

Appendix 2.6.c.

Competencies by Degree and Concentration

MPH Competencies

MHA Competencies

Dual Degree Competencies

MSPH Competencies

DrPH Competencies

PhD Competencies

BSPH Competencies

Core MPH Competencies

Master in Public Health graduates will:

1. Investigate, determine, and address socio-ecological factors that affect the health of a community
 - a. Apply the study of patterns of death, disease, and disability to the prevention (primary, secondary, and tertiary) of health issues
 - b. Apply statistical reasoning and methods to address, analyze, and solve problems in public health
 - c. Apply principles of risk assessment, communication, and management in relation to issues of environmental justice and equity
 - d. Apply the principles of systems thinking to program planning, implementation, and evaluation in organizational, community, and policy initiatives
 - e. Apply principles of evidence-based public health to assessment and prevention (primary, secondary, and tertiary) of public health issues
 - f. Integrate into public health practice strategies responsive to diverse cultural values and traditions of priority populations
2. Apply public health ethical principles
3. Demonstrate effective written and oral skills for communicating with different stakeholders
4. Demonstrate leadership and professionalism in public health practice

CONCENTRATION COMPETENCIES

Community and Family Health

MPH: Behavioral Health

This MPH degree is offered jointly with the USF Louis de la Parte Florida Mental Health Institute with a focus upon behavioral health (mental health and substance abuse) services. This concentration examines community and family issues in evaluation of systems performance and outcomes of public mental health and substance abuse services as well as children's mental health, aging and mental health, HIV and mental health services, and the planning, evaluation and accountability of mental health and substance abuse services. Graduates are prepared to work in mental health, alcohol and drug abuse organizations.

In addition to the overall Master of Public Health degree competencies, graduates with a concentration in Behavioral Health will:

1. Describe the history and philosophy of behavioral health services field
2. Identify the fundamental principles of the epidemiology of mental and substance use disorders
3. Specify unique issues in behavioral health programs and disorders for culture, age, and other specific at-risk populations
4. Describe ethical and legal issues in the diagnosis of individuals with mental and substance use disorders and in the design and delivery of services for individuals with mental and substance use disorders
5. Discuss the concepts of etiology, disease identification, and prevention of individuals with mental health and substance use problems
6. Identify and understand treatment interventions for individuals with mental health and substance use problems
7. Describe the social, political, and environmental context of behavioral health
8. Specify strategies for assessing effectiveness for planning and evaluating behavioral health programs
9. Demonstrate an in depth understanding of behavioral health advocacy, policy, information systems, & systems change
10. Critically evaluate and specify a broad range of behavioral health literature to analyze behavioral health issues and problems

MPH: Public Health Education

Health educators, using health promotion principles, assist individuals and communities in the adoption and maintenance of healthy lifestyles. This MPH program prepares health educators to collect and analyze data to identify diverse community needs prior to planning, implementing, monitoring and evaluating health promotion programs; communicate health and health promotion needs; and plan, implement and evaluate health promotion programs using ethical standards and theoretical frameworks and models. The curriculum helps students acquire relevant theoretical and practical knowledge in diverse fields of endeavor, such as the social and behavioral sciences, communication dynamics, educational theory and design, and community organization. Students who complete a degree in public

health education are eligible to sit for the national Certified Health Education Specialist (CHES) examination.

In addition to the overall Master of Public Health degree competencies, graduates with a concentration in Public Health Education will:

1. Assess individual and community needs for health education.
 - a. Obtain health related data about social and cultural environments, growth and development factors, needs and interests
 - b. Distinguish between behaviors that foster and those that hinder well-being.
 - c. Infer needs for health education on the basis of obtained data
2. Plan effective health education programs
 - a. Recruit community organizations, resource people, and potential participants for support and assistance in program planning
 - b. Develop a logical scope and sequence plan for a health education program
 - c. Formulate appropriate and measurable objectives
 - d. Design educational programs consistent with specified program objectives
3. Implement health education programs
 - a. Exhibit competence in carrying out planned educational programs
 - b. Infer enabling objectives as needed to implement instructional programs in specified settings
 - c. Select methods and media best suited to implement program plans for specific learners
4. Evaluate effectiveness of health education programs
 - a. Develop plans to assess achievement of program objectives
 - b. Interpret results of program evaluation
 - c. Infer implications from findings for future program planning
5. Act as a resource person
 - a. Utilize computerized health information retrieval systems effectively
 - b. Select effective educational resource materials for dissemination
6. Communicate health and health educational needs, concerns, and resources
 - a. Interpret concepts, purposes, and theories of health education
 - b. Predict the impact of societal value systems of health education programs
 - c. Select a variety of communication methods and techniques in providing health information
7. Apply appropriate research principles and methods in health education
 - a. Conduct a thorough review of literature
 - b. Use appropriate qualitative and quantitative research methods
 - c. Apply research to health education practice
8. Advance the profession of public health education and health promotion.
 - a. Provide a critical analysis of current and future needs
 - b. Apply ethical principles as they relate to the practice of health education

MPH: Maternal & Child Health Concentration

The MPH in Maternal and Child Health prepares health professionals and individuals in related fields for leadership roles in community based organizations that focus on major public health problems of women, children and families, especially among culturally diverse and underserved populations. Using multidisciplinary approaches, students develop analytical, advocacy, programmatic and evaluative skills to address health disparities, and to emphasize health promotion and disease prevention among populations in need.

In addition to the overall Master of Public Health degree competencies, graduates with a concentration in Maternal & Child Health will:

1. Identify the scientific underpinnings and strength of evidence from the literature for addressing MCH issues including: morbidity and mortality; individual, family, social and community factors; and health system characteristics;
2. Describe the scope and impact of MCH problems for children, women and families;
3. Use basic quantitative and qualitative research methods to prepare data for problem identification, program planning and evaluation, and policy analysis;
4. Apply organizational theory to public health, program planning, management and evaluation;
5. Describe MCH history, policy development, major programs, laws, regulations, advocacy movements and current legislative mandates;
6. Summarize data on a policy, write policy statements, and translate policies into organization;

7. Communicate effectively both orally and in writing;
8. Utilize cultural competence and social justice concepts, community partnership development, and ethical standards in practice

MPH: Socio-Health Science Concentration

The MPH in Socio - Health Sciences prepares students to apply the concepts and methods from social and behavioral sciences to public health research and practice in the areas of community needs assessment, analysis of the socio behavioral context of health, development of culturally competent programs, evaluation of intervention outcomes, and formulation of social policies affecting health. Graduates are prepared for careers in public health agencies, educational settings, social and family services, private voluntary organizations, research and consulting firms, and health-related industries. Examples of focus areas include social determinants of health, ethnographic and qualitative research, health needs of special populations, and community-based intervention.

In addition to the overall Master of Public Health degree competencies graduates with a concentration in Socio-Health Science will:

1. Critically evaluate and apply a broad range of social and behavioral science theories to analyze public health problems in terms of the factors which influence problem development alternative approaches to their resolution
2. Use concepts and methods from social and behavioral sciences in the design and implementation of community health research and intervention programs;
3. Understand the similarities and contrasts in the approaches taken by different social and behavioral science disciplines in the study of health-related problems;
4. Exhibit an in-depth understanding of the relationships between individual, interpersonal, social, structural, cultural and biological factors as they impact the etiology and management of illness;
5. Critically evaluate scholarly research in social and behavioral sciences applied to health in terms of its theoretical soundness, scientific rigor, appropriate use of concepts and methods, and contribution to knowledge;
6. Illustrate the knowledge and skills for translating socio cultural research into socially relevant and culturally competent public health intervention programs;
7. Understand ethical principles guiding the conduct of research on human subjects, including principles for ethical decision-making beyond the regulatory purview of institutional review boards;
8. Determine the appropriate level of intervention for different health problems, including individual behavior, family systems, community organization, complex social systems and the social and physical environment; and
9. Identify situations requiring multidisciplinary (including Socio behavioral) approaches to research and intervention on public health problems, and familiarity with the process of collaboration and integration of multiple perspectives

Environmental and Occupational Health

MPH: Environmental Health

Students in the MPH program in Environmental Health gain a broad perspective in the public health sciences and social sciences, and a fundamental education in the technical sciences with an emphasis on the protection and improvement of our environmental and public health. Students enrolled in the MPH program are likely to be recent graduates of a biological science, environmental science or medicine undergraduate program; employees of county or state agencies; in a military education program; or involved in environmental health & safety management with a company. The motivation for an MPH student to complete an advanced degree is to become an environmental scientist or manager; and increased competence as an environmental scientist or manager; or as pre-medical training or an opportunity to take and pass the US medical boards. Many MPH students are now or will become community leaders, for example, as U.S. Armed Services or Public Health Service Officers; as State Health Officers; or as Agency or Laboratory Directors.

In addition to the overall Master of Public Health degree competencies, Environmental Health MPH graduates will be able to:

1. Describe natural and engineered environmental systems and their interrelationships with human activities and human health
2. Relate the history of environmental health issues to current practices and policies
3. Apply technical knowledge and skill for the prevention and/or control of specific environmental health problems
4. Communicate orally and in writing relevant information concerning environmental health issues

5. Identify scientific, cultural, political and ethical practices and decisions that may have adverse effects on at-risk human populations or the sensitive ecosystems on each geographical scale
6. Decide between alternatives, or strategies, to minimize or alleviate adverse environmental impacts
7. Interpret published environmental health research findings
8. Engage in environmental leadership activities at the community level

MPH: Occupational Safety

The Occupational Safety program is intended for students with backgrounds in science or engineering seeking a professional public health career in occupational safety. In addition to core public health courses, the program builds upon a variety of courses enabling the student to recognize, evaluate and control existing and potential safety hazards due to faulty equipment, process design, chemical storage and handling. Students are trained to apply these safety principles in assessing engineering controls, personal protective techniques, administrative practices, conducting facility audits and to know when to consult with other environmental and occupational health and safety professionals to prevent or control work related injuries, illnesses or discomfort in the workplace. The program is a collaborative effort between the College of Public Health and the College of Engineering.

In addition to the overall Master of Public Health degree objectives, *Occupational Safety* graduates will be able to:

1. Recognize safety hazards that cause disease/injury associated with occupations;
2. Apply basic scientific and engineering principles to anticipate and identify actual potential safety hazards in the workplace;
3. Interpret toxicology literature and chemical and safety data and incorporate this knowledge into the management of occupational safety hazards;
4. Apply the principles of engineering in the design of appropriate controls for workplace safety hazards;
5. Evaluate, use, maintain, and manage the use of appropriate types of personal protective equipment for control of worker exposures;
6. Conceptualize, develop, manage and evaluate occupational safety programs in industry and elsewhere;
7. Communicate to labor, management, and diverse community populations, both verbally and in writing, the nature, risks, and remediation of workplace safety hazards; and
8. Interpret and assure compliance with applicable governmental regulations and standards pertaining to occupational safety and health.

MPH: Occupational Health for Health Professionals

The principal concerns of the occupational health professional are: the worker; the work environment and chemical, physical, and ergonomic and biological agents in the workplace. The curriculum is interdisciplinary in nature and scope, addressing topics in these broad areas. The MPH in Occupational Health is a 42 credit program designed for either physicians in practice who are interested in the residency but cannot spend 2 years away from their practice (They complete their MPH first while maintaining their practice and then spend only 1 year in the clinical residency program), or for other practicing health professionals.

In addition to the overall Masters of Public Health degree objectives, Occupational Health for Health Professionals graduates will be able to:

1. Summarize the history and social context of occupational health and their influence on workers health
2. Identify human and physical factors affecting workers health including geographic, socioeconomic and lifestyle characteristics
3. Apply principles of toxicology in the manifestation of exposure related illnesses
4. Identify the impact on workers of illnesses not related to exposures including psychological disorders
5. Describe special health related programs in industries of major importance to Florida and the nation
6. Determine the role of government regulations, insurance policies and procedures along with the ethical and legal ramifications in treatment and prevention of work related conditions and injury
7. Develop a strategy for a preventive program on a health related issue in the workplace
8. Identify supportive agencies for dealing with occupational health

MPH: Toxicology/Risk Assessment

This concentration area will provide a broad foundation in the biomedical sciences with general training in toxicology. The program is designed with a balanced curriculum in the areas necessary for understanding the response of organisms to chemical insult and to introduce individuals in the research approaches necessary for the evaluation of these responses. Students will be able to make decisions on the basis of available research findings on potential chemical hazards for humans and animals and to adapt to a rapidly growing body of new knowledge in toxicology.

In addition to the overall Master of Public Health degree objectives, Toxicology / Risk Assessment graduates will be able to:

1. Recognize toxicological responses to chemical insult
2. Identify chemical hazards, and how their physical and chemical properties influence and interact with the environment, and in turn, the human body
3. Recognize uses and limitations of animals for toxicity testing and inferences that can be made for human health effects
4. Analyze risks associated with chemical exposures, both environmental and occupational, and methods of intervention and prevention
5. Identify pathways and pharmacological aspects of chemical exposure
6. Identify the role of toxicologists in public health, medical, environmental and industrial sectors
7. Interpret and translate research findings and apply to problems arising from chemical pollution
8. Identify various laboratory techniques to evaluate chemical, biological and radiological hazards
9. Build communication skills, both written and verbal
10. Interpret the similarities and differences in the approaches taken by other public health disciplines, and social and behavioral sciences, in the study of health-related problems
11. Apply ethical principles guiding the conduct of research on human subjects, including principles for ethical decision-making beyond the regulatory purview of institutional review boards

Epidemiology and Biostatistics

MPH: Epidemiology

The MPH program in Epidemiology is a professional degree, intended for individuals who wish to obtain a broad understanding of public health, with an emphasis on epidemiologic principles and methods. The knowledge and skills obtained through the program will enable graduates to seek positions that characterize the health status of communities, critically evaluate research on determinants of health-related events, formulate strategies to evaluate the impact of health related interventions and foster the application of epidemiologic methods for health promotion/disease prevention activities at the community level.

In addition to the overall Master of Public Health degree competencies, Epidemiology graduates will be able to:

Epidemiologic Principles and Methods

1. Describe and discuss the history and theory of epidemiology
2. Identify, describe and discuss the public health problems in terms of magnitude, person, time and place.
3. Assess, synthesize and critically evaluate epidemiologic scientific literature
4. Describe and discuss strengths and limitations of experimental and observational study designs
5. Describe and discuss basic epidemiologic principles of infectious and chronic disease research
6. Identify and discuss risk factors and their relationships to health outcomes
7. Demonstrate proficiency in basic and intermediate epidemiologic methods and principles

Data Management and Statistical Methods

8. Demonstrate proficiency of data management and processing
9. Demonstrate proficiency in data analysis and appropriate interpretation of results

Epidemiologic Practice

10. Identify and discuss ethical and legal principles in the design, collection, use and dissemination of epidemiologic data and public health research
11. Apply epidemiologic knowledge and skills in a public health setting.
12. Conduct a guided epidemiologic project or critical synthesis of the epidemiologic literature
13. Synthesize and apply knowledge in the core areas of public health

MPH: Biostatistics

The MPH program in Biostatistics provides educational opportunities for students to acquire a broad knowledge in biostatistics and apply biostatistical methods to public health problems. The MPH program emphasizes the applications of quantitative methods to a broad range of public health problems. The intended audience of the program includes individuals with strong quantitative background and

interests in a professional career in a public health setting. The program trains students to be able to design studies, to implement data collection and management plans, to formulate analysis plans and conduct analysis, and to report and communicate analytical results. The program will also provide students with knowledge in statistical and computational methods and public health.

In addition to the overall Master of Public Health degree competencies, Biostatistics graduates will be able to:

1. Apply biostatistical methods to the design of experimental and observational studies with respect to sample selection, randomization, and power
2. Apply common probability distributions to public health outcomes
3. Use statistical techniques including descriptive statistics, data exploration, estimation, hypothesis testing, and modeling
4. Demonstrate basic data management skills and use common statistical software packages for data analysis
5. Communicate effectively to public health practitioners in terms of formulating research problems and interpreting statistical results
6. Read and interpret scientific literature on selected public health topics
7. Demonstrate knowledge of ethical issues related to the use of biostatistics in public health
8. Develop written and oral presentations based on statistical analyses and field experience
9. Demonstrate knowledge and understanding of public health issues

Global Health

MPH: Global Communicable Diseases

The Global Communicable diseases (GCD) program provides an opportunity for science-oriented students with an interest in communicable diseases to receive specialized training in the recognition, identification, diagnosis, surveillance, control, and prevention of public health problems related to communicable diseases throughout the world, with particular emphasis on the problems of Florida and underdeveloped nations. Several course offerings and areas of emphasis focusing on infection control have been added to this program to allow public health practitioners to expand their knowledge of infection control practices and procedures, particularly in hospital settings. Preference for admission is given to students with a background or demonstrated skills in the biological sciences. Prerequisites for some of these courses may be required.

In addition to the overall Master of Public Health (MPH) and Masters of Science in Public Health (MSPH) degree competencies, graduates with a concentration in Global Communicable Diseases will:

1. Interpret the natural history of disease-causing parasites, bacteria, viruses, fungi, and other organisms of major public health concern, as well as the disease processes and clinical manifestations caused by those infectious organisms;
2. Identify the appropriate diagnosis, epidemiology, surveillance, control, treatment and prevention of communicable diseases;
3. Describe the natural human defenses, the appropriate use of diagnostic techniques and serological surveillance, and the role of preventive interventions and treatments such as vaccines and antibiotics against communicable diseases;
4. Identify the cultural, social, and economic factors that contribute to the incidence and prevalence, as well as the transmission, control, treatment, and prevention of communicable disease;
5. Identify the public health conditions and problems related to the surveillance and control of communicable diseases in developing countries;
6. Design programs for the surveillance and control of communicable diseases;
7. Apply principles of immunology, molecular biology and other essential biological sciences disciplines in the laboratory settings for research and the diagnosis, surveillance, control, treatment, and prevention of communicable diseases; and
8. Prepare and present information about communicable diseases to other members of health-related professions and to members of the public in a professional and effective manner.
9. Explain factors such as biology, ecology and dynamics of arthropod vector populations that affect transmission of specific communicable diseases such as malaria and dengue
10. Recognize the roles of the laboratory in the Public Health system and have a thorough understanding of the complexity and inter-connectivity of all levels of laboratory services

MPH: Global Health Practice

This program will prepare students for achieving a professional position in the field of international public health, such as with international, bilateral, governmental and non-governmental agencies. The curriculum focuses on assessment and intervention strategies useful in resolving health problems of

primarily undeveloped countries. Global Health Practice students have an opportunity to select courses that focus on areas such as epidemiology, maternal and child health, management and socio-cultural health. Students who choose to combine this program with the Peace Corps Master's International program will be able to obtain a long-term field placement experience that will enhance their marketability for employment.

In addition to the overall Master of Public Health degree competencies, Global Health Practice graduates will be able to:

1. Describe the socio-cultural, political and economic determinants of health and health status at the global level;
2. Assess the burden of disease on health, service utilization and finance, and the importance of prevention;
3. Analyze the prevailing international health systems in industrial and developing countries, comparing coverage, utilization, equity, policy, organization, delivery and financing of those systems and define the rationale for health systems' reforms;
4. Appraise the role of cultural, social and economic factors that contribute to the incidence of infectious disease;
5. Assess public health conditions and problems related to infectious disease control and surveillance in developing countries;
6. Use ethical and culturally appropriate technology/ interventions when addressing public health problems and prevention at the global level; and
7. Propose methodologies for the evaluation of public health programs and interventions

MPH: Global Disaster Management and Humanitarian Relief

The field of disaster management and humanitarian relief plays an important role in global health, especially in areas of armed conflict and natural disasters. With the increase in weapons of mass destruction, including nuclear and biological threats from terrorist groups and radical states, the need for formal training and education has increased. Local and international organizations, governments and United Nation agencies are in need of highly trained professionals to manage and direct programs to reduce the global public health threats that continue to plague us. Where and when the next tsunami or earthquake will strike, or how the next terrorist group will respond, is unknown. But the logic behind professionally mitigating and preparing for one of these incidences places us in a stronger position to respond.

This concentration builds on the existing framework of the College of Public Health core courses, field experience and special project. Combining this framework with the existing disaster management and humanitarian courses will provide graduates with the ability to recognize, assess, implement and evaluate a global or local disaster.

In addition to the overall Master of Public Health degree competencies, graduates with a concentration in Global Disaster Management and Humanitarian Assistance will:

1. Know appropriate methods to employ the disaster cycle in disaster management.
2. Develop and utilize a Comprehensive Emergency Operations Plan.
3. Develop, implement, and monitor adequate services for affected populations.
4. Compare and contrast the scope of work, role, structure and culture of non-governmental organizations (NGOs) and the United Nations (UN).
5. Construct and adapt problem solving approaches regarding forced migration of populations and the effect on traditions, values and humanitarian action.
6. Illustrate the framework and infrastructure necessary at the international and local level to create a rapid response to a humanitarian emergency.
7. Apply the Sphere Project's Minimum Standards to deliver humanitarian assistance.
8. Recognize vulnerable populations and apply basic public health principles to protect the populations in humanitarian emergencies.
9. Develop and adapt approaches on advocacy and neutrality questions/issues related to humanitarian work.
10. Utilize the shift from disaster management practices towards an integrated disaster risk reduction approach in the context of sustainable development in complex humanitarian emergencies.

Health Policy and Management

MPH: Health Care Organizations and Management

The Health Care Organizations and Management program is designed for individuals interested in the management of hospitals, group practices, health departments, and other provider organizations. The program focuses on the structure and management of health care organizations. Students develop

knowledge and skills in management science, leadership, and decision-making. The curriculum does not require students to develop all health administration quantitative and analytic skill areas typically required of senior management positions.

In addition to the overall Master of Public Health degree objectives Health Care Organizations and Management graduates will be able to:

1. Assess the health care system in the United States , including the role of the public health disciplines
2. Employ analytic skill in health economics and health policy analysis
3. Apply management principles in private and public sector health organizations
4. Analyze ethical issues and implications of cultural diversity in health policy and management
5. Demonstrate ability to use decision making methodologies, such as information systems, financial management, and quantitative methods
6. Demonstrate ability to use decision making methodologies, such as information systems, financial management, and quantitative methods
7. Apply critical thinking skills and knowledge to a management issue in a health care or related organization

MPH: Public Health Administration (online)

The MPH in Public Health Administration program is designed for individuals interested in pursuing leadership and administrative positions in public health agencies or programs or in other initiatives focused on population health. The curriculum centers on management principles and methods to advance the health of communities. Students develop knowledge and skills in public health, health planning, quality improvement, financial management, and public health law.

Upon graduation a student with an MPH/PHA will:

Management and Planning

1. Integrate operational planning and management tools for performance and quality improvement (PHC 6104, PHC 6147)
2. Understand informatics methods and resources as tools to promote public health (PHC 6147)
3. Build analytical thinking acumen, e.g., the ability to understand any issue by delving into its relevant components and formulating solutions (PHC 6102, PHC 6104, PHC 6146, PHC 6147, PHC 6421)
4. Apply theory and strategy-based communication principles across different settings and audiences (PHC 6102, PHC 6104)
5. Demonstrate team building, negotiation, and conflict management skills (PHC 6104)
6. Develop strategies to motivate others for collaborative problem solving, decision-making, and evaluation (PHC 6104)
7. Promote high standards of personal and organizational integrity, compassion, honesty and respect for all people. (PHC 6104)
8. Describe the tasks necessary to assure that program implementation occurs as intended (PHC 6104)
9. Explain the contribution of logic models in program development, implementation, and evaluation (PHC 6104)
10. Differentiate among goals, measurable objectives, related activities, and expected outcomes for a public health program (PHC 6104)
11. Identify characteristics of a system. (PHC 6102, PHC 6104)
12. Acquire an in-depth knowledge of the concepts, rationale, and development of health services planning and evaluation. (PHC 6146)
13. Gain skills and knowledge of methodologies of the health services planning and evaluation process and its major tools. (PHC 6102, PHC 6146)
14. Become oriented to information needs regarding community, institutional and individual health assessment and on the use of quantitative and qualitative methods for enhancing information. (PHC 6146)
15. Be able to present the concepts and skills in an integrated fashion in a project report [the workbook]. (PHC 6146)
16. Integrate the assessment and evaluation of equity and ethical delivery of services into an actual program through a series of real world exercises. (PHC 6146)
17. Demonstrate planning and evaluation approaches for diverse populations within a given geographic area. (PHC 6102, PHC 6146)

Law and Ethics

18. Apply legal and ethical principles to the use of information technology and resources in public health settings (PHC 6421)
19. Explain how professional ethics and practices relate to equity and accountability in diverse community settings (PHC 6421)
20. Apply social justice and human rights principles when addressing community needs (PHC 6421)
21. Apply basic principles of ethical analysis (e.g. the Public Health Code of Ethics, human rights framework, other moral theories) to issues of public health practice and policy (PHC 6102, PHC 6421)
22. Analyze the potential impacts of legal and regulatory environments on the conduct of ethical public health research and practice (PHC 6421)
23. Distinguish between population and individual ethical considerations in relation to the benefits, costs, and burdens of public health programs (PHC 6102, PHC 6421)
24. Embrace a definition of public health that captures the unique characteristics of the field (e.g., population-focused, community-oriented, prevention-motivated and rooted in social justice) and how these contribute to professional practice (PHC 6102, PHC 6421)
25. Analyze the effects of political, social and economic policies on public health systems at the local, state, national and international levels (PHC 6102, PHC 6421)
26. Analyze the impact of global trends and interdependencies on public health related problems and systems (PHC 6421)

Financial management

27. Understand and construct financial statements, applying ratio analysis and pro forma statement generation (PHC 6160)
28. Apply financial management theory and principles to make decisions that promote financial well being of the organization (PHC 6160)
29. Execute financial mathematics, e.g., time value of money calculations, capital budgeting, return on investment, and project risk analyses (PHC 6160)
30. Understand differences in public health financial management (PHC 6160)
31. Perform differential reimbursement calculations by payers (e.g., Medicare/Medicaid, self-pay, managed care) (PHC 6102, PHC 6160)

MPH: Health Policies & Programs

The Health Policy and Programs MPH program is designed for individuals interested in development, analysis and evaluation of public policy for health services and public health programs. Students develop knowledge of theory and methods in policy analysis and program evaluation. Students are prepared to pursue policy analyst and program evaluation positions with federal, state or local agencies or with professional associations.

In addition to the overall Master of Public Health degree objectives, Health Policies and Programs graduates will be able to:

1. Assess the health care system in the United States , including the role of the public health disciplines
2. Employ analytic skill in health economics and health policy analysis
3. Demonstrate understanding of public policy analysis, program evaluation, and health law
4. Analyze ethical issues and implications of cultural diversity in health policy and management
5. Develop competencies in applying analytic and evaluation methods to health care issues
6. Develop leadership, interpersonal and communication skills
7. Apply critical thinking skills and knowledge to a policy or program issue in public health or health services

Public Health Practice Program

MPH: Public Health Practice

The Master of Public Health (MPH) is the primary professional degree in public health. The program provides a set of skills and principles essential for students who intend to apply their training in a professional setting, provide leadership in a specific health specialty, and improve and protect the health and well being of populations. All MPH students complete coursework designed to prepare public health professionals to actively and effectively contribute to population-based, culturally appropriate, and innovative approaches concerning current and emerging public health problems.

In addition to the overall Master of Public Health degree competencies, Public Health Practice graduates will be able to:

1. Appraise the health status of populations by acquiring skills and knowledge about determinants of health and illness, factors contributing to health promotion and disease prevention, and factors influencing the use of health services
2. Define the basic outcome indicators and goals of public health practices and how they differ from private health care
3. Utilize basic quantitative and qualitative research designs used in public health
4. Determine appropriate use of data and statistical methods for problem identification and resolution, and program planning
5. Develop skills in public health program planning, implementation and evaluation
6. Describe how a person's cultural background, socioeconomic status, level of education, occupational risks, age, disabilities and lifestyle preferences impact their current and future health status
7. Articulate the ethical, administrative, legal, social and political implications of preventive and health promotion services
8. Demonstrate effective integration of the core disciplines in improving public health outcomes
9. Describe methods for assembling and sustaining a successful coalition of partners
10. Demonstrate the ability to perform effectively as part of a team
11. Develop effective leadership and advocacy skills in advancing public health issues and concerns
12. Define the elements for effective communication of important public health information, needs, policies and problems

Core MHA Competencies

Health Policy and Management

Master of Health Administration

The MHA program prepares students for leadership positions in public and private health organizations, such as health systems, medical group companies, health insurance companies, and health agencies. This is achieved by providing a relevant curriculum that requires students to develop professional and management decision-making skills and knowledge, with application to health services and encompassing a clinical and community perspective.

Students develop knowledge and skills in accounting, financial management, health economics, quantitative methods, policy analysis, information management, strategic management, and marketing. In addition, students develop knowledge and skills in leadership, human resources management, physician relations, and governance. Students develop a working knowledge of health insurance, health law and ethics, and quality and performance improvement, and develop a clinical and community perspective through public health core courses. Upon graduation a student with a Master of Health Administration will be able to:

Management Science and Technology

1. Explain and demonstrate an understanding of scientific operational definitions and their measurement, e.g., efficiency, effectiveness and quality
2. Integrate operational planning and management tools for performance and quality improvement
3. Demonstrate the use of information systems and application software in health services, e.g., electronic medical records, GIS, and use of software tools for management decision-making
4. Explain and demonstrate the application of quantitative analysis, e.g., descriptive and inferential statistics, regression, forecasting
5. Build analytical thinking acumen, e.g., the ability to understand any issue by delving into its relevant components and formulating solutions
6. Manage and assess operational performance

Leadership, Planning, and Communication

7. Shape operational and strategic plans and integrate with marketing initiatives
8. Lead improvement upon organizational design and culture, e.g., formal and informal decision-making structures, and champion workforce diversity
9. Clarify human resources management and staff development
10. Demonstrate public health values and reinforce ethical decision-making
11. Integrate and demonstrate effective written oral communication

Public Policies and Community Engagement

12. Assess community needs and values and the role of external relations, e.g., demographic/population contexts for development and management of health services
13. Comprehend and explain the legal and regulatory environment for health services
14. Explain and identify the optimal quantity of health care services to provide, e.g., satisfying supply and demand constraints and resource limitations
15. Analyze public policy context and choices
16. Analyze the linkages between cultural competencies and diversity regarding health disparities

Concepts of Economic and Financial Management

17. Comprehend and create budgets (e.g., variance analysis and standards development) and apply contribution margin analysis as used by clinical revenue-generating personnel and for product line management
18. Explain the principles and applications of cost accounting, e.g., break-even analysis, the costing process, measurement, and control
19. Understand and construct financial statements, applying ratio analysis and pro forma statement generation
20. Execute financial mathematics, e.g., time value of money calculations, capital budgeting, return on investment, and project risk analyses
21. Perform differential reimbursement calculations by payers (e.g., Medicare/Medicaid, self-pay, managed care) and describe the major principles of health insurance
22. Understand and explain economic evaluation, e.g. cost benefit/cost effectiveness analysis

Dual Degree Competencies

In addition to the competencies associated with a degree sought within the College of Public Health, students within dual degree programs will also be able to:

MPH/PhD Biochemistry/ Molecular Biology

1. Demonstrate an understanding of the foundation of biochemical principles and a fundamental understanding of structures and processes of living systems at the molecular and cellular levels
2. Distinguish between techniques utilized with current state of the art research in the Department of Biochemistry and Molecular Biology

MPH/DPT Physical Therapy

1. Demonstrate accountability to patients/clients, legal standards, ethical guidelines, organizations, and society
2. Demonstrate social and professional responsibility through mentoring, participation in professional and community organizations and activities, patient/client advocacy, and provision of pro bono services
3. Exhibit caring, compassion, and empathy in providing services to patients/clients
4. Demonstrate professional behavior in all interactions with patients/clients, family members, caregivers, other health care providers, students, other consumers, and payers
5. Communicate effectively with patients, colleagues and other constituents
6. Effectively educate others based on the needs of the learner
7. Identify, respect, and act with consideration for individual and cultural differences in all professional activities
8. Integrate and apply new knowledge and evidence to the patient/client management process
9. Provide physical therapy services for prevention, health promotion, fitness, and wellness to individuals, groups, and communities to positively influence the health of society
10. Participate in practice management including delegation and supervision of support personnel, management planning, marketing, budgeting, and reimbursement activities
11. Provide consultation to individuals, groups, and organizations
12. Engage in lifelong personal and professional development through self-assessment, reflection, education, and feedback from others

MPH/JD Law

1. Solve public health problems using legal tools
2. Understand the scientific implications of legal problems touching upon public health a private health care provision
3. Understand how public health policies are expressed in laws and regulations
4. Analyze the legal environment and carry out public health programs and activities in compliance with law
5. Understand the legal ramifications of proposals for health care and social welfare reform
6. Develop skills to advocate changes in health care policy

MPH/MD Medicine

While students in the MD/MPH program will fulfill competencies specific to both of their medical and public health curricula, there are four competencies that bridge the two programs. These competencies enable students to apply public health principles in the assessment and translation of medical practice

1. Collaborate with others on health care teams and in the care of populations with an understanding of system based practice
2. Exemplify professionalism through attitudes and values
3. Demonstrate commitment to self analysis, lifelong learning and the teaching of others
4. Utilize principles governing ethical interactions with patients and the public

MPH/MSW

1. practice competency in relationship skills
2. knowledge of the interrelationships in the biological, psychological, and sociocultural factors in human life, including the impact of disease, injury, and emotional distress and their implications for social work practice
3. skill in methods of scientific inquiry for the purpose of advancing professional knowledge and practice
4. basic skill in the application of a range of social work treatment methodologies for the purpose of differential diagnosis and intervention
5. practice competency in applying a biopsychosocial approach to the assessment of human problems

6. practice competency in applying a biopsychosocial approach to treatment of human problems through individual, family, and group modalities
7. a basic knowledge of managerial processes in social services, including program planning, personnel management, finance, and evaluation

MPH/MA Anthropology

1. Infer the philosophical basis of contemporary anthropology to public health practice
2. Exhibit mastery of skills within the major branches of anthropology as practiced today in the major branches of Anthropology, focusing on Applied, Medical, and Urban Anthropology

MPH/PhD Anthropology

1. Specify strategies of Cultural Anthropology emphasizing contributions to Applied Anthropology
2. Exhibit mastery of skills within the major branches of anthropology as practiced today in the major branches of Anthropology, focusing on Applied, Medical, and Urban Anthropology

MPH/MS Nursing

1. A continuing goal of the Dual Degree MS/MPH Program is to assure that program graduates meet the requirements to write national certification examinations for adult nurse practitioners and the national certification examination for occupational health nurses (COHN-S)

PhD/MA Anthropology

1. Infer the philosophical basis of contemporary anthropology to public health practice.
Exhibit mastery of skills within the major branches of anthropology as practiced today in the major branches of Anthropology, focusing on Applied, Medical, and Urban Anthropology

Core MSPH Competencies

The MSPH provides a focus in research design, data collection, analysis and application of research in public health intended to improve and protect the health of populations. The program is designed for students with good quantitative and/or qualitative skills and an interest in the science of public health and a comprehensive research experience. Students are prepared for research roles in academic or professional public health careers by incorporating epidemiological principles and biostatistical methods with their focus within the core areas of public health.

Graduates of the MSPH degree program are expected to:

1. Critically evaluate scholarly research in public health in terms of scientific rigor, appropriate use of methods and measures, and contribution to science.
2. Investigate and determine socio-ecological factors that affect the health of a population.
 - a. Apply statistical reasoning and methods to address, analyze, and solve problems in public health.
 - b. Apply the study of patterns of death, disease, and disability to the prevention (primary, secondary, and tertiary) of health issues.
 - c. Apply the principles of systems thinking to program planning, implementation, and evaluation in organizational, community, and policy initiatives.
 - d. Apply principles of evidence-based public health to assessment and prevention (primary, secondary, and tertiary) of public health issues.
3. Demonstrate research and evaluation skills pertaining to public health issues.
4. Apply ethical principles guiding the conduct of research on human subjects.

CONCENTRATION COMPETENCIES

Community and Family Health

Department of Community & Family Health

MSPH - Behavioral Health

The MSPH prepares students for careers oriented toward needs assessment, research and evaluation in community and family health. Graduates are prepared for employment in academic, clinical and other research areas. Each area of specialization and corresponding program of study is developed on an individual basis, guided by the student's interests and areas of expertise in the department. A supervisory committee of three faculty members assists the student in planning appropriate coursework and directing the thesis. This program of study may be especially relevant to students whose future plans include a doctoral degree. Potential areas of specialization for the MSPH may include, but are not limited to one or more of the following fields of study: Social Marketing, Aging, Behavioral Health, Maternal and Child Health, Public Health Education, Women's Health, Global Health, Violence & Injury, Socio-Health Sciences.

In addition to the overall Master of Science in Public Health degree competencies, graduates from the Department of Community and Family Health will:

1. Identify the fundamental principles of the epidemiology of mental and substance use disorders. Specify unique issues in behavioral health programs and disorders for culture, age, and other specific at-risk populations
2. Demonstrate an in depth understanding of behavioral health advocacy, policy, information systems, & systems change
3. Critically evaluate and specify a broad range of behavioral health literature to analyze behavioral health issues and problems

Research Skills

4. Conduct needs assessments focused on health behavior change and the social impact of planned health programs
5. Use qualitative and quantitative research methods for studying the impact of psychological, interpersonal, social structural, cultural and biological factors in the etiology and social consequences of public health problems
6. Carry out, with faculty supervision, all phases of the research process, including project design, proposal development, data collection, data analysis, and interpretation and writing up of results.
7. Use ethical principles guiding the conduct of research on human subjects

Practical Applications to Public Health

8. Identify areas in which social and behavioral science expertise can contribute to the design, implementation and evaluation of public health programs

9. Determine the appropriate level of intervention for different health problems, including individual behavior, family systems, community organization, complex social systems and the social and physical environment
10. Critically evaluate research and translate it into evidence-based practice and public policy

MSPH – Health Education

The MSPH prepares students for careers oriented toward needs assessment, research and evaluation in community and family health. Graduates are prepared for employment in academic, clinical and other research areas. Each area of specialization and corresponding program of study is developed on an individual basis, guided by the student's interests and areas of expertise in the department. A supervisory committee of three faculty members assists the student in planning appropriate coursework and directing the thesis. This program of study may be especially relevant to students whose future plans include a doctoral degree.

In addition to the overall Master of Science in Public Health degree competencies, graduates with a Health Education concentration will:

1. Assess individual and community needs for health education.
 - a. Obtain health related data about social and cultural environments, growth and development factors, needs and interests.
 - b. Distinguish between behaviors that foster and those that hinder well-being.
 - c. Infer needs for health education on the basis of obtained data
2. Evaluate effectiveness of health education programs.
 - a. Develop plans to assess achievement of program objectives.
 - b. Interpret results of program evaluation.
 - c. Infer implications from findings for future program planning.
3. Apply appropriate research principles and methods in health education.
 - a. Conduct a thorough review of literature.
 - b. Use appropriate qualitative and quantitative research methods.
 - c. Apply research to health education practice.
4. Describe the relationships between psychological, interpersonal, social structural, cultural and biological factors as they impact on disease prevention and health promotion.

Research Skills

5. Conduct needs assessments focused on health behavior change and the social impact of planned health programs.
6. Use qualitative and quantitative research methods for studying the impact of psychological, interpersonal, social structural, cultural and biological factors in the etiology and social consequences of public health problems.
7. Carry out, with faculty supervision, all phases of the research process, including project design, proposal development, data collection, data analysis, and interpretation and writing up of results.
8. Use ethical principles guiding the conduct of research on human subjects.

Practical Applications to Public Health

9. Identify areas in which social and behavioral science expertise can contribute to the design, implementation and evaluation of public health programs.
10. Determine the appropriate level of intervention for different health problems, including individual behavior, family systems, community organization, complex social systems and the social and physical environment.
11. Critically evaluate research and translate it into evidence-based practice and public policy.

MSPH – Maternal and Child Health

The MSPH prepares students for careers oriented toward needs assessment, research and evaluation in community and family health. Graduates are prepared for employment in academic, clinical and other research areas. Each area of specialization and corresponding program of study is developed on an individual basis, guided by the student's interests and areas of expertise in the department. A supervisory committee of three faculty members assists the student in planning appropriate coursework and directing the thesis. This program of study may be especially relevant to students whose future plans include a doctoral degree.

In addition to the overall Master of Science in Public Health degree competencies, graduates with a Maternal and Child Health concentration will:

1. Identify the scientific underpinnings and strength of evidence from the literature for addressing MCH issues including: morbidity and mortality; individual, family, social and community factors; and health system characteristics

2. Describe the scope and impact of MCH problems for children, women and families
3. Describe MCH history, policy development, major programs, laws, regulations, advocacy movements and current legislative mandates
4. Summarize data on a policy, write policy statements, and translate policies into organization

Research Skills

5. Conduct needs assessments focused on health behavior change and the social impact of planned health programs
6. Use qualitative and quantitative research methods for studying the impact of psychological, interpersonal, social structural, cultural and biological factors in the etiology and social consequences of public health problems
7. Carry out, with faculty supervision, all phases of the research process, including project design, proposal development, data collection, data analysis, and interpretation and writing up of results.
8. Use ethical principles guiding the conduct of research on human subjects

Practical Applications to Public Health

9. Identify areas in which social and behavioral science expertise can contribute to the design, implementation and evaluation of public health programs
10. Determine the appropriate level of intervention for different health problems, including individual behavior, family systems, community organization, complex social systems and the social and physical environment
11. Critically evaluate research and translate it into evidence-based practice and public policy

MSPH – Socio-Health Science

The MSPH prepares students for careers oriented toward needs assessment, research and evaluation in community and family health. Graduates are prepared for employment in academic, clinical and other research areas. Each area of specialization and corresponding program of study is developed on an individual basis, guided by the student's interests and areas of expertise in the department. A supervisory committee of three faculty members assists the student in planning appropriate coursework and directing the thesis. This program of study may be especially relevant to students whose future plans include a doctoral degree.

In addition to the overall Master of Science in Public Health degree competencies, graduates with a Socio-Health Science concentration will:

1. Critically evaluate and apply a broad range of social and behavioral science theories to analyze public health problems in terms of the factors which influence problem development alternative approaches to their resolution
2. Use concepts and methods from social and behavioral sciences in the design and implementation of community health research and intervention programs
3. Exhibit an in-depth understanding of the relationships between individual, interpersonal, social, structural, cultural and biological factors as they impact the etiology and management of illness
4. Illustrate the knowledge and skills for translating socio cultural research into socially relevant and culturally competent public health intervention programs;

Research Skills

5. Conduct needs assessments focused on health behavior change and the social impact of planned health programs.
6. Use qualitative and quantitative research methods for studying the impact of psychological, interpersonal, social structural, cultural and biological factors in the etiology and social consequences of public health problems.
7. Carry out, with faculty supervision, all phases of the research process, including project design, proposal development, data collection, data analysis, and interpretation and writing up of results.
8. Use ethical principles guiding the conduct of research on human subjects.

Practical Applications to Public Health

9. Identify areas in which social and behavioral science expertise can contribute to the design, implementation and evaluation of public health programs.
10. Determine the appropriate level of intervention for different health problems, including individual behavior, family systems, community organization, complex social systems and the social and physical environment.
11. Critically evaluate research and translate it into evidence-based practice and public policy. □

Environmental and Occupational Health

MSPH: Environmental Health

Students in the MSPH program in Environmental Health receive an education with more focus in the technical sciences and public health sciences, and with an emphasis on the protection and improvement of our environmental and public health. Development of research skills is an important aspect of this program. Students enrolled in the MSPH program are likely to be recent graduates of a biological science, environmental science or medicine undergraduate program; employees of county or state agencies; in a military education program; or involved in environmental health & safety management with a company. The motivation for MSPH students to complete an advanced degree is to become an environmental scientist or manager; increased competence as an environmental scientist or manager; or as a prelude to either a medical training or a doctoral program.

In addition to the overall Master of Science in Public Health degree competencies, Environmental Health MSPH graduates will be able to:

1. Define an environmental health research hypothesis in the context of the interrelationship of human activities and environmental and public health
2. Develop laboratory and field sampling and analyses skills, and data analyses and interpretation skills, to answer a research hypothesis
3. Describe through quality assurance/quality control techniques and statistical methods the validity and significance of research results
4. Communicate orally and in writing research implications, methods, results, and conclusions, demonstrated through the preparation and defense of a thesis
5. Interpret published environmental health research findings
6. Demonstrate the appropriate research ethics in laboratory practice, data management, and publication of result

MSPH: Occupational Health

The MSPH in Occupational Health is an academic program that prepares occupational medicine physicians and health professionals with the research and professional knowledge and skills necessary to address the complex health and safety issues found in today's business environment. There is sufficient flexibility to accommodate a variety of interests and career goals, including: practice of occupational medicine in an industrial setting; development, administration and management of occupational health programs, practice of occupational medicine in an industrial setting; the development and management of governmental programs which may be required by law to provide surveillance, monitoring and hazard evaluation; careers in teaching and research in an academic setting or; planning, management and administration of occupational programs in an industrial setting emphasizing epidemiological, clinical and toxicological research. The MSPH curriculum focuses on the worker, the workplace, information management and administration. The student is provided the opportunity to acquire sufficient knowledge and skills to administer and manage occupational health services programs. The MSPH emphasizes protective and preventive policies, procedures, practices and programs. Information management and administration are stressed. The MSPH also gives importance to social, legal, and ethical issues concerns. There is emphasis and sufficient opportunity for conducting research; students are sufficiently prepared to pursue further graduate work (e.g., PhD degree) or pursue a career in an academic institution.

In addition to the overall Master of Science in Public Health degree competencies, Occupational Health graduates will be able to:

1. Summarize the history and social context of occupational medicine and their influence on workers health
2. Identify human and physical factors affecting workers health including geographic, socioeconomic and lifestyle characteristics
3. Relate fundamentals of epidemiologic principles to the incidence of work related health problems and conditions
4. Use appropriate research principles and practices in investigating, controlling and preventing occupational health hazards and conditions
5. Apply principles of toxicology in the manifestation of exposure related illnesses and identify illnesses not related to exposures including psychological disorders
6. Work effectively within the health and safety programs in industries of major importance to Florida and the nation
7. Analyze the role of government regulations, insurance policies and procedures along with the ethical and legal ramifications in treatment and prevention of work related conditions and injury

8. Develop a strategy for a preventive program on a health related issue in the workplace from such items as blood borne pathogens, ergonomics, respiratory protection, general preventive medicine, etc.
9. Focus research activities on specific regional workforce needs
10. Be able to communicate a thorough understanding of occupational and environmental medicine and critical research needs in the field

MSPH: Occupational Safety

In addition to core public health courses, the program builds upon a variety of courses enabling students to recognize, evaluate and control existing and potential safety hazards due to faulty equipment, process design, chemical storage and handling, and various psychological stressors in the workplace. Graduates are expected to contribute to workplace safety and health by evaluating workplace hazards, communicating these hazards to management, designing programs to control these hazards, and evaluating the program effectiveness. Students in this program will have the opportunity to be exposed to courses offered by the College of Engineering and the College of Arts and Sciences.

In addition to the overall Master of Science in Public Health degree competencies, Occupational Safety graduates will be able to:

1. Recognize safety hazards that cause disease/injury associated with occupations;
2. Apply basic scientific and engineering principles to anticipate and identify actual potential safety hazards in the workplace;
3. Interpret toxicology literature and chemical and safety data and incorporate this knowledge into the management of occupational safety hazards;
4. Apply the principles of engineering in the design of appropriate controls for workplace safety hazards;
5. Evaluate, use, maintain, and manage the use of appropriate types of personal protective equipment for control of worker exposures;
6. Conceptualize, develop, manage and evaluate occupational safety programs in industry and elsewhere;
7. Communicate to labor, management, and diverse community populations, both verbally and in writing, the nature, risks, and remediation of workplace safety hazards;
8. Interpret and assure compliance with applicable governmental regulations and standards pertaining to occupational safety and health; and
9. Design and conduct primary research in the field of occupational safety.

MSPH: Industrial Hygiene

The field of industrial hygiene plays an important role in the protection of worker health through workplace assessment and interventions. The training in industrial hygiene is designed to build on the basic skill of engineers and scientists so that they will be able to anticipate, recognize, evaluate, and control hazards in the work place. The development of research skills is also a critical component of the program. The curriculum includes the public health core courses, and program courses relating to occupational diseases, exposure assessment, control measures, and assessment of risk. Graduates are expected to contribute to worker health through their ability to gather data, form opinions, recommend solutions and interact with management, employees, and the community in implementing the solutions. Students will have the opportunity to expand their technical base through electives in the areas of environmental health, industrial safety, risk management, and ergonomics. It is expected that the students will pursue professional certification. The MSPH in Industrial Hygiene is accredited by the Related Accreditation Commission of the Accreditation Board of Engineering and Technology (ABET).

In addition to the overall Master of Science in Public Health degree competencies, Industrial Hygiene graduates will be able to:

1. Recognize health hazards that cause illness and injury associated with occupations
2. Apply basic scientific and engineering principles to anticipate and identify actual and potential health hazards in the workplace
3. Interpret literature and incorporate this knowledge into the evaluation and management of occupational health hazards
4. Apply the principles of engineering in the design of appropriate controls for workplace health hazards
5. Evaluate, use, maintain, and manage the use of appropriate types of personal protective equipment for control of worker exposures
6. Conceptualize, develop, manage, and evaluate health programs in industry and elsewhere

7. Communicate verbally and in writing research methods, results, conclusions, and implications as demonstrated through the preparation and defense of a thesis
8. Communicate verbally and in writing to professional peers, labor, management, and diverse community populations, the nature, risks, and remediation of occupational health hazards
9. Interpret and assure compliance with applicable government regulations and national standards for good work practices related to occupational safety and health

MSPH: Toxicology / Risk Assessment

This concentration is in the biomedical sciences with specialized training in research skills. The program is designed with a balanced curriculum in the areas necessary for understanding the response of organisms to chemical insult, and in the research approaches necessary for the evaluation of these responses. Students will be able to make decisions based upon an understanding of both the uses and the limitations of animal research as it relates to human and health effects. The MSPH provides a thesis experience to allow for research in a well-defined area consistent with the students and faculty interests.

In addition to the overall Master of Science in Public Health degree competencies, Toxicology / Risk Assessment graduates will be able to:

1. Identify chemical hazards, and how their physical and chemical properties influence and interact with the environment, and in turn, the human body
2. Explain uses and limitations of animals for toxicity testing and inferences that can be made for human health effects
3. Analyze risks associated with chemical exposures, both environmental and occupational, and methods of intervention and prevention
4. Identify pathways and pharmacological aspects of chemical exposure
5. Interpret and translate research findings and apply to problems arising from chemical pollution
6. Use a variety of laboratory techniques to evaluate chemical, biological and radiological hazards
7. Build communication skills, both written and verbal
8. Apply ethical principles guiding the conduct of research on human subjects, including principles for ethical decision-making beyond the regulatory purview of institutional review boards
9. Demonstrate, through preparation and defense of a thesis, mastery of research skill and curriculum content

Epidemiology and Biostatistics

MSPH: Epidemiology

The MSPH program in Epidemiology is an academic degree, geared toward students who want a solid foundation in research methods and who wish to become members of a public health epidemiologic research team. Related to health promotion, disease prevention and control, students acquire knowledge and skills in study design, data management, analysis and interpretation of study results. A thesis involving primary or secondary data analysis is required.

In addition to the overall Master of Science in Public Health degree competencies, *Epidemiology* graduates will be able to:

Epidemiologic Principles and Methods

1. Describe and discuss the history and theory of epidemiology
2. Identify, describe and discuss the public health problems in terms of magnitude, person, time and place
3. Assess, synthesize and critically evaluate epidemiologic scientific literature
4. Compare and contrast uses and limitations of experimental and observational study designs in epidemiology
5. Design a cross-sectional, cohort and case-control study to address a public health problem
6. Demonstrate proficiency in epidemiologic principles of infectious and chronic disease research
7. Critically evaluate risk factors and their relationships to health outcomes including the evaluation of bias and effect modification
8. Demonstrate proficiency in basic and intermediate epidemiologic methods and principles

Data Management and Statistical Analysis

9. Demonstrate mastery of data management and processing and SAS programming skills.
10. Demonstrate proficiency in the analysis of continuous, categorical and time to event data and interpretation of results

Practice of Epidemiology

11. Identify, discuss and apply ethical principles to the design, collection, use and dissemination of epidemiologic data

12. Conduct an independent research project including hypothesis generation, review of the epidemiologic literature, data management, analysis, interpretation and written and oral communication of findings

MSPH: Biostatistics

The goal of the MSPH Program in Biostatistics is for students to acquire a thorough understanding of biostatistical methods, and to apply them to research focusing on public health related problems. The program prepares students to fulfill a primary or shared responsibility for the handling of quantitative and computational aspects of a research project, ranging from study design, data collection and management, developing analysis plans, and conducting analyses and reporting findings. The program provides students with knowledge in statistical theory and computational methods as applied to public health research. The intended audience of the program includes individuals with a strong quantitative background and interests in pursuing a research career as a biostatistician. Through advanced coursework and the thesis, students develop mastery in at one or more statistical methods related to their thesis research area.

In addition to the overall Master of Science in Public Health degree competencies, Biostatistics graduates will be able to:

1. Apply biostatistical methods to the design of experimental and observational studies with respect to sample selection, randomization, and power.
2. Apply common probability distributions to public health outcomes.
3. Use statistical techniques including descriptive statistics, data exploration, estimation, hypothesis testing, and modeling.
4. Demonstrate programming and data management skills and use common statistical software packages for data analysis.
5. Communicate effectively to public health practitioners in terms of formulating research problems and interpreting statistical results.
6. Conduct independent research involving the application of biostatistical methods to a health research problem.
7. Critique statistical and public health literature.
8. Demonstrate knowledge of ethical issues related to the use of biostatistics in health research.
9. Develop written and oral presentations based on statistical analyses.
10. Describe public health problems in terms of magnitude, person, time and place, and demonstrate knowledge and understanding of risk factors and their relationship to health outcomes.
11. Demonstrate knowledge and understanding of public health issues

Global Health

MSPH: Global Communicable Diseases

The Global Communicable diseases (GCD) program provides an opportunity for science-oriented students with an interest in communicable diseases to receive specialized training in the recognition, identification, diagnosis, surveillance, control, and prevention of public health problems related to communicable diseases throughout the world, with particular emphasis on the problems of Florida and underdeveloped nations. Several course offerings and areas of emphasis focusing on infection control have been added to this program to allow public health practitioners to expand their knowledge of infection control practices and procedures, particularly in hospital settings. Preference for admission is given to students with a background or demonstrated skills in the biological sciences. Prerequisites for some of these courses may be required.

The MSPH program is designed for students who seek a more individualized, research-oriented program than that provided by the MPH degree. This program provides an intense research and technical program of study for science-oriented students with an interest in communicable diseases or global health. Individualized courses of study are determined for students with the cooperation of an advisory committee, which allows students to receive specialized training in the recognition, identification, diagnosis, surveillance, control, and prevention of public health problems related to communicable diseases and/or issues impacting global health. This degree program focuses on preparing students to fulfill leadership and research roles in solving or containing public health problems throughout the world with particular emphasis on the problems of resource poor regions. The MSPH culminates with an independent thesis requirement which requires a substantial on-campus time commitment on the part of the student. The thesis work involves extensive one on one interaction between the student, their thesis advisor and their thesis committee.

In addition to the Masters of Science in Public Health (MSPH) degree competencies, graduates with a concentration in Global Communicable Diseases will:

1. Interpret the natural history of disease-causing parasites, bacteria, viruses, fungi, and other organisms of major public health concern, as well as the disease processes and clinical manifestations caused by those infectious organisms;
2. Identify the appropriate diagnosis, epidemiology, surveillance, control, treatment and prevention of communicable diseases;
3. Describe the natural human defenses, the appropriate use of diagnostic techniques and serological surveillance, and the role of preventive interventions and treatments such as vaccines and antibiotics against communicable diseases;
4. Apply principles of immunology, molecular biology and other essential biological sciences disciplines in the laboratory settings for research and the diagnosis, surveillance, control, treatment, and prevention of communicable diseases; and
5. Prepare and present information about communicable diseases to other members of health-related professions and to members of the public in a professional and effective manner.
6. Explain factors such as biology, ecology and dynamics of arthropod vector populations that affect transmission of specific communicable diseases such as malaria and dengue
7. Recognize the roles of the laboratory in the Public Health system and have a thorough understanding of the complexity and inter-connectivity of all levels of laboratory services
8. Analyze data collected through MSPH thesis studies, interpret the findings, and successfully defend an MSPH thesis ;

Health Policy and Management

MSPH: Health Policy and Management

The MSPH in Health Policy and Management is designed for individuals interested in developing research and analytic skills regarding the organization, financing and delivery of health services and issues of cost, quality and access. Graduates of the MSPH program will be prepared for positions in research and analysis in private and public sector organizations. Some applicants choose the MSPH degree program in anticipation of pursuing doctoral studies. Students develop knowledge and skills in health economics and research and quantitative methods applied to health policy and management issues.

In addition to the overall Master of Science in Public Health degree objectives, Health Policy and Management graduates will be able to:

1. Assess the health care system in the United States , including the role of the public health disciplines
2. Employ analytic skill in health economics
3. Apply statistical and analytic methods regarding the organization, financing and delivery of health services
4. Demonstrate the ability to use research methodologies to address issues of cost, quality and access
5. Develop interpersonal and communication skills
6. Apply critical thinking skills and knowledge to a research topic in health policy and management

Core DrPH Competencies

The Doctor of Public Health (DrPH) is a professional, practice-oriented degree which is granted in recognition of the attainment of a broad set of practice, analytic and evaluative skills, including demonstrated public health leadership skills. Emphasis will be placed on proficiency in policy development and health policy strategies, public health leadership and management of health programs. Demonstration of applied research skills and strength in evaluation methods via practice-based specialized study will be expected.

A Doctor of Public Health graduate will be able to:

1. Critically evaluate and use scientific theories and frameworks relevant to public health practice
2. Critically analyze substantive public health problems using evaluation, applied research and statistical methods
3. Collect, synthesize and apply knowledge from a broad range of public health disciplines
4. Design, implement and evaluate innovative strategies and interventions to solve public health problems
5. Demonstrate leadership by mobilizing, coordinating and directing collaborative actions targeting a public health problem
6. Demonstrate effective written and oral skills in communicating accurate statistical, programmatic, and scientific information in both professional and lay settings

CONCENTRATION COMPETENCIES

Community and Family Health

DrPH: Community and Family Health

A Doctor of Public Health graduate with a concentration in Community and Family Health will be able to:

1. Defend the importance of theoretical frameworks in planning, implementation, and evaluation of community and family health interventions
 - a. Sub-competency: Distinguish among major and emerging intrapersonal, interpersonal, organizational, and community level theories used in community and family health
 - b. Sub-competency: Apply appropriate theoretical frameworks to public health assessments, interventions, evaluations and policy
2. Describe strengths and weaknesses of research designs and methods in population health
3. Differentiate among analytical techniques to determine the most appropriate for specific research and policy questions, then identify and apply those techniques as needed.
4. Interpret research findings
 - a. Sub-competency: Derive pertinent implications from research findings.
 - b. Sub-competency: Indicate and address study limitations
 - c. Sub-competency: Indicate directions for future policy and research
5. Describe significant public health achievements, changing paradigms, and continuing challenges
6. Analyze research traditions in community and family health from the standpoint of practice and the philosophy of science
7. Formulate research questions and testable hypotheses that will impact community and family health
8. Describe techniques and methods for community-based participatory research
9. Assess appropriateness of existing data sets to answer research questions
10. Advocate for public health issues in community and family health
 - a. Sub-competency: Advocate for evidence-based practices
 - b. Sub-competency: Describe criteria for evidenced-based practices
 - c. Sub-competency: Identify need for changes to existing policy or practice
11. Translate research into practice and policy implications
12. Describe techniques and methods for including community members in planning, implementing, and evaluating public health programs
13. Disseminate knowledge across targeted audiences in practice, policy, and community settings
14. Apply ethical standards of public health in the conduct and dissemination of research and policy
15. Align presentation and teaching methods to learner needs
 - a. Sub-competency: Demonstrate skills that facilitate learning in both formal and informal settings

Global Health

DrPH: Global Health

A Doctor of Public Health graduate will be able to:

1. Defend the theoretical constructs and approaches of development theory, public health theory, logical-framework matrices and project-cycle management as they relate to the design, needs assessment, implementation, monitoring & evaluation and impact analysis of interventions targeting marginalized populations in low-resource settings
2. Analyze the prevailing international health systems in industrial and developing countries, comparing coverage, utilization, equity, policy, organization, delivery and financing of those systems and define the rationale for health systems' reforms
3. Describe public health conditions and problems related to infectious disease control and surveillance in developing countries as well as trans-border movement of pathogens and disparities related to globalization
 - a. Sub-competency: Assess the diseases of poverty and marginalized populations as it relates to the globalization of health and remediation/eradication of diseases (both acute and chronic)
4. Assess the burden of disease on health, service utilization and finance, and the importance of prevention
5. Describe the bio-cultural, political and economic determinants of health and health status at the global level
6. Appraise the role of cultural, social and economic factors that contribute to the incidence of infectious disease
7. Describe development theory and the intersect of development, diet, disease and disparity for low-resource settings
8. Formulate community-based delivery of interventions, e.g. community-directed interventions (CDI) and Adaptive collaborative management (ACM) developed for low-resource settings
9. Design integrative strategies minimally synthesizing health economics (cost-effectiveness), biomedicine/clinical practice, social medicine and supranational policy (political ecology of health)
10. Use ethical and culturally appropriate technology/ interventions when addressing public health problems and prevention at the community and global levels
11. Describe the unique constraints and issues of international ethics pertaining to human subjects protection, informed consent, etc. ("therapeutic misconception, illiteracy, polygamy, communal definition of self, etc.)
12. Propose methodologies for the evaluation of public health programs and interventions
13. Ability to demonstrate the utility of qualitative analysis, quantitative analysis, and hybrid designs in addressing GH interventions
14. Demonstrate skills for knowledge management systems and learning evolution as it relates to project management and institutional and community memory
15. Demonstrate trans-disciplinarily (consilience, or cross-disciplinary fluency) minimally for health economics, biomedicine, social medicine and development theory

Core PhD Competencies

The Doctor of Philosophy (PhD) is granted in recognition of high attainment in a specified field of knowledge. It is a research degree and is not conferred solely upon the earning of credit or the completion of courses. Students should acquire the skills to create and disseminate knowledge, and also to lead, collaborate with and teach others in various public health academic, research and field settings.

A Doctor of Philosophy graduate will be able to:

Scientific Knowledge and Theory

1. Critically evaluate and use scientific theories and frameworks relevant to public health.
2. Synthesize knowledge from a broad range of disciplines in public health.

Research

3. Critically analyze research literature
4. Develop models for guiding independent research
5. Design and carry out original research that contributes to the knowledge base in public health
6. Demonstrate innovative methods of data collection and analysis
7. Apply a set of ethical standards in the conduct and dissemination of research
8. Work as an effective research team member
9. Prepare scholarly publications and deliver oral presentations

Teaching

10. Demonstrate ability to teach a university level course using current pedagogical techniques
11. Demonstrate communication skills that facilitate learning by others in formal and informal settings

CONCENTRATION COMPETENCIES

PhD: Community and Family Health

In addition to the overall Doctor of Philosophy degree competencies, graduates with a concentration in Community and Family Health will be able to:

1. Defend the importance of theoretical frameworks in planning, implementation, and evaluation of community and family health interventions
2. Describe significant public health achievements, changing paradigms, and continuing challenges
3. Analyze research traditions in community and family health from the standpoint of the philosophy of science
4. Formulate research questions and testable hypotheses that will impact community and family health
5. Assess appropriateness of existing data sets to answer research questions
6. Align research questions with appropriate methods of inquiry
7. Describe techniques and methods for community-base participatory research
8. Analyze research data
9. Interpret research findings
10. Apply ethical standards of public health in the conduct and dissemination of research
11. Disseminate knowledge across targeted audiences in research settings
12. Align teaching methods to learner needs
13. Translate research into practice and policy implications
14. Describe techniques and methods of including community members in planning, implementing, and evaluating public health programs
15. Disseminate knowledge across targeted audiences in practice, policy, and community settings
16. Demonstrate proficiency in writing audience-centered technical reports
17. Advocate for public health issues in community and family health

PhD: Epidemiology

In addition to the overall Doctor of Philosophy degree competencies, graduates with a concentration in Epidemiology will be able to:

1. Search the literature
2. Produce the descriptive epidemiology of a given condition, including case definition, calculation of the primary measures of disease morbidity and mortality, and appropriate comparisons by person, place and time; list the strengths and limitations of descriptive studies; identify data from existing national and international sources; identify the major chronic and infectious disease, their general pathophysiology, descriptive epidemiology and risk factors; identify leading causes of death; understand the general history of the development of epidemiology, including the major epidemiological studies of selected diseases; know the principles of screening and of surveillance systems, including understanding the concepts of validity and reliability of screening tests and be able to calculate associated measures and know the types of surveillance systems and

approaches used in disease surveillance; understand the global, cultural and social context of health problems and how these influence the conduct, interpretation and dissemination of research in and intervention studies

3. Review and critically evaluate the literature (be familiar with different approaches to reviewing and synthesizing the literature); synthesize available information; identify meaningful gaps in knowledge
4. Formulate an original and key hypothesis or statement of the research problem; design a study using any of the main study designs (including clinical trials and community trials)
5. Understand the advantages and limitations of each design for addressing specific problems, as well as the practical aspects of their uses, including trade-offs. This understanding will be reflected in selecting the most appropriate and efficient design for a designated problem; calculate the requisite sample size of power based on pre-determined sample size; identify and minimize sources of bias; describe both the direction and magnitude of the bias and the effect of potential biases on the measures of association; use basic population sampling methods. Use methods of measurement: design data collection forms assessing both exposures and outcomes; determine the validity and reliability of the instrument(s); identify the presence and magnitude of measurement error; and adjust for measurement error when appropriate data are available
6. Monitor the conduct and progress of data collection; develop, implement and assess quality control measures; create data files appropriate for analysis; carry out the steps needed to create new variables, clean data sets, etc.; use statistical computer packages to calculate and display descriptive statistics, analyze categorical data and perform multivariable regression, survival analysis and other longitudinal data analyses; examine data for the presence of confounding and interaction (effect-modification), identify their presence and manage them appropriately; interpret the research results, make appropriate inferences based on results, and recognize the implications of the research results; communicate research results orally and in writing to both scientists and non-scientists (includes preparation of a manuscript suitable for publication in a scientific journal and presentation of research proposals)
7. Apply this understanding as evidenced in the design and conduct of the research; demonstrate mastery of a substantive area, including knowledge and application of that knowledge in conducting original research related to a specific topic
8. Present research data in both tabular and figure forms; understand the concepts of human subjects procedures and confidentiality, and awareness of particular issues relevant to the study of specific populations; experience working with large data sets
9. Demonstrate proficiency in grant-writing for appropriate funding agencies
10. Students are encouraged to deliver data-driven talks/posters at national and international meetings in epidemiology an/or in their substantive area

PhD: Biostatistics

In addition to the overall Doctor of Philosophy degree competencies, graduates with a concentration in Biostatistics will be able to:

1. General knowledge of public health, health policy, healthcare management, and delivery
2. In-depth knowledge of epidemiology, evaluation of healthcare outcome and system; special knowledge in a chosen field of public health where the student has interests in conducting biostatistical applications
3. In depth knowledge of the history of biostatistics with respect to its role in public health
4. Conduct public health literature search and review the understand substantive research questions
5. Conduct literature review on biostatistical methods to understand the limitations and strengths of key methods
6. Articulate research needs for developing new methods and improving on existing methods
7. Formulate substantive research questions into statistical questions and identify biostatistical methods to address them
8. Design a research plan to develop, evaluate, and compare biostatistical methods
9. Develop and carry out an analysis plan for an application project
10. Understand study design, data structure, and be able to create datasets in an application context
11. Understand the role a biostatistician plays in ensuing scientific integrity with respect to data collection, analysis, reporting, and interpretation
12. Gain substantial experience in conducting consultation and collaborative research to provide biostatistical support

13. Develop effective communication capability with researchers from different disciplines
14. Develop leadership skill in a team environment
15. Participate in manuscripts preparation as a collaborator contributing mostly on data analysis and interpretation
16. Prepare manuscripts as a leading author emphasizing method development and application
17. Working knowledge of funding source from federal, local governments, and non-profit source
18. Experience in writing applications for pre- or post-doctoral fellowship
19. Working with faculty advisor or mentor to participate in grant writing; focusing on study design and analysis plan
20. Experience as a teaching assistant for master's level course
21. Experience in lecturing undergraduate course
22. Experience in presenting research findings at professional conferences and seminars in either poster or oral presentation
23. Conduct consultation sessions

PhD: Global Health

In addition to the overall Doctor of Philosophy degree competencies, graduates with a concentration in Global Health will be able to:

1. Define and formulate a research hypothesis that will provide information aimed at improving the health of individuals and communities, and the quality and safety of the environments in which we work and live
2. Develop and apply laboratory and field methodologies to test a research hypothesis, including quality assurance/quality control techniques and statistical methods that test the validity and significance of research data
3. Demonstrate the oral and writing skills, and experimental design, worthy of defending a dissertation and publication in academic and professional journals
4. Work as a productive member of a research team and collaborate in writing research proposals to obtain extramural funding to support research projects
5. Demonstrate ethical considerations in the practice, management and publication of research results

PhD: Health Policy and Management

In addition to the overall Doctor of Philosophy degree competencies, graduates with a concentration in Health Policy and Management will be able to:

1. Demonstrate proficiency in public health and health policy and management principles, research methodology, and a recognized specialty area in health policy or health care management
2. Demonstrate skills in the core disciplines of health policy and management, particularly economics and decision sciences, health policy and management
3. Conduct scholarly research
4. Demonstrate a working knowledge of the principal statistical approaches used in contemporary health services research
5. Analyze large-scale data sets
6. Apply ethical standards in the content of research and work as an effective research team member
7. Write scholarly publications and grant applications, and make oral presentations
8. Apply specialized knowledge in one or more of the substantive areas of health policy and management such as health services/outcomes research, concepts and techniques of health care management, analysis of federal/state health policies, and/or medical care organization and financing;
9. Contribute to health policy and management inquiry and practice

PhD: Occupational Health

1. Demonstrate general knowledge of public health in the context of environmental factors, occupational exposures, and related health outcomes including personal risk factors
2. Demonstrate knowledge of the history of environmental and occupational health
3. Interpret literature regarding environmental and occupational health and understand the limitations and strengths of the research presented
4. Conduct discipline-specific literature reviews to assess current issues and develop research questions
5. Demonstrate special knowledge in a specific area of interest in occupational health
6. Articulate research needs for new methods and improvement of existing methods

7. Formulate substantive research questions in occupational health
8. Design and execute a feasible research plan to address specific gaps in the state of knowledge in occupational health
9. Understand study design and data structure, and be able to interpret results
10. Conduct research responsibly with an understanding of scientific integrity with respect to data collection, analysis, interpretation, and reporting
11. Perform all research ethically with respect for the protection of human participants
12. Communicate effectively with other scientists and the public
13. Collaborate with researchers in other disciplines
14. Prepare manuscripts presenting the results of research
15. Present research at professional conferences and seminars
16. Engage in lifelong learning regarding occupational health
17. Provide leadership in occupational and public health improvement at the local, state, national and international levels

PhD: Industrial Hygiene

1. Demonstrate general knowledge of public health in the context of environmental factors, occupational exposures, personal risk factors, and related health outcomes
2. Demonstrate knowledge of the history of industrial hygiene and occupational health
3. Interpret literature regarding industrial hygiene and occupational health and understand the limitations and strengths of the research presented
4. Conduct discipline-specific literature reviews to assess current issues and develop research questions
5. Demonstrate special knowledge in a specific area of interest in industrial hygiene and occupational health
6. Articulate research needs for new methods and improvement of existing methods
7. Formulate substantive research questions
8. Design and execute a feasible research plan to address gaps in the state of knowledge in industrial hygiene and occupational health
9. Understand study design and data structure, and be able to interpret results
10. Conduct research responsibly with an understanding of scientific integrity with respect to data collection, analysis, interpretation, and reporting
11. Perform all research ethically with respect for the protection of human participants
12. Communicate effectively with other scientists and the public
13. Collaborate with researchers in other disciplines
14. Prepare manuscripts presenting the results of research
15. Present research at professional conferences and seminars
16. Translate research results to practice/practical application
17. Advocate for industrial hygiene and occupational health in public forums
18. Engage in lifelong learning in industrial hygiene and occupational health

PhD: Environmental Health

1. Demonstrate general knowledge of public health in the context of environmental factors, occupational exposures, and individual susceptibilities, and related health outcomes
2. Demonstrate knowledge of the history of environmental health
3. Interpret literature regarding environmental health and understand the limitations and strengths of the research presented
4. Conduct discipline-specific literature reviews to assess current issues and develop research questions
5. Demonstrate special knowledge in a specific area of interest in environmental health
6. Articulate research needs for new methods and improvement of existing methods
7. Formulate substantive research questions in environmental health
8. Design and execute a feasible research plan to address gaps in the state of knowledge in environmental health
9. Understand study design and data structure, and be able to interpret results
10. Conduct research responsibly with an understanding of scientific integrity with respect to data collection, analysis, interpretation, and reporting
11. Perform all research ethically with respect for the protection of human participants
12. Communicate effectively with other scientists and the public
13. Collaborate with researchers in other disciplines

14. Prepare manuscripts presenting the results of research
15. Present research at professional conferences and seminars
16. Convey broad knowledge of environmental health in an educational setting

PhD: Toxicology & Risk Assessment

1. Demonstrate general knowledge of public health in the context of environmental factors, occupational exposures, personal risk factors, and related health outcomes
2. Demonstrate knowledge of the history of environmental and occupational health
3. Interpret literature regarding environmental and occupational health and understand the limitations and strengths of the research presented
4. Conduct discipline-specific literature reviews to assess current issues and develop research questions
5. Demonstrate special knowledge in a specific area of interest in environmental and occupational health
6. Articulate research needs for new methods and improvement of existing methods
7. Formulate substantive research questions
8. Design and execute a feasible research plan to address gaps in the state of knowledge in environmental and occupational health
9. Develop and apply experimental design skills, and laboratory and field methodologies to test a research hypothesis
10. Understand study design and data structure, and be able to interpret results
11. Conduct research responsibly with an understanding of scientific integrity with respect to data collection, analysis, interpretation, and reporting
12. Perform all research ethically with respect for the protection of human participants
13. Communicate effectively with other scientists and the public
14. Collaborate with researchers in other disciplines
15. Prepare manuscripts presenting the results of research
16. Present research at professional conferences and seminars
17. Teach at a university level and work as a productive member of a research team and collaborate in writing research proposals to obtain extramural funding to support research projects
18. Provide leadership in toxicology and risk assessment at the local, state, national and international levels

B.S. in Public Health
Core BS in Public Health Competencies

The new BS in public health also requires that students gain a breadth of knowledge in the core areas of public health.

A Bachelor of Science with a major in Public Health will be able to:

1. Identify and articulate the core functions of public health
 - a. Explain the basic principles of epidemiology
 - b. Assess social and behavioral interventions to improve health of populations
 - c. Identify the impact of the environment and communicable diseases on health
 - d. Explain the role that public health plays in disaster prevention and management and evaluate public policy issues with respect to access, quality and cost when understanding health disparities within vulnerable populations
2. Exhibit critical thinking and analytical abilities, including the capacities to engage in inductive and deductive thinking and quantitative reason, and to construct sound arguments.
 - a. Identify topics pertaining to public health research
 - b. Generate research questions, analyze and present data, and interpret and discuss findings
 - c. Demonstrate awareness about current public health topics including an analysis of the societal attitudes that generate differences on current public health topics
3. Communicate using effective oral skills
 - a. Demonstrate an ability to contribute effectively to group discussions and presentations
 - b. Apply effective public speaking skills during classroom presentations
4. Develop effective written presentations
 - a. Demonstrate the use of information literacy skills such as locating and evaluating pertinent public health information
 - b. Demonstrate the ability to use library resources and scientific databases
 - c. Exhibit proper referencing secondary materials in APA format