

Public Health Practice



Stories from the Field

The University of Texas School of Public Health
Student Practicum Experiences
Fall 2014 – Environmental & Occupational Health

Prevention diabetes safe kids clean water policy disaster response
cancer adolescent sexual health HIV/AIDS research obesity
alcohol empowerment vaccinations maternal & child health

The practicum experience is an integral part of the MPH and DrPH curricula. Public health students are provided with the opportunity to apply their classroom knowledge to real world settings through which they make a meaningful contribution to a public health organization.

Under the guidance of a community preceptor and faculty sponsor, students from all divisions gain a deeper understanding of public health practice, interact with professionals in the field, and expand their repertoire of professional skills.

This fifteenth-edition e-magazine showcases student practicum experiences throughout the Fall 2014 semester. (Prior semesters may be accessed through the e-book, a collection of student abstracts and e-magazines describing their experiences.)



Practicum Topics

Serving Size: 1 Practicum per Student

Servings per e-Magazine: 4

Hours per Week per Student	Approximately 12
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Campuses (Houston)	1
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Division	1
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Student

Environmental & Occupational Health

Research Laboratory Safety	Jingwei Fan
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Environmental Laboratory Safety	Funmi Omagbemi
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Congenital Heart Disease	Mojisola Popoola
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Air Quality Monitoring	Olusegun Popoola
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Research Laboratory Safety



A picture demonstrating proper personal protective equipment (PPE) in a research lab setting.

Source:

http://www.pharmaceutical-int.com/gallery/laboratory-consumables/laboratory-safety-gloves_01.html

Lessons in Research Laboratory Safety

By: Jingwei Fan

This fall I was fortunate enough to intern at Baylor College of Medicine (BCM). I was in the Environmental Safety Department and assisted an Environmental Safety Specialist with lab safety work, which has a direct impact on creating and maintaining a safe working environment. My main tasks were doing research lab safety surveys, recording chemical inventories and performing laboratory safety inspections.

The central idea of my project was to perform lab inspections in order to assist in improving the safety of employees in the research lab environment. Lab inspections included recording lab deficiencies, and generating a report to notify principal investigators about potential safety hazards in their labs. In addition, we posted lab door or bench signs that had information based on the hazards we had noted in each area. Behind the lab door signs, we posted the chemical inventories.

Public Health Significance

More than 500,000 workers are employed in laboratories in the U.S. The laboratory environment can be a hazardous place to work. Laboratory workers may be exposed to numerous potential hazards including chemical, biological, radiological and physical hazards, as well as, musculoskeletal stresses.

Research laboratory safety at BCM is governed by guidelines and regulations. The work I did was to monitor compliance with these guidelines and regulations and

provide guidance on creating a safer working environment, enhancing the public health of the workers, and the public. It is important to keep these hazardous materials contained in order to protect both the workers and the public. Many regulations, including local, state and federal, place limits on the release of hazardous materials. Research institutions must comply with these regulations.

Practicum Duties

- Completing laboratory safety surveys.
- Recording chemical inventories.
- Performing equipment inspections prior to repair, maintenance or disposal.
- Posting hazard warning signs.

Lessons Learned and Advice for Future Students

- Hazard communication is important in the working environment. This is related to the information we learned in class.
- You can learn a lot from public health and environmental safety practitioners during an internship.



This is me wearing a lab coat, gloves and safety glasses performing a chemical inventory in a research laboratory.

Environmental Laboratory Safety



Some examples of unsafe laboratory practices, L-R; a damaged electrical plug and a violation of 18-inch vertical clearance from sprinkler heads. *(Courtesy of Funmi Omagbemi)*

Health and Safety Inspections in the Research Lab

By: Funmi Omagbemi

Core functions of the BCM Environmental Safety Department include:

- Conducting comprehensive laboratory inspections using the BCM survey response report.
- Taking chemical inventories of all hazardous chemicals present in the laboratories.
- Assisting researchers in maintaining compliance with local, state and federal safety regulations.
- Informing laboratory staff and principal investigators how to rectify safety compliance issues.
- My job description entailed: conducting comprehensive laboratory inspections using the BCM survey response report, performing comprehensive chemical inventories of hazardous chemicals used in the laboratory, and updating door signage.

Public Health Significance

The Environmental Safety Department provides essential public health services with emphasis on some of the core public health functions. The public health significance of these services provided include:

- Ensuring compliance with safety regulations in the laboratory.
- Reducing the risk of safety hazards, injuries and accidents in the laboratory.
- Reducing the cost of treatment by the organization as a result of reduced work place injuries.
- Increased level of productivity by laboratory staff and principal investigators.
- Maintaining chemical inventories and safety data sheets in order to help to improve diagnosis of health effects, resulting from laboratory hazards.
- Increasing knowledge of safety and its importance.

Highlights during your practicum

- Performing laboratory inspections and taking chemical inventories dependently.
- Clearing equipment for repairs, maintenance or relocation.

Lessons Learned

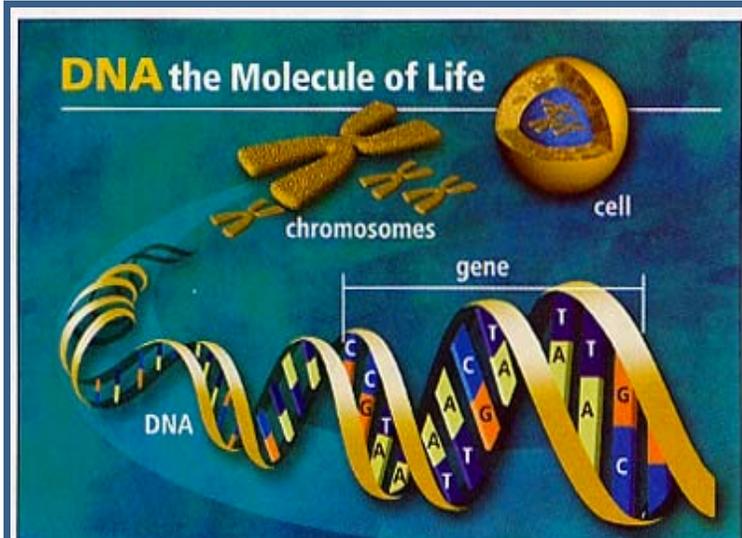
- Teamwork improves productivity.
- The importance of paying attention to safety checklist.
- The importance of effective risk communication in ensuring work place safety.



A photo of me wearing required Personal Protective Equipment (lab coat, gloves and protective goggles) performing a chemical inventory in a research laboratory.

(Courtesy of Hilda Puente)

CONGENITAL HEART DISEASE



DNA structure. A Carrier of genetic information.

Source: http://www.imprensaregional.cienciaviva.pt/conteudos/artigos/?acao=Istartigos&id_tag=167/

Special events/ duties during your practicum

- Data collection
- Data Analysis
- Review of relevant articles
- Presentation of findings
- Peer discussion

Genetic susceptibility to the development of Congenital Heart Disease

By: Mojisola Popoola

In the department of Genetics and Molecular Biology at the Baylor College of Medicine work is been done to increase the understanding of the molecular biology of congenital heart disease and also to identify risk factors for the development of congenital heart disease considering the increasing incidence and mortality worldwide. As a member of the team I was charged with the responsibility of

identifying the association of the genetic expression of single nucleotide polymorphism to congenital heart disease. This I performed by reviewing various article as well as using relevant statistical tools to analyze obtained data and in presenting the findings.

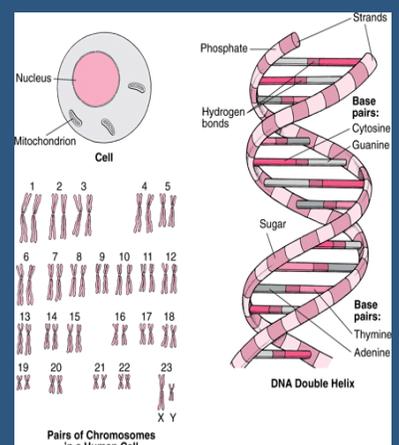
Public Health Significance

Congenital heart diseases occur in 5-8 per 1000 live births and are a leading cause of death in the new born. The incidence of congenital Heart disease (CHD) is similar worldwide but the burden of supporting the patients and their families is enormous and continues to increase. With an increase in fertility rate especially among countries that have the lowest per capital income the burden continues to increase. Knowing fully well that the world is a global village, the effect of the unchecked

increase in congenital heart disease is felt by all countries and even by the developed countries that support them. The mental and emotional stress faced by the families of these children as well as the continued care further burdens the health care system thereby making it of public health significance. Finding a way to detect the susceptibility of developing CHD will therefore reduce its incidence and lessen the long-term health care cost on the families and the general population.

Lessons Learned [OR] Advice for Future Students

- I learned how to collaborate with other professionals in serving a large population.
- Innovation distinguishes between a leader and a follower – Steve Jobs



The Human chromosomes and DNA base pair.

Source: http://www.merckmanuals.com/home/fundamentals/genetics/genes_and_chromosomes.html

Air Quality Monitoring

Indoor Air Monitoring and Sampling in UT Health Facilities

By: Olusegun Popoola

At the UT Health Safety Health Environment and Risk management, I was able to rotate through the various units gaining exposure to all the various aspects of Occupational and Environmental Safety. In the Chemical safety Unit we are responsible for Industrial Hygiene, Occupational safety and Environmental Health. The unit conducts routine indoor/outdoor air monitoring in all UT Health facilities to assess for presence of contaminant such as chlorine, Carbon Monoxide, Volatile organic compounds, methane, formaldehyde to mention a few. My duties are to ensure calibration of equipment, appropriate sample collection and analysis using direct reading instruments and to ensure that the observed levels are within OSHA permissible exposure limits. This project ensures the safety of all staffs and clients served by the UT Health.



Special events/ duties/highlights during your practicum

- Laboratory surveys
- Emergency response to odor complains.
- Air sampling and analysis.
- Writing of reports and memorandums.

Lessons Learned [OR] Advice for Future Practicum Students

- I learned that everyone performs the work of keeping the environment safe.
- "The more I want something done, the less I call it work" – Richard Bach.

Public Health Significance

Air pollution is a major threat to health. Indoor and outdoor air pollution as been linked to the increase in the incidence of several health issues such as high blood pressure, Asthma, Chronic obstructive pulmonary disease, birth of low birth weight babies. Also, according to the World health organization over 4 million individuals die yearly from ailments attributable to air pollution both indoor and outdoor. Considering the magnitude of the problem, it is important to therefore ensure that workers go back to their various homes as healthy as they came. Activities at my practicum was involved in evaluating and investigating possible environmental hazards to the community and following standard protocols to contain them and limit exposure thereby ensuring safety. We also conduct staff education based on our findings with written reports produced for future reference. We write memos to the unit head and distribute it among all concerned individuals. We also perform respiratory protection education and fit testing.



For more information regarding
The University of Texas School of Public Health,
Office of Public Health Practice
and the practicum program, please visit:
<https://sph.uth.tmc.edu/practicum/>