

**Freshman Seminar**  
**Bugs to Bombs: Are We Safe Yet?**  
**Instructor: J. Mac Crawford, PhD**

The course we are proposing would be a one-hour seminar on issues related to *Public Health Preparedness*. This will be a discussion-based class concentrating on current issues and topics in preparedness (on-going efforts for safety) and bioterrorism. It only takes a daily reading of the newspaper to find instances of breakdowns in our efforts to make the world more secure. One example is the inadvertent shipping of samples of H2N2 influenza virus to thousands of labs around the world. This particular virus caused a pandemic (widespread epidemic) in the 1950s but has not caused illness since the late 1960s, leaving a large proportion of the population vulnerable to it. It killed over a million people in the 50s when the world's population was much smaller. Such a dangerous flu strain unleashed today could kill multiple millions. This happened in our "post-9/11 world" in which we are reputedly so vigilant, but there are also many other examples of vulnerability that this course will delve into, discuss, and process. It is hoped students come away with resolve to become involved in the world's affairs with energy and a sense of duty to improve it.

**Course Goals:**

1. To allow students to have a forum to discuss events in the world related to public health and public health preparedness.
2. To provide perspective on these events that will encourage independent thinking and spur an interest in making a difference personally and professionally.
3. To discuss in some detail the classes of threats that we face and the degree to which we have or have not succeeded in making the world safer.

The course is one credit-hour and will be graded S/U.

The acronym CBERN; which stands for Chemical, Biological, Explosive, Radiological, and Nuclear threats will form the core of class discussions, with supplementation from other topical areas.

Readings have yet to be determined but will come from the popular press, government web sites, and scientific journals.

*Proposed outline:*

Week one: Introduction to Public Health  
History  
Discussion based on PH  
School oriented/CPHP

Week two: CBERN: Chemical threats

- Week three:   CBERN: Biological threats  
                  Flu (H2N2)  
                  Infectious waste  
                  Human-engineered viruses (polio virus “built” in the lab from scratch)
- Week four:    CBERN: Explosive threats  
                  Nitrogen fertilizer  
                  U.S. Arms sales/explosives in general
- Week five:    CBERN: Radiological threats  
                  Nuclear waste  
                  Depleted uranium use in wars
- Week six:     CBERN: Nuclear threats  
                  U.S. Proposals to develop new nuclear weapons  
                  Spread of information among countries: Iraq, Iran, Pakistan, etc.
- Week seven:   Threats to the water supply  
                  Over-pumping of aquifers
- Week eight:   Threats to the food supply (food safety)  
                  Hoof and mouth disease  
                  Mad cow disease (Spongiform encephalopathies)
- Week nine:    Energy  
                  Fossil fuels as financial support for terrorists  
                  Addiction of modern civilization to oil  
                  Future of alternative energy sources
- Week ten:     Shelter-in-place  
                  Wrap-up

Other topics that may be introduced, depending on time:

Air/ground/shipping safety  
Labs/contamination  
Levels of security and bioterrorism potential  
Cyber attacks (energy and water systems are vulnerable)

### **BIOGRAPHICAL INFORMATION FOR J. MAC CRAWFORD, R.N., Ph.D.**

Dr. Crawford has been in the health field for over twenty years. He began his career as an emergency medical technician and, after receiving an A.S. degree in Nursing, worked

in critical care as an R.N. for five years. Dr. Crawford completed the M.S. and Ph.D. degrees in the Department of Preventive Medicine at Ohio State and is an Assistant Professor in the Division of Environmental Health Sciences in the School of Public Health at OSU. As an epidemiologist, Dr. Crawford's research interests include chemical exposures and risk of hearing loss, cancer among Ohio police and firefighters, injury epidemiology and exposure assessment. He has taught a course in epidemiology to undergraduates in the School of Allied Medical Professions and is currently developing a course in environmental health for undergraduates.

### **ACADEMIC INTEGRITY**

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research and other scholarly activities. It is expected that all students in the School of Public Health will have read, and understand the University's *Code of Student Conduct*. Academic misconduct is "Any activity that tends to compromise the integrity of the University or subvert the educational process." Academic misconduct includes, but is not limited to cheating on exams, selling or providing answers to an exam to other students, plagiarism, unauthorized collaboration, copying the work of another student, and possession of unauthorized materials during an exam. Faculty in the School of Public Health are required to report any suspected academic misconduct to the Dean and to the University Committee on Academic Misconduct. Academic misconduct may result in sanctions ranging from a failing grade to dismissal from the university.

If you have any questions about what constitutes academic misconduct, please contact me. You may also wish to refer to the following sources for additional information.

[www.oaa.osu.edu/coam/home.html](http://www.oaa.osu.edu/coam/home.html)

[www.oaa.osu.edu/coam/ten-suggestions.html](http://www.oaa.osu.edu/coam/ten-suggestions.html)

[www.northwestern.edu/uacc/8cards.html](http://www.northwestern.edu/uacc/8cards.html)

### **SPECIAL ACCOMMODATIONS**

Any student requiring special accommodations for a disability should contact me privately to discuss his/her needs. The Office of Disability Services, in room 150 Pomerene Hall (phone 614-292-3307), may be contacted to coordinate reasonable accommodations for any student with documented disabilities.