



59th EHS Center Directors Meeting

October 27 – 30, 2001
Austin • Texas

Community Outreach and Education Program:

Organizational Worksheets,

Poster Abstracts,

and

Presentation Slides

**59th Annual Center Directors Meeting
Austin, Texas, October 28, 2001**

THE UNIVERSITY OF
TEXAS
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CANCER CENTER**

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Part I
Organizational Worksheets

National Institute of Environmental Health Sciences: Community Outreach and Education Programs



The following document contains worksheets that highlight the similarities and differences among the 28 Community Outreach and Education Programs (COEPs) that are a part of the National Institute of Environmental Health Sciences' (NIEHS) Core Centers Program. The worksheets provide primary data on various aspects of a COEP, including the number of years a COEP has been supported within a Center, the number of staff within a COEP, outreach and education activities conducted by COEPs, and sources of other funding outside the Core Centers Program. In some instances, COEPs provided an organizational chart to give readers a visual sense of how the COEP fits within the overall organization of the Core Center, in addition to its relationship with other Centers (e.g. Superfund, Children's, NIOSH) at the University.

This information was collected in response to requests from COEP staff at last year's Annual COEP meeting (Wayne State University, October 2000). Meeting participants wanted to know how certain COEPs were able to accomplish as much as they did with the small budget allocated from the Core Center budget. Such discussions led to additional questions about the structure and funding of other COEPs. The purpose of the document is to provide insight into how COEPs are organized and operated within a Core Center.

COEP worksheets are organized in alphabetical order by University name.

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
NIEHS Center for Environmental Health in Center Focus	Regina Santella	Environmental	6	6	6%
Understanding and preventing environmental components of disease in underprivileged populations. Research activities focus on respiratory disorders, neurotoxicology and neurodegenerative disease, and cancer.					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Mary E. Northridge	19%	Respiratory			
COEP Key Personnel	Percent FTE	Role			
Peggy Shepard	19%	Co-Director			
Swati Prakash					
Gabriel N. Stover					
Total Number of Staff					4
Forms of Outreach at COEP & Target Audience	educational forums and conferences		community		
	training on environmental and health issues		community		
	community focused education materials on asthma, and		community		
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Guest Editors of Environmental Health Perspectives a special issue "Using CBPR to Advance Environmental Justice"					
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
CDC					
EPA					
NIEHS	Intervention Grant				
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [5]			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active			
Ways in which Center members participate in COEP.	Many members have been speakers at COEP workshops				
	Many joint projects between researchers and COEP				
Mechanisms used to encourage Center member participation.	Attend bimonthly Center meetings				
	plan to meet with research cores to find better ways for collaboration and use of				
Comments					
Provide expertise in research projects regarding social epidemiology, CPBR, environmental justice and writing for publication					
COEP Web Site:	n/a				

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
Harvard University	Joseph Brain	EHS	39	5	5.4%
Center Focus					
Effects of Physical and Chemical Factors in the Environment on Biological Systems and Especially Human Health					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Richard Monson, MD, ScD	5%	Occupational Health			
COEP Key Personnel	Percent FTE	Role			
Ann Backus	20%	Director of Outreach			
Rachel Pescatore	10%	Program Assistant			
Marshal Katler	15%	Educator			
Total Number of Staff					4
Forms of Outreach at COEP & Target Audience	K-12 Education (emphasis on Grade 5)		Minority students		
	Photography exhibits and Stolen Dreams website		Communities		
	Conferences, health fairs, asthma workshops		Profess'ls, students, public		
	Teacher training		Gr 4/5 teachers		
Other Activities 1	Other Activities 2	Other Activities 3			
Visitng Scholars Program	Web development				
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
Annenberg Foundation	Training	7.4%*	Teacher training		
Alicia Patterson Foundation	Fellowship	17.2%*	Fishing hazards exhibit		
NIEHS	Superfund Basic Research	49%*	Visiting Scholars, EPA Seminars, etc.		
NIOSH	Educ. & Res. Center	3.1%*	Visiting Scholars, Fishing		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	<p style="text-align: center;">4</p> <p style="text-align: center;">← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ →</p> <p style="text-align: center;">very active not active</p>				
Ways in which Center members participate in COEP.	Teacher training, speakers at confereces, advisors to Visiting Scholars, school visits. visits, advisors to outreach activities, members of outreach advisory committees				
Mechanisms used to encourage Center member participation.	Ensure that requests for assistance are mutually beneficial for faculty and outreach. Achieve close alignment of requests with research and academic expertise of expertise of faculty. Give praise and report frequently on the impact of their contribution.				
Comments					
*Under other funding sources, the percentages were calculated by adding all outreach monies and determining the percentage contribution of each funding source. Using this formula the NIEHS Center Grant would contribute 23.3% to the total outreach budget.					
COEP Web Site:	www.hsph.harvard.edu/kresge and www.hsph.harvard.edu/gallery				

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of Iowa	Peter Thorne, PhD, MS	EHS	11	7	9%
Center Focus					
Interdisciplinary environmental health sciences research with a focus on agricultural and rural environmental exposures, health effects, and related injury and diseases.					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Shannon Marquez, PhD, MEng	50%	Environmental Assessment & Control	none		
COEP Key Personnel	Percent FTE	Role			
J Merchant	5%	Co-Director			
R Ungar	20%	Assoc Dir-Int'l Programs			
D Osterberg	5%	Assoc Dir-Policy Initiatives			
L Fuortes	1%	Steering Committee			
T Cook	1%	Steering Committee			
Total Number of Staff				14	
Forms of Outreach at COEP & Target Audience	EHSI for Rural Youth (9th grade summer institute)				
	Iowa Town Meeting on CAFOs				
	International COEP - Develop. Country Workshops				
	Burlington, IA - Dept. of Energy Former Worker Prog.				
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Iowa Environmental Council	Iowa Wesleyan Univ.				
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
Education Grant (in preparation)	EPA Region VII	30%	environmental justice		
Iowa Private Well Study	CHEEC, USGS, IDNR	12%	community education		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	Enter number (1-7) here: [2.5]				
	← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active				
Ways in which Center members participate in COEP.	Steering committee, mentors, lecturers and presenters for EHSI, provide tours of facilities and cores for COEC visitors. Attend COEC activities. Serve as a technical resource for community inquiries. Instructional design and curriculum development for EHSI. Attend community meetings.				
Mechanisms used to encourage Center member participation.	Steering committee, requests for assistance in program planning, Center retreat, email, executive committee, advisory boards				
Comments					
COEP Web Site:	http://www.public-health.uiowa.edu/ehsrc/COEC.htm				

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
Johns Hopkins	John Groopman	EHS	15	3.5	12%
Center Focus					
Urban Environmental Health					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Michael Trush	10%	Molecular Toxicology (MAT)			
COEP Key Personnel	Percent FTE	Role			
Jim Zabora	10%	Co-Director			
Polly Walker	25%	Program Co-ordinator			
Cecilia Davoli		COEP member			
Cliff Mitchell		COEP member			
Peyton Eggleston		COEP member			
George Jakab		COEP member			
Total Number of Staff					6
Forms of Outreach at COEP & Target Audience	Teacher Workshops		Middle and secondary		
	Environmental Health presentations		Community organizations		
	Community Outreach course		Public Health students		
	Community fairs		Residents		
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
Private foundations			Teacher workshops		
NIEHS	K-12 Education		Teacher workshops		
Private Grants			Community Interactions		
Center Pilot Program			Community		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	2				
	← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active				
Ways in which Center members participate in COEP.	Giving presentations to middle and secondary students Participating in teacher workshops Meeting with citizens Interacting with community groups				
Mechanisms used to encourage Center member participation.	Center members have been very willing to participate when asked				
Comments					
COEP interacts with Cancer Center and NIEHS Childrens Center					
COEP Web Site:					

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
MIT	Leona Sampson	EHS	23	4	14%
Center Focus					
Environmental Genomics, Airborne Toxicants, Superfund Basic Research					
COEP Co-Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Prof. Heidi Nepf	17%	CEE	CEE		
COEP Key Personnel	Percent FTE	Role			
Prof. Trish Culligan	17%	Co-Director			
Gerti Gillen	2%	Fiscal Administrator			
Amy Fitzgerald	25%	Outreach Coordinator			
Beartz Fidalgo		Graduate assistant			
Franceca Casella		Educational Consultant			
Total Number of Staff					6
Forms of Outreach at COEP & Target Audience	Hands-On Activities at MIT			7th-8th grade	
	Video Curriculum Series			8th -12th, freshman	
	Web Page			6th - 8th	
	Freshman Seminar			Freshman	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Teachers as Scholars					
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
none					
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [4]			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active			
Ways in which Center members participate in COEP.	Co-Directors are faculty				
	Faculty featured in video series				
Mechanisms used to encourage Center member participation.	Encouragement from director				
	personal solicitation from Co-directors				
Comments					
COEP Web Site:		http://www.niehs.nih.gov/centers/coep/mit-coep.htm			

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
Mt. Desert Island Biological Laboratory	James L. Boyer, M.D.	Marine and Freshwater Biomedical Sciences	16	5	7%
Center Focus					
Signal Transduction, Ion and Cell Volume Regulation, Xenobiotic Transport					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Barbara Kent, Ph.D.	15%				
COEP Key Personnel	Percent FTE	Role			
Jeri Bowers	15%	Public Outreach			
Michael McKernan	25%	Educational Programs			
Janet Redman	25%	Outreach Coordinator			
Total Number of Staff					4
Forms of Outreach at COEP & Target Audience	Summer Research Fellowships	Undergraduate, Graduate			
	Summer Research Fellowships	High School Minorities			
	Public Outreach program and lectures	General Public			
	Community Environmental Toxicology Laboratory	Local elementary,			
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Center Annual Report	Laboratory Newsletter	Laboratory Annual Report			
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
NIEHS	Center Supplement	77%	CETL		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [2]			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active			
Ways in which Center members participate in COEP.	Student mentoring--high school, undergraduate, graduate				
	Student recruiting				
	Research lectures open to the general public				
	Recruiting high profile speakers for public lectures				
Mechanisms used to encourage Center member participation.	Written reports for newsletter, annual report				
	direct personal contact				
	history of positive experience with COEP				
	honoraria for speakers				
Comments					
COEP Web Site:					

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
New York Univ. School of Medicine (Dept. of EHS)	Max Costa, Ph.D	EHS	39	7	6%
Center Focus					
We are a highly interdisciplinary research organization. RESEARCH CORES: 1. Molecular & Genetic Toxicology 2. Environmental Carcinogenesis 3. Systemic Toxicology 4. Human Exposure & Health Effects 5. Epidemiology 6. Biostatistics					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
George D. Thurston, Sc.D	20%	Human Exposure & Health Effects Core			
COEP Key Personnel	Percent FTE	Role			
Lisa M. Schuetz	50%	Coordinator, Community Outreach			
Mary Krol	10%	Project Assistant, Community Outreach			
Lung Chi Chen, Ph.D.	10%	Principal Investigator, S. Bronx Project			
Jessica Clemente	50%	Project Assistant, S. Bronx Project			
Total Number of Staff					6
Forms of Outreach at COEP & Target Audience	Science Advice		Community Groups & Policy Makers		
	K-12 Science Education		NY Students & interns		
	Community scientific presentations		Local, regional & national community groups		
	Media Awareness		Media		
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Internet resources web site	S. Bronx inner city proj.	Occ. & Env. Health Clinic Outreach	Epi. Outreach		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
EPA	Center Grant				
EPA			Air monitoring in S. Bronx		
NIEHS	Supplement		Community forums on women's & children's hlth		
Con Edison Elec. Co.			Web design		
NIEHS	Superfund				
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [2]			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active			
Ways in which Center members participate in COEP.	Presentations to civic and community groups				
	State & Federal scientific advisory and testimony roles via the national media				
	Education of students and faculty from other institution on the use of the lab and other equipment used to conduct experiments.				
	Provide technical expertise to the community (e.g., with air sampling)				
Mechanisms used to encourage Center member participation.	Outreach staff recruit individuals for appropriate outreach activities				
	Center Members who are members of civic groups regularly present on environmental health issues				
	Members asked/offer to testify on state or federal level				
	Media/Press contacts members for information				
NYU Media Relations setup interviews of Center members for the press					
Comments					
COEP Web Site:		http://niem.med.nyu.edu/niels/coep/COEPActivities.html#e			

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
Oregon State University	Dale Mosbaugh, Interim Center Director	EHSC/MFBS	34	8	4%* ^{see comments}
Center Focus					
EHS Center Research Cores: (1) Carcinogenesis; (2) Cell Biology & Immunotoxicology; (3) Molecular & Genetic Toxicology; (4) Structural Biology & Environmental Chemistry. MFBS Center Research Cores: (1) Carcinogenesis; (2) Neurotoxicology.					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Nancy Kerkvliet	40%	Cell Biology & Immunotoxicology	Cell & Tissue Analysis		
COEP Key Personnel	Percent FTE	Role			
Kendra Mingo	100%	Assistant Director			
Molly Bloomfield* ^{see comments}	75%	Project Director, Hydroville Curriculum Project			
Total Number of Staff					2
Forms of Outreach at COEP & Target Audience	K-12 Programs			precollege students	
	Teacher Workshops			precollege teachers	
	Community Outreach			varies	
	Community Course, "Your Health & Chemical Risks"			general public	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
EHS/COEP Web Development	EHS Center Brochure				
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
NIEHS	K-12 EHSIC	81%	Curriculum & Teacher Training		
NIH	EH-STEP	6%	Teacher Training		
EPA	Environmental Education Grant Program	3%	Teacher Training		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [2.5]			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active			
Ways in which Center members participate in COEP.		SMILE Program partnership (e.g. curriculum, teacher training, student challenge weekends)			
		Community Course, "Your Health and Chemical Risks"			
		K-12 classroom participation (e.g. Tox in a Box, ToxRAP, etc.)			
		Community Scientists, Science & Engineering PartnershipS (SEPS)			
		Tours of facilities (e.g. Mass Spectrometry, Aquatic Toxicology, etc.)			
Mechanisms used to encourage Center member participation.		One-on-one contact			
Comments					
*% Ctr Budget: calculated as COEP Core Budget/Total EHS Center Budget (does not include other funding sources); *Key Personnel: Molly Bloomfield is Project Director for NIEHS K-12 EHSIC funded Hydroville Curriculum Project for the duration of the grant; Contact Information: Kendra Mingo, Assistant Director, (541) 737-4374, kendra.mingo@orst.edu					
COEP Web Site:		http://www.ehsc.orst.edu/outreach			

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
CERH, Texas A&M University	Kenneth S. Ramos, PhD	EHS	4	4	9.85%
Center Focus					
Rural Environmental Health					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Irma N. Ramos, M.D.	80%				
COEP Key Personnel	Percent FTE	Role			
Larry Johnson, PhD	25%	PEER Principal Investigator			
Kirby Donnelly, PhD	10%	PEER Co-Investigator			
Noemi Gonzalez	5%	Promotora Coordinator			
Marlynn May, PhD	5%	Community Needs Assessment Director			
Charles Farnsworth, PhD	2%	Director Instructional Design (computer training, COEP web page)			
Total Number of Staff			6		
Forms of Outreach at COEP & Target Audience	Community Based Organization		Promotoras & Colonia Residents		
	K-12 Education (Public Rural Middle Schools)		Students & Teachers		
	TV Educational Segment		Bryan/College Station TV views		
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Website development & update	Newsletters	Annual Report	High school students EHS education		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
NIEHS	K-12 Education	10%	Website curriculum; PEER Intensive/Science Teacher Training; Scientist visits to classroom		
NIEHS	K-12 Education	5%	Website curriculum		
NIEHS	Environmental Health Training of Promotoras in Colonias along the TX-MX border	20%	Environmental health training of 4 promotoras, Cameron Park colonia		
CHUD	Community Development	10%	Environmental health training of 4 promotoras, Cameron Park colonia		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [2]			
Ways in which Center members participate in COEP.		<ol style="list-style-type: none"> 1. Teach curriculum to promotoras 2. Assist COEP staff in development & implementation of educational materials 3. Visit classrooms (Public Rural Schools) 4. Train middle & high schools students and teachers 5. Participation in educational TV and Radio shows 			
Mechanisms used to encourage Center member participation.		<ol style="list-style-type: none"> 1. Regularly schedule meetings to discuss activities 2. Promotional materials 3. Invitation 			
Comments					
The COEP at Texas A&M provides education on how to reduce environmental exposures associated with human illness. The primary COEP activity involves training of promotoras (community educators) and colonia (community) residents along the Texas-Mexico border. A cornerstone of this program is an Environmental Health Science curriculum rooted on the Train the Trainer model of education and outreach. This has been done in collaboration with center scientists and physicians of the three Texas NIEHS Centers, and colleagues within different colleges of the university. Another important component is a K-12 education program that involves incorporation of environmental health issues into public school science curricula. This is carried out in collaboration with faculty of the Partnership Education and Rural Health (PEER), web page address http://peer.tamu.edu . A Brazos Valley community outreach counterpart initiative has also been established to address health concerns in our immediate community.					
COEP Web Site:		http://www.cerh.tamu.edu/coep/			

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of Arizona	Dr. Dan Liebler	EHS	8	8	10%
Center Focus					
SWEHSC research is focused in 5 areas: arsenic, environmental affectors of gene expression, proteomics, pulmonary toxicology, & reproductive and developmental toxicology.					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Stefani Hines	100%	None	None		
COEP Key Personnel	Percent FTE	Role			
Marti Lindsey	100%	Outreach & Internet Specialist			
Eleanor Navarro	50%	Administrative Assistant			
Total Number of Staff				3	
Forms of Outreach at COEP & Target Audience					
curriculum development				K-12	
Internet-based materials				K-12, public, health	
teacher workshops & classes				K-12	
student activities				k-12	
Other Activities					
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Other Funding Sources					
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
NIEHS	Supplemental	21%	IMPACTT program		
NIH	SEPA	11%	EH-STEP teacher training		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in		Enter number (1-7) here: [3]			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ →			
		very active not active			
Ways in which Center members participate in COEP.		presenting at workshops, curriculum & materials review/development,			
		classroom visits & presentations, serving on project advisory boards			
Mechanisms used to encourage Center member participation.		To be a member of the center, investigators agree to participate in COEP			
		direct contact (email, phone, meeting) to discuss my idea for their participation			
		I encourage them to tell me if they aren't comfortable w/ a type of outreach			
		Use our center list serve for important COEP announcements			
Comments					
COEP Web Site:					
		http://swensc.pharmacy.arizona.edu/coep/index.html			

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of California, Berkeley	Bruce Ames	EHS	23	7	10%
Center Focus					
Nutrition Environment Gene Interactions					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Patricia Wakimoto	80%				
COEP Key Personnel	Percent FTE	Role			
John Nides	25%	Project Coordinator			
Total Number of Staff					2
Forms of Outreach at COEP & Target Audience	Conferences			Health care workers	
	Health fairs, community events,			Underserved	
	Community outreach (by student interns)			Rural and urban Latinos	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Newsletters					
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		4			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active			
Ways in which Center members participate in COEP.	Faculty sponsor of the undergraduate student intern program				
	Presentations to lay public regarding research findings				
	Community outreach projects associated with epidemiologic research studies				
	Write newsletter articles for targeted audiences served as students, science writers				
	Presentations to general public				
Mechanisms used to encourage Center member participation.	One-on-one meetings with scientists, presentation of ideas for possible projects such as				
	Director support at Center Annual Meeting				
Comments					
COEP Web Site:					

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
Univ. of California, Davis	Fumio Matsumura	EHS	10	6	11%
Center Focus					
Human Health Effects of Agrochemicals and Related Xenobiotics					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Fumio Matsumura	3%	1)Toxicogenomics 2)Neuro	Genomics & Mol Bio		
COEP Key Personnel	Percent FTE	Role			
Rebecca Morrison	50%	COEP Coordinator			
To be named	100%	Education Specialist			
Total Number of Staff					1.5
Forms of Outreach at COEP & Target Audience	Training pesticide workers				
	Teaching kids about water toxicology				
	Answering toxics questions from public				
	Training undergrads in env health sci outreach				
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
Pending	Pending	33%	K-12 Education		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	4				
	← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active				
Ways in which Center members participate in COEP.	Give lectures at conferences, speak at schools, answer questions from public, sponsor undergraduate outreach courses, provide pesticide training to farmworkers and others, write training manuals, write outreach grants, participate in annual COEP events such as Picnic Day, Friends Day, and Conference for Environmental Health Scientists.				
Mechanisms used to encourage Center member participation.	We tell all faculty that it is part of the requirement of being a Center member to do outreach.				
Comments					
COEP Web Site:	www.envtox.ucdavis.edu/cehs/outreach				

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of Cincinnati Medical Center	Marshall Anderson	EHSC	10	5	13%
Center Focus					
Investigate the impact of genetic diversity on the response of the individual to toxic environmental agents. Uses a multidisciplinary approach devoted to the application of molecular biology and genetics to environmental research.					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Eula Bingham	10%	-	-		
COEP Key Personnel	Percent FTE	Role			
Susan Vandale	100%	Health educator/COEP Coordinator			
M Kathryn Brown	10%	COEP Co-Director			
Nancy S Warren	5%	COEP member			
Total Number of Staff					4
Forms of Outreach at COEP & Target Audience	presentations/workshops on environmental genetics			public	
	Web page			public	
	development of curricular materials			public	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
contribute articles to newsletter	Collaboration in Admin. Suppl with UNC (2001-2002)				
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	Enter number (1-7) here: [2]				
	← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active				
Ways in which Center members participate in COEP.	review curricular materials				
	write for newsletter				
	help with presentations/workshops				
Mechanisms used to encourage Center member participation.	communication through written activity updates and meetings				
Comments					
COEP Web Site:	http://www.med.uc.edu/legends/legends.html				

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
UMDNJ-Robert Wood Johnson Medical School	Michael A. Gallo, PhD	EHS	14	14	10%
Center Focus					
To understand molecular, cellular and organismic responses to environmental agents by studying environmental-gene interactions, signal transduction, neural and developmental toxicology and exposure assessment; and providing community outreach and education.					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Audrey R. Gotsch, DrPH, CHES	10%	N/A	N/A		
COEP Key Personnel	Percent FTE	Role			
Laura Hemminger, MPH	50%	COEP Co-Director & Director, Resource Center of EOHSI			
Jane Lewis, DrPH	5%	COEP Member & Assistant Professor, UMDNJ-SPH			
Mark Robson, PhD, MPH	5%	COEP Member & Associate Professor, UMDNJ-SPH			
Robert Snyder, PhD	5%	COEP Member & Director, EOHSI			
Lynn Waishwell, PhD, CHES	5%	COEP Member & Associate Professor, UMDNJ-SPH			
Total Number of Staff					7
Forms of Outreach at COEP & Target Audience	Curriculum Development and Dissemination			Grades K-12	
	Worker-Related Training			Workers/Paraprofessionals	
	Public Education			Public	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
N/A					
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
National Center for Research Resources	Science Education Partnership Award	100%	Curriculum Dissemination through Teacher Professional Development		
NIEHS	EHSIC	100%	Curric. Develop. and Dissem. through Teacher Prof. Develop.		
Toxicology Education Foundation & Other Foundations/Corporations	-----	100%	Curriculum Dissemination through Teacher Professional Development		
Centers for Disease Control and Prevention/ Agency for Toxic Substances Disease Registry	Public Health Conf. Grant	100%	Curric. Develop. and Dissem. through Teacher Prof. Develop.		
NIEHS	Hazardous Materials Worker Health/Safety Training	100%	Worker Education and Training (hazardous materials and waste generation/removal/containment/transportation and emergency response.		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	Enter number (1-7) here: [1.0]				
	← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ ----- → very active not active				
Ways in which Center members participate in COEP.	Curriculum Development-guidance, technical writing, review Teacher Training-presentations and roundtable discussions Student Education-classroom presentations, science/careers fairs, lab tours Public Awareness-response to general public questions/requests Worker-Related Training-development, teaching				
Mechanisms used to encourage Center member participation.	Center Director encouragement Past participation has lent to good experiences Word-of-mouth Ease of participation				
Comments					
The COEP of the NIEHS Center for Environmental Health Sciences, which is jointly sponsored by the University of Medicine and Dentistry of New Jersey (UMDNJ)-Robert Wood Johnson Medical School and Rutgers, The State University of New Jersey, is located at the Environmental and Occupational Health Sciences Institute (EOHSI) and collaborates with the UMDNJ-School of Public Health (UMDNJ-SPH).					
COEP Web Site:	eohsi.rutgers.edu/niehs/coep.shtml -OR- eohsi.rutgers.edu/rc				

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of Miami	Patrick Walsh, PhD	MBFS	11	6	10%
Center Focus					
The human health effects of Marine and Freshwater Toxins and Marine Models of Human Disease.					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Lora E Fleming MD Phd	5%	Marine & Freshwater Toxins	COEP		
COEP Key Personnel	Percent FTE	Role			
Van de Bogart	5%	Center Administrator & Assist Dr Fleming			
Pitman	other	K 12 AMBIENT Project			
Undergraduate Student	10%	Assist Dr Fleming			
Webmaster	5%	Assist Dr Fleming			
Gawley	5%	Post Doc Program			
Walsh	5%	Center Director			
Total Number of Staff					2
Forms of Outreach at COEP & Target Audience	Center Website			Patients, Healthcare	
	Articles, brochures, videos			Same	
	Poison Information Center Hotline			Same	
	Talks			Same	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Pilot Projects	Student Mentoring	Taskforces	Center Listserve		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
AMBIENT	NIEHS K through 12	10%	High School Env Health		
HAB Taskforce	State of Florida	10%	Brochures, Articles		
ARCH	NIEHS	5%	Scientist Mentoring, Pilot		
Post Doc Program	NIEHS	10%	Post Doc Training		
Florida Dept of Health	Dent of Health/CDC	5%	Brochures, Articles		
Red Tide PO1	NIEHS	10%	Brochures, Articles, Talks		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [2]			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active			
Ways in which Center members participate in COEP.		Articles, talks, mentoring (scientists and students), website, answering questions			
Mechanisms used to encourage Center member participation.		Pilot Project Monies, Website, Center Listserve			
		Post Doc Program			
		Collaboration on their projects in exchange for COEP			
		COEP suggestions for existing and future projects			
Comments					
Encourage the relationship between research and COEP as a "two way bridge" to both generate new research areas of interest to the community as well as always try to have some sort of COEP component of research projects; involve social scientists including Ethicists in COEP; collaborate with existing COEP Institutional Programs as well as existing community COEP programs					
COEP Web Site:		www.rsmas.miami.edu/groups/niehs/			

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of New Mexico	Pope Moseley, MD	Developmental	2	2	2%
Center Focus					
Environmental Respiratory Diseases in Native Americans					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Teresa A. Coons, PhD	~.35 FTE (see below)				
COEP Key Personnel	Percent FTE	Role			
Teresa A. Coons, PhD	10%	Director			
David S. James, MD	5%	Professional education			
Johnnye Lewis, Ph.D.	5%*	Outreach to Northern Pueblos			
Sam Bradshaw (Albq Area IHS)	5%*	Liason with Indian Health Services Environmental Health			
Craig Marcus, PhD	5%*	PI for Middle School Environmental Health Program			
Donald Godwin, PhD	5%*	Water Quality Education Outreach Program Chair			
Total Number of Staff				5 Univ.-related, 1 non-	
Forms of Outreach at COEP & Target Audience	Community Advisory Committee			Native American communities	
	Workshops			healthcare professionals	
	Support for K-12 programs			teachers and students	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Outreach support for NIEHS K-12 programs					
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
NIEHS	COEP supplement	24%	see supplement report		
NIEHS	K-12 Programs	20%	outreach support		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	<div style="text-align: center;"> 4 ← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active </div>				
Ways in which Center members participate in COEP.	participate in Community Advisory Council meetings help to develop professional, school-based, and community education programs 				
Mechanisms used to encourage Center member participation.	invitations to participate on Community Advisory Council involvement in education activities directly related to research interests (workshops, 				
Comments					
Our COEP program has begun to develop a regional approach, with the signing of a Memorandum of Understanding between the UNM Center and the Saccomanno Research Institute (Grand Junction, CO), and the coordination of uranium education and water quality education programs with the Albuquerque Area IHS, Navajo Area IHS and Dine College Uranium Education Program. *Non-Center FTE.					
COEP Web Site:					

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of North Carolina at Chapel Hill	James Swenberg	EHS	6 mos.	6 Mos.	10%
Center Focus					
The Center focuses on environmental epidemiology and toxicology and has three areas of concentration: genetic susceptibility which brings together laboratory and molecular epidemiologic research; developmental susceptibility, particularly on conception through childhood; and toxicokinetic susceptibility, which looks at inter-individual differences in physiologic and metabolic factors that occur in response to exogenous agents.					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Frances Lynn	25%				
COEP Director	Percent FTE	Role			
Kathleen Gray	20%	Deputy Director			
Alyssa Wittenborn	25%	Outreach and Research			
Michele Kloda	5%	Teacher Professional Development			
Melanie Miller	50%	Communications			
Total Number of Staff				5	
Forms of Outreach at COEP & Target Audience	Citizen Education, Citizen-Scientist Understanding				
	Teacher Professional Development				
	Education of Policy Makers				
	Student Internships				
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Center Website Development and Maintainance	Center Newsletter	Center Logo and Brochure			
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
UNC-CH	School of Public Health	37%	Outreach and Public Service		
UNC-CH	Carolina Env. Program	28%	Outreach and Public Service		
NIEHS	Superfund Basic Research Program	17%	Outreach and Education		
UNC-CH	Center for Public Service	2%	Assistance to Flood		
Center Member Participation in COEP					
Level of Faculty Participation	4 ← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active				
Ways in which Center members participate in COEP.	Serve as scientific advisors to review COEP materials and activities				
	Serve on advisory board for grants				
	Participate with Community Advisory Committee				
Mechanisms used to encourage Center member participation.	Scientific advisors assigned from each core				
	One-on-one meetings with Center members				
Comments					
The CEHS COEP is a distinct unit of the UNC-CH Environmental Resource Program (ERP), a 16-year old, university-funded, environmental public service and outreach unit of the University of North Carolina at Chapel Hill whose mission is to promote environmental stewardship and public health through education, applied research and community service. The ERP serves North Carolina citizens and environmental groups, state and local government and school teachers. It also provides opportunities and mentors students who work on community issues and is					
COEP Web Site:		http://www.sph.unc.edu/cehs			

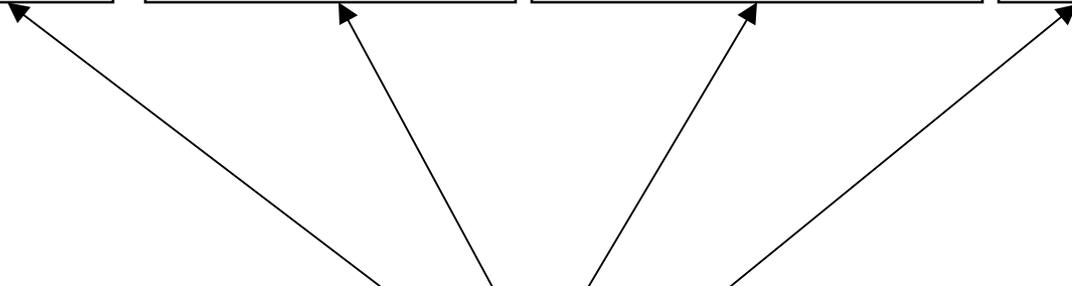
UNC-CH
School of Public Health /
Department of
Environmental Sciences
and Engineering

UNC-CH
Carolina
Environmental
Program

UNC-CH
Superfund Basic
Research Program

UNC-CH
Center for Environmental
Health and Susceptibility

**UNC-CH
Environmental
Resource Program**

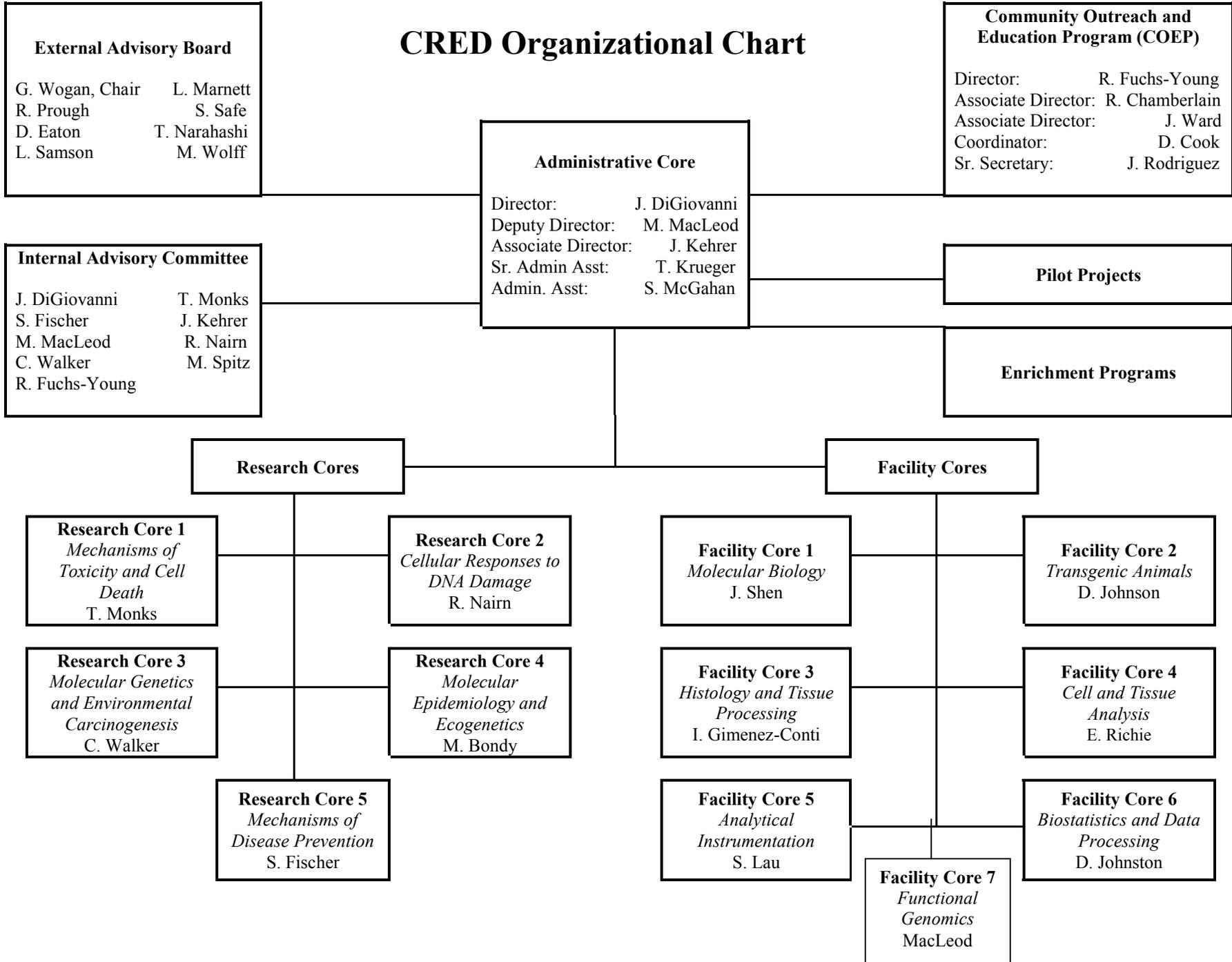


Center Name	Center Director	Center Type	Ctr. Years since 1975	COEP Yrs.	% Ctr Budget
University of Rochester	Deborah Cory-Slechta, Ph.D.	EHS	1975	7	12%
Center Focus					
Molecular toxicology, including the following research cores: Neurotoxicology, Osteotoxicology, Pulmonary Toxicology, and Protein Modulators of Toxicity					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Dina Markowitz, Ph.D.	100%	None	None		
COEP Key Personnel	Percent FTE	Role			
Bernard Weiss, Ph.D.	5%	community/senior outreach			
William Beckett, M.D., Ph.D.	5%	health care professional outreach			
Richard K. Miller, Ph.D.	5%	perinatal outreach			
Joyce Morgan	25%	administrative assistant/newsletter			
Jana Penders	100%	science educator			
Geoffrey Inglis	10%	web site			
Victor Laties, Ph.D.	10%	web site			
Total Number of Staff				8	
Forms of Outreach at COEP & Target Audience	K-12 science education			grades 6-12 students	
	teacher professional/curriculum development			grades 6-12 teachers	
	community forums			local citizens	
	health care professional outreach			physicians/health care	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Center Newsletter	Center Web Site	perinatal outreach			
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
NIEHS	EHSIC	28%	gr. 6-12 curriculum devel.		
NIEHS	COEP Admin. Suppl.	21%	community forums		
NCRR	SEPA	47%	k-12 education		
local foundations		3%	water quality educ.		
AOEC/NIOSH	Curriculum Modules	1%	occupational asthma edu.		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [2]			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active			
Ways in which Center members participate in COEP.	Presentations to community groups				
	Participation in K-12 education programs				
	Presentations for teacher workshops				
	Submit articles for newsletter				
Mechanisms used to encourage Center member participation.	COEP Director asks them (cheerfully!)				
	Word-of-mouth about our programs encourages participation				
	COEP maintains a bulletin board of activities and opportunities				
	COEP Director presentations at faculty meetings				
Comments					
Contact: Dina Markowitz, Ph.D., COEP Director, (716)275-3171, dina_markowitz@urmc.rochester.edu					
COEP Web Site:	http://www2.envmed.rochester.edu/envmed/EHSC/outreach/coep.html				

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of Southern California	John Peters, M.D.	EHS	6	6	10%
Center Focus					
Using epidemiologic methods to study effects of the environment on human health and how personal factors modify response, esp with regard to multiethnic populations of California and the Pacific Rim					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Andrea Hricko, MPH	100%	Respiratory Effects Core			
COEP Key Personnel	Percent FTE	Role			
Mirna Troncoso	100%	Outreach Coordinator & Project Assistant			
Ed Avol	6%	Principal investigator of EJ grant with EHC			
Rob McConnell	5%	Key investigator on EHC EJ grant			
Total Number of Staff					4
Forms of Outreach at COEP & Target Audience	Educ about env health issues, eh sciences, EJ		K-18 teachers/students		
	Link Center scientific research with public		Collab. with comm. grps		
	Educ about env health issues and EJ		Health care providers		
	Serve as community resource on env hlth issues		Public/media/gov't policy		
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Web development & maintenance	Plan L.A.'s NIEHS Town Hall Meeting	Help organize nat'l and internat'l Ctr conferences	Assist in Seminar Series		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
NIEHS	EJ	5%	EHC community research		
NIEHS	EJ	4%	CBE community research		
EPA	Children's Env Health		Asthma education		
NCRR subcontract-EOHSI	SEPA	3	Train K-12 teachers		
NIEHS/EPA	Children's Env Hlth Ctrs	2	Outreach Director		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		2			
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active			
Ways in which Center members participate in COEP.	1. Collaborate with community groups on EJ/asthma/children's issues				
	2. Teach/address comm.grps,pts,students,teachers,public,media on EHS issues				
	3. Advise community groups on cancer cluster concerns				
	4. Participate on gov't sci policy bds and on advisory bds of comm. grps				
	5. Organize and educate youth on tobacco issues and other EH concerns				
Mechanisms used to encourage Center member participation.	1. COEP presentation at Annual Center Retreat to stimulate interest				
	2. Phone calls to request participation in speaking engagements, health fairs				
	3. Center member survey about outreach activities				
	4. COEP updates at Executive Committee meetings				
	5. Selecting 6 B17scientists to serve as Members of the COEP Core				
Comments					
Andrea M. Hricko, COEP Director SCEHSC 1540 Alcazar Street CHP 236 Los Angeles, CA 90033 323-442-3077					
COEP Web Site:		http://www.usc.edu/medicine/scehsc			

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of Texas, MD Anderson Cancer Center	John DiGiovanni, Ph.D.	EHS	6	6	10%
Center Focus					
To investigate basic mechanisms and prevention of environmental disease.					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Robin Fuchs-Young, Ph.D.	20%	Molecular Genetics and Environmental Carcinogenesis	N/A		
COEP Key Personnel	Percent FTE	Role			
R. Chamberlain, Ph.D	5%	Assoc. Director			
J. Ward, MS	5%	Assoc. Director			
Don Cook, MS	100%	Coordinator			
Joe Rodriguez	100%	Project Manager			
Total Number of Staff					5
Forms of Outreach at COEP & Target Audience	Environmental Health & Cancer Prevention Education			adults, K-12	
	Curriculum development-environmental health & science, ELSI			K-12	
	Research and educational internships at Center			high school and college students, K-12 teachers	
	professional development, educational resource			teachers, curriculum coord., principals, school nurses, coaches	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
career development and counseling for students	media communications	facility tours to civic and community groups	collaboration with health care providers, CBOs, federal agencies		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
NIEHS	supplements	50%	curricula		
NIH	Training grant	8%	summer internships for minority students		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	2.5				
Ways in which Center members participate in COEP.	Give scientific /environmental health talks to various groups				
	Evaluate and design curricular materials				
	Mentor students in their laboratories				
	Career counseling and demonstrations for students interested in science				
Mechanisms used to encourage Center member participation.	successful programs - demonstrated productivity				
	efficient use of faculty time - well organized programs				
	strong support by Center Director				
	faculty research drives the Outreach - our programs are aimed at the intersection of community needs and faculty expertise				
begging and flattery					
Comments					
Since 1999, COEP has been focusing its programmatic goals and defining methodologies. Future efforts will be aimed at increasing funding, from a variety of sources, to allow expansion of programs. Collaborations with other Texas COEPs have been highly beneficial and productive.					
COEP Web Site:	http://sciencepark.mdanderson.org/cred/outreach also www.Veggie-mon.org				

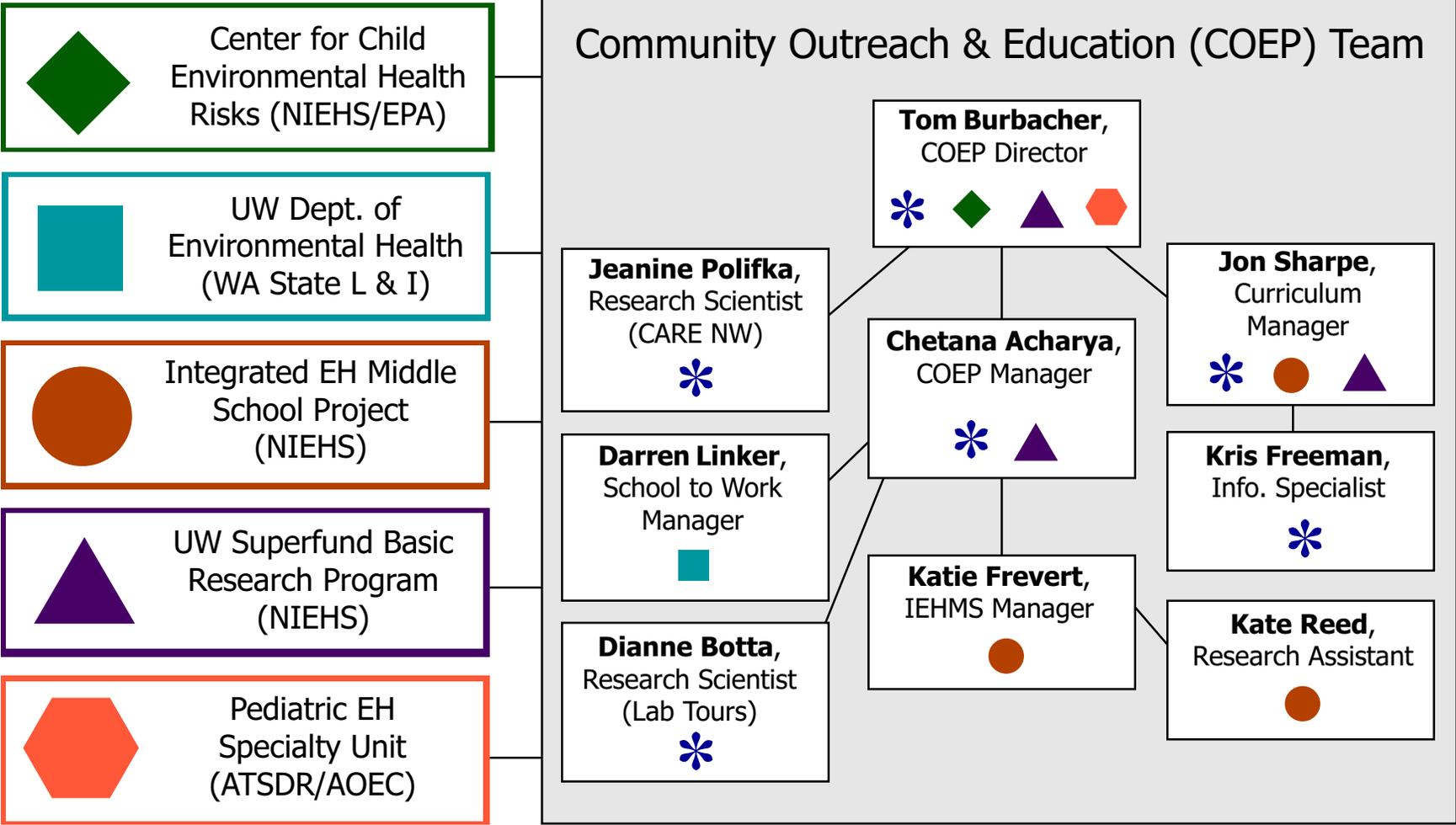
CRED Organizational Chart



Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of Texas Medical Branch	R.Stephen Lloyd	EHS	7	7	10%
Center Focus					
Environmental Toxicology					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Pamela D.Diamond	100%	N/A	N/A		
COEP Key Personnel	Percent FTE	Role			
Jennifer Gorenstein	100%	COEP Associate Director			
RayKay Santa	20%	NIEHS Center Administrative Director			
Edward G. Brooks	10%	Asthma Outreach Director			
Anne Meng	20%	Camp RAD Director			
Sharon Petronella	10%	Asst. Professor, Pediatrics			
Nanette Jay	50%	Asthma Outreach Coordinator			
Total Number of Staff					
Forms of Outreach at COEP & Target Audience					
Bench Tutorials		Grades 11 & 12			
Asthma Education Outreach		K-12 & school officials			
TX Teacher Training (Summer Institute & RETC)		Texas teachers			
Youth Environmental Studies (YES)		Grades 6-9			
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Camp RAD	Tools for Schools	Colonias Asthma Outreach			
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
Sealy Center for Environmental Health & Medicine	Programmatic funding/Salary Support	40%	K-12 EDU PROGRAMS & ASTHMA OUTREACH		
NCCRSEPA/NIEHS ADMIN	EH-STEP & Summer Institute	23%	Teacher Professional Dvt.		
Bromberg Charitable Trust	Bench Tutorials: Scientific Research & Design	5%	Fund supplementary graduate student stipends		
TX Allergy & Immun. Society	School Nebulizer Project	2.00%	Asthma Mgt Outreach		
CDC & Robert Woods Johnson Foundation	TGCAC - Texas Gulf Coast Asthma Coalition	13%	TEDAS (TX Emerg. Dept. Asthma Surveillance)		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [2]			
		← 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 → very active not active			
Ways in which Center members participate in COEP.		High school & Undergraduate student mentoring			
		Poster & abstract judging			
		Community Advisory Board			
		Scientific Panel discussion for Summer Institute and local classrooms			
		Town Meetings			
Mechanisms used to encourage Center member participation.		Annual meetings			
		Simple requests			
		Part of a grant application			
		If all else fails, rely upon cookies and bribery...			
		Also, depend on participation of non-Center faculty!			
Comments					
COEP Web Site:		www.niehs.utmb.edu			

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of Washington	David L. Eaton	EHS	7	7	12%
Center Focus					
Interactions between genetics, human health, and the environment					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Thomas Burbacher	30%	none	none		
COEP Key Personnel	Percent FTE	Role			
Chetana Acharya	100%	COEP Manager			
Dianne Botta	10%	Research Scientist			
Kris Freeman	60%	Writer/Editor			
Katie Frevert	100%	IEHMS Project Manager			
Darren Linker	100%	School to Work Manager			
Janine Polifka	25%	Clinical Instructor			
Kate Reed	50%	Research Assistant			
Jon Sharpe	80%	Curriculum Manager			
Total Number of Staff					9
Forms of Outreach at COEP & Target Audience	Curriculum development			K-12 teachers/students	
	Teacher workshops			K-12 teachers	
	Misc. work with community-based EH organizations			general public	
	CE course for reporters			media	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
advisory boards	community festivals	newsletter/website	lab tours		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
WA Dept. of Labor & Industry	L&I Initiative	see comments	HS curriculum		
NIEHS	K-12 EHSIC	" "	IEHMS Project		
NIEHS	SBRP	" "	SBRP Outreach Program		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?		Enter number (1-7) here: [3]			
Ways in which Center members participate in COEP.	Lecture at teacher workshops				
	Review written materials for dissemination to the general public				
	Agree to be interviewed for newsletter				
	Attend videoconference sessions at which K-12 students present projects				
	Host lab tours for student groups				
Mechanisms used to encourage Center member participation.	Frequent email bulletins alerting members to outreach opportunities				
	Interviewing researchers for the "Profiles" section of our newsletter				
	Asking researchers to lecture/present on their area of expertise				
	Requesting participation in lab tour program				
Comments					
We are fortunate to have an outreach team that includes staff members working on a variety of projects. Each is able to leverage the expertise of the group while working on specific goals funded by distinct grants. For this reason I left the "percent COEP budget" column blank in the "other funding sources" section above. The other sources of support listed do not go to support CEEH COEP efforts per se, as each has its own set of goals and staff to ensure that those goals are met.					
COEP Web Site:		http://depts.washington.edu/ceeh/			

 **Center for Ecogenetics and Environmental Health
at the University of Washington (NIEHS)**
David Eaton, Director



COEP Team Project Assignment Chart

Icons beneath staff names indicate funding sources and project assignments for that staff position. Percent effort on each project is not shown.

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
University of Wisconsin-Madison	Colin Jefcoate	EHS	3	2.5	8%
Center Focus					
Developmental and Molecular Toxicology					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Kevin Niemi	25%	none	none		
COEP Key Personnel	Percent FTE	Role			
Tom Zinnen	5%	co-leader (Biotechnology Center)			
Cheryl Redman	20	outreach specialist (Biotechnology Center)			
Dolly Ledin	5	outreach specialist (Center for Biology Education)			
<i>to be hired</i>	50	<i>outreach specialist</i>			
David Liebl	0	Solid & Hazardous Waste Education Center partnership			
Total Number of Staff					6
Forms of Outreach at COEP & Target Audience	Teacher professional development, 1 week or longer			K-12 teachers	
	Student programming, > 1 week duration			4-8 grade students	
	Student programming, < 1 week duration			K-12 students	
	Public programming, < 1 week duration			general public	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
quarterly newsletter	website maintenance	science outreach, campus	science outreach, statewide		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
NCRR-NIH	SEPA	25%	ToxRAP™ dissemination		
Center Pilot project-like grant	NIEHS	10%	Curriculum development		
IHS	precollege	2%	collaboration on disseminating ToxRAP to		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	5 ← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active				
Ways in which Center members participate in COEP.	teach during week-long EHS courses assist with school group visits to campus write articles for quarterly newsletter issues participate in public forum associated with annual research symposium				
Mechanisms used to encourage Center member participation.	encouragement from Center director COEP is an active participant in Center's seminar series--recruitment opportunity				
Comments					
I think that what is unique about our COEP is that our effort involve several campus partners. We all (one exception will be the person to be hired) have another funding source for our positions and we allocate set percentages of our time for COEP activities. It affords us many opportunities for interesting collaborations.					
COEP Web Site:	www.wisc.edu/ehscenter				

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget									
University of Wisconsin-Milwaukee	David H. Petering	MFBS	23	5	ca 10%									
Center Focus														
Metals/neurobehavioral toxicology; Signal transduction/endocrine disruption toxicology														
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation											
Jeanne Hewitt	ca. 10%	None	None											
COEP Key Personnel		Role												
David Petering	20%	PI on two NIH grants for COEP												
Randall Ryder	25%	PI on NIEHS grant: Summer Training in Toxicology for												
Randall Ryder	25%	Education collaborator on precollege education												
Moreen Carvan	8%	Education collaborator on precollege education												
Karen Riggs	8%	Health mass communication expert												
Peter McAvoy	8%	Community health communication												
Total Number of Staff				20										
<table border="1"> <tr> <td rowspan="4"></td> <td>Middle school life science education</td> <td></td> </tr> <tr> <td>Health risk communication to ethnic populations</td> <td></td> </tr> <tr> <td>Summer research experiences for minority college</td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table>							Middle school life science education		Health risk communication to ethnic populations		Summer research experiences for minority college			
	Middle school life science education													
	Health risk communication to ethnic populations													
	Summer research experiences for minority college													
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4											
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product											
NCRR	Precollege education	42%	Curriculum modules											
NIEHS	Environmental justice	44%	Video											
NIEHS	Short term training for minority college students	7%	Research projects											
Center Member Participation in COEP														
How would you characterize the level of faculty participation in COEP?		1, very active												
		← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active												
Ways in which Center members participate in COEP.		Grant PI												
		Creators of curriculum modules and scientist contacts for teachers												
		Scientific experts												
		Research mentors												
Mechanisms used to encourage Center member participation.		Grant writing with funding for participating members												
		Peer example												
Comments														
COEP Web Site:		http://www.uwm.edu/Dept/MFB/												

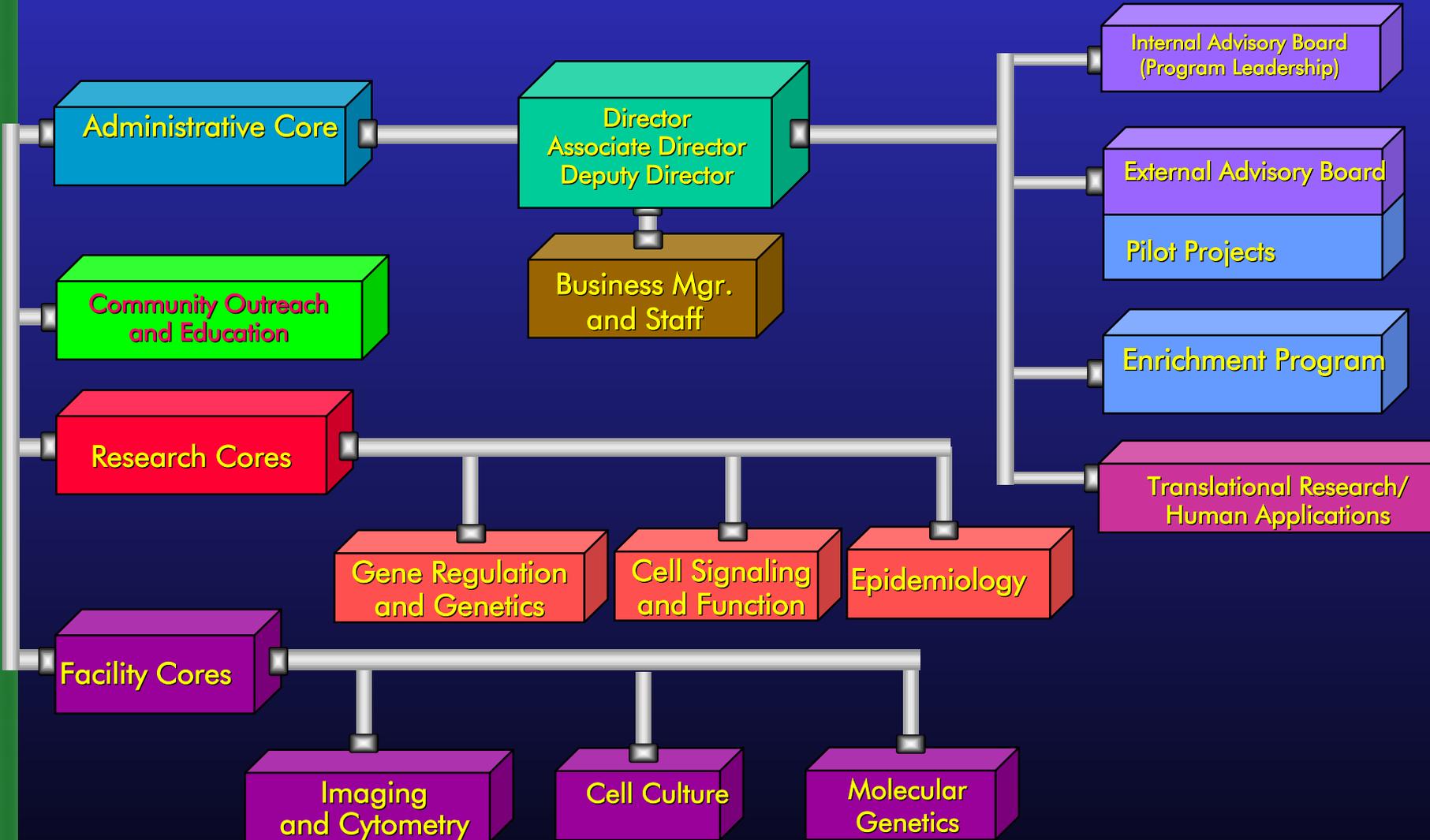
Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
Vanderbilt University	F.P. Guengerich, Ph.D.	EHS	33	7	10.5%
Center Focus					
Molecular Toxicology					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
F.P. Guengerich, Ph.D.	5%	Director EHS Center; Enzymatic Oxidation and Conjugation Co-Leader Regulation of Gene Expression Research Core			
J.A. Pientenpol, Ph.D.	5%				
COEP Key Personnel	Percent FTE	Role			
W.B. Hawkins, M.S.	100%	Coordinator			
E. Rochelle	25%	Systems Administrator			
Total Number of Staff					4
Forms of Outreach at COEP & Target Audience	Env. Health Sci. Training & Ed. Program		Teachers (K-12)		
	Center Associates Program		Researchers / Teachers / Community Groups		
	Community Forum Series		General Public		
	School Presentation Program		Students (K-12)		
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Website development - EHS, COEP, MTPC*	Newsletters - <i>CMTnews</i> , <i>ToxiKon Tattler</i> , <i>MTPCnews</i>	Professional Meeting Committees - SOT, SETAC, MidSouth SETAC, SOTAC	Community Service - member of various community boards and associations		
Other Funding Sources	Grant Program	Percent COEP Budget	Activity/Product		
SEPA	Env. Health Sci. Training & Ed. Program	15%	Teacher-training workshops		
NIEHS	COEP Admin. Sup.	10%	Associates Program		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	Enter number (1-7) here: [3] (1 being the most active)				
Ways in which Center members participate in COEP.	Speakers for Outreach functions (e.g. Comm. Forum series and Open House)				
	Scientist advisory boards (EH-STEP, internal Outreach committees)				
	Review of Outreach projects and programs				
	Respond to media inquiries				
Mechanisms used to encourage Center member participation.	Proactive - Personally ask to assist on Outreach projects (works 99% of the time)				
	Reactive - Respond to investigator needs when Outreach is involved in a project				
Comments					
*MTPC - Middle Tennessee Poison Center; Contact Information: Center in Molecular Toxicology, Community Outreach Program, 638 MRB I, Vanderbilt University, Nashville, TN 37232-0146, phone (615) 936-2179, fax (615) 936-0756, email - outreach@toxicology.mc.vanderbilt.edu					
COEP Web Site:	www.toxicology.mc.vanderbilt.edu/coep				

Center Name	Center Director	Center Type	Ctr. Years	COEP Yrs.	% Ctr Budget
Wayne State University	Raymond Novak	EHS	8	6	16%
Center Focus					
impact of environmental agents on genes, gene expression and signal transduction processes					
COEP Director	Percent FTE	Research Core Affiliation	Facility Core Affiliation		
Mary Oriold Dereski, Ph.D.	100%	Epidemiology	none		
COEP Key Personnel	Percent FTE	Role			
Lisa Piatrantonni	80%	Educational Program Coordinator			
Sheila O'Brien	100%	Community Program Coordinator			
Total Number of Staff					
Forms of Outreach at COEP & Target Audience	Educational programs			Students and teachers	
	Community programs			CBO members	
	Environmental Health Materials Resource Center			Both of above	
	Web Based educational materials			Both of above	
Other Activities 1	Other Activities 2	Other Activities 3	Other Activities 4		
Student Science Fair Awards	Science Summer Camp	Saturday Institutes	Community Health Fairs		
Other Funding Sources	Grant Program	Percent COEP Budget (2000-2001)	Activity/Product		
Detroit Pre College and Engineering Program	Private Funding Source	2%	Saturday Institutes		
Michigan Metropolitan Girl Scout Council	Private Funding Source	1%	Summer Science Camp		
Collaborative Grant with EOHSI	SEPA	4%	Collaborative dissemination of curriculum		
NIEHS	K-12	47%	Web-Based Curriculum		
NIEHS	Center Supplement	14%	Community-based educational project		
Center Member Participation in COEP					
How would you characterize the level of faculty participation in COEP?	Enter number (1-7) here: [3]				
	← ① ----- ② ----- ③ ----- ④ ----- ⑤ ----- ⑥ ----- ⑦ → very active not active				
Ways in which Center members participate in COEP.	Review and contribute to curriculum speaker's bureau judge science fair projects Contribute to newsletter COEP grant collaborators				
Mechanisms used to encourage Center member participation.	email list of all center members for distribution of notices and requests Monthly Center leadership meetings Good collegial atmosphere				
Comments					
Mary O. Dereski, Ph.D., COEP Director, phone: 313-964-5251, fax: 313-963-1946, email: m.dereski@wayne.edu					
COEP Web Site:	www.ehscenter.org click on Community Outreach				



Wayne State University EHS Center Organizational Chart

Molecular & Cellular Toxicology



Part II
Poster Abstracts

A New Curriculum Supplement on Environmental Health for Middle School Students

William E. Mowczko, MA, Program Administrator, Office of Science Education,

The NIH Office of Science Education in collaboration with the National Institute of Environmental Health Sciences developed a new curriculum supplement to be used in middle school

(Grades 6-9). It is entitled "Chemicals, the Environment, and You: Explorations in Science and Human Health". The supplement was designed and written by Biological Sciences Curriculum Study (BSCS) in Colorado Springs, Colorado and includes a companion CD-ROM which was produced by Videodiscovery in Seattle, Washington. The supplement consists of a sequence of five inquiry-based activities (including one wet lab) which are keyed to the middle school National Science Education Standards. Students will learn about the nature of chemicals and toxins in the environment, understanding dose-response and individual susceptibility, and assessing the risks from environmental toxicants. The supplements will be made available free to middle school teachers and are expected to be available late fall or early winter this year.

William E. Mowczko

Program Administrator

Office of Science Education

6705 Rockledge Drive, Room 729 MSC 7984

Bethesda, MD 20892-7984

Partnerships of The Center, WEACT and Harlem Health Promotion Center

COEP of NIEHS Center for Environmental Health in Northern Manhattan

Gabriel N. Stover, Swati Prakash

The Community Outreach and Education Program (COEP) of the NIEHS Center for Environmental Health in Northern Manhattan (the Center) is a formal collaboration between the Center and West Harlem Environmental Action (WE ACT), a community-based environmental justice organization. While the work of our COEP is focused on the local community of Northern Manhattan, our recent projects have broadened to make connections with and serve similar communities nationally. This poster highlights three of our projects from this past year. The focus of our collaborative efforts has been a national conference on "Human Genetics, Environment, and Communities of Color: Ethical and Social Implications," co-sponsored by WE ACT and the NIEHS Center, scheduled to take place at Columbia University on September 20th and 21st. 300 participants were pre-registered for the conference, including over 100 environmental health and justice activists. The conference had to be postponed to March 2002 due to the World Trade Center tragedy. The COEP continues to work to ensure the rescheduled conference will be successful in educating community advocates on genetics and environmental health, and in creating a forum to discuss the ethical, legal, and social implications of genetics research for communities of color. We also worked this past year to implement the "Traffic and Public Health" curriculum, funded by an administrative supplement jointly awarded last year to our COEP and the UCLA / USC COEP. This project allowed us to begin pilot-testing an air pollution curriculum with local high school youth, focusing on teaching the use of fine particle counters to monitor pollution associated with diesel exhaust. A third collaborative project we worked on was serving as guest editors for an Environmental Health Perspectives (EHP) supplemental issue entitled "Using Community-Based Participatory Research to advance Environmental Justice." We submitted the proposed package to EHP in August and anticipate a final publication date of April 2002. This supplement will be complemented by a community (lay) publication for October 2002, to be released at the Second National People of Color Environmental Summit.

Outreach to the Nursing Community
COEP: Harvard University Kresge Center for Environmental Health
Ann Backus, MS

Our unique Visiting Scholars Program (VSP) in the Department of Environmental Health and the Kresge Center for Environmental Health at the Harvard School of Public Health (HSPH) has been ongoing since 1988. The VSP now includes 25 professionals from academia, industry, non-profit organizations, and government agencies in the six New England states. In the nursing field we currently have as visiting scholars, two nurses from academia, one from a non-profit organization, and one from a state department of health (Vermont). Our outreach to the nursing community is through these visiting scholar nurses who keep current in the environmental health field by attending miniconferences that we offer as a key component of the Visiting Scholars Program at HSPH.

The accomplishments of the visiting scholar nurses based in academia include

- Satellite conferences and live conferences on preventing needle stick injuries and on relationships between the environment and health, approved for nursing contact hours by the ANA
- Training videos on needle stick injuries, hospital waste management, latex allergies, and pollution prevention in the healthcare industry
- Occupational Health Case Studies (now needing revision)
- Articles published in March and April 2001 in *Journal of the American Association of Occupational Health Nurses* supporting the need for curricula in occupational and environmental health
- Risky Business: Management of Health and IAQ, a presentation at American Nurses Association Annual Convention
- IOM core competencies for environmental health in nursing integrated into all clinical nursing curricula at Worcester State College and featured in *Nurses in Environmental Health: Success through Action*, a publication of the National Environmental Education and Training Association and ATDSR
- Integration of occupational and environmental health nursing curricula into undergraduate curricula at UMASS Lowell
- Presentations by invitation to National League for Nursing Educational Summit and American Association of Colleges of Nursing Annual Baccalaureate Education Conference

The accomplishments of the visiting scholars nurse based in a non-profit organization include

- Workshops under the auspices of Health Care Without Harm
- Developing and writing copy for The Environment and Health, Pollution Prevention Tool Kit, produced by the American Nurses Association
- Consultation on health care waste and pollution prevention in Sao Paulo, Brazil; Bombay, India; New Mexico, and on pediatric environmental health assessment and nursing issues for the Children's Environmental Health Network
- Education for nurses on the management of hospital/health care waste
- Web site development (www.nihe.org) featuring nursing and environment issues, linking Florence Nightingale's early works to environmental issues
- Development of 'talking notes on healthcare waste management and pollution prevention,' an internal document for the World Bank task masters

The accomplishments of a visiting scholar nurse based in state government include

- Outreach through a state department of health nurse to resettled refugees in their home and work environments which includes development of a template pertaining to health status management for use by nurses and resettlement programs nationally

Development of the COEP Resource Center: Centralized Support for COEPs

Karalyn Colopy, COEP Resource Center Director

Analytical Sciences, Inc

2605 Meridian Parkway, Suite 200

Durham, NC 27713

Phone: (919) 544-8500

Fax: (919) 544-7507

Email: colopy@niehs.nih.gov

The NIEHS Community Outreach and Education Program (COEP) Resource Center is a physical and virtual resource designed to facilitate the exchange of materials and information among COEPs and to increase public awareness about NIEHS-supported outreach efforts. Development of the Resource Center began in October 2000 and is scheduled to be complete by April 2002, although expansion of the resources available will continue indefinitely. After consulting with an Advisory Board of representatives from nine different COEPs, Resource Center staff solicited and received a wide variety of outreach and education materials from individual COEPs. Information about these materials (over 400 in number) was compiled in a catalog, for use by COEP Directors and staff. The Resource Center also developed a Web site, which provides public access to the catalog and information about NIEHS-supported outreach activities and individual COEPs, as well as restricted access to archives of the COEP electronic mailing list. By April 2002 the Web site will provide public access to downloadable, electronic versions of catalog materials and will allow COEPs to submit new materials on-line. Thus, the Resource Center will allow COEPs to access and share with a wide audience a large and growing body of information and materials for direct use in outreach and education applications and for providing ideas and guidance for new outreach and educational efforts.

MIT COEP

Co-Directors: Profs. Patricia Culligan and Prof. Heidi Nepf

The focus of the MIT COEP is the promotion of scientific literacy for the non-scientific public in the areas of human and environmental health. In recent years our efforts have been in the creation of video curriculum, web-based activities and hands-on experiences for a 6th - 12th grade audience. Our poster will present an overview of the following three programs.

Human Health, Pollution and the Environment - Video/Curriculum Series:

This video series introduces the process of scientific investigation in the context of the center's research in environmental and human health. Topics include, e.g., the effects of pollution on human health; transport of pollutants in groundwater, surface water, and air; and the benefits and risks of civilian nuclear science and its past and future impacts on our society.

Investigating Groundwater Pollution - Video/Curriculum Package:

This package includes a thirty-minute video that introduces groundwater pollution, remediation and the Superfund Program. The video is supported with introductory material and a curriculum that includes both hands-on and web-based activities.

Hands-On Lab Activity at MIT:

Working with consulting teachers from the Cambridge Public Schools we are developing a hands-on

experimental experience in which 7th and 8th grade students build physical models that demonstrate potential human exposure pathways for environmental pollutants that travel in groundwater. The activity highlights the scientific processes of prediction and risk assessment in the context of several real scenarios of groundwater contamination.

WOMEN'S AND CHILDREN'S ENVIRONMENTAL HEALTH- NEW YORK STATE REGIONAL TOWN MEETINGS

New York University School of Medicine Department of Environmental Health Sciences

This poster summarizes a Community Forum held on Saturday June 16, 2001 in the South Bronx. This was conducted as part of a series of forums funded by a Center supplement entitled: **Women and Children's Environmental Health-New York State Regional Town Meetings**. This supplement is a collaborative effort with University of Rochester Environmental Health Sciences Center. The main goal of this particular forum was to inform concerned citizens in the South Bronx about environmental health topics of concern to women and children in the urban environment. Another objective was to inform the community about the NIEHS Environmental Sciences Center at NYU and four community-based organizations that are available as environmental health resources for their particular concerns.

Prior meetings with community interest groups helped to determine the topics of the forum: asthma, air pollution, metals in the urban environment, gas and diesel generators, and community involvement. The forum also introduced an air pollution exposure study currently being conducted in the South Bronx by Center investigators. As part of this introduction, NYU's 30-foot EPA van was exhibited outside of the college in an effort to dispel any misconceptions about the van's presence in the community. Instrumentation specialists were present in the van to educate the community about the van's role in the project.

All informational materials were composed in both Spanish and English since the population in the South Bronx is predominantly Spanish speaking. Two moderators were chosen to introduce the speakers: Mr. Robert Williams from one of the community groups, Sports Foundation Inc., introduced the community speakers and Dr. George Thurston from NYU, introduced the NYU speakers. Our panel of speakers was comprised of both scientists from New York University and members of the community. Time was allotted at the end of the forum for a question and answer session. Finally, the audience was asked to fill out a questionnaire that we used as our evaluation tool.

Post-forum evaluation questionnaires indicated that the forum was successful in effectively educating the audience in the issues discussed. In addition, the forum generated a variety of favorable media attentions to our Center, including New York City TV, radio and newspaper coverage. The next "community forum" is being planned for the inner city of Newburgh in Orange County, New York.

Hydroville Curriculum Project and ToxRAP™ Train the Trainer Workshops
Environmental Health Sciences Center & Marine/Freshwater Biomedical Sciences Center at Oregon State University
Kendra Mingo, Assistant Director, Community Outreach & Education Program

Hydroville Curriculum Project and ToxRAP™ Train the Trainer Workshops

OSU is home to two NIEHS Centers: the Environmental Health Sciences (EHS) and the Marine/Freshwater Biomedical Sciences (MFBS) Center. The Centers focus on collaborative, interdisciplinary research to determine how environmental chemicals and other agents may be toxic to humans. Specific research conducted by EHS Center investigators helps provide a scientific basis for the prediction of human health risks from exposure to both natural and synthetic environmental chemicals.

In addition to scientific research, the EHS and MFBS Centers use their shared Community Outreach and Education Program (COEP) to increase the public's ability to understand and make informed decisions on issues relevant to the role of environmental factors on human health. The COEP also strives to develop an understanding among the public of environmental health science research and its importance in assessing human health risks. To achieve these goals, the COEP enlists the expertise of Center investigators in active collaborations with existing venues of outreach education such as OSU's SMILE Program, Oregon Museum of Science and Industry (OMSI), and a variety of community organizations. In 2000-01, COEP has focused on its partnerships with the SMILE Program, OMSI, and Rutgers and University of Medicine and Dentistry in New Jersey.

There are several objectives and goals of the COEP program in the EHS and MFBS Centers at OSU:

- Σ To increase the public's ability to understand and to make informed decisions on issues relevant to the role of environmental factors in human health and disease;
- Σ To facilitate appreciation of fundamental concepts of relative risk and scientific methods for risk assessment among scientists, teachers, health professionals and the public;
- Σ To educate scientists and the public regarding the usefulness of aquatic species in assessing environmental risks to human health and in clarifying the mechanisms by which environmental factors can benefit or adversely impact human health;
- Σ To foster partnerships among educators, scientists in academia, governmental agencies and industry to utilize the most advanced methods involving aquatic model systems for addressing human environmental health concerns;
- Σ To provide local expertise for the solution of local environmental health problems.

Σ

Learning through Environmental Health Science Scenarios: the Hydroville Curriculum Project

COEP is entering the second year of the Hydroville Curriculum Project (HCP), a seven year "Environmental Health Sciences as an Integrative Context for Learning (EHSIC)" grant from NIEHS dedicated to dramatically improving the science education and environmental health knowledge of high school students. The EHS and MFBS Centers are partnered in this grant with the OSU Science and Math Investigative Learning Experience (SMILE) Program, the OSU Department of Public Health, and the Oregon State Department of Education. The project uses the Hydroville Curriculum Problems, an existing set of environmental health science scenarios developed with funding from a NIEHS "Environmental Health Sciences Education Teacher Enhancement" grant.

2000-01 Project Benchmarks:

- Σ Adapted and enhanced the Hydroville Pesticide Spill challenge problem into an integrated classroom module, incorporating additional scientific, math, language arts, and humanities content.
- Σ Aligned the Pesticide Spill challenge problem with Oregon and national educational standards.
- Σ Hosted a Teacher Summer Institute and trained 9 teams of teachers (22 total) in environmental health science, team teaching, problem based learning, and implementation of the challenge problem module.
- Σ Developed evaluation tools to address the impact of the curriculum and teaching methods on student achievement and attitudes toward science, risk, and environmental problem solving.
- Σ Introduced the Pesticide Spill challenge problem into 11 SMILE Program after-school clubs and 9 pilot schools with over 1600 participating ninth and tenth grade students.
- Σ Convened the HCP Curriculum Development Team to adapt the Mysterious Illness Outbreak challenge problem into an integrated classroom model.

Toxicology and Risk Assessment & Pollution (ToxRAP™) Teacher Training Workshops

COEP is continuing to offer professional development opportunities for teachers and to disseminate the early elementary, intermediate elementary, and middle school modules of the ToxRAP™ (Toxicology, Risk Assessment and Pollution) curriculum as part of Environmental Health Sciences Training and Education Program (EH-STEP). In collaboration with the Oregon Museum of Science and Industry (OMSI) Teacher Education Program, COEP is offering five ToxRAP train the trainer workshops for Oregon teachers in 2001-02.

**COEP Program
at
Texas A&M University**

Texas A&M University has a rich history of agricultural research that provides a solid foundation for basic and applied research focused on issues affecting rural populations in Texas. The NIEHS Center for Environmental and Rural Health (CERH) was established in 1998 as a Center of Excellence dedicated to study mechanisms of environmental disease. The Center consists of four integrated research cores, six facilities cores, and a community outreach and education program (COEP). The COEP provides education on how to reduce environmental exposures associated with human illness. The primary COEP activity involves training of promotoras (community educators) and colonia (community) residents along the Texas-Mexico border. A cornerstone of this program is an Environmental Health Science curriculum rooted on a "Train-the-Trainer" model of education and outreach. Another important component is a K-12 Education Program that involves incorporation of environmental health issues into public school science curricula. This is carried out in collaboration with faculty of the Partnership Education and Rural Health (PEER). A Brazos Valley community outreach counterpart initiative has also been established to address health concerns in our immediate community.

**Irma N. Ramos, M.D.
COEP Director
NIEHS Center for Environmental & Rural Health
Texas A&M University
College Station, TX**

PERINATAL/JUVENILE EXPOSURE TO METHOXYCHLOR REDUCES NUMBER OF SPERMATOGONIA AND DAILY SPERM PRODUCTION WHICH PARALLEL REDUCTION IN SERTOLI CELL NUMBER IN ADULT RATS.

C. Staub,¹ R.E. Chapin,² M.W. Harris,² V.B. Hardy,¹ R.S. Heck,¹ S.L. Van De Wiele¹ and L. Johnson¹.

¹Department of Veterinary Anatomy and Public Health, Center for Environmental and Rural Health, Texas A&M University, College Station, Texas 77843. ²Reproductive Toxicology Group, Environmental Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, N.C. 27709.

Perinatal and juvenile treatment of rats with Methoxychlor (MXC) reduced testicular size in those animals as adults. The objective was to determine if these males have fewer Sertoli cells that parallel lower numbers of spermatogonia and sperm production rates based on round spermatids. Rat dams were gavaged with MXC at 0, 5, 50, or 150 mg/kg/day for the week before and after they gave birth. Resulting male pups were dosed directly from postnatal day 7 to 42. Across dose groups, there were no differences in the daily sperm production per g of testicular parenchyma, the number of Sertoli cells per g of parenchyma, or ratio of spermatids per Sertoli cell. There were dose-related differences in daily sperm production per testis and number of Sertoli cells per testis. The two highest dose groups had reduced numbers of testicular spermatids and Sertoli cells. In addition, MXC reduces the volume density and the number per g of spermatogonia in testicular parenchyma and the number of spermatogonia per testis. Daily sperm production and number of spermatogonia were directly related to the number of Sertoli cells. In conclusion, male rats exposed to MXC prior to puberty had reduced the number of spermatogonia and daily sperm production which parallel reduced Sertoli cell number as adults. However, Sertoli cell function, based on spermatid/Sertoli cell ratio, did not appear to be altered at high doses of MXC, as the progeny of spermatogonia present underwent less degeneration during meiosis to produce comparable numbers of round spermatids to that of control and low dose. The ratio of spermatid number per spermatogonium was higher ($P < 0.05$) in the MXC treated groups. This difference indicated that the testis can compensate for the treatment-induced reduction in number of spermatogonia by reducing the amount of germ cell degeneration of their progeny (spermatids). Hence, oral exposure of pesticides with estrogenic/antiandrogenic effects as youth can reduce spermatogenic potential of males as adults by reducing their number of Sertoli cells and number of spermatogonia. Supported in part by NIEHS Contract NO1-ES-15307.

ENHANCING RURAL MIDDLE-SCHOOL SCIENCE EDUCATION VIA AN ON-LINE ENVIRONMENTAL HEALTH SCIENCE CURRICULUM

L. Johnson (PI), J.J. Denton, J.F. Hunter, W.R. Klemm, K.C. Donnelly, I.N. Ramos, C.C. Farnsworth, T.J. Davis, B.L. Smith, and V.B. Hardy. College of Veterinary Medicine; College of Education Texas A&M University

The long-term goal of the Partnership for Environmental Education and Rural Health; (is to develop and disseminate an engaging model for enhancing environmental health science education of grade levels 6-8 in rural settings. Curriculum: Three modules, each lasting for two to three weeks of daily lessons and experiments, have been produced and are being tested in schools. These are: "Water's the Matter", "Cells Are Us", and "Toxic or Not." Modules include tutorials on common hazards, experiments and learning activities, short biographies of famous scientists, what we know about the subject, how we know, and why it is important to know, and teacher pages (with pre- and post tests, explanations, procedures, resources). Also, a game learning activity (Slime Sleuths at Toxic Island) provides a self-paced fun activity. These modules were field tested in schools and two additional modules, "Properties of Hazards" and "Organ Systems", are nearing completion to be field tested this year. Professional Development: In two summers, 33 teachers came to Texas A&M for a week to receive technology training, to review the curriculum, and to perform the experiments. Also, 91 additional teachers received certification for 12 hours of training in water quality testing and classroom experimentation at regional locations throughout the state, and 16 teachers received an one-day workshop in "Cells are Us" or "Water's the Matter" in conjunction with COEP NIEHS Center in Galveston. A repeat intensive workshop (one week at Texas A&M) and four regional workshops for 64 interested teachers are planned for this summer. School Visits: Scientist visits to public middle schools have provided over 4,200 students in over 30 rural school districts an opportunity to learn about experimentation and environmental health science first hand. Likewise, over 600 teachers, teacher aides, and parents have attended these presentations on health and the environment. Scientist visits are on-going throughout the school year. The goal is to enhance a large number of students to enter and remain in science academic tracks. NIEHS Grant R25 ES 10443.

USING PROBLEM-SOLVING ADVENTURES TO INTEGRATE ENVIRONMENTAL HEALTH SCIENCE INTO RURAL MIDDLE-SCHOOL CURRICULA.

L Johnson (PI), JF Hunter, WR Klemm, JB Kracht*, DT Kochevar, JJ Denton*, KC Donnelly, IN Ramos, CC Farnsworth and VB Hardy, College of Veterinary Medicine and College of Education*, Texas A&M University.

The long-term goal of the Partnership of Environmental Education and Rural health (<http://peer.tamu.edu>) is to encourage teachers across all fields to utilize environmental health science topics to motivate students and help them relate science instruction to the real world. Specifically, we have developed an engaging model for integrating environmental health science into mathematics, English language arts, social studies, and science in grades 6-8. Rural schools are emphasized in this project because of increased health risks associated with rural environmental hazards. During the first year, six instructional modules will be produced reflecting the Texas Essential Knowledge and Skills (TEKS) for 6th grade social studies, English, mathematics, and science. Each module is integrated around an adventure story written by a professional children's author. Social studies content directs the location and time (historical or contemporary). For example, in Texas, children study the world at large in grade 6, the state of Texas in grade 7, and the United States in grade 8. This framework allows construction of adventures that involve different eras and different locations. However, the environmental health problems at these locations and times in history exemplify problems found in the U.S. such as contaminated water and food, air pollution, and contagious or environmentally transmitted diseases. The first adventure is set at the construction site of the burial chambers in ancient Luxor, Egypt. Construction has ceased due to a mysterious illness that causes vomiting and diarrhea in the workers. The students must assess the work environment and formulate a strategy to help solve the problem. Activities include map reading, construction calculations, interviews with characters in the story, and a hands-on science experiment. NIEHS Grant R25 ES10735.

IMPACTT

Stefani Hines, M.A. , Rebecca Milholland, and Marti Lindsey, M.A.

University of Arizona, Southwest Environmental Health Sciences Center

IMPACTT (Integrating Multiple Perspectives Across the Curriculum for Today and Tomorrow) is a unique, fully integrated environmental health / environmental science academy, or "school within a school." IMPACTT began in 1999 and is being developed between the Community Outreach and Education Program of the Southwest Environmental Health Sciences Center and Sunnyside High School, in the Sunnyside Unified School District in Tucson, AZ. Course content is presented in thematic units through which students make connections to environmental health and traditional academic subjects. Students obtain academic credits in science, health, math, English, social studies, physical education, and technology. The 9th grade component theme is "The Environment" which consists of five units including Biodiversity, Endangered Species, Air Quality, Land & its Uses and Water. The 10th grade theme is "World Explorations" and is composed of seven units including Origins of the Universe, Origins of Life, Rise of Agrarian Societies, History of Science, Disease & Industrialization, Organizations & Science, and Present Complexities. The 11th and 12th grade components are currently being designed. Eventually IMPACTT will be a full 4-year academy where students who participate in all 4 years will exceed Arizona University System admissions requirements.

Fun Environmental Health Activities

University of Arizona, Southwest Environmental Health Sciences Center

The University of Arizona Southwest Environmental Health Sciences Center (SWEHSC) Community Outreach and Education Program (COEP) has developed an online resource for teachers called "Fun Environmental Health Activities." The website includes original materials developed by the SWEHSC COEP, as well as materials that have been partially or extensively modified by the SWEHSC COEP. There are interactive web-based programs, downloadable curricula materials, and Power Point lectures related to different Environmental Health topics including basic toxicology, air quality, epidemiology, cancer, and pharmacology. The poster highlights the website and includes brief descriptions of each of the online activities. Complete print-outs of the materials will be available for review. A lap top computer will also be available to try the interactive web-based programs.

Stefani D. Hines, M.A., M.S.

Director, Community Outreach & Education Program

Center for Toxicology, Southwest Environmental Health Sciences Center

College of Pharmacy, University of Arizona

P.O. Box 210207, Tucson, AZ, 85721-0207

Office: (520) 626-3692

Fax: (520) 626-4468

<http://swehsc.pharmacy.arizona.edu/coep/>

NIEHS UC Berkeley Center COEP

Development of Nutrition Education Materials for Low Literacy Populations

Identification of Barriers to Increasing Fruits and Vegetable Consumption in a California Latino Population

This community outreach project involved collaboration with three groups: the COEP, San Joaquin County Expanded Food and Nutrition Education Program (EFNEP), and the Undergraduate Research Apprentice Program at the University of California, School of Public Health.

One of the primary objectives was to better define obstacles and barriers to increasing fruit and vegetable intake. The end goal was to obtain information for the development, distribution and effective use of culturally appropriate nutrition education materials that focus on increasing fruit and vegetable intake.

Small group discussions were held to learn about the nutrition education needs of the California Latino population. The project also provided nutrition education to the participants of the discussion groups. Sites were community centers in Fruitvale, La Clinica de la Raza (east bay San Francisco area) and Lodi Community Center (rural area in San Joaquin county).

Groups were comprised of 8 to 12 persons. There were 8 small group sessions, each lasted approximately 1 ½ hours. Topics discussed included the relationship of food to health and factors that motivate change. The discussions were guided by a set of questions and were run as "open discussion". Specific questions addressed included: what would motivate an increased consumption of fruits and vegetables; what type of information (tips, suggestions, shopping tips, food storage tips) might be useful to incorporate to make nutrition education materials and tools more effective. All

groups were conducted in Spanish. Both men and women participated.

A series of 6 informational handouts have been developed as a result of this project.
A manuscript has been submitted for publication.

The Center for Environmental Genetics (CEG), University of Cincinnati
Dr. Eula Gingham – COEP Director, Dr. Susan VanDale – COEP Coordinator

In 1998, the Center for Environmental Genetics (CEG), University of Cincinnati, began an outreach project called LEGENDS (Learning Exchange for Genetic and Environmental Disease Solutions) that was directed to communities. Curriculum was developed containing information on 6 topics, including environmental health, genetics, genes and disease, environmental genetics, genetic testing, and human genome research. Presentations made use of multimedia and interactive exercises, such as games, video skits, and role-plays. Factual knowledge was organized into 24 short, project-developed, thematic modules. CEG members and their Department of Environmental Health colleagues, other scientists, local educators, and worker health and safety trainers collaborated to present the educational sessions.

Since there were no instructional materials available, this program was developed de novo by the COEP and has been extensively reviewed and evaluated. A wide range of adults has been trained, including blue-collar workers), science teachers, health care workers and sanitarians, community activists and minority community members. These groups represent all educational levels. A planning meeting was scheduled with group leaders to customize the lesson plan to the needs of their constituencies. To date, over a thousand people have participated in workshops and discussions based on environmental genetics.

Evaluations provide quantitative and objective indicators of the excellent quality of this program. 93% of workshop participants rated the educational sessions on environmental genetics as excellent or good. Pre and post-tests of participants to determine how much knowledge was gained revealed that the relative percent change in knowledge regarding concepts ranged from 11% to 53% with a median change of 32%. The tests measuring ability to identify features of genetic and environmental diseases ranged from 19% to 43% (relative percent change) with a median of 33%. (These results compare favorable with comparative evaluation data obtained in the Midwest Consortium Hazardous Waste Worker Training, a highly ranked worker-training program.)

The evaluation indicated that a large majority (94%) of workshop participants indicated they would be able to apply the knowledge obtained in the session; 75% noted that the information would help them better understand mass media coverage given to related topics; 72% said that the session motivated them to look for further opportunities to learn more about issues related to genetics and environmental genetics. 68% indicated that they would use the information in situations related to their work.

Presentations have been made at the Society of Toxicology, the American Public Health Association, the North American Association of Environmental Educators, and Zeta Phi Beta, a national sorority dedicated to the education of African Americans. Environmental genetic issues have also been highlighted in special events such as “6th Biennial Conference on Communication and Environment” (National Communication Association) and “A Decade of ELSI Research” (NHGRI & DOE). Recently, COEP began a pilot-project to provide six community trainers with information regarding environmental and genetic factors in disease and genetic testing, along with strategies to safeguard the rights of minorities and underserved workers with regard to genetic privacy.

“Environmental Health Sciences Institute (EHSI): Science Education and Research Opportunities for Rural Youth”

The University of Iowa

Environmental Health Sciences Research Center

Community Outreach and Education Core (COEC)

Shannon P. Márquez, PhD, MEng, COEC Director

The Environmental Health Sciences Institute for Rural Youth (EHSI) is a one-week residential summer program at The University of Iowa sponsored by the Environmental Health Sciences Research Center (EHSRC). EHSI was created by the EHSRC in 1997; development of the Institute continues with administrative support from the University of Iowa Belin-Blank International Center for Gifted Education and Talent Development and the Women in Science and Engineering Program. Each EHSI student receives a \$550 scholarship to cover the entire cost of the Institute. EHSI is a self-nomination program; any student from rural Iowa (town of 2,500 or less) who is currently in 9th grade is eligible for participation. Each year, EHSI provides 15 talented students with an intensive hands-on educational experience in areas related to the research cores and facility cores of the EHSRC. The program is designed to enhance participant’s intellectual and social growth, and a variety of learning activities are provided including: didactic, small-group discussion, laboratory, and field exercises. Students participate in team-building activities and also receive practical experience with information technology. Each student also develops an independent research project on one or more of the topics covered and prepares a lecture. After attending camp, the 15 participants are required to return to their home communities and give at least two formal presentations on their research topic to school and public groups. A \$300 stipend is awarded to the student following completion of the two presentations. Over the last three years, EHSI students have returned to 49 Iowa counties to present their research, touching more than 2,500 rural students, educators, administrators, school board members, 4-H clubs and others. Of the 14 original 1997 EHSI students, nine have declared a college major in science or engineering.

University of Medicine and Dentistry of New Jersey
Center for Environmental Health Sciences (Grant No. P30 ES05022)
National Institute of Environmental Health Sciences (NIEHS)
Center of Excellence

The Community Outreach and Education Program (COEP) at the NIEHS Center of Excellence in New Jersey, located at the Environmental and Occupational Health Sciences Institute (EOHSI), is jointly sponsored by the University of Medicine and Dentistry of New Jersey (UMDNJ)-Robert Wood Johnson Medical School and Rutgers, The State University of New Jersey. COEP, in conjunction with the UMDNJ-School of Public Health, is managing EH-STEP (Environmental Health Sciences Training and Education Program), a nationwide K-12 educational initiative supported by the National Center for Research Resources under the Science Education Partnership Award Program (Grant No. R25 RR15621). Through this project, COEPs at eight NIEHS Centers of Excellence are collaborating to enable more than 40,000 students nationwide to improve their basic science and math skills while learning to reduce their exposure to potential pollutants and possibly prevent environment-related diseases and illnesses. As such, over 2,000 educators will be integrating environmental health sciences (EHS) curricular materials into their science and math lessons through teacher professional development opportunities.

COEPs at Oregon State University, University of Arizona, University of Southern California, University of Texas Medical Branch, University of Wisconsin-Madison, Vanderbilt University and Wayne State University are participating with UMDNJ. Each COEP has established a Regional Education and Training Center (RETC) at its site to provide professional development opportunities for teachers. Partners also include scientists from these centers and the Toxicology Education Foundation (TEF). This broad-based partnership will ensure that the project is translatable nationwide.

A curriculum dissemination through professional development model is utilized. This model comprises four main components—EHS curricula, train-the-trainer workshops, teacher trainings and scientist involvement—and expands on two of EOHSI's successful nationwide programs: the ToxRAP™ Education and Training Program, currently supported by TEF, and the ToxRAP™ Network which was a joint program, supported by NIEHS, with the University of Arizona. ToxRAP™, an award-winning EHS curricula developed by EOHSI with support from NIEHS, is serving as the initial curriculum for dissemination. A Curriculum Selection Board (CSB) is identifying additional materials that will be incorporated into EH-STEP. During the first of two selection periods, the CSB chose The Environmental Cyber Schoolhouse developed by Wayne State University and Chemicals, The Environment, and You, a National Institutes of Health curriculum.

RETC teams attend train-the-trainer workshops on implementing the selected curricula, as well as designing/delivering effective teacher training programs. Each RETC is responsible for providing trainings and curricula to K-12 teachers in its region. A Scientist Involvement Advisory Board is developing strategies for scientists to interact with teachers/students and to encourage students to pursue careers in biomedical and behavioral sciences research. Ongoing support is provided through Internet-based technologies. Formative and summative measures are used to analyze project effectiveness.

AMBIENT Project

(Atmospheric and Marine-Based Interdisciplinary Environmental Health Science Training)

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<http://www.rsmas.miami.edu/groups/niehs/ambient>

Miami-Dade County is home to more than 2.1 million people. Ethnic diversity is extensive, with a population that is 52% Hispanic, 34% African American, 13% White, and 1% American Indian/Asian/Other. The Miami-Dade County Public Schools is the 4th largest district in the country with more than 350,000 students, more than 93,000 of which are in grades 9-12. There is significant need within the public high school system to involve students with research scientists and members of the community in an interdisciplinary approach to learning about local environmental health science issues.

The AMBIENT Project is a systemic approach to environmental health science education. Focused around the 4 environmental themes of air, water, soil and food, a health-science problem-based learning approach will be delivered by trained teachers to the ethnically-diverse population of high school students in Miami-Dade County. The teachers will work together to enhance understanding of environmental and ethical issues through a hands-on summer workshop with research scientists from the University of Miami, Florida International University, and County Department of Health. Best practices from existing environmental curriculum materials will be assembled for use in the training. An important emphasis of the project will be to provide team teaching strategies for incorporating interdisciplinary activities into the large classes of more than 35 students at the high schools.

The project is modeled after three highly successful environmental teacher training models, GLOBE, IN-STAR and the SECME Summer Institutes, and draws the best from each. Classroom activities and assessment tools will be incorporated into a problem-based learning Web site. Technology for Learning will provide formative and summative assessment of the project.

To date, environmental health Science Curriculum have been created and piloted concerning Water/Sewage, and Soil/Lead. These modules are being evaluated and disseminated, while new modules on Air/Asthma and Food/Marine Toxins are being created. This project addresses the need defined by Priority 8.2 of Healthy People 2000: Educational and Community-Based Programs, which is to increase high school completion rates to 90%, especially with regard to Hispanic and Black American students.

This study is funded in part through the National Institute of Environmental Health Sciences (NIEHS) K through 12 Program at the NIEHS MBFC at the University of Miami.

Human Health Effects from Exposure to Marine Recreational Waters

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Microbial water quality indicators are used to determine whether a water body is safe for recreational purposes. The microbial indicators used are found in high concentrations in sewage. Therefore, if high concentrations of the microbial indicators are found in a water body, then there is reason to suspect that the area is impacted by sewage and thus not safe for swimming. Recently there have been concerns raised about the appropriate use of microbial indicators to regulate recreational uses of water bodies, in particular water bodies located in tropical and sub-tropical environments. Some of the concerns include the potential for the indicators recommended by the USEPA to multiply (or regrow) in the environment, thereby resulting in artificially elevated concentrations above that observed from sewage impacts alone and the lack of water quality and epidemiologic study within tropical and sub-tropical regions which is where regrowth of the microbial indicators is suspected to occur.

The purpose of this analysis was to preliminarily assess whether microbial indicators are useful tools for establishing recreational standards within sub-tropical environments for areas where there is no known discharge of sewage. Specifically, this project evaluated the relationship between microbial water quality indicators and public health. Three water quality indicators were utilized for this evaluation: enterococci, fecal coliforms, and *Clostridium perfringens*. The relationship between public health and microbial indicators was evaluated through this investigation within 2 beaches in Miami-Dade County. One beach had been characterized by elevated concentrations of microbial indicators relative to that observed at the second beach. Neither beach received sewage discharges from a known source. Water samples were collected daily at each beach during a wet and dry season month. An epidemiological questionnaire previously used in a large study of Los Angeles recreational beach goers was adapted to assess the swimming related symptoms and exposure as a prospective cohort study. The data were evaluated for differences in self reported symptoms between the 2 beaches and between the dry and wet months, as well as other analyses.

From the epidemiological point of view, issues of relatively small sample size of the participant population, as well as possible participant selection bias and exposure assessment, limit the analysis of these Pilot study data. The final study population consisted of 63 families with 208 (86%) individuals (3.3 individuals/family); 75 (36%) were interviewed during the dry month and 99 (46%) at Hobie Beach. In all, 35 (17%) of the subject population reported at least 1 symptom occurring since their visit to the beach, with cough (7%) and skin rash (5%) being the most frequently reported symptoms. In general, there was no significant association between the number or type of reported symptoms, and the different sampling months or beach sites, although persons who returned repeatedly to the beach ("Over exposed") were more likely to report symptoms. Overall, the number of indicator organisms correlated negatively with the frequency of symptoms reported by recreational beach goers, possibly due to the lack of individual exposure information. Larger epidemiologic studies are recommended to further evaluate these associations.

This study was funded in part through the National Institute of Environmental Health Sciences (NIEHS) Pilot Project Program at the NIEHS MBFC at the University of Miami, as well as the Miami Dade Dept of Health and a NIH Minority Undergraduate Training Grant.

Community Outreach and Education Regarding the Health Impacts of Uranium Mining and Milling in the American Southwest

University of New Mexico

Teresa Coons, PhD

Uranium mining and milling operations played an important role in the social, economic and political life of the American Southwest for more than five decades. Although it is now widely recognized that uranium miners suffer a disproportionately high risk for lung cancer and other lung diseases, workers in other parts of the uranium industry may also suffer from work-related illnesses, and the legacy of the uranium industry reaches beyond the workers to their families and communities. Environmental and human impacts are part of the ongoing legacy of this industry. The potential for historical and ongoing environmental exposures related to the presence of uranium mines, mills, and their respective waste products in close proximity to residential communities, and concerns about risks associated with radioactive materials that were brought home on workers' clothes or became building materials for family dwellings has created a climate of fear within these communities. Community members, healthcare providers, politicians and educators continue to seek answers to questions such as

1. Are individuals in uranium-impacted communities at risk because of their work or environment?
2. How have these individuals been affected by their exposures and how might these individuals, their family members or other residents of the community be affected in the future?
3. How can individuals, family members, community residents, and future generations best deal with these effects?

The University of New Mexico COEP, in collaboration with other regional institutions and community-based organizations, has been working to transfer the currently available research knowledge about uranium-related health risks to the impacted communities. One example of this information transfer and educational process will be presented. The objective of workshops and meetings such as those described in the poster presentation is to provide the kind of information that is necessary for community leaders, residents, and healthcare providers to make informed decisions about the need for resource commitments to protect human health and for individuals to gain a better understanding of their risks and options.

Case-based Risk Assessment Training Module for Native American Communities Impacted by the Cerro Grande Fire

University of New Mexico

Johnnye Lewis, PhD

The Cerro Grande Fire burned approximately 43,000 acres including 7,500 acres of Los Alamos National Laboratory property from May 3 to June 10, 2000. The fire continues to raise major public health concerns in communities in Northern New Mexico, particularly the fear of a major nuclear exposure to the communities in the wind plume during the fire and now with increased rain and snow melt to the downstream communities in the watershed. While substantial emergency response efforts were focused on the Los Alamos town site, very little attention was paid to the concerns of the eight Native American Pueblos in the vicinity and the five down river tribal communities. During the fire many tribal communities were affected and their community health representatives (CHRs) were looked to for information on health effects to tribal members. However the CHRs had no previous training in environmental health issues, nor were they able to interpret the data that was collected by numerous federal and state agencies. Frequently there are only one or two CHRs for a community of 300 to 3000 people.

In response to the Pueblos' concerns the Community Environmental Health Program (CEHP) has developed a case-based risk assessment training module for Native American communities using the Cerro Grande Fire a model scenario. Often when tribes encounter state and federal agencies on environmental health concerns, they find unique exposure concerns related to tribal and cultural practices are not taken into consideration. The multidisciplinary staff at CEHP has incorporated into the module and teaching methods concepts that are culturally sensitive. In this way the tribal staffs are learning to evaluate land and water use and possible exposures by themselves without divulging sensitive practices that need to be kept private. During each presentation special attention has been taken to include discussion on specific concerns of the Pueblo and their members.

To date, trainings in environmental health have been provided to at least twelve of the New Mexico Tribal Communities, more than sixty individuals. Following participation in the fire risk module, there has been significant interest to learn about other environmental health concerns and subsequent trainings have included other topics such as pesticide use and environmental lead exposures. Issues such as increased exposures resulting from unique resource use in cultural practices, interactions of environmental and occupational exposures, and bioaccumulation of contaminants have also been discussed. The modules focus on evaluating data quality and sufficiency, developing conceptual models, and encouraging environmental staffs and CHRs to work together.

Community Outreach and Education Program
UNC-CH Center for Environmental Health and Susceptibility

Frances M. Lynn, Dr.P.H,

The purpose of the UNC-CH three panel display is to acquaint others with (a) the research foci of the newly established (April, 2001) Center for Environmental Health and Susceptibility at the University of North Carolina at Chapel Hill; (b) the activities of the Center COEP; and, (c) the scope of the COEP's supplemental grant that looks at the ethical, legal and social issues involved in environmental genomics.

The UNC-CH Center focuses on environmental epidemiology and toxicology and has three areas of concentration: genetic susceptibility, which brings together laboratory and molecular epidemiological research; developmental susceptibility, particularly on conception through childhood; and toxicokinetic susceptibility, which looks at inter-individual differences in physiological and metabolic factors that occur in response to exogenous agents. Four facility cores support the three research areas: high-throughput genotyping; biostatistics and epidemiological methods, biomarkers, and nutrient assessment.

COEP activities include outreach and education to three groups: North Carolina communities, policy makers, and schoolteachers. Two integral components of COEP activities are a broad based Community Advisory Committee and the involvement of UNC-CH students in outreach and education. In addition, the COEP is responsible for the Center's website and newsletter. To date, the COEP has: collaborated with a low income community to assemble data on local air pollution; analyzed three COEPS and also inventoried the activities of 27 COEPS; conducted three focus groups among scientists and citizens, which looked at incentives and barriers to collaboration. In addition, the COEP is surveying NC teachers to determine topics of interest that draw on Center research strengths as a prelude to offering teacher professional development.

During the coming year, with supplemental NIEHS funding, the COEP will produce educational materials on the ethical, legal and social issues involved in environmental genomics. This work will be done in collaboration with the University of Cincinnati COEP, two organizations from our Community Advisory Committee, the NC Breast Cancer Coalition and the NC Occupational Safety and Health Project, and a diverse scientific advisory committee. The main educational products of the grant are: two interactive educational modules, one focusing on breast cancer and the other occupational exposure; and a booklet, which presents an overview of environmental genomics and attendant ethical, legal and social issues. These products will be piloted with members from our two community partners.

“My Environment, My Health, My Choices”

University of Rochester Environmental Health Sciences Center

Dina Markowitz, Ph.D., Director, Community Outreach and Education Programs

The “My Environment, My Health, My Choices” program, supported by the EHSIC grant program from NIEHS (1R25 ES10717), will facilitate the development, by middle and high school teacher teams, of new curricula that incorporate environmental health education into science, social studies and health classes. Fifteen teams of middle school and high school science, social studies and health teachers will take part in this program over the course of seven years. Each team will be composed of a science, social studies, and a health teacher. Five teams of high school teachers have been selected for the first phase of the program, which began during the summer of 2001. These schools represent urban, rural and suburban areas. Five middle school teams will enter the program during summer 2003, and five additional teams of middle or high schools will enter the program during summer 2004.

Details of the “My Environment, My Health, My Choices” program include the following:

- Teachers will work with faculty from the University of Rochester’s Environmental Health Sciences Center and the University of Rochester’s Margaret Warner Graduate School of Education and Human Development to develop unique curriculum units around a specific environmental health topic or problem that is chosen by the team. Each team will focus on a different topic, ranging from urban environmental exposures, (lead and air pollution) to overpopulation, to household environmental hazards. All curriculum units will align with New York State education standards.
- Teacher teams participated in a one-week summer training workshop at the University of Rochester. The workshop introduced the teachers to relevant environmental health and curriculum development issues by experts in these fields. Follow-up workshops will be held three times each school year to monitor the teacher’s progress, and to allow them to present portions of their curricula.
- Each team is paired with a scientist mentor who will assist teachers in locating resources, help to review the curriculum units, and help to monitor the teachers’ progress.
- Funding is provided for teachers to develop and implement the curricula and for classroom materials and supplies for the duration of time that each school participates in the project.
- University of Rochester faculty will provide significant follow-up and evaluation of the program during the entire grant period.
- Curriculum units from all participating schools will be available in written and electronic formats for national dissemination.

Information on the “My Environment, My Health, My Choices” program is available at:
<http://www2.envmed.rochester.edu/envmed/EHSC/outreach/MyEnvironment.html>

Addressing Traffic Density and Public Health Concerns

By Andrea M. Hricko, COEP Director, Southern California Environmental Health Sciences Center (University of Southern California and UCLA)

Community Partners: Boyle Heights Mejoramiento, Environmental Health Coalition (EHC), West Harlem Environmental Action (WEACT), Communities for a Better Environment (CBE), Pacoima Beautiful, and Liberty Hill Foundation

University partners: Center for Environmental Health in Northern Manhattan (CEHNM) at Columbia University, USC Sustainable Cities Program and the Urban and Environmental Policy Institute (UEPI) at Occidental College, Neighborhood Knowledge L.A. (NKLA) at UCLA

Abstract of poster:

Aim: The Community Outreach and Education Program (COEP) of the Southern California Environmental Health Sciences Center (SCEHSC), in concert with numerous university and community partners, aims to increase public understanding of traffic and human health effects in urban neighborhoods where environmental health problems resulting from heavy traffic are key scientific and community health concerns.

The COEP is addressing this issue on a number of fronts, by:

- (1) Enhancing science education in the classroom** through a joint “Traffic and Public Health” program with the Columbia University CEHNM and its community partner WEACT. Through an administrative supplement to their NIEHS Centers, the COEPs are purchasing hands-on monitoring equipment to measure traffic-related air pollutants. With the Environmental Health Coalition in San Diego, the COEPs are developing classroom materials and teaching students how to use the air monitoring equipment.
- (2) Empowering residents to conduct their own measurements** using SCEHSC equipment. For example, the COEP has worked with a grassroots organization addressing concerns about traffic density (safety, noise, and air pollution, especially diesel exhaust from trucks) in an East L.A. neighborhood where schools abut freeways.
- (3) Developing environmental leadership skills in students** by working with community-based organizations (EHC, CBE) to develop and teach week-long high school courses targeted at specific communities with disproportionate impact from exposure to traffic-related pollutants. E.g., in San Diego, the SCEHSC and EHC taught 150 students (in English and Spanish) a special curriculum and took students on a field trip where they were able to do their own hands-on monitoring of fine particulate matter. Students subsequently volunteered to testify at a public hearing on air pollution.
- (4) Increasing public awareness of the connections between environmental justice (EJ) and traffic.** The SCEHSC was invited to organize a workshop on Diesel and Environmental Justice sponsored by the Liberty Hill Foundation for its EJ grantees.

From the Bench to the Public - the Community Outreach and Education Program of the Center for Research on Environmental Disease. R. Fuchs-Young, Ph.D., D. Cook, MS, J. Rodriguez, and J. DiGiovanni, Ph.D. The UT M.D. Anderson Cancer Center, Science Park Research Division, Smithville TX and UT Austin College of Pharmacy.

The Community Outreach and Education Program of the Center for Research on Environmental Disease has a focused series of programs and activities aimed at communicating information about environmental health and science to our target audiences, including the students, educators, civic groups and general public in Central Texas. Center research provides the basis for the Outreach program, that seeks to provide current knowledge about causes and prevention of environmental disease, especially cancer.

For students we provide career development seminars and science and health education to help them make healthy lifestyle choices that reduce their risk of disease. Three key projects for students are the veggie-mon.org web site, the CD-ROM based curriculum enhancement called SCREAM, and internships for high school and undergraduate students at the Center.

The “Veggie-Mon” website for 3rd through 8th graders is named for the mascot that guides students through the pages designed to support and enrich existing science and health curricula. The site (<http://www.veggie-mon.org>) was developed in collaboration with teacher interns working at the COEP during the summer, and uses illustrations, animations, games, quizzes, experiments, a glossary, and a virtual journey to the Antarctic to teach environmental health and science. It also challenges kids to be “in charge of their own health” and to make healthy lifestyle choices. Currently, Veggie-Mon includes information about sun safety, nutrition, and cancer research at the Center. New sections on tobacco avoidance are being added. The site provides educational enrichment for students in elementary and middle schools, especially those in rural or underserved school systems that may lack funds for supplemental materials. Students can read about cancer prevention and learn a little about how scientific investigations are conducted in a modern laboratory and the field. The material contained within the site is responsive to the Texas Essential Knowledge and Skills (TEKS) and can serve as curriculum enhancement to assist teachers in communicating required concepts and principles.

For teachers we offer professional development and scientific education through in-service workshops, summer internships, and electronic resources like the Environmental Health Educators’ Quarterly. The email quarterly is designed to help educators identify useful internet resources covering a variety of environmental health and science topics. In compiling each issue Don Cook, Outreach Coordinator and editor of the Quarterly, draws from a variety of sources, including magazine and journal articles, Web searches, and other COEP publications. Targeted to teachers, curriculum supervisors, and school nurses, the Quarterly has a direct mailing list of 450 (you are invited to subscribe at <http://sciencepark.mdanderson.org/cred/subscribe.html> - it’s free!). As the CRED program develops new programs and materials for health and science educators and students, the Quarterly will continue as a key venue of dissemination.

For civic groups we provide education about cancer risk and prevention using the “Environment and Cancer” slide module. The slide module covers basic toxicology, genetics, cancer biology and environmental carcinogens and was developed by the Center faculty. The module translates the most current information about environmental causes of cancer into understandable language and provides tips on disease prevention.

To serve the general public, the COEP answers questions about cancer and environmental disease submitted by telephone and email, hosts community forums, and maintains a comprehensive internet site on current research and outreach activities. We also communicate via various media outlets about the scientific accomplishments of CRED faculty and staff and other NIEHS-sponsored research.

**IICOMOH (I'm In Charge of My Own Health): Are They Getting the Message?
S. Spaw BA, D. Cook, MS, R. Fuchs-Young, Ph.D., L Walters, Ph.D.**

Objective At a time when most children trust what they read on the World Wide Web, science communicators take on a great responsibility when publishing scientific information there. One Web site (www.veggie-mon.com) introduces primary schoolchildren to environmental health topics, such as nutrition, bacteria, and ultraviolet radiation effects on the skin. The Veggie-mon Web site was created by Texas teachers who interned at the Center for Research on Environmental Disease-Community Outreach and Education Program at the University of Texas M.D. Anderson Cancer Center, Research Division, in Smithville, Texas. This study was to assess the effectiveness of the Veggie-mon Web site in communicate science information to schoolchildren.

Methods Focus groups of elementary and middle school students attending rural schools east of Austin, Texas, will be used to determine whether the Web site is reaching its intended audience. As each student looks through the Web site at will, an investigator will watch from a short distance. The investigator will take notes on items such as the directions the student moves through the site, the time spent in certain areas, the student's behavior and audible comments, and so on. The investigator will respond to the student's questions and comments, if asked. Once the student finishes perusing the site, the student will be asked d questions posed by the investigator. The answers are expected to help determine what the student remembered, learned, liked or disliked about the Web site.

Expected Results Nearly 90 percent of the total student population in the target schools are expected to participate. We are not expecting 100 percent response because of the difficulty of obtaining written parental consent and absenteeism on the days that investigators visit the respective schools. Most students are expected to remember, learn from, and like the site. Students will have the option of suggesting more interactivity and games, less text, or more sophisticated graphics. But, otherwise, the results are expected to show favorable responses to the veggie-mon Web site.

Conclusion We anticipate that the Veggie-mon Web site will prove to be an effective information source about environmental health for schoolchildren. From this site, schoolchildren may discover ways to modify their behavior in a manner that enhances their health as well as those around them. The site's sponsors will implement suggestions from the focus groups to increase the site's effectiveness and further promote good health.

UTMB

The NIEHS Center in Environmental Toxicology & the Sealy Center in Environmental Health & Medicine have evolved to its present status as unique entities in Southeast Texas, home to the largest petrochemical complex in the nation. Galveston's pivotal location was a large motivational factor for creating Centers focusing on environmental health sciences at the University of Texas Medical Branch. The Centers are dedicated to the study of environmental health science problems, as well as to the education of our community about prevention and solutions to these problems. The Centers focus the environmental concerns of and develops useful programs for the local communities via the Community Outreach & Education Program (COEP). The COEP coordinates the interactions of a multi-disciplinary cooperative of research scientists with students, at-risk populations, health care providers, industry leaders, and community groups. Specifically, two areas have evolved as a central focus of the Centers' COEP, an Environmental Health K-12 Education Program and an Asthma Outreach and Education Program.

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Community partnerships create collaborations to discuss environmental health equity issues.

Chetana Acharya MS, Jonathan F. Sharpe MEd, Krissandra Freeman, Thomas M. Burbacher, PhD and David L. Eaton, PhD

Despite the improvement in the health status of people in the United States, there continues to be disparity in death and illness experienced by poorer and racial/ethnic minority populations. In September 2000, the NIEHS Center for Ecogenetics and Environmental Health organized a town meeting to focus on environmental health and environmental justice issues in Washington State. The town meeting, 'Voices for Healthy Environments, Healthy Communities' was successful because of the Center's commitment to a truly participatory process. The planning team made an effort to have equal representation from community organizations, government agencies, scientists and affected individuals. Over 200 participants attended workshops, discussion circles and the open-mike session; highlighting the complex relationship between environment, health, genetics, socioeconomics and ethnicity/race.

Long-term outcomes of the town meeting include an established partner network to share resources and information, and the Center's participation with partners outside the University. The Center has been particularly active with the Shoalwater Bay Indian Tribe. With funding support from NIEHS, the Center staff is working with the Shoalwater to develop a Shellfish Monitoring Management Plan. This document will allow the community to systematically assess shellfish quality in their Bay. We hope that it will provide the foundation for future work addressing the Shoalwater Tribe's recent high pregnancy loss rate. The decision to focus on developing a management plan was made at a meeting between Center staff, the Shoalwater chairman and the Shoalwater environmental director.

Similarly, partners in the Yakima Valley have developed culturally appropriate curriculum to teach children and adults about reducing exposure to pesticide residues. The Center has successfully obtained funding from the US EPA Region X, Children's Health Program, to help disseminate information to break the take-home pathway of exposure to pesticides by working with Head Start teachers and early elementary education students in the Valley. The Center intends to share the materials developed for use in Eastern Washington with partners in Western Washington.

Building trust and establishing strong community relationships takes time and effort. Successful partner-driven Center activities can be seen as a first step towards addressing environmental health equity issues. The Center for Ecogenetics and Environmental Health intends to continue building relationships with community partners, in order to ensure that cutting edge environmental health science research plays a vital part in community-based decision making.

UW-Madison Education Efforts Target Native American Tribes in Wisconsin

Author—Kevin Niemi, Ph.D., COEP Director, UW-Madison Environmental Health Sciences Center for Developmental and Molecular Toxicology

The UW-Madison EHS Center has a collaborative effort with the Wisconsin Indian Health Professions Office to promote environmental health science programs to Native American populations in Wisconsin. We have offered two trainings to tribal educators in the ToxRAP™ EHS curriculum. An August 2000 training was held for the Lac Courte Oreilles tribal school and one in August 2001 was for the Bad River band. Both bands have reservations and tribal schools in northern Wisconsin. We have also produced a set of extension activities to the ToxRAP™ modules called “The Case of John Small Wolf’s Bad Medicine: Clues & Mysteries.” This module was written to make ToxRAP™ more culturally relevant for Indian communities. Long-term plans are to continue offering training with plans to reach all eleven Indian Nations of Wisconsin as well as to promote “The Case of John Small Wolf’s Bad Medicine: Clues & Mysteries” through both ToxRAP™ Network partners and national public health education avenues.

**Community Outreach and Education Program
of the Marine and Freshwater Biomedical Sciences Center
at the University of Wisconsin-Milwaukee**

COEPeration in Milwaukee: Engagement with the Community

**Jeanne Hewitt, COEP Coordinator
David H. Petering, MFBS Center Director**

The Marine and Freshwater Biomedical Sciences (MFBS) Center’s COEP program focuses on a range of community education opportunities. These include precollege education, undergraduate and graduate education, and education of inner city minority populations. Specifically, we are beginning our sixth year of developing experiment modules for middle school life science which link basic and environmental health science and working with middle school science teachers to enhance their ability to teach life science concepts. We have also just finished our sixth year of hosting minority college students for summer research experiences in toxicology. A new activity for the coming year will be to participate in a program that increases the understanding of environmental health by graduate nursing students. Finally, we have just begun an environmental justice-based project that intends to increase the awareness of Milwaukee minority populations about the issues related to eating fish contaminated with toxic chemicals. Each initiative is underwritten by grant funding from NIEHS, NCRR, and ASTDR. A hallmark of the COEP is the extensive participation of scientists within the MFBS Center as well as a number of colleagues from diverse disciplines including education, film, and mass communication.

Center in Molecular Toxicology: An Overview of the Outreach Program and Its Activities.
W. Bradley Hawkins, Center in Molecular Toxicology, Vanderbilt University, 638 RRB, Nashville, TN 37232-0146

brad.hawkins@vanderbilt.edu

T: 615.936.2179

F: 615.936.0756

Vanderbilt's Outreach Program provides information through education and outreach activities for members of the community on environmental health hazards. The goals of the Outreach Program effort are to improve environmental risk perception and to modify individual and population behaviors toward chemical risks. The current and future directions of the Outreach Program focus on identification of specific needs of surrounding communities in order to provide adequate and relevant information in the field of environmental health while translating the Center's research efforts into knowledge that can be applied to public health. To accomplish these goals, the Outreach Program directs its efforts through a variety of programs and activities including Center events, K-12 education and professional assistance.

Center events include an annual *Open House* and *Community Forum Series*. The Open House provides an opportunity for Center faculty to educate undergraduate and graduate students, and professors from area colleges and universities along with community health professionals in the area of toxicology including pertinent research being performed at the Center. The community forum seminar series was developed to provide information to the general public. This forum series focuses upon environmental health issues, in particular those of local and state concern that are currently addressed by the Center's research.

Education programs (K-12) are directed toward both students and teachers. Presentations are made weekly by Center staff at area schools on topics such as toxicology, environmental hazards and chemical safety. The Outreach Program collaborated with several other NIEHS outreach programs on an Environmental Health Sciences Training and Education Program grant to regionally disseminate environmental health curricula. In addition, the Center Associates Program is a curriculum and professional development program that provides educational and facility support for area teachers from the Center. The participants of the program receive support from the Center to perform projects in the area of toxicology, environmental health, or general and specialized science.

The Outreach Program provides assistance for professional scientific and educational societies and organizations. The Outreach Program has assisted the American College of Occupational and Environmental Medicine (ACOEM), Society of Environmental Toxicology and Chemistry (SETAC), MidSouth SETAC, Society of Toxicology and the Tennessee Environmental Education Association with their respective conferences.

Non-Traditional Environmental Health Science Education

EHS Center, Wayne State University

Mary O. Dereski, COEP Director

Along with classroom curricular materials that have been developed by the Environmental Health Science (EHS) Center's Community Outreach and Education Program (COEP) at Wayne State University, the COEP has a very active and influential non-traditional environmental science education program. This program consists of several components: Science Nights (Science Seekers); After School Science Clubs (Science Wizards); Summer Science Camps (Science Encounters) and Saturday Laboratory Institutes. Each of these components is unique and involves students at various grade levels. Science Seekers is an evening for grades K-2. The students are asked to sign up to attend an evening of science with at least one parent. Worksheets are provided for groups as they rotate through fifteen-minute hands-on experimental stations. Science Wizards is provided for grades 3-5. Students assemble with COEP members after school for an hour of science club. High school students are recruited from the local feeder schools to assist with the experiments. Science Encounters is a summer day camp offered to 7th, 8th and 9th graders through the Michigan Metropolitan Girl Scout Council. COEP and EHS Center members guide twenty girls through experiments as they spend a week on campus. In a further effort to expose students to the methodologies that are a daily function of the research laboratories of the EHS Center, the COEP has partnered with the Detroit Area Pre-College Engineering Program to offer Saturday Laboratory Institutes to middle school students. In January and October of 2000, the COEP offered Basic Laboratory Skills I. In January of 2001, the COEP offered the second class (Basic Laboratory Skills II). Fourteen of the students in Basic Laboratory Skills I enrolled in the advanced class. In summary, education in the area of environmental health can extend beyond the traditional classroom. These educational opportunities may have a positive impact on students and their interest in environmental health science.

Part III

Selected Presentation Slides Given at the 59th Annual Center
Directors Meeting, Austin, Texas, October 28, 2001

III.1 COEP Organization

Presenter: Liam O'Fallon



COEP Organization

COEP Annual Meeting
October 28, 2001



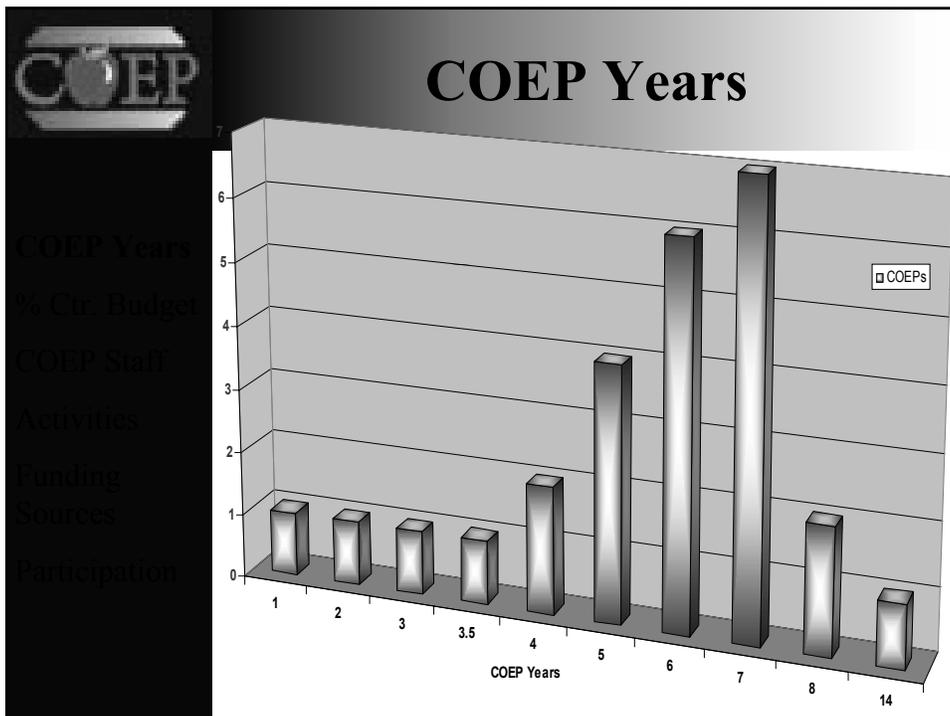
WHY?

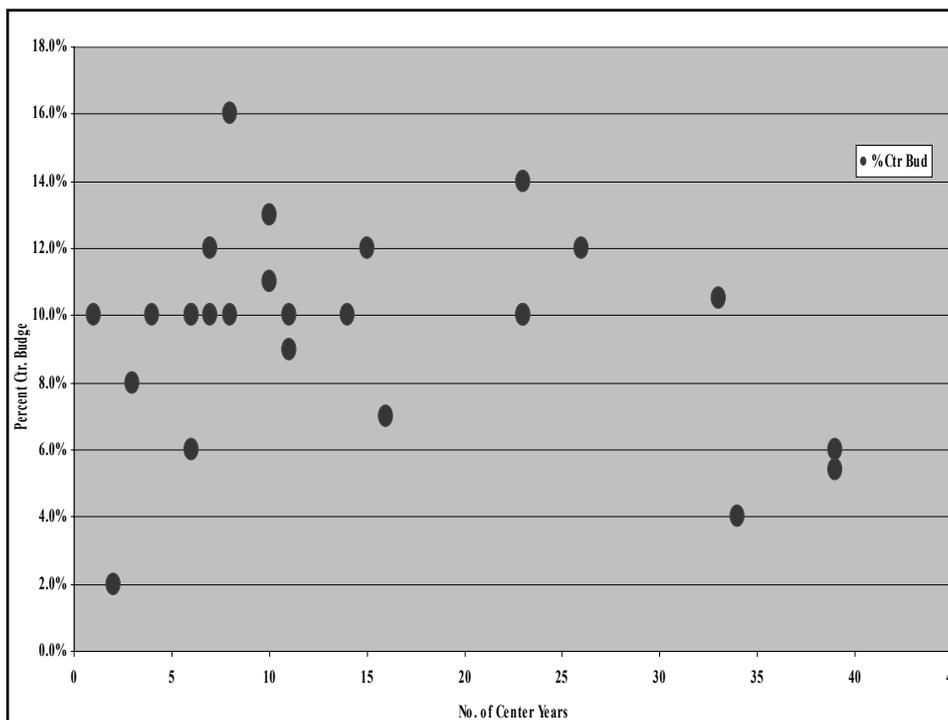
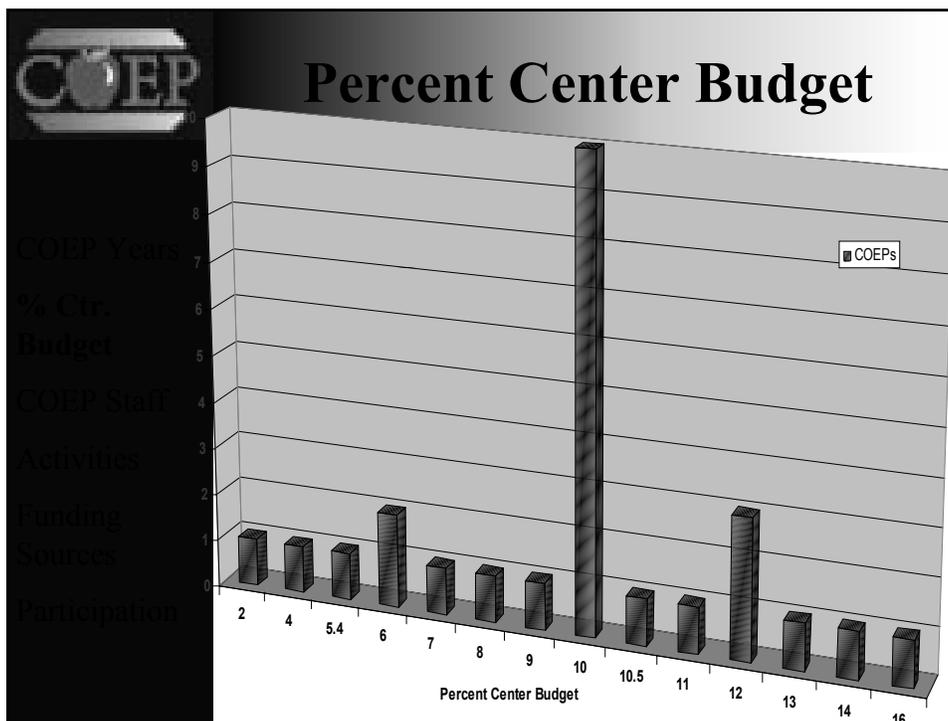
- Learn more about one another
- Highlight similarities and differences
- Consider COEP interaction within Center and with other Centers
- Provide insight into general structure and function of COEPs

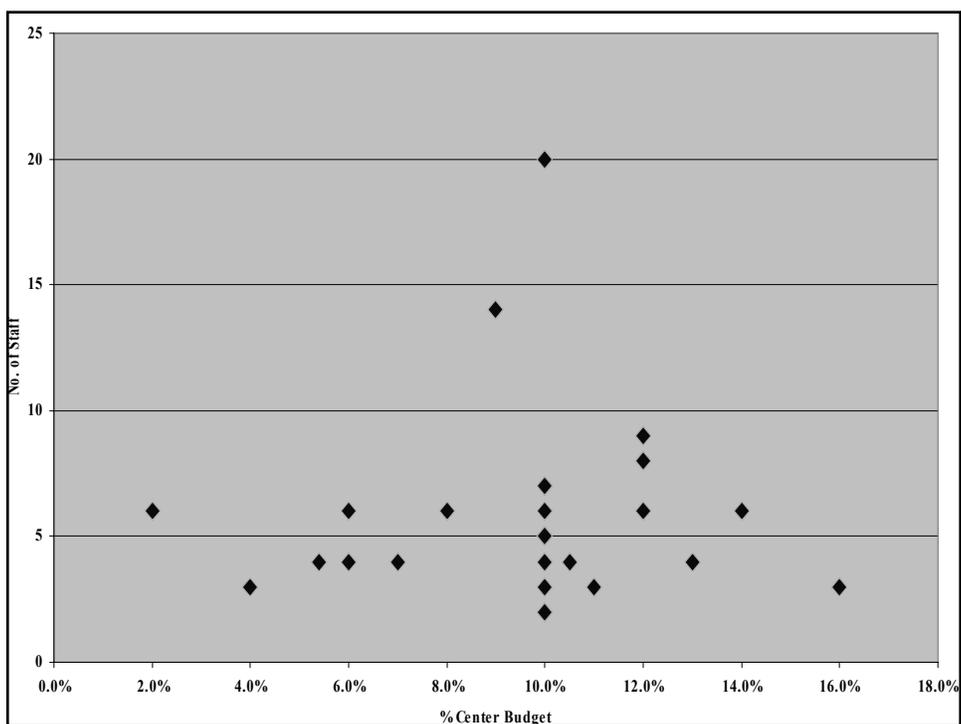
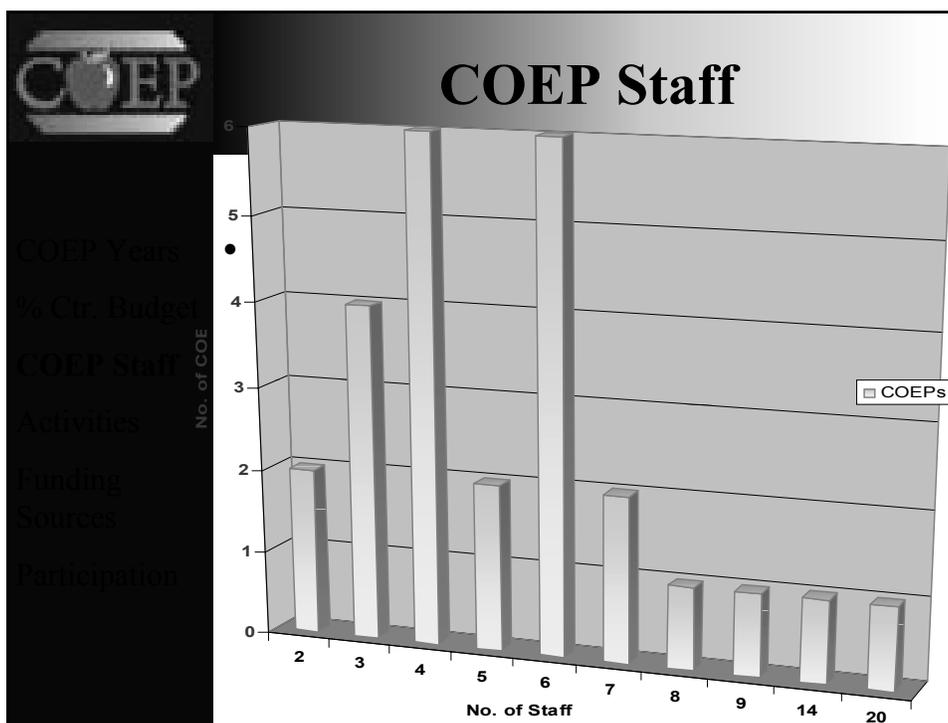
COEP

Major Interests?

- COEP Years
- Percent of Center budget to COEP
- Number of COEP staff
- COEP Activities
- Other Funding Sources
- Center member participation









Activities

- Community Awareness (n=24)
 - Forums
 - Web site development
 - General EH education
 - Articles, brochures, etc.
- Internships (n=4)
 - Research
 - Education
 - Teachers, students, community residents

COEP Years
K-12 Budget
COEP Staff
Activities
Funding Sources
Participation



Activities

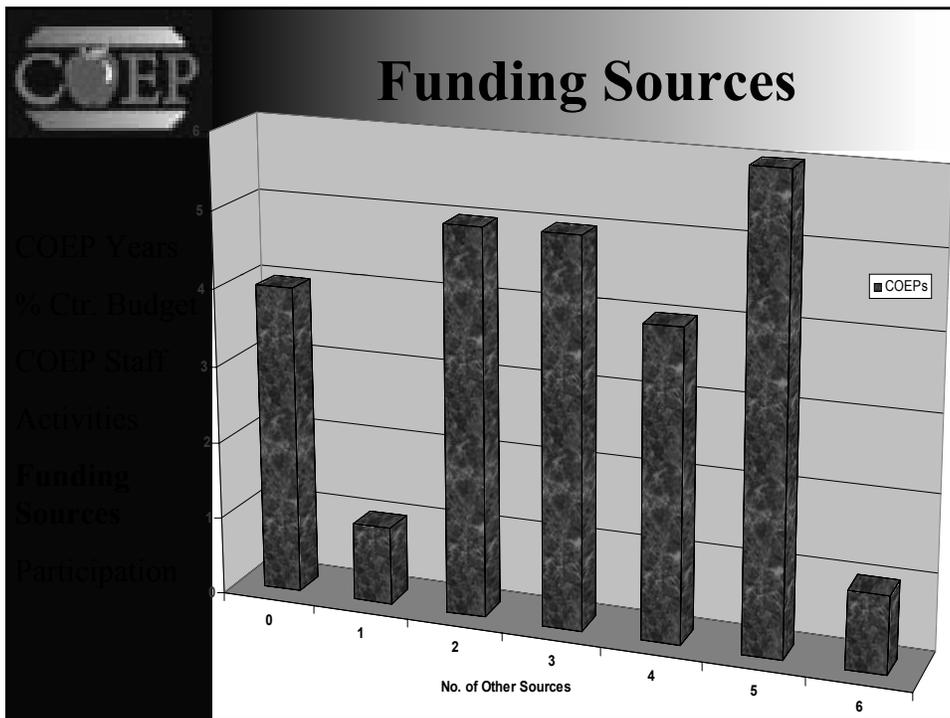
- K-12 Education (n=18)
 - Curriculum development
 - Internet-based materials
 - Videos
- Media/Policy (n=5)
 - TV broadcasts
 - Courses for reporters
 - Community resource

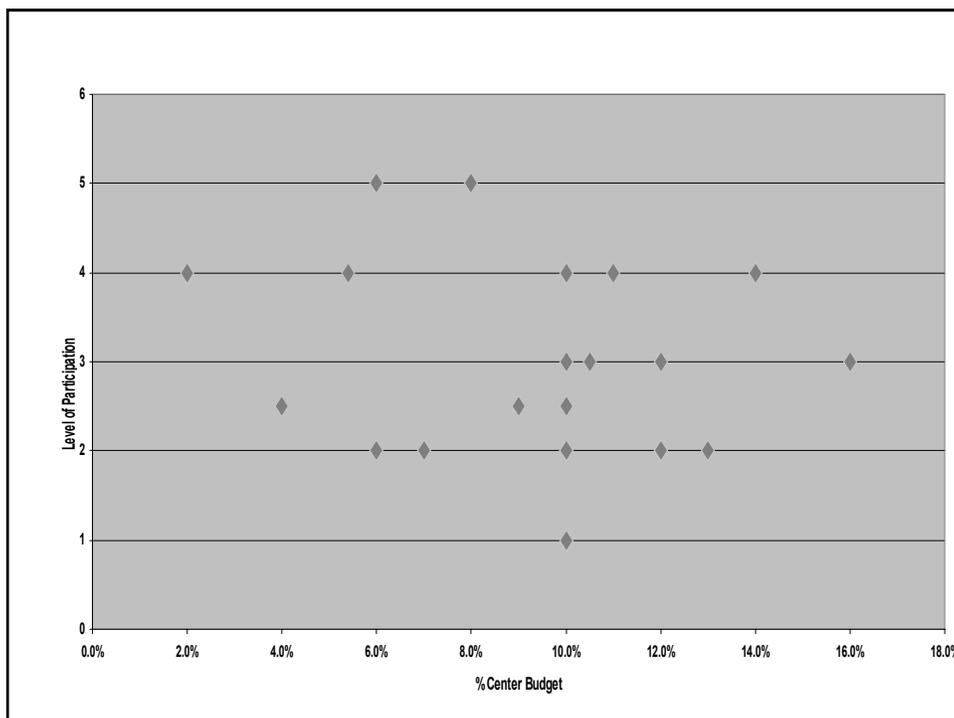
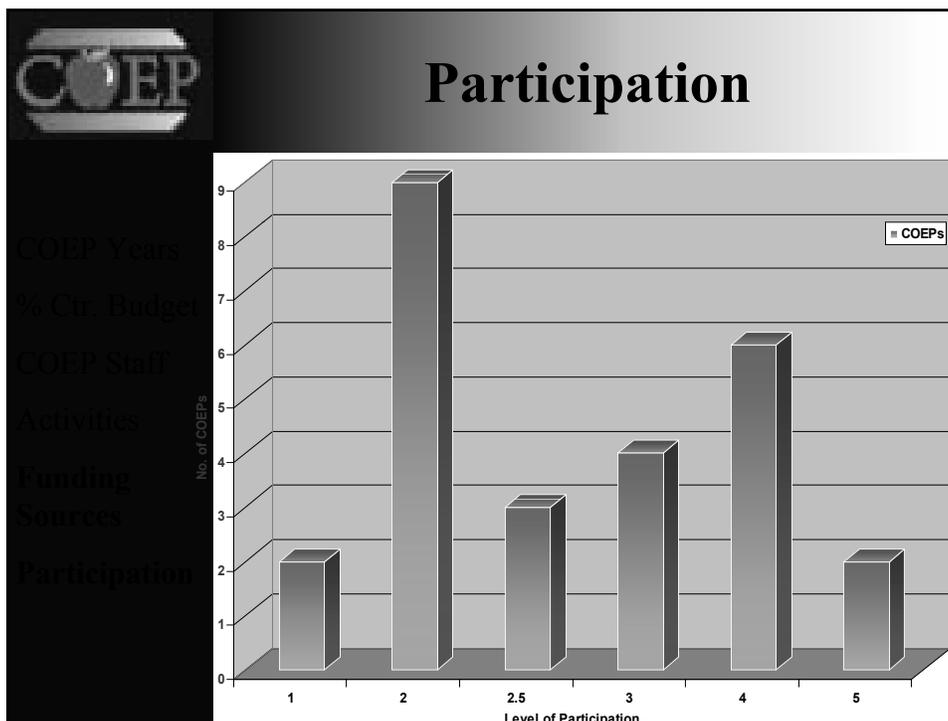
COEP Years
K-12 Budget
COEP Staff
Activities
Funding Sources
Participation

COEP

Activities

- Professional Development (n=15)
 - Teacher training/workshops
 - Worker training
 - Health care professional outreach
- Undergraduate (n=5)
 - Summer research fellowships
 - Seminar courses
 - Environmental health outreach training







Center Investigators

- Speakers
- Joint projects
- Teacher training
- Advisors
- School visits
- Community interaction
- Mentoring
- Report writing
- Lab tours
- Media interviews
- Grant writing
- Review curriculum
- Technical writing
- Teach
- Sci. policy boards
- Career counseling
- Science fair judges



Mechanisms

- Center meetings
- Mutually beneficial
- Praise
- Convey impact
- Just ask personally
- Director encourages
- Honoraria
- Survey members
- Ctr. retreat present.
- Past history
- Schedule reg. mtgs.
- Promotional mats.
- Requirement of Ctr. membership
- Regular interaction
- Pilot projects
- Listserv/web ann.
- Cookies & bribery

III.2 K-12 Outreach Technologies, University of Arizona COEP

Presenter: Stefani Hines

K-12 Outreach Technologies

The UA



Uses the Web



Four Ways We Use the Web

1. Basic information delivery
2. Provide downloadable curricula
3. Organizational and delivery tool for a complex, "webbed," integrated curriculum
4. Fun, highly interactive activities



Basic Information Delivery

- Straight HTML
 - [Water & Health Activities](#)
- Basic & easy to read
- Simple interaction to raise interest
 - Q & A



Provide Downloadable Curricula



- Teachers have access to the web
- Teachers may want to use partially web-based or nonweb-based materials
- Provide free, high quality materials
- [Educational Resources](#)



Organizational Tool for a “Webbed,” Integrated Curriculum

- Year-long
- Completely integrated across all subjects
- Student pages
- Teacher pages



Fun, Highly Interactive Activities



- Uses more “advanced” web programming
 - Flash, Shockwave, Databases, Java
- Advantages
 - Kids (& adults) love it
 - Effective teaching tool
- Disadvantages
 - Requires more skilled personnel
 - Requires “plugins”
 - Requires higher memory & speed



Examples

- CHH - Environmental Tobacco Smoke & Lung Development
- Air and Health Activities
 - A Recipe for Ozone
 - Lung Attack
 - CO City
- Teachers guides &/or accompanying student worksheets

III.3 K-12 Outreach Technologies, University of Texas M.D.
Anderson Cancer Center COEP

Presenter: Robin Fuchs-Young



**Center for Research on
Environmental Disease**

**Community Outreach and
Education Program**



**A new environmental health and science
website for kids, grades 3 - 8**

**IICOMOH
stands for
“I’m in charge of my own health”**

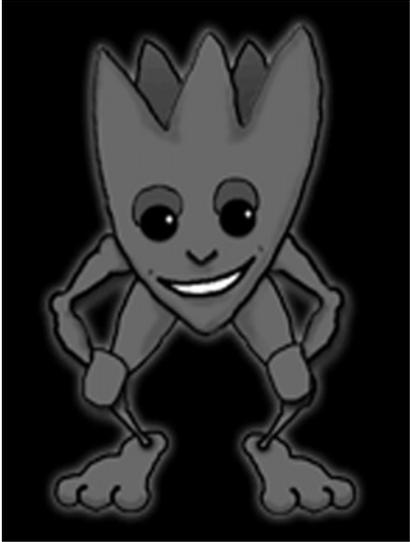
www.Veggie-mon.org

The Plan

I. Early Concepts:

- **Friendly website for kids
disease prevention
diet and sunlight**
- **Characters - the “Veg”**
- **Teacher involvement
paid internships
bring ideas**

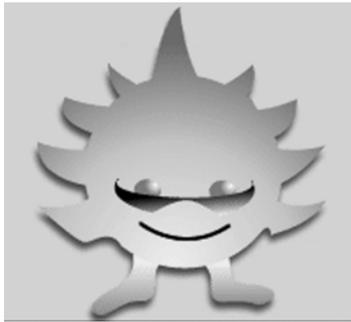
Veggie-mon



II. Content

- A. Assess needs and areas of potential impact
- B. Key on Center strengths
- C. Teachers translate

Sunspot



Strawberry girl

III. Site design

- Format - maximum flexibility
- Classroom access

Informative Fish

Veggie Mon Nutrition | Veggie Mon Under the Sun | The Laboratory | Ask a Scientist | Glossary

UV Did You Know? | Bacteria Blues | **Informative Fish**

Major Sections:
 Nutrition
 Under the Sun
 The Lab
 Ask a Scientist
 Glossary

Veggie-Mon

Hi Kids!
 I'm Veggie-Mon, your guide to the website called Ick-o-Moh. That stands for "I'm in charge of my own health".

How to find your way in this web site.

You can go through the different sections of this web site using this menu system. Each colored section will point to its sub-sections as they are available. Each sub-section will be the same color as its main section. Sub-sections may also expand in the same way.

Veggie Mon Nutrition | Veggie Mon Under the Sun | The Laboratory | Ask a Scientist | Glossary

Sub-section 1 | Sub-section 2 | Sub-section 3

Sub-section 2A | Sub-section 2A | Sub-section 2A

IICOMOH Home | Student Index

Veggie Mon Nutrition | Veggie Mon Under the Sun | The Laboratory | Ask a Scientist | Glossary

Did You Know These Things About NUTRITION?

Oxidation Experiment

Veggie Mon Nutrition | Veggie Mon Under the Sun | The Laboratory | Ask a Scientist | Glossary

Nutrition | Food Pyramid | Kid Cuisine

Oxidation Experiment | UV Experiment

Nutrition is particularly important when the body is growing as in childhood and adolescence. The nutritional information shown below will teach you about a balanced diet that will help you be a healthier person.

Bacteria Blues

Home About Us Contact Us News Archives Ask a Scientist Glossary

Home News Archives Ask a Scientist Glossary

News

My name is Jarah A. Meador and I am a graduate student working under David L. Mitchell, Ph.D., at the UT MD Anderson Center for Research on Environmental Disease at Smithville Texas. My project involved collecting bacteria and spore/infestation from water and sea samples in Antarctica in order to measure DNA damage caused by ultraviolet (UV) light. The two kinds of bacteria that are most harmful are called *UVA* and *UVB*. I thought that it was important to study this damage because all living organisms have DNA and can be injured by UVB or UVA. We were also interested in how these organisms repaired themselves after being damaged.

The reason that we chose Antarctica for our samples is because of *climate* of the south land over the Antarctic. The ozone layer allows UVA to pass through it while blocking most of the UVB from reaching the earth's surface. Since there is a thinning in the ozone layer over the Antarctic, more UVB reaches the earth's surface there than anywhere else in the world.

Dr. David Mitchell and graduate student Jarah Meador study UV induced DNA damage in microbes in Antarctica

II. Content

- Base content on Center research and contributions from Center members
- Teachers help communicate



Adventure, Animals and Cool Toys

Journey to Antarctica

I began my journey by boarding a jet and flying to Punta Arenas, Chile, on October 6, 1999. Chile is a country on the west coast of South America. Next, I took a 240 foot research ship named the Laurence M. Gould to a research station on the coast of Antarctica called Palmer Station. This ship is used by the National Science Foundation to conduct scientific research at sea and to take people to the different research stations in Antarctica.

The boat trip took seven days. I was worried about getting seasick, but luckily the seas were calm. The rooms on the ship were small and each person had a roommate. I spent most of my time reading. The rest of the time I watched movies or visited with other scientists. We were served three meals a day and the food was really good!

Return to Map Continue Trip

Wildlife

Several types of whales, seals, penguins, and other sea birds lived near the station. All of these animals are adapted to life in the frigid conditions of the Antarctic. As you look at the pictures of these animals, try to identify some of these adaptations.

While I was there I saw Mink whales, Crab-eating seals, and Leopard seals. On the peninsula next to the station there was a family of Elephant seals with one male, several females, and many young seals called pups.

The penguins that I saw there were the Adelle, Gentoo, and Chinstrap penguins. The Adelle penguins had a large *coolbox* that we could visit with the Zodiacs.

Some of the birds that I observed were the Giant Petrels, Snow Petrels, Cape Petrels, Wilson's Storm Petrels, Imperial Shags, Greater Black-backed Gulls, Arctic Terns, and Southern Skuas. The Skuas were the main *predators* on the penguin rookeries and would work in pairs to steal the eggs and young chicks.

On the trip from Chile to Palmer Station we also saw many birds including different types of Albatrosses.

Involve scientists who are passionate about their work

Why Study Fish At All?

Fish and humans are very different, right? The next question that you might ask is "so why do you study fish to learn about a human disease?" The answer to that question is that fish and humans have many things in common.

One thing that fishes and humans have in common is that they are both vertebrates. Vertebrates are animals that have a backbone. Vertebrates, such as fishes and humans, have between 35,000 and 60,000 genes. These genes hold all the genetic information for an organism.

Another thing that they have in common is that fishes and humans have similar genes. One of these similar genes is found in melanocytes. Melanocytes are cells that produce melanins, which are a group of pigments that range in color from brown to black. In some hybrid fish, like the ones we study, a particular gene pigmented mel divide more or normally do. If control in melan lead to the development of melanomas in the process occurs.

The primary source of environmental UV radiation is the sun. We are protected from much of the damaging UV radiation by the ozone layer. The ozone protects us by absorbing UVB light. Unfortunately, as the ozone becomes depleted due to pollution, a larger amount of UV radiation makes its way to the earth's surface.

Humans have a similar gene called a tumor suppressor gene, when we stop working p or humans can

scientists have also begun to study the effects of UV radiation on skin cancer. UVB is one type of ultraviolet radiation. UVB has been shown to cause sunburn, which damages the genetic material in cells. This damage can lead to skin cancer.

With the increase of UV radiation in our environment, there has also been an increase in the cases of melanoma. We have been using hybrid fish to study how UV radiation can contribute to the formation of melanoma. The hybrid fish that we use have a high risk of developing melanoma. We expose some of them, the test fish, to certain amounts and types of UV radiation. The control fish are not subjected to UV radiation. We then compare the percentage of how many fish got melanomas in the test group to how many fish got melanomas in the control group.

The table below shows the results of one of our experiments.

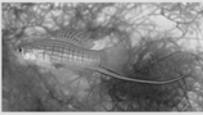
DEVELOPMENT OF MELANOMA			
Not Exposed to UVB		Exposed to UVB	
Melanomas	Total #	Melanomas	Total #
6	121	29	150
5.0%		19.3%	

The hybrid fish that were exposed to UVB showed a significant increase in melanoma development. This data tells us that exposure to UV radiation can lead to development of melanomas in the fish.

We continue our work with these little fish. These informative fish help us to answer some questions about melanoma and hopefully other cancers.



Dr. Steve Kazianis studies fish to learn about skin cancers caused by UV radiation.



Northern Swordtail from Ocampo in Northern Mexico:
Isn't this a beautiful fish?



Southern Swordtail from Rio Sarabia in Southern Mexico:
It's at the sword on that fellow!



Southern Swordtail from Rio Llaneta in Belize:
This is one of my favorites!



Southern Swordtail from Rio Candelaria in Southern Mexico:
Wow! What a gem!



Mollyfish from Rio Zamapa in Veracruz, Mexico:
How that's a pretty little gal! Notice the black spot on her dorsal (top) fin.

Drs. Steve Kazianis and Rodney Nairn study UV-induced melanoma in fish.

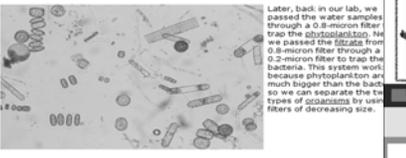
Teach some science and prevention

Ocean Sampling

To isolate bacteria from the ocean, we used a small rubber boat called a Zodiac to go to many sites out on the water. We used the global positioning system (GPS) to find these sites. Once we arrived at each site, we sent down containers to specific depths and collected a water sample.



Later, back in our lab, we passed the water samples through a 0.8-micron filter from the phytoplankton. We passed the filtrate from 0.8-micron filter through a 0.2-micron filter to trap the bacteria. This system works because phytoplankton are much bigger than the bacteria so we can separate the two types of organisms by using filters of decreasing size.



Palmer Station Area Map

Click icons for more information.



Graph your data using a line graph.

QUESTIONS

1. What time of day was the sun's UV intensity the greatest?
2. What time of day was the sun's UV intensity the least?
3. At what time of day would it be safest to take a walk? Explain your answer.
4. If you took a walk at 1:00 p.m., what type of precautions would you take before going out?

EXTENSION

- Using the scientific method, plan and conduct your own UV experiment using the Sun Smart UV Intensity Meter.

Skin cancer is the most common form of cancer. By going "undercover" to reduce your risk, it's also the most preventable!



UV Did You Know?

Hi! I'm Sunspot, I'm a friend of yours. I'm a friendly and helpful sun. I'll provide you with information about the sun and its effects on your skin.



I have learned in recent years that some of you are sunbathing more than ever. It is important to understand how a person can take steps to protect their skin.

Exposure to the sun's rays of energy that travels in waves (light) is the most common cause of skin cancer. The sun's rays are made up of ultraviolet (UV) radiation. Some of the UV radiation that reaches the earth's surface is called UVA. Some is called UVB. Both UVA and UVB can damage the DNA in your skin cells. This damage can lead to skin cancer. UVA is the most common cause of skin cancer. UVB is the most dangerous. UVB is the most common cause of sunburn. UVB is the most common cause of skin cancer.

Want to know what a word means?

GLOSSARY

Antarctic Peninsula The southernmost part of the continent of Antarctica. It is a narrow strip of land that extends from the continent to the tip of South America.

Antarctic Peninsula The southernmost part of the continent of Antarctica. It is a narrow strip of land that extends from the continent to the tip of South America.

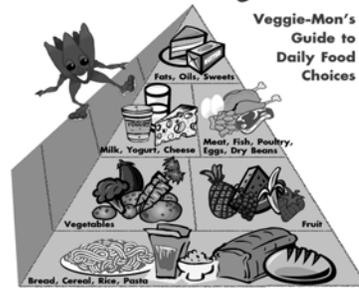
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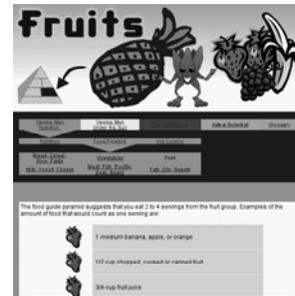
Diet and Nutrition Information, Recipes



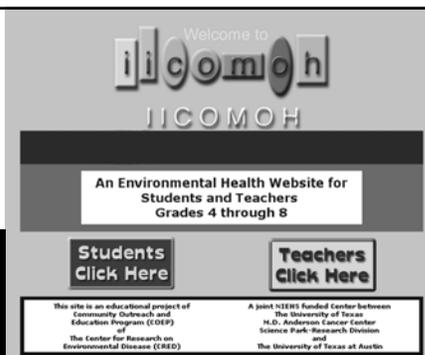
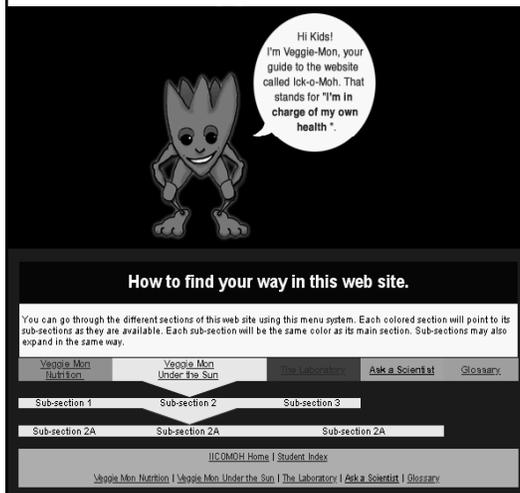
Food Guide Pyramid



Diet is a major contributor to cancer risk and important intervention target



III. Site Design and Development Always storyboard, Always content poor



Design colorful, flexible (easy to add to) and easy to pilot around

Enthusiastic, organized
 and talented people
 Seth Peebles
 Sherry Scott
 Marsha Jenkins
 Teachers



VEGGIE MON Nutrition
 Decisions, decisions. They're all calling my name!!

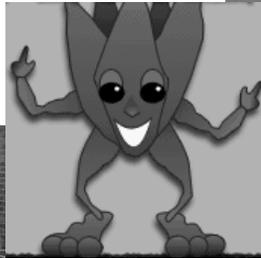
Items needed for experiment:
 Apple, Lemon, Knife

Instructions:
 1. Make two shallow apple slices by cutting vertically along the axis of the stem. Look at the picture below to see what your apple cut should look like.
 2. Put the apple slices peel side down on your paper plates or bowl sections, so they look like two small hubcaps.
 3. Squeeze a generous portion of the lemon juice onto only one of the apple slices. Leave the slices for an hour.

Don Cook's apple oxidation experiment

Impact

Numbers:
 Check "hits" monthly
 1842 since Dec. 2000
 Increasing ~ 200/month



Spreading the word:
 In-service programs
 Fliers, cards
 Letters to regional service ctrs.
 EHE Quarterly

Kids Interviewed:

- Liked the site**
- Would tell their friends**
- Want Action**
- Want to “do stuff”**

Older kids migrated to experiments and expedition

Younger ones to food and characters

Sunspot's UV Quiz Game - Question #1 - Correct

Yeah! You got this one right

Radiation is one form of energy that travels in waves, just like waves of water on a pond. The distance between the tops of the waves is called the wavelength. Some radiation is like short waves all bunched up while other radiation has long, stretched out waves. We measure these waves using a tiny length of measurement called a nanometer, or nm for short.

[Go to next question](#)

Sunspot's UV Quiz Game - Question #2 - Incorrect

Sorry!

You may want to review the [Sunlight and Cancer Did You Know Info.](#)

Informative Fish

Scientists here at Science Park have been studying fish. We study these fish to better understand how certain cancers develop in humans. The three groups of fish that we study are Northern Swordtails, Southern Swordtails, and Platfish. These names probably sound familiar to you. That's because these fish are common at pet stores. We don't get our fish at the local pet store though. These fish are native to Mexico and Central America. So we go to Mexico to get them. That makes working with these fish even more fun!

[Go to next question](#)

Ask a Scientist

Ask us scientific questions about the environment and what you have learned from our website. After you send your question to us, we will get a "real" scientist to answer and put the answer on our website. Look for the answer to your question after 2 weeks.

Click on the letter below to send your question to a real scientist:

ASK A SCIENTIST

Veggie-mon goes International!

Euroskin and WHO Campaign against skin cancer in children

Primary cause - sun and UV

The screenshot displays the Veggie Mon website interface. At the top, the navigation menu includes: Veggie Mon (Home), Veggie Mon Under the Sun, The Laboratory, Ask a Scientist, and Glossary. Below the menu, there are several interactive sections:

- UV Did You Know?**: A section featuring Sunspot, a cartoon character, with the text: "Hi I'm Sunspot. I'm a friend of Veggie Mon and Strawberry Girl. I'll guide you through this portion of the website about the sun and its effects on your skin." Below this are buttons for "Veggie Mon Under the Sun", "Ask a Scientist", and "Interactive Fish".
- Under Cover - UV Experiment**: A detailed experiment page with instructions, a "BE SAFE IN THE SUN" graphic, and a data table for recording UV intensity.
- What Would You Like to Explore?**: A menu with options: "I want to read about sunlight & cancer and I want to play Sunspot's quiz", "Find out about Antarctica! in Bacteria Blues", and "Interactive Fish".
- Footer**: Contains text about skin cancer awareness: "Scientists have learned in recent years that over-exposure of skin to sunlight is more dangerous than was believed a few decades ago. It is important to understand sunlight and how a person can take protective steps." and a link to "Read the Sunspot and Cancer: Did You Know info and then take Sunspots' UV Game Quiz to see how much you have learned!"

Coming:

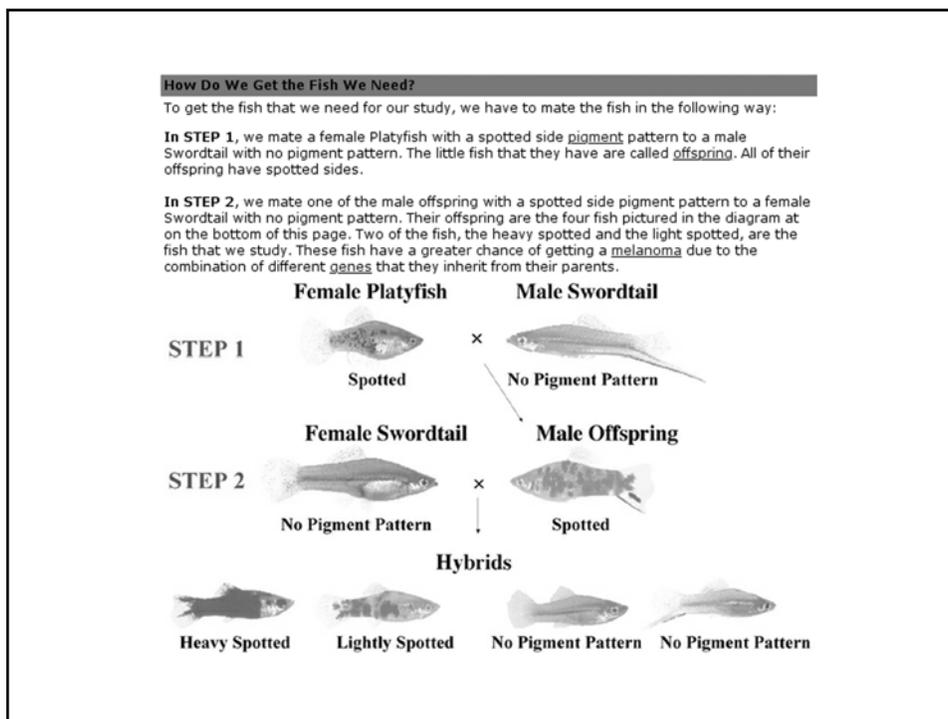
New sections on Tobacco avoidance - featuring "Igna Ray Mouse"

More experiments, games and puzzles in each section

Classroom evaluation - Sabra Spaw

Veggie-mon en Espanol y Deutch

The screenshot shows the "The Laboratory" section of the website. It features a cartoon scientist character and text that reads: "Welcome to Veggie Mon's Laboratory" and "Kids - be sure to visit the laboratory again - we'll be adding new experiments." Below this, there are buttons for "Tobacco Avoidance Experiment" and "UV Experiment". A large button at the bottom says "click on the experiment you would like to see".



III.4 K-12 Outreach Technologies, University of Washington COEP

Presenter: Jon Sharpe

Educational Technology in K-12 Outreach



Jon Sharpe
Center for Ecogenetics &
Environmental Health
Email: jsharpe@u.washington.edu

Presentation Goals

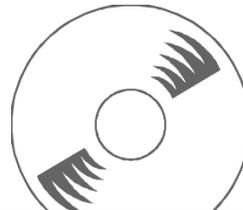
- Present three CEEH K-12 outreach projects that are enhanced by technology
- Compare and contrast strengths and challenges of the various media
- Provide a matrix comparing the media



Community Outreach & Education Program

Case 1: CD-ROM

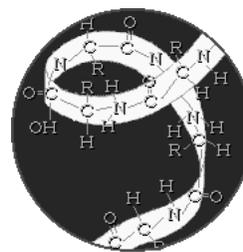
- *Essentials of Cell Biology: Toxicology in Action*
- Development funded by SEPA grant (94-97)



Community Outreach & Education Program

CD-ROM: Development

- PHASE 1: Beta version was “a textbook with animations” - state of the art for its time
- Cell Biology used as a “hook” for science teachers
- Toxic Connections introduced toxicology concepts



Community Outreach & Education Program

CD-ROM: Development

- PHASE 2: Second edition adds more interactive shell and introduces Professor Chen, toxicologist
- Much of the new content is recycled from other curriculum projects



Community Outreach & Education Program

CD-ROM: Dissemination

- SEPA grant funds 1000 CDs of 1st edition
- Partnership with SOT Toxicology Education Foundation (TEF) funds 2nd edition remastering, packaging and printing of 2000 copies
- CD is currently distributed at teacher conferences and through advertisement in *American Biology Teacher* (NABT).



Community Outreach & Education Program

CD-ROM: Evaluation

- Each recipient is asked to complete a one page evaluation (return reply envelope provided)
- Distribution list is being compiled and recipients will be sent a reminder to complete the evaluation, possibly with additional incentives



Community Outreach & Education Program

CD-ROM: Strengths

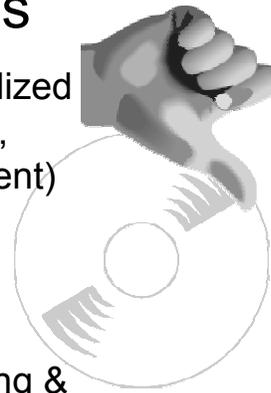
- Tangible product: attractive giveaway at conferences, etc.
- No Internet connectivity necessary to run the program
- High level of control over use and distribution



Community Outreach & Education Program

CD-ROM: Challenges

- Development requires specialized skills (programming, graphics, multimedia project management)
- Fixed medium
- No real-time interactive possibilities
- High cost of printing, packaging & mailing



Community Outreach & Education Program

Case 2: Web Curriculum

- *Project Greenskate*
- Partially supported by SEPA grant (96-00) and UW Superfund Basic Research Program (SBRP)



Community Outreach & Education Program

Web Site: Development

- Created as an adventure game - students seek out “key documents” to understand a fictional hazardous waste scenario
- Program asks students to gather information, then interpret it off-line
- Content shared with 2nd edition of CD-ROM



Community Outreach & Education Program

Web Site: Dissemination

- Site first published in 1999
- Database keeps demographic information about users
- Site is promoted at teacher conferences, in program newsletter and through web links on other sites



Community Outreach & Education Program

Web Site: Evaluation

- Site has been evaluated in focus groups and with teachers during workshops
- Evaluation has been mostly formative, (i.e. it has helped improve the site)
- User tracking through the database provides an opportunity for follow-up with users through email, etc.



Community Outreach & Education Program

Web Site: Strengths

- Instant availability once the site goes live
- Higher level of interactivity - users can easily connect to developers in real time and can jump to other sites
- Content can be continuously updated
- Users can be tracked and queried



Community Outreach & Education Program

Web Site: Challenges

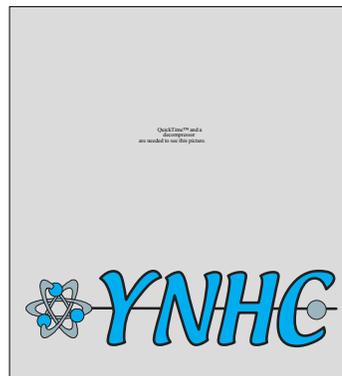
- Intangible product - tough to compete with the many other sites out there
- Depends on reliable connectivity in classroom and a robust server
- Low level of control over use and distribution



Community Outreach & Education Program

Case 3: Videoconferencing

- *Youth Network for Healthy Communities*
- Funded by Center COEP supplement (00-01)



Community Outreach & Education Program

VC: Development

- Project began as part of the CEEH town meeting, *Voices for Health Environments, Healthy Communities* (9/00)
- Partnership with 2 high school teachers
- Uses new statewide K20 network
- Materials include a *Teacher's Guide* and taped orientation session



Community Outreach & Education Program

VC: Dissemination

- Teachers are recruited through word of mouth and at regional teacher conferences
- Teachers attend a one hour orientation videoconference
- After five weeks of classroom work, students present a community-based EH research project via videoconference



Community Outreach & Education Program

VC: Dissemination

YNHC
Participating
sites
Fall 2000
through
Fall 2001



Community Outreach & Education Program

VC: Dissemination

Student research topics in 2000-01 included:

- Health hazards from diesel power generator emissions
- Health impacts of a proposed Gold Mine
- Heavy metals in the Coeur d'Alene watershed
- Safety of reclaimed water
- Human health effects of wildfires
- Migrant farmworkers at risk from pesticides
- Water quality in Lake Osoyoos



Community Outreach & Education Program

VC: Evaluation

- Overall project rating: Teachers = 4.2, Students = 3.8 (5 = outstanding)
- Teachers liked the use of new technology, the community connection, and the interaction between schools.
- “I found that it helped bring our class together. It made us be creative and insightful. We learned a lot about our town.” - *student*



Community Outreach & Education Program

VC: Strengths

- Minimal development time - orientation content and teacher materials only.
- Excellent “presence” and interactivity - especially for rural schools
- Students are active, not passive users of technology
- Easily involves CEEH experts



Community Outreach & Education Program

VC: Challenges

- Hook-ups can be unstable, technology is still new
- Steep learning curve for staff
- Teachers and students don't take full advantage of CEEH resources
- Researchers are somewhat hesitant to participate



Community Outreach & Education Program

	Ease of development	Max # students reached	Interactivity/ Presence	User enthusiasm
CD-ROM	LO	MED	MED	LO
Web-based	LO	HI	MED	MED
Video conference	MED	LO	HI	HI



Community Outreach & Education Program

III.5 K-12 Outreach Technologies, University of Wisconsin at Madison COEP

Presenter: Kevin Niemi

Selected Web Resources in EHS

Kevin Niemi, Ph.D.
UW-Madison, EHS Center for
Developmental and Molecular
Toxicology

1

Center research topics

- Developmental biology
- Model organisms
- Genomics
- Bioinformatics
- Stem Cell research

10/24/01



2

Microarray Technology

Davidson University

<http://www.bio.davidson.edu/courses/genomics/chip/chip.html>

10/24/01



3

Molecules

Visualization of molecular structures

<http://molvent.com>

10/24/01



4

Campus class visit activities

- Day-long visit of local Madison area high school and Tribal school group of 11th and 12th graders
- 50 students total, split group into two
- Dr. Ralph Albrecht, Advanced Microscopy FSC leader

10/24/01



5

Biotechnology Center activities

- DNA discussion (10 minutes)
- Computer lab activities (see PP handout, 90 minutes)
- Walking tour of building (e.g, sequencing lab, 20 minutes)

10/24/01



6

Questions?

10/24/01

UNIVERSITY OF WISCONSIN

EHS Center

7

III.6 Nursing and Environmental Health: Emerging Roles in Education, Research, and Practice

Presenter: Barbara Sattler

Nursing and Environmental Health



Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

Nurses:
1:100 Americans
2.5 million



Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

Demographics of the Nursing Profession:

- Primarily white and female
 - 5.4% male
 - 4.2% African American
 - 3.4% Asian/Pacific Islander
 - 1.6% Hispanic
 - .5% Native American / Alaskan Native
- Average Age 46 years old

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing



RN Licensure:
Graduate School of Nursing
Pass State Boards

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

Registered Nurses must be licensed by the state in the state in which they practice.



Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

Educational Preparation: (1992 Data)

- 2-year Associates Degree Programs (731,613)
- 3-year Diploma Programs (hospital affiliated) (502,959)
- 4-year Baccalaureate Programs (672,915)

193,159 Master's prepared
14,300 Doctorally prepared

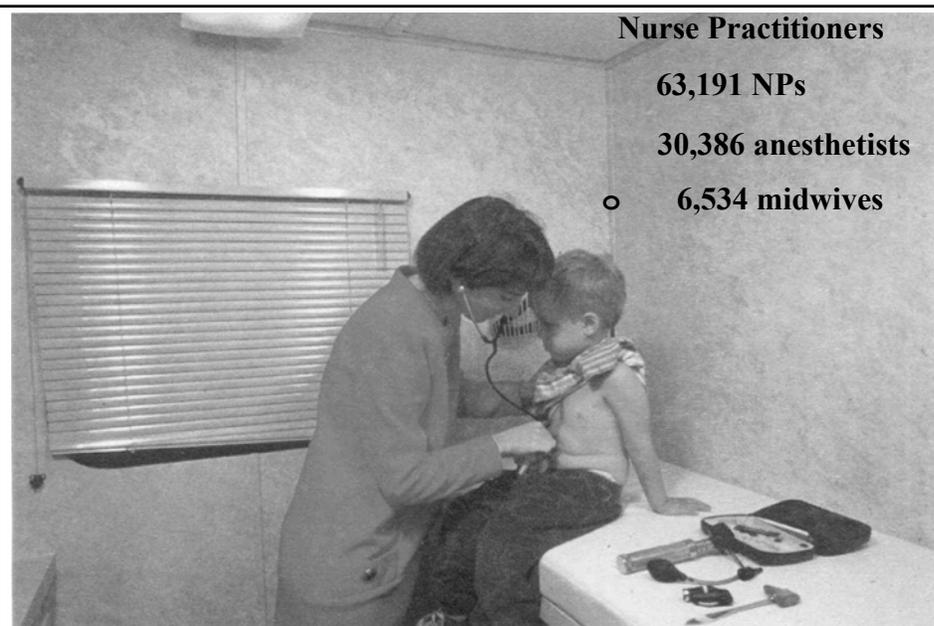
Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing



Master's Degree Preparation:

Nurse Practitioners (Adult, Pediatric, Family,
Psychiatric and other)

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing



Nurse Practitioners

63,191 NPs

30,386 anesthetists

○ **6,534 midwives**

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing



Doctoral Preparation in Nursing
and other fields (microbiology,
epidemiology, health education,
health policy)



Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing



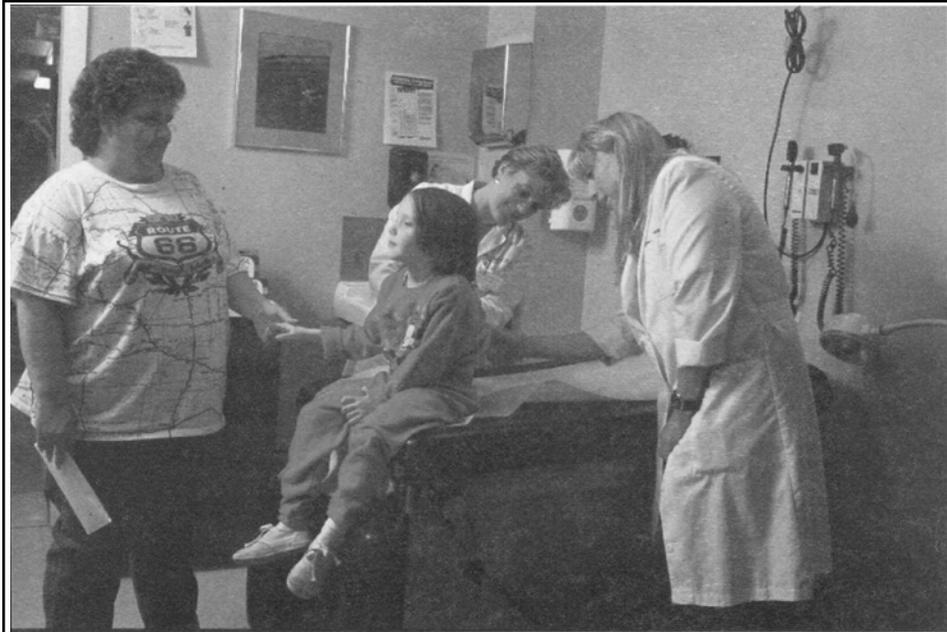
Where do nurses work?

Within tradition “health care settings” – hospitals, clinics, nursing homes, doctors’ offices, mental health facilities

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing



Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing



Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing



Nurses also work where
people work, play, live, and
learn



Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

Nurses identify “communities” in order to deliver care, education, and interventions:

- Geographically
- By age
- By disease
- By logical groupings
- By behaviors/exposures

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing



Nursing practice is science/evidence based.

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

PUBLIC HEALTH NURSING PHN INTERVENTIONS:

Advocacy
Case Management
Coalition Building
Collaboration
Community Organizing
Consultation

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

PHN Interventions

Counseling
Delegated medical Rx

Disease investigation
Health teaching
Outreach/case finding

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

PHN Interventions

Policy development
Provider education
Referral and follow up
Screening social marketing
Surveillance

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

Nurses are trusted sources of health
information.



Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

New Environmental Health and Nursing Initiatives:

- Kellogg Faculty Development
- NEETF Health Professional Project
- ATSDR Nursing Initiative
- EPA Activities
- HRSA Advanced Nursing Education
- Health Care Without Harm
- APHA

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

Why connect with nurses?

- Enhance community connections / facilitate dialog
- Identify populations at risk
- Improve community education and risk communication
- Expand the multidisciplinary nature of your EH work
- Assist with translating science into policy
- Enlist undergraduate and graduate students for data collection

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

How to connect to nurses?

- State and local health departments
- Hire nurses as project managers.
- Nursing professional associations
- Nursing Schools
- Schools of Public Health

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

www.enviRN.umaryland.edu

bsattler@son.umaryland.edu

Barbara Sattler, RN, DrPH
University of Maryland
School of Nursing

III.7 Outreach to Nurses: Lessons Learned by an ERC Visiting Scholar

Presenter: Ellen Ceppetelli

Outreach to Nurses: Lessons Learned by a Visiting Scholar

Ellen Ceppetelli, MS,RNC
Director of Nursing Education
Dartmouth Hitchcock Medical Center

Community Outreach Education Program
Annual Meeting
Austin ,Texas October 28, 2001

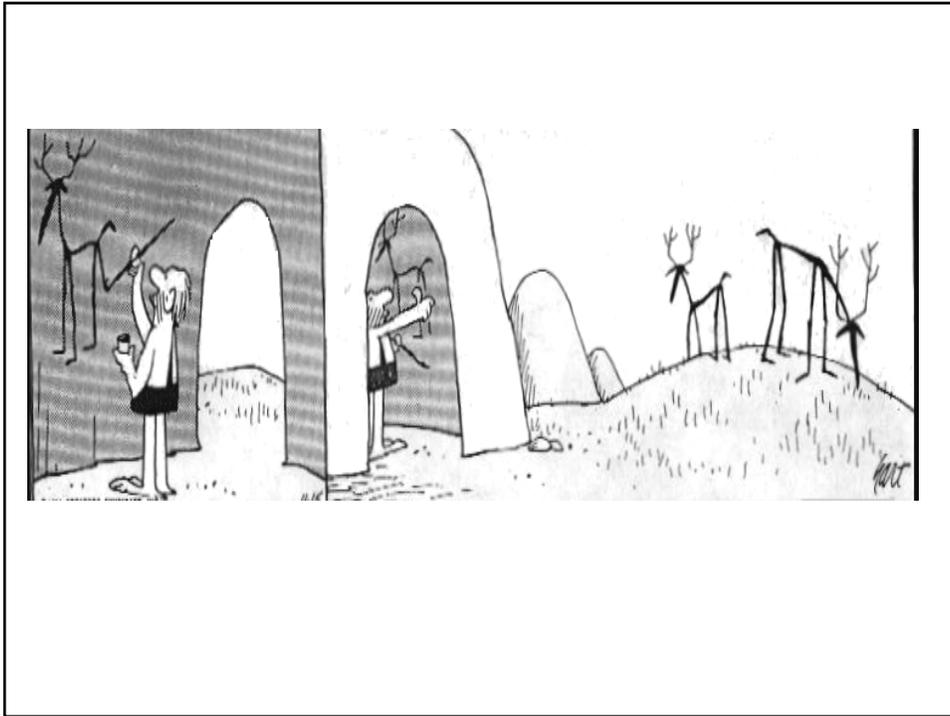


Community Outreach Education Program

Serves as a bridge between research
& community by converting the
science to understandable &
culturally appropriate formats

My Goal

Assist COEP to develop or
enhance interactions with the
nursing community

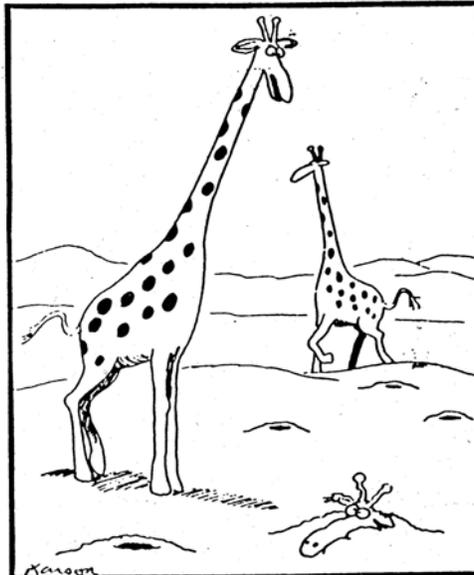


OUTCOMES

- Think about new opportunities
- Tailor existing outreach efforts to connect with the nursing community

Why Outreach to Nurses?

- Trusted health-care professionals
- Knowledge workers
- Values / passion
- Privileged intimacy
- 2.4 million nurses
- Nurses are everywhere
- Your link to guide in the community

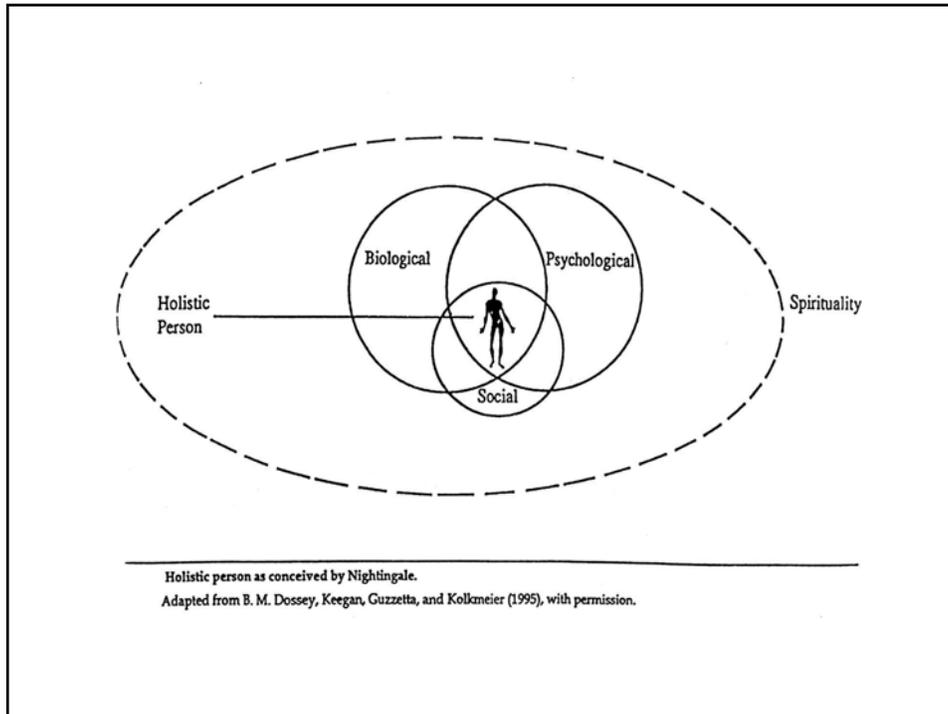


"You've got to watch out for them
gopher holes, Roger."

The Challenges of Connecting to Nurses: A SWAT Analysis

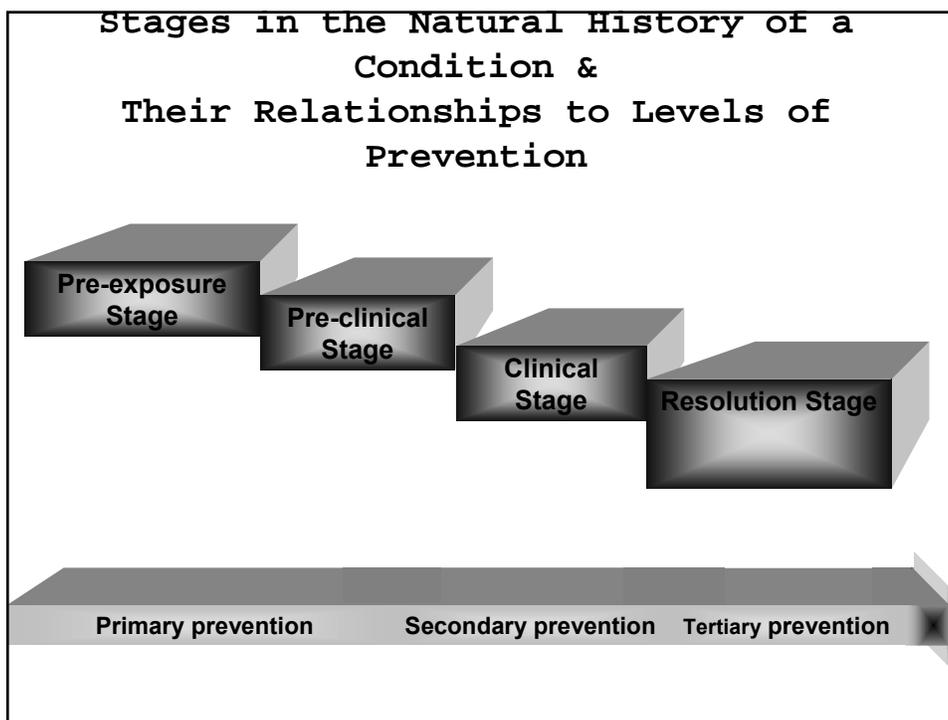
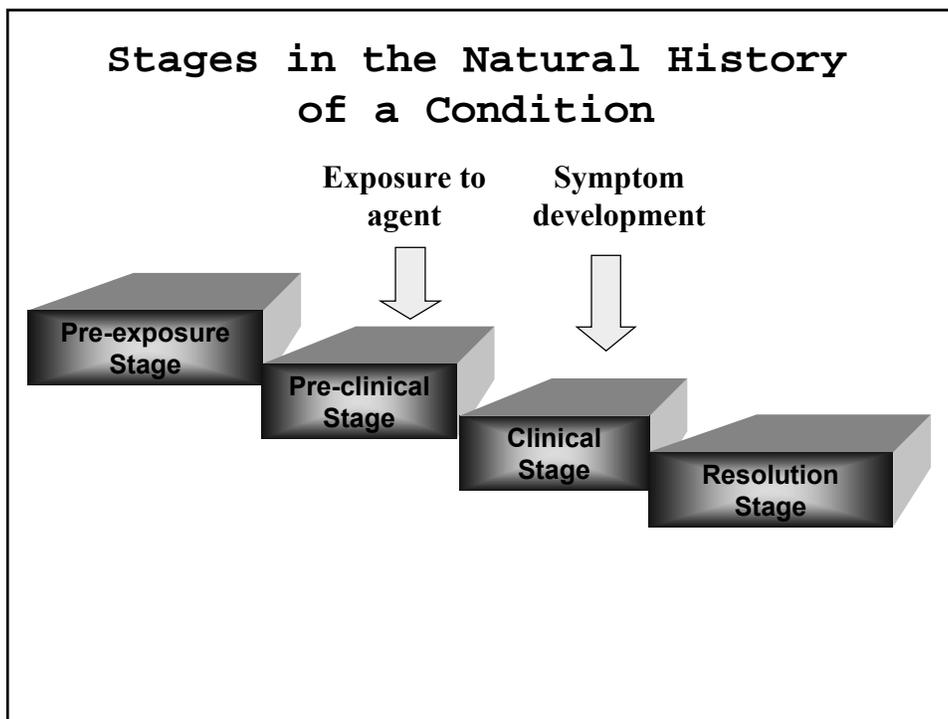
Strengths

- Continuous learners
- Advocates for patients
- Team players & ideal partners
- Skilled communicators]
- Value competency/ quality care
- Holism



Weaknesses

- Unaware of significance of environment-health connection
- Untapped role in health promotion
- Lack role models in practice
- Lack skills to advocate for populations
- Assume environment is responsibility of public health nurses
- Don't know they need to know



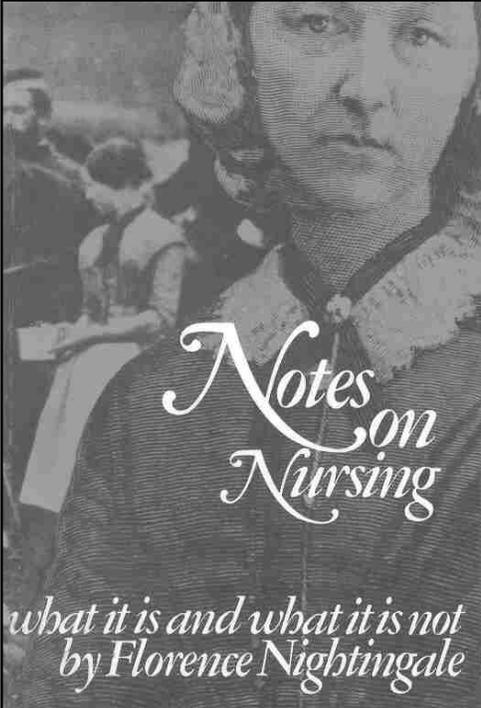
IOM Recommendations

Basic Knowledge and Concepts

Assessment and Referral

Advocacy, Ethics, and Risk
Communication

Legislation and Regulation



Notes on Nursing
what it is and what it is not
by Florence Nightingale

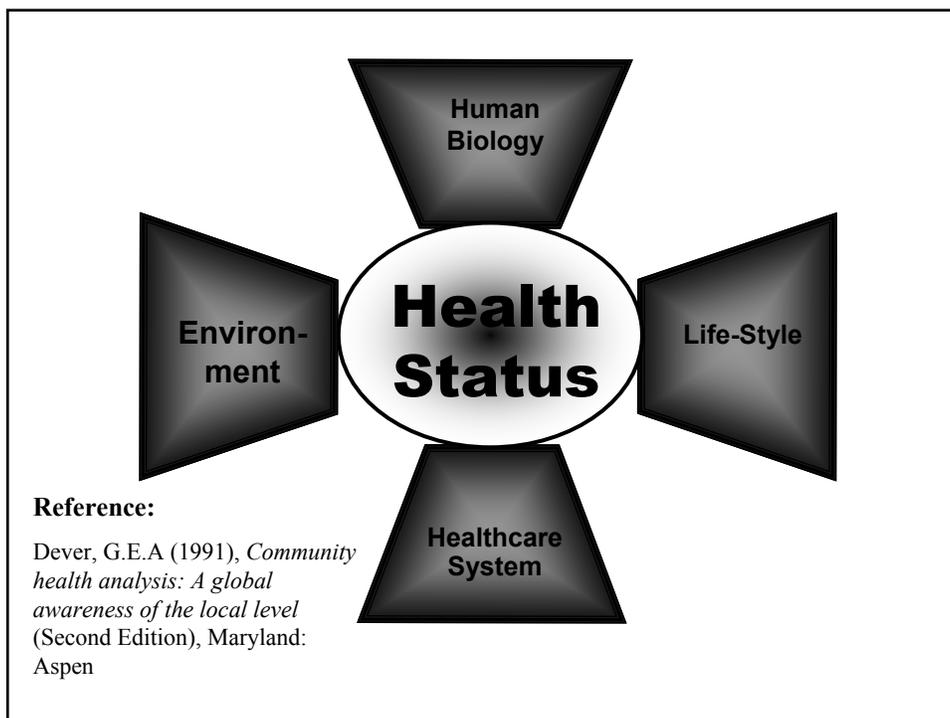
“No amount of medical knowledge will lessen the accountability for nurses to do what nurses do, that is, manage the environment to promote positive life processes.”

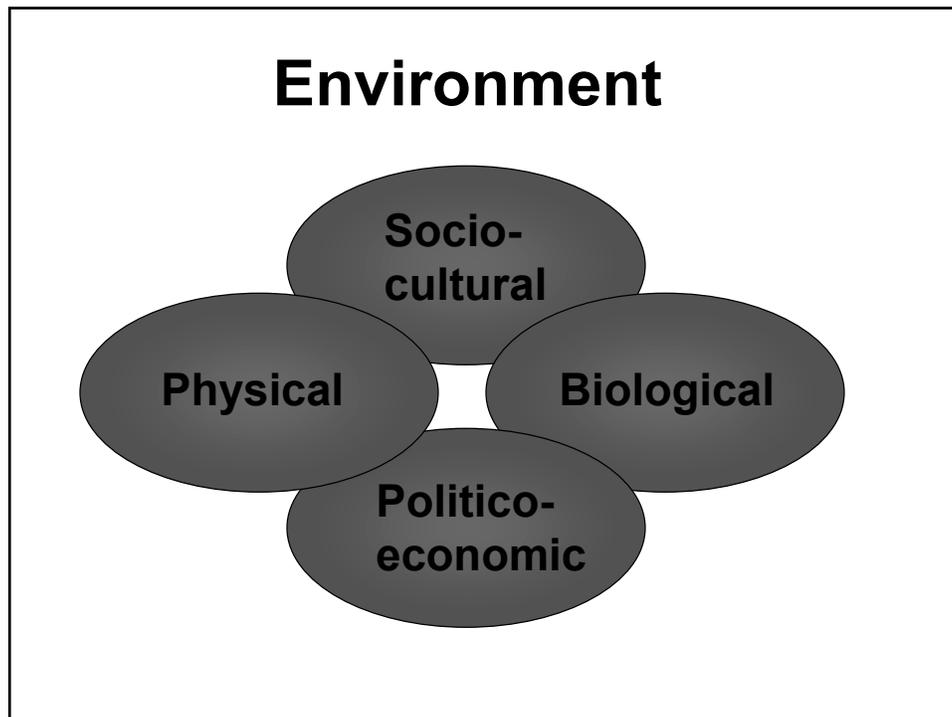
Metaparadigm of Nursing

- *Person*
- *Environment*
- *Health*
- *Nursing*

Threats

- Increasing environmental threats to health
- Nursing shortage
- Missed diagnoses
- Missed opportunities
- Reimbursement
- Continue to select non-environmental CE activities
- HCDS focus-episodic care to acute and chronically ill





Opportunities

- **Unanswered patient questions**
- **Vulnerable populations**
- **Environmental concerns in own community**
- **Unexpected national events**



My Journey

HARVARD VISITING SCHOLAR



ASSOCIATE PROFESSOR NORWICH UNIVERSITY



CURRICULUM DEVELOPER/ASSISTANT PROFESSOR DCE UVM



DIRECTOR OF NURSING EDUCATION DHMC

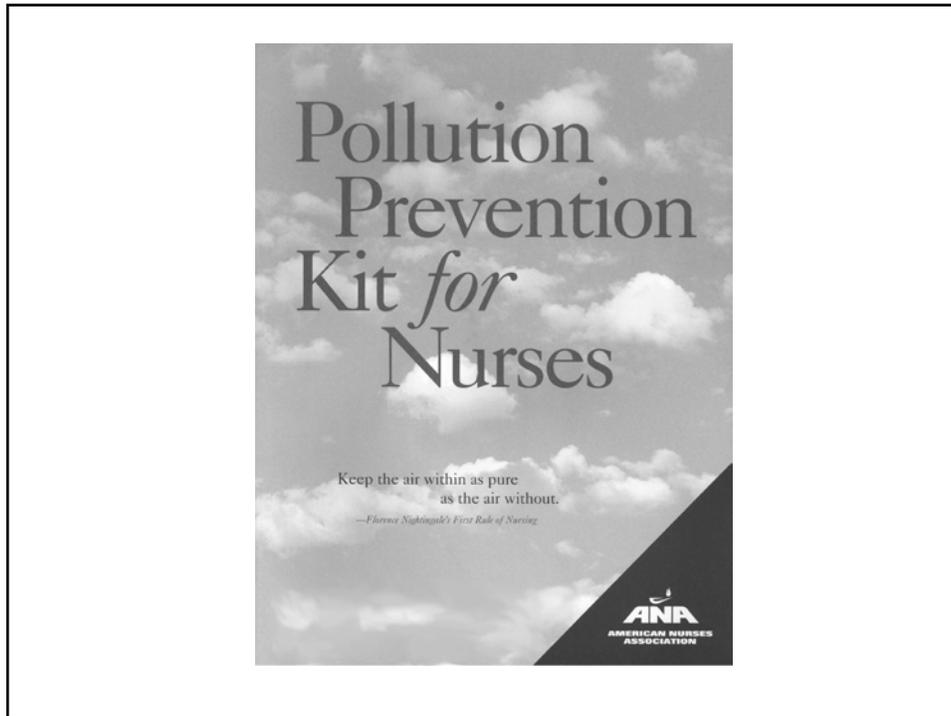


Nursing Summit-Jan 1997

- American Nurses Association
- VT State Nurses Association
- University of Vermont
 - School of Nursing
 - Continuing Education
- Association of Operating Room Nurses
- Physicians for Social Responsibility
- Healthcare Without Harm

1998 Summit Outcomes

- VSNA resolution changed ANA CE agenda
- HCI Impact Teleconference
- John Merck Fund-EPA Connection
- ANA -IAQ
- Pollution Prevention Kit
- NEPHA meeting
- UVM /ANA partner to create "Need to Know" ISM video series



1999 Outcomes

- SNA of Vermont
- SNA of New York
- Association of State and Territorial Directors of Nursing
- International Council of Nursing
- Nightingale Institute for Health and in the Environment Board
- American Lung Association Council Member
- ERC Advisory Committee

2000 Outcomes

- Health & Environment ISMS
- EPA waste management video
- Needlestick Teleconference, ISMs & Workshops
- AONE
- NHONE
- ANA Council Nurse Educators
- American Public Health Association

Health & Environment Teleconference Series

- University of Maryland
- NIEHS
- EPA REGION One
- ATSDR
- HSPH/Divinity
- ANA
- USC
- ALA of VT
- VT DOH

2001 Outcomes

- Adjunct Professor-University of Vermont
- EPA Waste plan video
- American Lung Association Board member
- Simmons College Advisory Committee
- Planning for New England Nursing Summits

Lessons Learned

- First educate nurse leaders
- Next:
 - Workshops
 - Distance learning
 - Independent study modules
 - Toolkits for action

Lessons Learned

- Partner to get environmental health on the agenda of national associations
- Maximize connections with leaders, disciplines, and schools with mutual interest/goals
- Connect with funding sources

Lessons learned

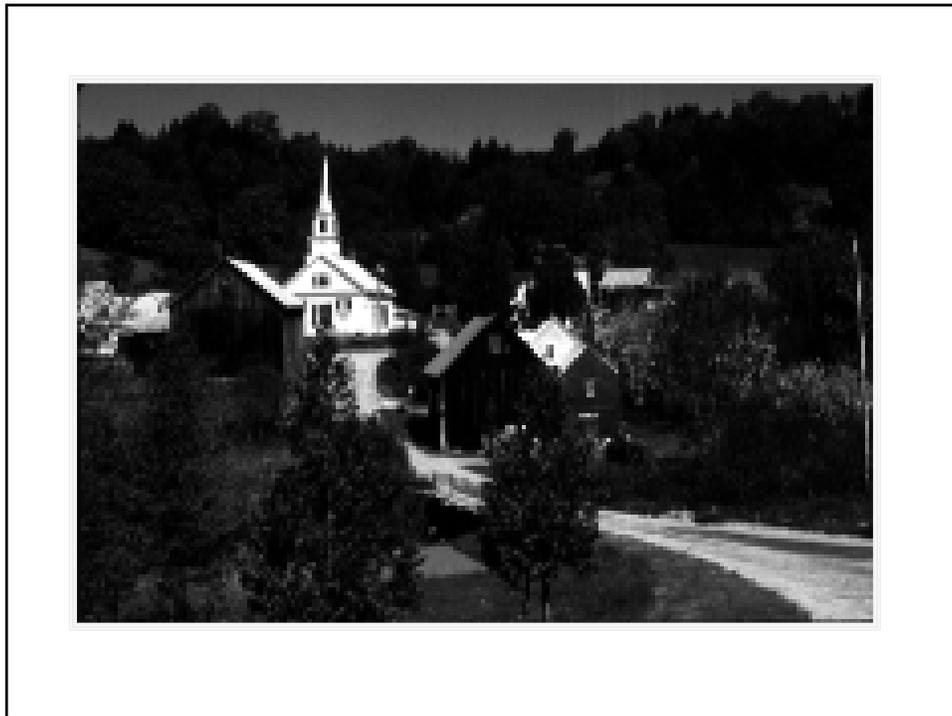
- National Speaker Experience
 - Vulnerable population connection
 - Feature as general session
 - Fewer chose voluntarily
 - Everyone needs to know
 - Personalize the reality of exposed communities

Enhance COEP Programs

- University of Arizona
- University of Iowa
- University of Rochester
- ****University of Southern California

“Nursing is a progressive art in which to stand still is to go back.”

Florence Nightingale



III.8 COEP Resource Center Update and Future Activities

Presenter: Karalyn Colopy

Development of the COEP Resource Center: Current Status and Future Plans

Karalyn Colopy
COEP Resource Center Director



Presentation Outline



Presentation Outline



Why Create a Resource Center?

- Interest expressed by Center Directors
- To help COEPs communicate with each other
- To be a centralized source of information about NIEHS-supported outreach and education efforts
- To maintain archives of COEP materials



Background

Current Status

Future Plans

Questions

Resource Center Components

- Physical Resource Center
 - ◆ Library in Durham, NC
 - ◆ Printed catalog
- Virtual Resource Center
 - ◆ Web Site
 - ◆ On-line database of materials



Background

Current Status

Future Plans

Questions

Timeline

- October 2000
 - ◆ Begin contract with Analytical Sciences, Inc. (ASI)
- Spring 2001
 - ◆ Complete initial collection of COEP materials
- October 2001
 - ◆ Send printed catalog to COEPs
 - ◆ Open library
 - ◆ Launch Web site
- April 2002
 - ◆ Add database of downloadable materials to Web site



Presentation Outline



Resource Center Advisory Board

- Formed at 2000 Center Directors Meeting
- Nine volunteers
- Consulted for feedback
 - ◆ Scope of library and selection criteria
 - ◆ Web site issues



Background > **Current Status** > Future Plans > Questions

Collecting Materials

- Wrote Scope Statement and Selection Criteria
- Sent to COEPs with request to submit materials
- Created database of information about materials received
 - ◆ Bibliographic information
 - ◆ Subject terms
 - ◆ Availability
 - ◆ Abstract



Background > **Current Status** > Future Plans > Questions

Catalog

- Mailed to each COEP Director
- Information on all materials received as of August 2001
- Five indexes



Background > **Current Status** > Future Plans > Questions

Physical Resource Center

- Open to NIEHS and COEP visitors
- Houses collection and provides hardcopies of COEP materials
 - ◆ Videos
 - ◆ Newsletters
 - ◆ Curricula
 - ◆ Posters
 - ◆ Training manuals
 - ◆ And much more!



Background > **Current Status** > Future Plans > Questions

Web Site

- Wrote a design document to describe site features and navigation
- Incorporated COEP feedback
- Created designs
- Added content and programmed features
- <http://benson.niehs.nih.gov/coeprc>



Background > **Current Status** > Future Plans > Questions

NIEHS Community Outreach & Education Program Resource Center

SEARCH

Site Map Contact Us Policies/Disclaimers

Readings

Spotlight On:
UT's Center for Research on Environmental Disease

The COEP Resource Center is a gathering place for NIEHS-supported COEPs to

- Exchange information and ideas, and
- Share educational and outreach materials with each other and the public.

Please select a link to explore all the resources available.

About Us

Calendar

Electronic Information Resource Center

Links

COEP Listserv (Members Only)

Visit FirstGov

Background > **Current Status** > Future Plans > Questions

NIEHS Community Outreach & Education Program Resource Center

SEARCH

Site Map Contact Us Policies/Disclaimers

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Electronic Information Resource Center

About Us

Visit FirstGov

Background > **Current Status** > Future Plans > Questions

The screenshot shows the homepage of the NIEHS Community Outreach & Education Program Resource Center. At the top, there is a navigation bar with 'Background', 'Current Status', 'Future Plans', and 'Questions'. Below this is a search bar and links for 'Site Map', 'Contact Us', and 'Policies/Disclaimers'. A banner image features various people and a 'RADIONUCLIDES' sign. The main content area includes a central text block: 'The COEP Resource Center is a gathering place for NIEHS-supported COEPs to Exchange information and ideas, and Share educational and outreach materials with each other and the public. Please select a link to explore all the resources available.' To the right, a 'Spotlight On:' section highlights 'UT's Center for Research on Environmental Disease' and 'Reading Rooms'. A circular menu at the bottom contains links for 'About Us', 'Calendar', 'Electronic Information Resource Center', 'Links', and 'COEP Listserv (Members Only)'. A large arrow points from the central text to the 'Electronic Information Resource Center' link. The 'Visit FirstGov' logo is in the bottom right corner.

Background > **Current Status** > Future Plans > Questions

This screenshot is identical to the one above, showing the same website interface. However, a large arrow points from the right side of the page to the 'Links' link in the circular menu at the bottom.

Background > **Current Status** > Future Plans > Questions

NIEHS Community Outreach & Education Program Resource Center

SEARCH GO

Site Map Contact Us Policies/Disclaimers

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- Exchange information and ideas, and
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Spotlight On:
UT's Center for Research on Environmental Disease

Readings

COEP Listserv
(Members Only)

About Us **Calendar** **Electronic Information Resource Center** **Links**

Visit FirstGov

Background > **Current Status** > Future Plans > Questions

NIEHS Community Outreach & Education Program Resource Center

SEARCH GO

Site Map Contact Us Policies/Disclaimers

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Readings

COEP Listserv
(Members Only)

About Us **Calendar** **Electronic Information Resource Center** **Links**

Visit FirstGov

Background > **Current Status** > Future Plans > Questions

Visit FirstGov

Presentation Outline



Background >> Current Status >> **Future Plans** >> Questions

Web Site Maintenance and Upgrades

- Integrate database of downloadable materials, with ability to submit new materials on-line (by April 2002)
- Add new calendar events and Reading Room materials
- Write new Spotlight articles monthly
- Make other improvements based on feedback



Background >> Current Status >> **Future Plans** >> Questions

Library Expansion

- Continue adding new materials to the library
- Update catalog (in print and on Web) as necessary



Background > Current Status > **Future Plans** > Questions

Evaluation

- Ask for COEP evaluation of Resource Center services
 - ◆ Catalog
 - ◆ Web site



Background > Current Status > **Future Plans** > Questions

Under Consideration

- Write a periodic COEP newsletter
- Create a COEP informational brochure
- Develop a traveling COEP conference exhibit
- Assist COEPs with final production of materials
- Expand Resource Center to include other NIEHS outreach/education programs
- Other suggestions?



Your Homework Assignment



Your Homework Assignment

Continue to send in materials and
calendar items!



Presentation Outline



Appendix
59th EHS Center Directors Meeting, COEP Agenda

59th EHS CENTER DIRECTORS MEETING

Hosted by the EHS Center for Research on Environmental Disease and
The University of Texas M.D. Anderson Cancer Center, Science Park – Research Division

COEP Agenda

Saturday, October 27, 2001

Radisson Hotel & Suites

5:00 pm – 6:00 pm Poster Set-Up
6:00 pm – 10:00 pm Registration, Reception and Poster Session – *Mezzanine, Radisson Hotel*

Sunday, October 28, 2001

COEP Meeting (Radisson Hotel & Suites)

*All – Campus Tour, Reception, Poster Session, Dinner and Entertainment
UT M. D. Anderson Cancer Center, Science Park – Research Division (SPRD)*

7:45 am – 8:30 am Continental Breakfast – *Mezzanine, Radisson Hotel*
Meeting – Mezzanine, Radisson Hotel

8:30 am – 8:35 pm Welcome - Dr. John DiGiovanni, UT M. D. Anderson Cancer Center, Smithville

8:35 am – 9:30 am COEP Organization – Liam O’Fallon, Moderator

9:30 am – 11:30 am K-12 Outreach Technologies: CD-ROM, the web, video conferencing, and beyond – Robin Fuchs-Young, Moderator

- Heidi Nepf, MIT
- Stefani Hines, University of Arizona
- Robin Fuchs-Young, UT M. D. Anderson Cancer Center, Smithville
- Jon Sharpe, University of Washington
- Kevin Niemi, University of Wisconsin - Madison
- Bill Mowczko, Office of Science Education, NIH
- Discussion

11:30 am – 12:30 pm Lunch

12:30 pm – 2:00 pm Outreach to Nursing Community – Ann Backus, Moderator

- Barbara Sattler
“Nursing and Environmental Health: Emerging Roles in Education, Research, and Practice”
- Ellen Ceppetelli
“Outreach to Nurses: Lessons Learned by an ERC Visiting Scholar”
- Ann Backus (10 min)
Harvard Visiting Scholar Program & Nurses
- Ed Brooks, UTMB (10 min)
Asthma in Schools Outreach
- Q&A (10 min)

2:00 pm – 2:30 pm COEP Resource Center, Karalyn Colopy

- Update
- Future Activities

2:30 pm – 2:45 pm	Collaborative Opportunities and Meeting Recap
2:45 pm	Meeting adjourned
3:00 pm – 4:00 pm	Transportation from Hotel to SPRD – <i>Lobby, Radisson Hotel</i>
4:00 pm – 5:00 pm	Tour of SPRD
4:30 pm – 6:00 pm	Reception and Poster Session – <i>SPRD</i>
6:00 pm – 8:30 pm	Dinner and Entertainment – <i>SPRD</i>
8:30 pm – 9:30 pm	Transportation from SPRD to Hotel – <i>SPRD</i>

Monday, October 29, 2001
Scientific Symposium (Avaya Auditorium)
Applied Computational Engineering & Sciences (ACES) Building
201 East 24th Street
University of Texas at Austin

7:30 am – 8:00 am	Transportation from Radisson Hotel to ACES Building
8:00 am – 8:30 am	Continental Breakfast
8:30 am – 12:00 pm	Scientific Symposium
12:00 pm – 1:00 pm	Lunch
1:00 am – 5:00 pm	Scientific Symposium
5:00 pm – 5:30 pm	Transportation from ACES Building to Radisson Hotel
6:30 pm – 9:00 pm	Dinner and Entertainment – <i>Four Seasons Hotel</i>

Tuesday, October 30, 2001
General Meeting of Center Directors, Administrators and COEP
Radisson Hotel & Suites
Mezzanine, Austin Room

7:15 am – 8:00 am	Continental Breakfast
8 :00 am – 8:10 am	Opening Remarks Dr. Margaret Kripke, E.V.P. and Chief Academic Officer UT M. D. Anderson Cancer Center
8:10 am – 8:55 am	Report from COEP Meeting and Discussion with Center Directors Liam O’Fallon, NIEHS
8:55 am – 10:10 am	Report from FY00 Administrative Supplements Dr. Allen Dearry, NIEHS
10:10 am – 10:30 am	Break
10:30 am – 11:30 am	Director’s Report Dr. Kenneth Olden, NIEHS
11:30 am – 11:45 am	Extramural Research Update Dr. Anne Sassaman, NIEHS
11:45 am	Adjourn