. Univ. Católica de Valparaíso;
- Camila Roncari, School of Dentistry, São Paulo State Univ., UNESP;
- Melina Silva, Faculdade de Medicina de Ribeirão Preto, Univ. de São Paulo;
- Carla Sipert, Araçatuba Dental School, UNESP;
- George Souza, School of Medicine of Ribeirão Preto, Univ. of São Paulo;
- Rimenez Souza, Univ. Federal



Trainees listening to a lecture on manuscript writing.

de São Carlos; and

- Beatriz Valeri, Faculdade de Medicina de Ribeirão Preto, Univ. de São Paulo.

Trainees, instructors, and observers all agreed that this was a very successful event. The participants left the course feeling that they were better prepared to complete a manuscript for publication in a scholarly journal. Instructors left very satisfied knowing that the trainees greatly appreciated their efforts.

Prior to the workshop, the Physiology

Department of the São Paulo School of Medicine, Federal Univ. of São Paulo graciously invited the APS member instructors for a tour of their department and university. Kim Barrett and Sue Barman gave a joint talk to graduate students on publishing in APS journals. APS would like to thank their host, Wagner Antunes, as well as faculty members Sergio Cravo and Alexandre Steiner for coordinating this visit.

Barrett and Barman were also invited to speak at the V Symposium Covian that followed the workshop in Ribeirão Preto. This symposium honored Professor Miguel Rolando Covian, a pioneer in the Department of Physiology, in promoting the discipline of physiology in Brazil. Barrett and Barman spoke in a session entitled "Attracting People to Science." The APS, overall, is delighted to have had these opportunities to strengthen our international reach and our ties with current and future colleagues in Brazil. We look forward to additional opportunities to cement our partnerships at the first Pan-American Physiological Sciences Congress, "Physiology without Borders," scheduled for August 2-6, 2014 at Iguassu Falls, Brazil. ❖



Kim Barrett discussing manuscript writing with her group of trainees.

APS Presents Awards to Outstanding High School Students at the 64th Intel International Science and Engineering Fair

For volunteer APS judges, the prestigious 64th Annual Intel International Science and Engineering Fair (ISEF) was an opportunity to meet some of the brightest young minds in the world. The Intel ISEF, held this year in Phoenix, AZ on May 12-17, 2013, is the world's largest international pre-college science competition where more than 1,500 students presented their own independent research and competed for over \$4 million in scholarships and cash prizes.

Students were eligible to compete at the ISEF after winning a top prize from one of 454 affiliate fairs in more than 70 countries, regions, and territories. For the 21st year, the APS presented Special Awards for the most outstanding projects in the physiological sciences in the form of cash prizes, certificates, t-shirts, and one-year subscriptions to APS publications. This year's APS judging team included Catharine Clark (Cornell Univ.), Lila LaGrange (Univ. of the Incarnate Word), Johana Vallejo-Elias (Midwestern Univ.), and Larry Alexander (Midwestern Univ.). The APS judging team evaluated 50 projects based on students' abstracts and selected 12 candidates to interview at their posters. After two days of judging, the following students were selected to receive APS Awards for excellence in physiological research:

The first place APS award (\$1,500) was presented to Ari Shi Gao from Texas Academy of Mathematics and Science (Denton, TX) for his project titled "Somatostatin Type 3 Receptors Mediate Protective Effects Against Seizures." Ari also won a Best of Category award in Medicines and Health Sciences (\$1,000).

The second place APS award (\$1,000) was presented to Ingrid Nieves Zippe from Hathaway Brown School (Shaker Heights, OH) for her project titled "Selective Oligodendrocyte Apoptosis as a Model for Multiple Sclerosis."

The third place APS award (\$500)

was won by Jay Kumar from duPont Manual Magnet High School (Louisville, KY) for his project titled "What Are The Mechanisms Underlying Nicotine Induced Neutrophil Apoptosis?"

The APS Exceptional Science Award (\$500) was won by James Nathan Hilt from Middleburg High School (Middleburg, FL) for his project titled "Pumper's Paradise: Which Fast-Acting Insulin Analog Is the Most Efficient?" ❖

*Catharine G. Clark
Lila P. LaGrange
APS Education Committee*



The 2013 APS Award Winners at the Intel International Science and Engineering Fair.

Join the NEW Women in Physiology Facebook Page



The APS Women in Physiology Committee (WIPC) is excited to announce the recent launch of our new Facebook page! This page is a platform to share and promote content relevant to the goals of the WIPC, including mentoring resources, promotion of physiology to junior physiologists, and issues related to women in physiology. Please visit our page and "Like" us to receive regular updates on the activities of this committee.

Go to www.facebook/APS.WIPC and like the page today!

APS Poster Creation, Presentation, and Networking Courses Help Trainees Prepare for Experimental Biology

APS offered three Online Professional Skills Training courses this spring to help trainees prepare for the 2013 Experimental Biology meeting: Creating a Poster for a Scientific Meeting, Presenting a Scientific Poster, and Networking at a Scientific Meeting.

Seven individuals from the United States, Mexico, and Norway took part in the week-long Creating a Poster for a Scientific Meeting online course. In this course, participants learn how to develop the text and layout of a poster through presentations and critiques of example posters. Participants who successfully completed the course were APS members Herbert Chew, Nathalie Holme, Carlo Milani, Rocio Montoya, and Jian Wu as well as Nikhil Kamat. APS would

like to thank Thomas Pressley, Texas Tech Univ. Health Science Center, and Robert Carroll, East Carolina Univ., for serving as instructors.

Five individuals from the United States took part in the week-long Presenting a Scientific Poster online course. In this course, participants learn how to introduce a poster, prepare a poster presentation, and present at a scientific meeting. Participants who successfully completed the course were APS members Jessica Dahmus and Jian Wu. APS would like to thank Thomas Pressley, Texas Tech, Univ. Health Science Center, for serving as instructor.

Five individuals from the United States and the Netherlands took part in the week-long Networking at a

Scientific Meeting online course. During this course, participants received feedback on recorded introductions from their peers and instructor and also received valuable information on conducting oneself at a scientific meeting and other social networking events. Participants who successfully completed the course were APS members Jonathan Grudis and Amanda Jepson, as well as Leia Edenfield and Noud van Helmond. APS would like to thank Johana Vallejo, Midwestern Univ. of Osteopathic Medicine for serving as instructor.

These three online courses will be held again February-April 2014. For more information, please visit www.the-aps.org/PST. ❖

APS Sponsors Speaker at 27th Annual HAPS Conference



Hannah Carey giving her invited talk on hibernation to HAPS attendees.

APS was pleased to take part in this year's Human Anatomy and Physiology Society (HAPS) Conference, May 25-27, 2013 in Las Vegas, NV. APS member Hannah Carey, Univ. of Wisconsin-Madison, gave the APS-sponsored Updated Seminar entitled "Unraveling Mysteries of Hibernation." Carey's talk was well-attended and the audience was engaged throughout the presentation. Carey received a number of ques-

tions after her talk and was approached by many HAPS attendees for additional discussion. Materials related to the talk may be found in the APS Archive of Teaching Resources Featured Collections (<http://www.apsarchive.org/featured.cfm>). ❖

Publications

Pollock Named Editor-in-Chief of *Comprehensive Physiology*



David M. Pollock

at Georgia Regents Univ. (GRU). A renal physiologist whose work focuses on the interplay between the kidney and hypertension (high blood pres-

sure), Pollock has been named Editor-in-Chief of *Comprehensive Physiology*, effective July 1, 2013. Pollock is the Regents' Professor and Chief of the Section of Experimental Medicine in the Department of Medicine

(sure), Pollock is also APS President-Elect. Pollock replaces Ron Terjung of the Univ. of Missouri-Columbia. Terjung was the founding Editor-in-Chief of *Comprehensive Physiology*, and has served as Editor since before the publication launched in 2011.

Pollock received his PhD degree in Physiology from the Univ. of Cincinnati in 1983 and completed a fellowship in the Departments of Physiology and Medicine at the Univ. of North Carolina at Chapel Hill. Following postings at Harvard Univ. and Abbott Laboratories, he joined GRU (then the Medical College of Georgia) in 1995. In 2011 he was named founding Chief of GRU's Section of Experimental

Medicine in the Department of Medicine. His research focuses on the interaction of endothelin, angiotensin, inflammatory mediators, and oxidative stress in hypertension. He describes the impact of this work in an online video at <http://bit.ly/yH5wTK>.

Pollock is a member of the Editorial Board of the *American Journal of Physiology-Renal Physiology*, *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*, *American Journal of Physiology-Heart and Circulatory Physiology*, as well as an Editorial Board member of the journal *Hypertension*. ❖

Mentoring 101: Training for the Future

Nadia Ayala-Lopez, Nusrat Matin and Anne M. Dorrance



Nadia Ayala-Lopez



Nusrat Matin



Anne M. Dorrance

In the spring of 2013 the graduate students from the Department of Pharmacology and Toxicology at Michigan State Univ. began a series of workshops to learn how to mentor undergraduate researchers. We followed a program that was developed by the Wisconsin Program for Scientific Teaching (see Resources). The goal of this program is to provide career stage specific advice on mentoring to future mentors. On completion of the program, the outcome was twofold: the students developed a mentoring philosophy and a mentoring toolbox. The unintended benefit from this program was that the students reflected on their own experiences as mentees and learned how to make

their own mentor-mentee relationship work better for them.

The mentoring toolbox created by the student body is detailed below. This is divided into four categories: 1) initial tasks (things that we felt should be completed before a student begins an experiment); 2) things to establish (these should begin at the same time, but the development of these areas should be continuous); 3) beginning research; and 4) mentoring beyond the bench. The latter two are both self-explanatory.

Initial Tasks

Introduce the concept that they will be creating new knowledge. Confucius said, "Choose a job you love and you never have to work a day in your life." The importance of inspiring the mentees and getting them excited about the research cannot be stressed enough. The notion that they are actually creating new knowledge is com-

pletely foreign to most undergraduate students. For most students, the only experiments they have conducted have been in lab classes where hundreds, if not thousands, of other students have performed exactly the same experiment before them. Reminding them that they are creating new knowledge might also reduce the chances of bias in their results.

Describe the big picture of the project, as well as the importance of their work. It is essential that we help students see beyond the basic steps involved in conducting an experiment to the end goal of the research. This is particularly important when tasks are difficult, repetitive, or when the research is not going well. Constantly keeping the bigger picture in mind helps everyone keep moving forward.

Teach the students that a major part of the business of science is publishing papers and discussing their work with others. Describe the opportunities they may have to do this. Publishing abstracts and papers can be a plus point when mentees are applying to graduate school. It can also get the mentee into the habit of writing and can help clarify ideas. Many undergraduates have never experienced scientific writing and are shocked to find that this is a very different style from anything they have written before.

Provide background material and papers. This helps the mentee understand the context of their research instead of mindlessly carrying out a series of experiments. It helps with the concept of knowledge creation and also helps the undergrads feel connected to the project when they can suggest ideas for what to do next.

Give them a choice of projects if possible. While some mentees come to lab with a very focused idea of the field in which they want to end up working, many join a lab willing to try different ongoing research areas. Some students don't know if they will be comfortable with some areas of the research (e.g., working with animals), so letting them know there is flexibility helps these students feel able to investigate choices.

We noticed that our "to do" list for entering students was lengthy, and everyone commented on the fact that we have never actually taken this much time to introduce these concepts

to entering students. All too often we are in such a rush to get the students doing experiments that we forget to make sure they have enough background to understand why the experiments they are conducting are important. We also assume that students understand why publishing and getting grants is important to a scientist – the fact is that most undergraduates do not have experience in this area.

Things to Establish

Open lines of communication. Lines of communication (in both directions) need to be established very early on in the

Nadia Ayala-Lopez is a second year PhD student in the Department of Pharmacology & Toxicology at Michigan State Univ. She has a BS in Clinical Laboratory Sciences from the Univ. of Nevada, Las Vegas and is a board certified Medical Laboratory Scientist. Her research involves studying the role of perivascular adipose tissue in the adrenergic regulation of vascular tone in normal vascular biology and in hypertension.

Nusrat Matin has been working with Dr. Anne Dorrance as graduate research assistant since May 2012. She received her Bachelor's in Pharmacy from East West Univ. Bangladesh and joined the PhD program in the Department of Pharmacology and Toxicology of Michigan State Univ. in August 2011. In the Dorrance lab, Matin is studying the effects of hypertension and obesity on the cerebral circulation that leads to vascular cognitive impairment. Matin is a member of the Integrative Pharmacological Sciences Training Program at Michigan State Univ., as well as a member of American Physiological Society, and American Society for Pharmacology and Experimental Therapeutics.

Anne Dorrance is an Associate Professor and the Director of Doctorial Programs in the Department of Pharmacology and Toxicology at Michigan State Univ. She obtained her PhD from the Univ. of Glasgow, and her research interests include the effects of hypertension and obesity on the cerebral vasculature.

mentoring process. It is also really important to work out what are the acceptable methods of communication; for example, does the undergraduate ever read their email or would it be better to communicate with text messages? Open lines of communication are particularly important when the mentee has made a mistake carrying out the protocol. Mistakes are acceptable, but failure to report mistakes is not. Making the student understand that mistakes are part of science (and sometimes even lead to new discoveries!) is an essential step in this process.

Expectations. Students can't learn expectations by osmosis. They need to be told exactly what you expect of them, and in some cases they also need to hear what the consequences of not meeting expectations will be.

Plan for the short- and long-term goals of the mentee. Because they have never done research before, most undergraduates have no concept of how long a series of experiments should take. Laying out the goals and the acceptable endpoints early in the process can avoid frustration on both sides of the relationship.

Set a schedule. This comes into play especially when the mentees have to work with each other, sharing space, equipment, and access to personnel. It is essential that the mentees learn not just to communicate with the mentor but also with each other.

Beginning Research

Describe how to design an experiment. This should include a discussion of controls: what they are, and why we need to have them. Beginning a discussion of statistics at this point is also a good idea, but you have to approach this with the understanding that most undergraduate students have very little exposure to statistics.

Demonstrate and teach techniques. A detailed well-thought-out lab notebook is an art in which a mentee needs to excel. Mentors need to ensure that the mentee is taking notes and not just mindlessly watching him/her demonstrate techniques. It is a good idea to detail an experiment and ask the mentee to write up the protocol and explain it. If this is done a few times early on the mentoring process, the mentee is likely to be more attentive and careful. This is the part of mentoring that most of us are really good at; we all know how to teach a student to do a Western blot or PCR. We are, however,

not always good at describing why we do particular techniques or how those data will be interpreted.

Check in and exchange results. This should be more than just obtaining a graph of summary data from the student. It is really important to look at the raw data and to make sure that all the analysis is correct. Ask the student how they interpret the results before you provide your input.

Discuss research integrity. Many people would put this in the initial toolbox. It could be in either place and should be a constant conversation. However, it is much easier to teach some of the aspects of research integrity once the students have an idea of how data are collected and where bias could be introduced.

Mentoring Beyond the Bench

Get to know the mentee better, learn about their education, background and culture. This can be hugely important, especially in big labs where undergrads often feel like a small cog in a big wheel. Students who feel like they have a personal relationship with a mentor are much more likely to want to work hard and do well. This is an area, however, where we felt that caution was necessary, particularly when considering graduate student mentors and undergraduate mentees. The age gap is often small between these groups and it may be very easy to become too friendly and the lines of "authority" become blurred.

Help the students network by introducing them to colleagues and other students. At the end of the day it takes a village to "raise" a really good student. We should not be possessive of our great undergraduates. We should make sure they get to meet the people who might help them make the next step in their career. This means you might occasionally lose a great student to another lab, but if that means you have increased the student's chance of attaining their career goals, then you have done the right thing and have been a good mentor.

Encourage the student to develop confidence in presenting their work. The ability to present research findings is a transferable skill across disciplines that we just can't live without. No matter what a student goes on to do beyond the lab, the ability to communicate ideas is critical.

Talk about more than just science. Discuss career goals with the students, and talk about your experiences and how you achieve balance in your life.

Treat them as colleagues and working

professionals. Simply, you can't expect professional behavior if you don't treat students as professionals. Making the student feel valued will add value to the relationship. Students who know that their voice will be heard are more likely to speak up and invest their energy in the project, will be more willing to discuss concerns about their research, and are often more receptive to constructive criticism.

Final Thoughts

At the end of the workshop many of the students commented about how much good mentoring is simply about good communication. Certainly, when we looked back over our toolbox every "gadget" we placed in there had some kind of a link to communication. It is obvious that we need to communicate, but in practice it is one of the hardest things to do effectively. Potential obstacles to effective communication include cultural and/or language differences, time constraints, over-use of technical language, differences in perception, and stressful or hurried situations. Many of these issues cannot be avoided and must be confronted at one point or another. Precautions that could be taken to avoid miscommunication include speaking in plain language and avoiding scientific jargon when possible, having clearly written protocols for frequently performed procedures, and taking time to regularly speak to your mentee to gain an idea of how they are perceiving each situation. Effective communication is a two-way street. Finding common ground onto which to communicate is necessary in order to navigate through a conversation. Understanding your mentee's background and personal motivators could provide a vehicle by which to effectively communicate ideas and suggestions. Finally, it is important to treat our mentees with the same consideration we would expect from others and to remember that we were all mentees once upon a time.

Learning to be a good mentor is a constant process, and mentoring styles tend to change with changes in the responsibilities of the mentor. All the students involved in this workshop felt that starting to think about mentoring early in their career was helpful. They felt that their mentoring would now be a more intentional rather than an accidental process.

To comment on this article, go to <http://www.the-aps.org/forum-mentoring101>. ♦

<http://www.researchmentortraining.org>

APS Suggests Way to Reduce Regulatory Burden

In response to a request for information from the National Science Board (NSB), the APS offered suggestions for reducing the administrative burdens associated with federally-sponsored research. The NSB is the governing board for the National Science Foundation and also provides policy advice to the President and Congress.

In March, 2013, the NSB's Task Force on Administrative Burden asked the scientific community to provide input on ways to reduce so-called regulatory burdens associated with research. The American Physiological Society (APS) participated in FASEB's effort to develop comprehensive comments and offered up its own commentary on ways to reduce burdens associated with laboratory animal care. The objective, as APS noted, "is to ensure animal welfare while minimizing unnecessary burden."

The APS pointed out that "risk intolerance is an important source of regulatory burden" both for oversight agencies and institutional compliance offices. "Seeking to reduce risk is a reasonable goal that is compatible with efficient research practices," the APS

comments stated. "However, a risk intolerant mentality encumbers research with burdensome procedures." For that reason, the APS said, "The problem of risk tolerance will have to be addressed before meaningful progress can be made toward actually reducing administrative burden."

The APS called for a halt to de facto regulatory changes made by oversight agencies. These are changes that do not undergo the notice and comment process required by law when new regulations are promulgated. Instead, agencies may simply issue policy statements that re-interpret regulations, turning recommended practices ("should" statements) into requirements ("must" statements). This produces what has been called "regulatory creep." The APS urged agencies to "refrain from modifying their regulations without consulting the regulated community."

The APS comments urged a clarification of the responsibilities of funding agency review panels and institutional animal care and use committees (IACUCs) to avoid duplication of effort. Specifically, APS suggested that scientific review panels not re-review animal use protocols that have already been approved by an applicant's IACUC. In addition, to reduce the workload for both investigators and

IACUCs, the APS suggested that animal use protocols be approved for five years at a time so that in most cases they will not need to be reviewed again until the grant itself is renewed.

Multiple overlapping inspections are another source of burden. Strategies APS recommended for reducing the burden of inspection included designating a few IACUC members to conduct an inspection rather than requiring the participation of the whole committee. In addition, inspections should be combined whenever possible. For example, a semi-annual inspection might be combined with a post-approval monitoring or AAALAC site visit.

The APS noted that while training is important to ensure the competence of those who work with animals, "unnecessary or repetitive training is burdensome" and urged institutions to seek ways to avoid this. Training should be tailored to activities pertinent to an individual's position in the foreseeable future. While those who are new to the field need comprehensive training, those who have done comparable work at other institutions may need less. Where it is feasible to do so, animal care staff should "assess individuals' prior training and experience through training records and observation," which may make it possible to arrange for specific training to address areas of need. However, the APS noted, "While it would be helpful to encourage institutions to consider developing a flexible approach to training, it is ultimately up to the institution to decide how to proceed" since the institution bears the responsibility for the actions of its personnel. It was suggested, nonetheless, that institutions to "provide those who undergo training with documentation detailing what subjects they have completed successfully" to facilitate transferability of training. In addition, institutions may wish to "consider adopting widely-available standardized modules that meet their training needs." ♦



APS leadership met with officials at NIH on July 9, 2013 to discuss research budgets and other priorities for the physiology community. From left to right: Science Policy Chair Kevin Kregel, President Kim Barrett, President-elect David Pollock, Past-President Sue Barman, Executive Director Martin Frank and Councillor John Chatham.

APS hears from NIH, NSF officials at Experimental Biology

On April 24, 2013, attendees at the Experimental Biology 2013 meeting had the opportunity to hear from representatives of the National Science Foundation (NSF) and two NIH Institutes. NSF Assistant Director for

Biological Sciences John Wingfield, National Institute for Neurological Disorders and Stroke Director Story Landis, and National Institute for Diabetes, Digestive and Kidney Disorder Director Griffin Rodgers each outlined how their respective research portfolio and programs will be adjusted to accommodate budget cuts as a result of sequestration. For more on the presentations, go to: <http://www.the-aps.org/FundingAgencySymp>.

NIH Finalizes New Chimpanzee Rules

On June 26, 2013, NIH Director Francis Collins announced that the agency had accepted nearly all the recommendations of a Working Group on NIH implementation of an IOM report on chimpanzees in biomedical and behavioral research. Minor modifications were made to recommendations concerning the approval process for future research, but the only recommendation NIH set aside—at least for the moment—is a requirement to provide 1,000 ft.² per animal as part of an “Ethologically Appropriate Physical and Social Environment” (EASPE). NIH concluded that there was insufficient scientific justification to support it.

In the announcement of the decision, NIH noted that chimpanzees are “our closest relatives in the animal kingdom” and as such have provided “exceptional insights into human biology.” Because of their close kinship to humanity, chimpanzees “requir[e] special consideration and respect.” NIH already has made a commitment to provide lifetime support to chimpanzees it owns regardless of whether they remain as part of an active research population. As a result of the IOM’s recommendations, NIH has also adopted special criteria for future research involving chimpanzees. These include that the knowledge gained is necessary to advance the public’s health; that there is no other research model to obtain the knowledge and the research cannot ethically be performed with human subjects; and the animals will be maintained either in EASPEs or in natural habitats. Since there now are alternatives to the chimpanzees in many research areas, NIH will also retire the majority of its chimpanzees, retaining only 50 animals for future

research in areas where alternatives are not available. One area often cited as an example of this is the development of a prophylactic Hepatitis C vaccine. In addition, the size of the research population will be evaluated every five years.

NIH plans to designate about 310 of its chimpanzees for retirement and ultimately for transfer to the federal sanctuary system. However, these transfers are “subject to the availability of additional sanctuary space and the elimination of funding restrictions” imposed by the Chimpanzee Health Improvement Maintenance and Protection (CHIMP) act. This is a critical issue because the CHIMP Act, passed in 2000, only allows NIH to spend a cumulative total of \$30 million to support the care of chimpanzees in sanctuaries. With NIH expected to reach that cap within a few months, the Senate Appropriations Committee has taken the step of adding language to NIH’s FY 2014 funding bill permitting NIH to support the care of chimpanzees it owns regardless of location. However, this language must be passed into law before it can take effect.

In setting aside the recommendation to provide 1,000 ft.², NIH noted that while “sufficient square footage is needed for chimpanzees to travel, patrol, coexist in social groups of 7 or members, and sometimes separate from others,” there is a “lack of scientific consensus that 1,000 ft.² is the amount of space needed. Therefore, NIH plans to “review the space density requirements with respect to the promotion of species-appropriate behavior.” NIH also indicated that while the preferred social group size was seven or more animals, there would be flexibility based upon medical and social considerations. In additions, the agency modified the recommended process for a final review of research proposals involving chimpanzees using the IOM criteria. Rather than an independent body, these reviews will be conducted by a special subcommittee to NIH’s Council of Councils.

Meanwhile, the US Fish and Wildlife Service has published a proposed rule that would designate all captive chimpanzees, including NIH-owned animals, as endangered. Currently, while wild chimpanzees are classified as endangered, captive animals are classified as threatened. If the proposed rule goes into effect, then it may become neces-

sary to obtain a permit from the Fish and Wildlife Service in order to conduct biomedical research on chimpanzees.

Noting that NIH’s decision about its research program was being made at the same time that the Fish and Wildlife Service had asked for comments on the proposed rule, which could severely limit research with chimpanzees, the APS released a statement pointing out that NIH’s review focused on human health needs, while the FWS has focused on preserving chimpanzees as a species. The APS therefore urged both agencies to “take a broader view.” While each agency has a specific mission, the APS statement noted that “Americans will be ill-served if these agencies pursue piecemeal policies that fail to acknowledge the special circumstances surrounding chimpanzees in closed research colonies and the value of judiciously-conducted chimpanzee research to advance both human and animal health.” ❖

White House Clarifies Rules for Federal Spending on Conferences and Travel

In May 2013, the White House Office of Management and Budget (OMB) issued a memo (the-aps.org/OMBTravelMemo) providing guidance on expenditures of federal funds for travel, conferences and meetings. Previous directives from the White House had ordered federal agencies to curtail spending on conferences and travel in the wake of budget cuts due to sequestration and Congressional outrage over alleged misuse of government funds for meetings and conferences.

The new memo stresses the importance of mission-related travel and conference in agency operations, including the promotion of collaborations within the scientific community. The memo calls on each agency to implement internal travel and conference policies in a manner that balances reductions in spending with meeting mission-related agency goals. The memo also instructs agencies to develop specific guidelines on acceptable conference and travel expenses, and provides a list of best practices. ❖

Comparative Physiologist Jessica U. Meir Joins NASA Astronaut Class



Jessica U. Meir

APS member Jessica U. Meir, Ph.D. has been selected as a member of NASA's 2013 Astronaut Candidate Class. Meir was scheduled to begin training at NASA's Johnson Space Center in August. Previously she held the position of Assistant Professor of Anesthesia at Harvard Medical School and Massachusetts General Hospital where she studied animal physiology and adaptation to extreme environments. Meir's comparative physiology research has included

field and laboratory research on experimental models including bar-headed geese, elephant seals and emperor penguins.

Previously Meir worked for NASA, coordinating life science experiments for astronauts traveling aboard the Space Shuttle and the International Space Station. Meir's training for the astronaut corps will take her away from the lab, but she hopes to continue to pursue her research interests through future collaborations at NASA. ❖



Joe G. N. "Skip" Garcia, MD, has been appointed senior vice president for health sciences at the Univ. of Arizona. Garcia, who also will serve as an endowed UA professor of medicine, will assume his new duties Sept. 1. He joins the UA from the Univ. of Illinois, where he served as the vice president

for health affairs and the Earl M. Bane Professor of Medicine, Pharmacology and Bioengineering at the Univ. of Illinois at Chicago (UIC). Garcia is an authority on the genetic basis of lung disease and the prevention and treatment of inflammatory lung injury.

Christine Maric-Bilkan has joined NIH/ National Heart, Lung, and Blood Institute (NHLBI) in Bethesda, MD, having moved from the Department of Physiology and Biophysics, Univ. of Mississippi Medical Center, Jackson, MS.

Distinguished Physiologist News

Letter to Ken Baldwin

Mary Osbakken writes: "Current activities

- President, Osbakken Consulting, LLC: scientific and clinical advisor for small Biotechs and Pharma.
- Because of my background in basic and clinical science, and experience in the pharmaceutical industry, I am in the position to help small Pharma and Biotechs with their Drug and/or Device Development Plans and Clinical Development Plans.
- Visiting Research Professor, School of Biomedical Engineering, Science & Health Systems, Drexel University, Philadelphia, PA.
- Scientific Advisor for a variety of device-related projects initiated

in Drexel's Biomedical Engineering program via the Coulter Foundation Program and Chief Medical Officer for ANMODE, a Drexel Startup; developing an fNIR based anesthesia monitoring device to use in the operating room and outpatient surgery.

- Reviewer for scientific journals; e.g., Cardiovascular Research.
- Mentor and advisor to students from grade school / high school to graduate school / post docs across a variety of venues.
- Member and supporter of a variety of scientific and social service organizations that promote women's education and empowerment."

"Words of Wisdom

- Training in the basics of physi-

ology prepares one for a wide variety of opportunities in education, healthcare, and industry.

- Life is a continuum from formal education to a lifetime of self-education. Don't forget to keep learning.
- Career changes are inevitable for many, and are opportunities to expand one's horizons.
- Professional endeavors and opportunities abound to those with imagination and perseverance.
- Nothing is impossible with hard work and persistence.
- Never stop pursuing your dream as new opportunities present themselves.
- Think of your first job as a stepping stone to your next." ❖

Current Calls for Papers

Physiological Genomics

Mitochondrial Metabolism

NextGen Sequencing Technology-Based Dissection of Physiological Systems

Technology Development for Physiological Genomics

Physiological Genomics of Exercise in Health and Disease (March 1, 2014)

AJP-Gastrointestinal and Liver Physiology

Physiology and GI Cancer

Intestinal Stem Cells in GI Physiology and Disease

Innovative and Emerging Technologies in GI Physiology and Disease

AJP-Lung Cellular and Molecular Physiology

Biomarkers of Household Air Pollution (April 1, 2014)

Bioengineering the Lung: Molecules, Materials, Matrix, Morphology, and Mechanics

Translational Research in Acute Lung Injury and Pulmonary Fibrosis (December 1, 2013)

Real-time Visualization of Lung Function: From Micro to Macro (January 1, 2014)

American Journal of Physiology— Endocrinology and Metabolism

Islet Biology (September 30, 2013)

Novel Aspects of Adipocyte Biology (September 30, 2013)

CNS Control of Metabolism (September 30, 2013)

Advances in Physiology Education

Teaching and Learning of Professional Ethics

American Journal of Physiology— Heart and Circulatory Physiology

Cardiovascular and Cerebrovascular Aging— New Mechanisms and Insights (January 15, 2014)

Sex and Gender Differences in Cardiovascular Physiology—Back to Basics (September 30, 2013)

AJP-Renal Physiology

Novel Mechanisms and Roles of Glomerular Podocytes (December 31, 2013)

Novel Therapeutics in Renal Diseases (December 31, 2013)

Sex and Gender Differences in Renal Physiology (December 31, 2013)

Renal Hemodynamics: Integrating the Nephron and Beyond (February 1, 2014)

American Journal of Physiology— Cell Physiology

Cellular Mechanisms of Tissue Fibrosis (September 30, 2013)

Cellular Circadian Rhythms (September 30, 2013)

Stem Cell Physiology and Pathophysiology (September 30, 2013)

Proteomic and Metabolomic Approaches to Cell Physiology and Pathophysiology (September 30, 2013)

The Fourth Phase of Water: Beyond Solid, Liquid and Vapor.

Gerald H. Pollock. Washington, USA: Ebner & Sons Publishers, 2013, 384 pp. \$29.95. ISBN: 978-0-962-68954-3.

Understanding the properties of water is essential to understanding physiology. The framework within which we are taught that understanding is predicated on 19th century conceptions of its bulk phases: solid, liquid and vapor. But how would our understanding change if there were a fourth phase somewhere between solid and liquid that existed wherever water interacts with a surface? Drawing upon an astounding accumulation of anomalous results and surprising experiments, Gerald Pollack, a Professor of Bioengineering at the Univ. of Washington, proposes that the standard ways of thinking about water are inadequate. Pollack certainly has the credentials to challenge the state of water studies. He is Founding Editor-in-Chief of the journal *WATER*; received the Prigogine Medal in 2012 for his studies of dissipative systems; has made fundamental contributions to physiology; and has written two very successful previous books (*Muscles and Molecules and Cells*, *Gels and the Engines of Life*). His current book is an extraordinary attempt to revolutionize science.

Pollack begins his book with questions raised by the sublimity of the mundane. Gelatin desserts are over 95% water, so why doesn't the water leak out of the gelatin? How does water act as an adhesive to bind wet sand together so we can build sand sculptures? How do diapers hold 50 times their weight in urine or 800 times their weight in pure water? What makes ice slippery? What causes the osmotic pressure that permits a root to crack concrete? Why do water droplets bead up on surfaces?

Next Pollack turns to mysteries of the laboratory. Put a bunch of tiny charged beads into a beaker of water and let them stand long enough and all the spheres will migrate out of the center of the beaker leaving a clear zone. How and why? Let a drop of water fall into a beaker of water from just above its surface and the drop may persist for tens of seconds rather than immediately integrating into the larger body. How is this possible? Turn a bottle of water upside down and let its contents drip

out of two, separated openings so that the drops pass through a pair of metal rings attached by electrical wires to a pair of metal canisters that catch them. As Lord Kelvin discovered, such an apparatus can generate an electrical discharge of up to 100,000 volts. What generates the electrical charge?

Pollack explains all of these mundane surprises and laboratory mysteries, and much more, with four simple principles. The first principle is that water has four, not three phases. The fourth phase is what Pollack calls a "liquid crystalline" or "semi-liquid" phase that produces an "exclusionary zone" or "EZ" adjacent to any hydrophilic surface. This EZ is well-ordered, ionized and can extend several millimeters away from the surface. The EZ is sufficiently ordered to exclude dyes and larger particles.

Pollack's second principle is that water can store energy through order and charge separation at hydrophilic surfaces. Electrons accumulate near the hydrophilic surface producing a balancing build-up of hydronium ions further out. The resulting charge separation results in the measurable pH differences that can be observed between the layers of water near a surface. The EZ also produces a corresponding storage of energy. This potential energy can be released as an electrical discharge.

Pollack proposes as his third principle that water can accumulate potential energy from light. One of the experimental surprises that his laboratory team has observed is that many of the phenomena associated with the development of EZ can be enhanced by particular wavelengths of light. Photons, he argues, can split water into its ionized forms providing the free electrons and hydronium ions required to build up an EZ. Thus, electromagnetic energy can build up potential energy in water that drives the various phenomena associated with his first two principles.

Finally, Pollack argues that likes attract likes through the intermediary of unlikes. Put some positively charged beads into a flask of water and most people would predict that the beads will repel each other. Pollack's experiments demonstrate that they attract. Each bead produces an exclusionary zone around itself consisting of negative electrons. These generate, in turn, a halo of hydronium ions. Several beads share these hydronium ions so that the beads draw together. The result is that it

appears as if like attract like, a phenomenon that can help to explain everything from water droplet formation to surface tension—as well as why a diaper can hold so much water!

If you are skeptical of Pollack's revolutionary approach to water, that's understandable. Read his book anyway. Pollack has written for anyone with a college science education. There's nothing incomprehensible or difficult in his book; no technical jargon. You may, in fact, be surprised how simple his experiments and arguments seem. But as I point out to my students, simplicity and clarity are two of the hallmarks of the very best and most important science. Only scientists who truly understand nature can explain it so that the rest of us can understand. Pollack's science has that simplicity and clarity.

There are other reasons to read Pollack's book, too. It is a lesson in how to perform anti-dogmatic science in an age of consensus peer review. Pollack is an old hand at challenging convention. He began his career by questioning some of the basic results of Nobel laureate Andrew Huxley. He helped to develop what has become the NIH Director's Transformative RO1 program and the US-Israeli Binational Science Foundation's Transformative grant program. He knows first-hand how difficult it is to question what everyone else takes for granted. More importantly, he knows how important it is to carry out such non-conventional research. His book is an excellent guide for carrying out such work and an inspiration for those iconoclasts who desire to be architects of science rather than mere laborers.

Finally, every physiologist will find Pollack's book a source of innumerable possibilities. If the water inside a cell is generally ordered and ionized, how does this change our understanding of intracellular diffusion? If the water abutting a cell membrane creates an EZ, how does it change our conceptions of how ligands reach their receptors? If capillaries are coated with EZ, how does this affect red blood cell passage and oxygen diffusion? How must we rethink the function of renal tubules or alveoli in light of a fourth phase of water? Such questions force you to rethink everything you thought you knew. That would please Gerald Pollack very much! ♦

Robert Root-Bernstein
Michigan State University
rootbern@msu.edu

Postdoctoral Positions: Univ. of Wisconsin-Madison (Molecular and Applied Nutrition Training Program (MANTP) has postdoctoral (PhD or MD) training positions in molecular and applied nutrition in the following five research focus areas: Aging; Cell Signaling, Growth and Development; Fat Soluble Vitamins; Metabolism and Metabolic Diseases; and Mineral Metabolism. This NIH-funded Nutrition Training Program, established in 1993, is built upon a tradition of outstanding nutrition research and disciplinary breadth that provides a unique educational opportunity for trainees. The MANTP has enhanced the training of postdoctoral researchers who intend to become leaders in nutrition-related biomedical research. Former trainees are professors at leading universities and senior researchers at major companies. Trainees have performed diverse research projects ranging from genetic studies in model organisms aimed at understanding nutrient function, metabolism and regulation to nutritional studies in humans aimed at elucidating how and in animal models of human disease. Support is available for up to three years. Participating faculty trainers from nine departments in the College of Agricultural and Life Sciences or the School of Medicine and Public Health include: A. Adams, R. Anderson, A. Attie, H. Chen, M. Clagett-Dame, J. Denu, M. Drezner, D. Eide, R. Eisenstein, J. Gern, G. Groblewski, K. Hansen, C. Hayes, K. Kudsk, H.J. Lai, J. Mares, D. Ney, P. Nichol, J. Ntambi, D. Pagliarini, T. Prolla, S. Smith, S. Tanumihardjo, R. Weindruch, C-L. E. Yen. Information about MANTP including research interests of faculty and research of current trainees can be found at: <http://www.nutrisci.wisc.edu/NIH/index.html>. Applicants should send a cover letter describing their research background, their future career interests and which MANTP faculty they are interested, a curriculum vitae and three letters of reference to: Rick Eisenstein PhD, Dept. of Nutritional Sciences, Univ. of Wisconsin, 1415 Linden Drive, Madison, WI 53706. Email contact: eisenste@nutrisci.wisc.edu. Deadline: Sept 30, 2013 or until positions are filled. UW-Madison is an equal opportunity/affirmative action employer. Positions are open only to US citizens and non-citizen nationals.

Assistant Professor: The Univ. of Wisconsin-Madison invites applications for a tenure-track faculty position at the Assistant Professor level in the Department of Nutritional Sciences. The successful candidate will be expected to develop a nationally competitive research program relevant to the multidisciplinary field of nutrition and health. Although all research areas will be considered and are encouraged, targeted themes include the role of the intestinal microbiome in obesity, diabetes, and other metabolic disorders, as well as the interaction between nutrients and epigenetic regulation. Research may incorporate molecular, biochemical, physiological, metabolic, genomic and/or clinical approaches. In addition to obesity and energy metabolism, current Department strengths include molecular mineral metabolism, developmental nutrition, gastrointestinal biology, genetic modifiers of metabolism, vitamin A/carotenoids, and community nutrition. The applicant will participate in graduate and undergraduate teaching, and will contribute to university service. Competitive start-up funds will be available. The Univ. of Wisconsin is an equal opportunity employer. To ensure consideration applications must be received by November 30, 2013. Application materials should include: 1) Cover letter; 2) Curriculum Vitae; 3) Three letters of reference sent directly to PVL76888@nutrisci.wisc.edu; 4) Description of accomplishments and future research goals (three-page limit); 5) Electronic reprints of up to three recent articles. Submit applications electronically to PVL76888@nutrisci.wisc.edu or by mail to: Professor Guy Groblewski, Search Committee Chair, Department of Nutritional Sciences, Univ. of Wisconsin, 1415 Linden Drive, Madison, WI 53706.

Assistant Professor: The Department of Biology at the Univ. of Colorado, Colorado Springs (UCCS) invites applications for a tenure track Assistant Professor in integrative physiology to start in August 2014. Applicants must have a PhD, postdoctoral experience, research agenda with potential to obtain external funding, and commitment to undergraduate teaching in the Biomedical Science option within the Biology major.

Special consideration will be given to individuals with expertise in human neuromuscular, cardiovascular, or respiratory physiology. Teaching load will include courses in human physiology, pathophysiology and anatomy. The University enrolls 10,000 students, with 750 undergraduate Biology majors. The Biology Department is dedicated to outstanding teaching and research at the undergraduate and Master's levels (www.uccs.edu/~biology). Additional information and online application are available at www.job-satcu.com (posting #F00476). Review of applications will begin on November 1st and continue until the position is filled. UCCS is dedicated to ensuring a safe and secure environment for our faculty, staff, students, and visitors. To achieve this goal, we conduct background investigations for prospective employees. The Univ. of Colorado Colorado Springs fosters equity in employment by promoting diversity and assuring inclusiveness. We encourage applications from women, racial and ethnic minorities, persons with disabilities and veterans. Alternative formats of this ad can be provided upon request for individuals with disabilities by contacting the Office of Human Resources at 719-255-3372.

Faculty Position: The Department of Biological Sciences at Oakland Univ. invites applicants for a full-time faculty position in Human Physiology to be filled by January 1, 2014. The appointment is for a Special Instructor, a teaching-based faculty position leading to job security equivalent to tenure, with the full range of faculty benefits. The Department offers physiology classes at all levels to Biology majors and pre-medical students, in addition to Health Sciences and Nursing students. The successful candidate will be a full-time faculty member of the Biological Sciences department and will work with existing team of faculty and instructors who teach physiology. Applicants must have a PhD in physiology or closely related area, with three-five years of full-time experience in teaching physiology classes in a university setting. Preference will be given to individuals with post-doc and/or medical education experience. We are looking for an individual with excellent teaching skills and the ability to develop curriculum at the course and pro-

gram levels. The Department of Biological Sciences (<http://www.oakland.edu/biology/>) is a modern, well equipped, research oriented department with a strong academic mission and a wide student base. Oakland Univ. is a state-supported institution of over 20,000 students situated on a beautiful 1,500-acre wooded campus in the northern metropolitan Detroit area. Review of applications will begin August 1, 2013. Applications should include a cover letter, curriculum vitae, teaching statement and philosophy, sample curricula, teaching evaluations, three representative publications, and a list of three or more references. Applications are accepted online at <http://academicjobs.oakland.edu/postings/769>. Inquiries should be addressed to: Arik Dvir, Chair, Department of Biological Sciences (dvir@oakland.edu). Oakland Univ. is an Equal Opportunity Employer.

Medical Physiology Educator: A.T. Still Univ. School of Osteopathic Medicine in Arizona (ATSU-SOMA) seeks a full-time educator (12-month appointment) with a primary interest in teaching clinically focused physiology or pathophysiology. ATSU-SOMA utilizes an innovative clinical presentation curriculum designed to create high quality physicians for underserved populations. The program features early clinical experience supported by a nationwide partnership with community health centers. Candidates must possess a strong commitment to working with a multidisciplinary team in an environment focused on innovation, learning-centered education, and professional development. The successful candidate must have a PhD in a related field or a DO or MD and demonstrated ability to teach. The ideal candidate will explore research interests that may include areas of education. Salary and academic rank will be commensurate with qualifications and experience. If you share the same enthusiasm for transforming medical education, we would like to explore the opportunities with you. Interested candidates should send a cover letter, curriculum vitae, and list of references to: Human Resources, ATSU-SOMA, 5850 East Still Circle, Mesa, AZ 85206. Electronic submission of application materials to hraz@atsu.edu is also acceptable. Review of application materials by the

respective search committees will begin immediately and continue until the position is filled. ATSU does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, age, disability, or status as a Vietnam-era veteran in admission and access to, or treatment and employment in its programs and activities.

Research Faculty (Department Head): The Fluid Dynamics Division in the Fluids, Structural Mechanics, and Acoustics Office (FSMAO) at The Pennsylvania State Univ.'s Applied Research Laboratory (ARL) seeks to hire a Department Head for its Fluids Research Department (FRD). The Division consists of three Departments: Fluids Research; Fluid Machinery; and Systems Design. The Division is currently comprised of 24 research faculty and engineers, with eight research faculty and engineers in the FRD, and is ARL's leading resource for expertise in analytical and experimental fluid mechanics, hydrodynamic testing and flow diagnostics with a focus on non-invasive, optical techniques. Through its research, the Division serves both the mission of the ARL as a Navy sponsored Univ. Affiliated Research Center and the Land Grant mission of the Univ. The FRD works with its sister departments on a broad spectrum of flow related research and development projects. These projects comprise a mix of both development-oriented contracts with specific deliverables and exploratory research grants, the former being predominant. Specific areas of specialization include: multi-phase flows (cavitation, gas/liquid flows), turbulence, marine renewable energy, drag reduction, flow control, bio-fluid mechanics, nuclear thermal-hydraulic flows and advanced flow diagnostics and testing. The FSMAO is well equipped with testing resources including unique high and low Reynolds number facilities and state of the art instrumentation including three-component laser Doppler velocimeters, planar and stereo particle image velocimeters (greater than 5 kHz velocity acquisition rates), thermal anemometry and high speed imaging (up to 100kHz frame rates). Department personnel are expected to develop their own funded research programs consisting of individual and collaborative efforts. Collaboration across ARL departments

and with Penn State faculty is strongly encouraged and is a unique feature of the ARL work environment. ARL also has a long history of teaming with industry. The Department Head, who reports to the head of the Fluid Dynamics Division, is expected to develop and conduct interdisciplinary research projects, as well as provide technical expertise and direction through the development of outstanding research and growth within the department. Responsibilities include the operation and management of the department, including preparation and execution of department budgets, strategic planning and workforce and resource development. Travel is involved in the execution of these responsibilities. Faculty rank will be commensurate with education level and experience. Typical qualifications include a PhD in Aerospace or Mechanical Engineering or a related discipline, plus five years of related work experience (or equivalent). The successful candidate must be capable of leading a strong research group of research faculty and engineers in a program management capacity and must have a strong background in experimental or analytical fluid dynamics, presentation skills and solid communication skills. You will be subject to a government security investigation and you must be a US citizen to apply. Electronically apply to Job # I-39358 at arl-jobs@psu.edu. Please insert job number in subject line. Applications will be accepted until position is filled. For further information about the Applied Research Laboratory or current position vacancies, visit our web site at www.arl.psu.edu. Employment will require successful completion of background check(s) in accordance with Univ. policies. The Pennsylvania State Univ./Applied Research Laboratory offers an exceptional benefits package, including a 75% tuition discount for employees, their spouse or domestic partner and eligible dependents. Penn State is committed to affirmative action, equal opportunity and the diversity of its workforce.

Faculty Position: The Department of Physiology and Developmental Biology at Brigham Young Univ. announces the availability of a continuing faculty status track faculty position. Review of applications will begin October 1, 2013

and continue until the position is filled. Applicants should have a doctorate degree and postdoctoral experience, with expertise and teaching capability that fit with current department emphases. Candidates must demonstrate a high potential for establishment of an externally funded research program. Candidates may apply online at Y Jobs (<https://yjobs.byu.edu>). Attach a complete CV, cover letter and a one-page statement of research and teaching interests. Address specific questions to Dr. Marc Hansen, Department of Physiology and Developmental Biology, Brigham Young Univ., Provo, UT 84602. (Fax: 801-422-0700, Email: marchansen@byu.edu). Additional information is available at <http://pdbio.byu.edu/FacultyPositionAnnouncement.aspx>. BYU is an equal employment opportunity employer. Preference is given to qualified members in good standing of the affiliated church, The Church of Jesus Christ of Latter-day Saints.

Medical School Research Fellowship: The Harvard Medical School Research Fellowship in Integrative Medicine invites candidates to apply for our NIH funded training program to begin July 1, 2014 for a three-year fellowship. This joint program of Harvard Medical School-affiliated teaching hospitals is searching for postdoctoral candidates including physicians (primary care specialties such as internal medicine preferred), anthropologists, health behavioralists, sociologists and psychologists with MDs and/or PhDs who are interested in training in one or more of three general tracks: 1) health behavior research; 2) mind-body therapies; and 3) placebo studies. The program is led by researchers in the Division of General Medicine and Primary Care at Beth Israel Deaconess Medical Center. Research areas of special interest within the Division include the chronic dis-

ease management, innovations in primary care, obesity and cardiovascular health, patient-provider relationship, end of life and palliative care, and aging. <http://www.bidmc.org/Research/Departments/Medicine/Divisions/GeneralMedicineandPrimaryCare.aspx>. The program offers candidates the opportunity to obtain an MPH degree at the Harvard School of Public Health. The deadline for applications for the year beginning July 1, 2014 is October 1, 2013. For information and application forms, please contact: Ms. Rachel Quaden, HMS Fellowship in Integrative Medicine, Division of General Medicine and Primary Care, Beth Israel Deaconess Medical Center, Harvard Medical School, Email: rquaden@bidmc.harvard.edu. The participating institutions are equal opportunity employers. Underrepresented minority candidates are encouraged to apply. ❖

Meeting Report

48th Annual Meeting of the Lake Cumberland Biological Transport Group

The 48th Annual Meeting of the Lake Cumberland Biological Transport Group was held June 16-18 at Lake Cumberland State Park, Jamestown, KY. The meeting had 35 participants (14 faculty, three postdoctoral fellows, 17 graduate students and one administration assistant). A total of 26 scientific talks (35 min each) were presented in ten sessions. The talks covered a wide range of topics including kidney and lung disease, intracellular protein trafficking, regulation of membrane transport proteins and ion channels, novel drug discovery, and signal transduction.

The meeting was supported in part by donations from Thermo Scientific, Sartorius Stedim, Quiagene, Sarsted, Roche, VWR International, Microsynth AG, Sigma-Aldrich, Li-Cor, the Institute of Pharmacology and Toxicology and Paracelsus Medical University Salzburg (Austria) through the Seventh Frame Work Programme and Marie Curie Actions, and the County of Salzburg, Austria, Europe. These donations plus the income from registration fees covered the cost of the

meeting. Registration fees (\$60.00 for faculty, \$25 for postdoctoral fellows, and \$15 for students) have remained constant for 8-9 years and there is not an immediate need for an increase. The Lake Cumberland Biological Transport Group remains solvent and continues to build a modest reserve fund. The administration of the Lake Cumberland State Resort Park has remained very supportive and accom-

modating for our annual meeting.

The attendees expressed their appreciation for the continued affiliation of the Group with the American Physiological Society. We are eagerly looking forward to the 50th anniversary of this meeting to be held at the same site and have begun preliminary plans to make this a truly festive event. The Group welcomes suggestions from the APS and its membership in this regard. ❖



Attendees of the 48th Annual Meeting of the Lake Cumberland Biological Transport Group.

Here are some hot weather whites to sip - cool to cold:

2011 Smoking Loon Chardonnay unoaked, \$7. There are not too many unoaked Chardonnays around, and when you see one, it is often worth a try just to see what the grape is like without all that wood. This one, at the price, is a decent party wine. It has a simple tropical fruit nose. The palate is similar with a little peach edge, very slightly herbaceous and almost a touch sweet. Acid is good, and it is clean, May not be your cup of tea, but worth a shot.

2012 Bird Pinot Gris, Marlborough, New Zealand \$13. This wine is much more citrus than stone fruit in character on both the nose and palate. It is very clean, and has excellent, appealing, flavor intensity and moderately high acid.

2010 Harmony Cellars Chardonnay, Central Coast \$15. This is very tasty if a bit pricey. The nose has tropical fruit with apple and pear as well, and subdued vanilla oak. The palate is bright with good, almost high, acidity. Apple and citrus come through as the main flavors, with light toasty vanilla oak. I like the combination of good acid, low oak and strong fruit flavors.

2011 Bottega Vinaia Pinot Grigio \$14. This is another citrus-based wine with a lemony nose softened by a little cashew nut element. The palate is also lemony but with some stonefruit edges, and very good acidity and fruit intensity. Again there is a slight nuttiness.

2012 Cakebread Cellars Sauvignon Blanc \$24. So what is a wine at this price doing in my column? If you insist on a Californian SB, then this is a very



Peter Wagner

good wine. The nose and palate have tropical and stone fruit (peach and apricot) characters of high intensity/concentration. Not grassy or herbal. It is very clean, very viscous, with excellent acidity and length. You just want to keep sipping it.

But if you insist on a Sancerre from France, try this:

2011 Domaine Millet Freres, Sancerre \$20. The nose is muted and does not foretell the palate at all, which is lush, herbal and grassy. It is clean, with good viscosity, length and acidity, and is another wine you don't want to put down. Just as well at this price.

Some interesting reds:

2011 Bradford Mountain Zinfandel, Dry Creek \$15. This wine has a very young, very forward, floral grapey nose. The palate has intense red cherry and raspberry flavors with a little hay/dry sage herbs. So ripe it is almost sweet, but not quite. Tannins are soft and acid is medium.

2011 County Line Zinfandel, Russian River \$22. Another that is a bit high priced, sigh. This wine has some elegance and complexity and a relatively low alcohol level. The nose has raspberry fruit, with some oak char and slight earth. The palate is young, a bit grapey, fresh, clean, and not sweet. There is a touch of earth and anise. Acid and tannin are well-balanced (in check).

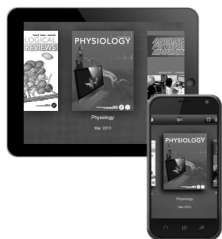
2010 Big Vine Cabernet Sauvignon, Napa \$17. To find a serious Napa Cabernet at this price is rare, especially one as tasty as this. The nose is a bit muted, with dark cherry and vanilla. The palate is very ripe, almost a touch sweet, with loads of intense dark berry fruit, obvious tannins, good acidity, and excellent length.

2010 Justin Cabernet Sauvignon, Paso Robles \$20. The nose is forward with grapey young fruit, some blackcurrant and anise and clear vanilla oak. The palate is not too heavy or extracted, and has excellent dark berry fruit with vanilla, soft tannins, good acid and good length.

And finally, we recently opened a bottle of 2009 Ferrari Carano Alexander Valley Cabernet we have had in the wine room for some years. No idea where we got it or when, nor if it is available now or at what price, but a really high quality red with some maturity, yet still with fresh fruit and medium to soft tannins. Lots of dark berries, some dill, earth, oak. Needs red meat, for sure, but very nice wine. ❖



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October 5-7

The 13th International Congress on Amino Acids, Peptides and Proteins (ICAPP), Galveston, TX.
Information: Dr. Wu. Email: g-wu@tamu.edu.

October 11-12

Regulatory Circuits in Cell Motility, Philadelphia, PA.
Information: Email: marion.siegman@jefferson.edu;
Internet: <http://www.jefferson.edu/jmc/departments/physiology/Symposium.html>.

October 17-18

2013 Pittsburgh International Lung Conference: Acute and Chronic Lung Infections: Novel Pathogens, Diagnostics, and Therapeutics, Pittsburgh, PA.
Information: Internet: http://www.dept-med.pitt.edu/paccm/conference_archive.html.

October 23-26

24th International Symposium on the Autonomic Nervous System, Kohala Coast, Big Island of Hawaii.
Information: Anita Zeller, AAS Executive Secretary, American Autonomic Society, 18915 Inca Ave, Lakeville, MN 55044. Tel.: 952-469-5837; Fax: 952-469-8424; E-mail: zeller.anita@mayo.edu; Internet: <http://www.americanautonomicsociety.org>.

October 24-27

The 18th World Congress on Controversies in Obstetrics, Gynecology & Infertility (COGI), Vienna, Austria. *Information:* Internet: <http://www.congressmed.com/cogi/>.

November 6-8

8th Cell Based Assay and Screening Technologies Conference, Boston, MA. *Information:* Internet: http://www.gtcbio.com/conference/assay-overview?utm_source=newsletter1&utm_medium=assay&utm_campaign=assay13.

November 16-20

22nd IUBMB and 37th FEBS Congress, Marrakech, Morocco. *Information:* Internet: <http://www.iubmb-2013.org/>.

December 14-18

2013 American Society for Cell Biology Annual Meeting, New Orleans, LA. *Information:* Internet: <http://www.ascb.org>.

2014

March 13-15

The Power of Programming 2014 - International Conference on Developmental Origins of Adiposity and Long-Term Health, Munich, Germany.
Information: Email: EarlyNutrition@med.imu.de; Internet: <http://munich2014.project-earlynutrition.eu/>.

June 24-28

The International 22nd Puijo Symposium "Physical Exercise in Clinical Practice—Critical Appraisal of Randomized Controlled Trials," Kuopio, Finland.
Information: Email: saila.laaksonen@uefi.fi; Internet: <http://www.puijosymposium.org>.

August 25-29

7th World Congress for Psychotherapy, Durban, South Africa. *Information:* Janie Koeries, Paragon-Conventions, Milnerton Mall, Loxton Road, Milnerton, Cape Town, South Africa. Tel.: 021 552 8679; Email: jkoeries@paragon-conventions.com; Internet: <http://www.wcp2014.com>.



Meetings and Conferences

Experimental Biology 2014

San Diego, California
April 26-30, 2014

2014 APS Conference: APS Institute on Teaching and Learning

June 23-27, 2014
College of the Atlantic, Bar Harbor, Maine

For more information on APS meetings, please visit: the-aps.org/mm/Conferences