



**NATIONAL  
ENVIRONMENTAL HEALTH  
SCIENCE AND PROTECTION  
ACCREDITATION COUNCIL  
(EHAC)**

## **Outcome Assessment Report 2013**

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### **Background:**

The EHAC Undergraduate Guidelines section VI. Reporting Obligations of Accredited and Pre-accredited Programs part D. Program Outcomes Assessment Survey states that:

“At the time of re-accreditation, the institution shall survey program graduates and employers via the Council’s outcome assessment tool. All graduates since the last accreditation shall be in the pool of those to be surveyed. The completed tools shall be gathered by the institution and forwarded to the Executive Director of the Council six months prior to the annual meeting of the Council. The Council will supply a summary of the information gathered to all accredited programs on an annual basis.

The purpose of this survey is to determine the adequacy of the accreditation process to the needs of the professional practice of environmental health. The information gathered by an institution through the outcome assessment process will not be used as part of the self-study for re-accreditation purposes for a given institution. The Council will use the compiled information from all institutions undergoing re-accreditation to evaluate and modify the requirements of accreditation.”

The outcome assessment tool consists of two surveys conducted through surveymonkey.com, one for graduates and one for their supervisors. It is distributed to the re-accreditation candidate Program Directors where they send the links to their graduates. The graduates then submit the supervisor survey to their supervisors.

The following re-accreditation applicants responded to the outcome assessment survey:

**Table 1.**

<b>EHAC Re-Accreditation Applicants 2014</b>	<b>Program</b>	<b>Next Accreditation Review</b>	<b>Initial Accreditation</b>	<b>Graduating Classes reflected on OA</b>	<b># of Graduate Respondents</b>	<b># of Supervisor Respondents</b>
Missouri Southern State University	Undergraduate	2014	1996	2008-2013	14	6
Old Dominion University	Undergraduate	2014	1983	2008-2013	10	2
West Chester University	Undergraduate	2014	2008	2008-2013	2	0

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### Graduate Skills

Listed below are core competencies in environmental health programs. Graduate (Undergraduate) respondents were asked to choose the option that most closely described their skill level. The percentages reflect 26 graduate survey respondents.

Chart 1

### Information Technology/Computer Skills

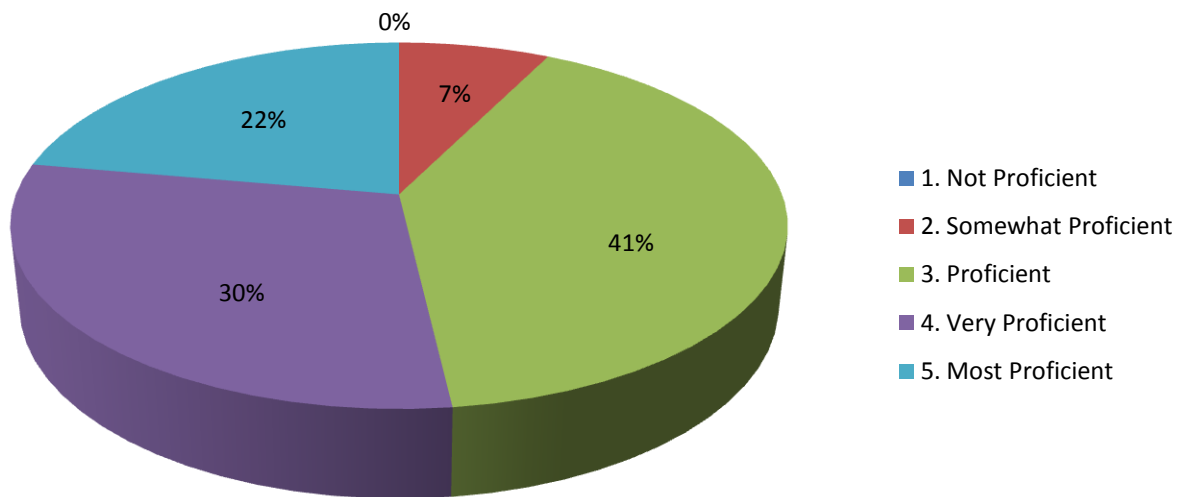


Chart 2

### Public Speaking

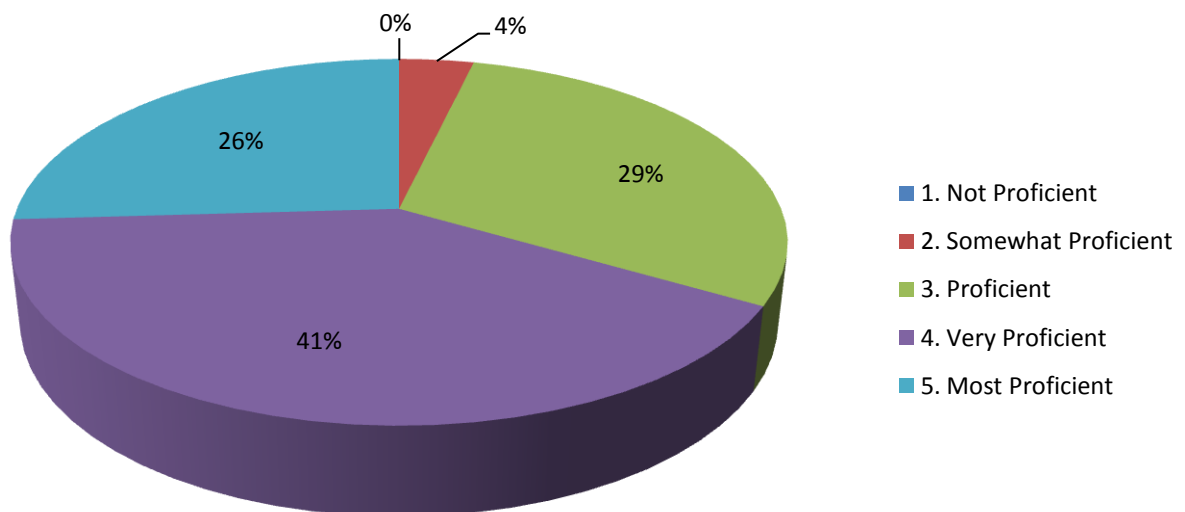


Chart 3

### Technical Writing

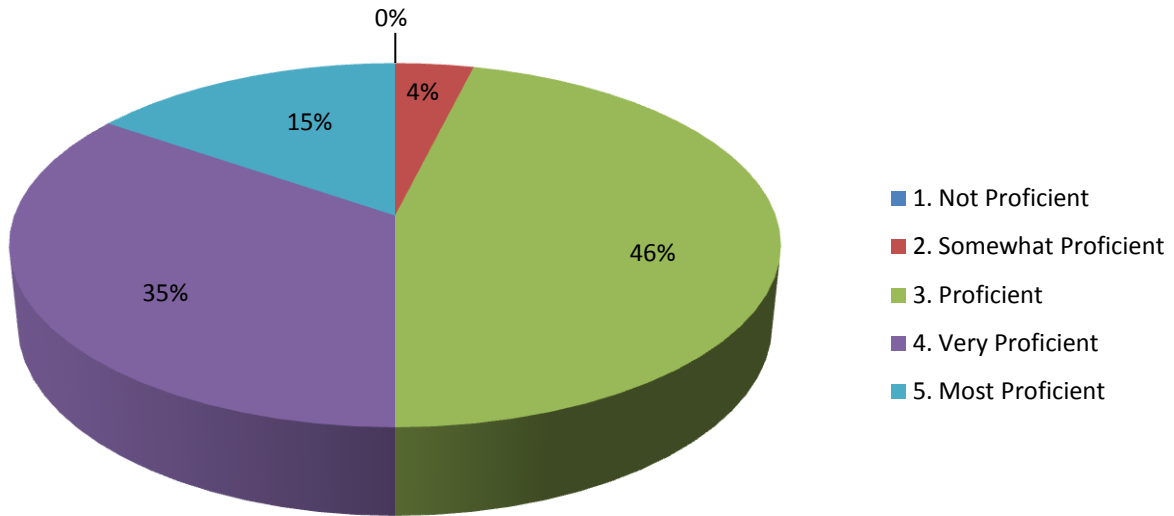


Chart 4

### Identify reliable and relevant information

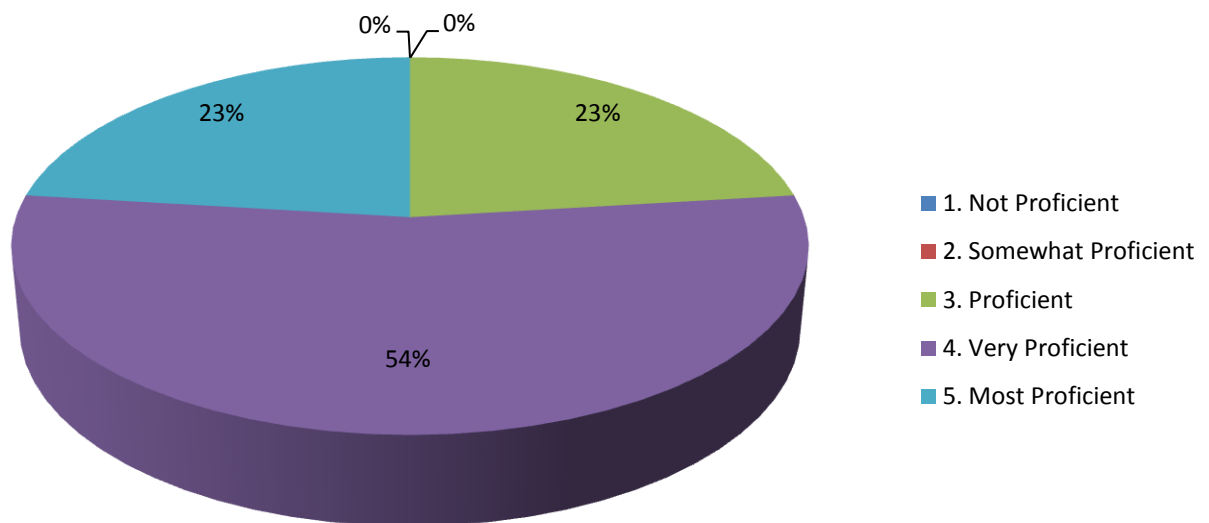


Chart 5

Drawing appropriate conclusions

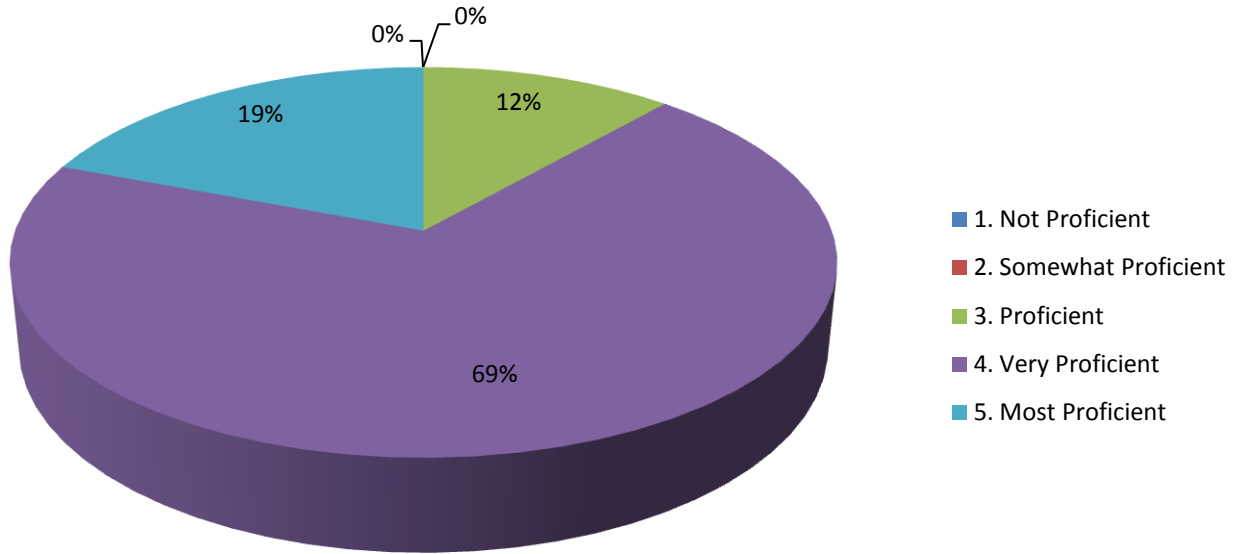


Chart 6

Choosing and defending an appropriate course of action

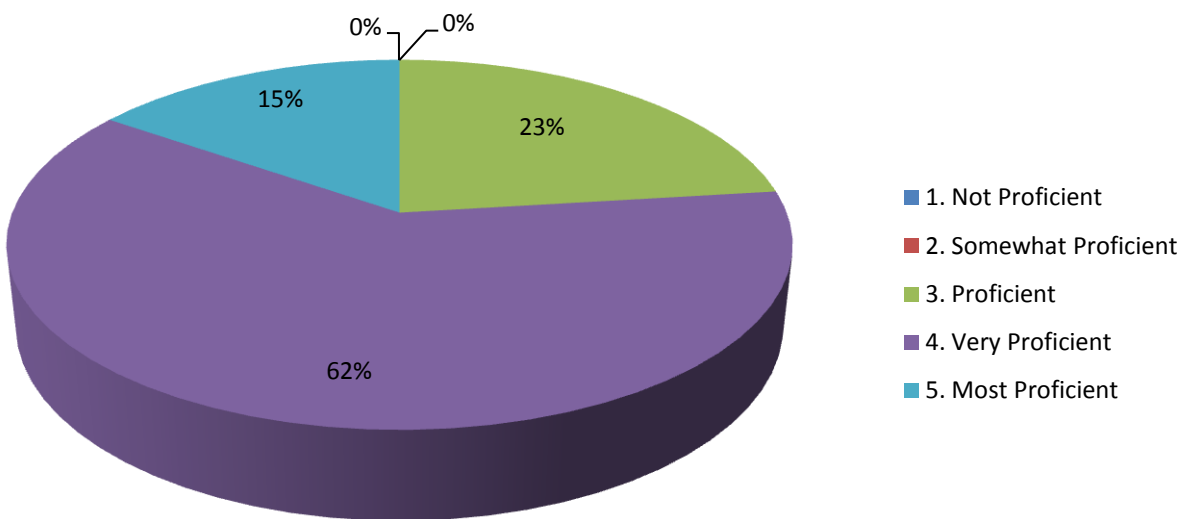


Chart 7

### Conducting a statistical analysis and interpreting data

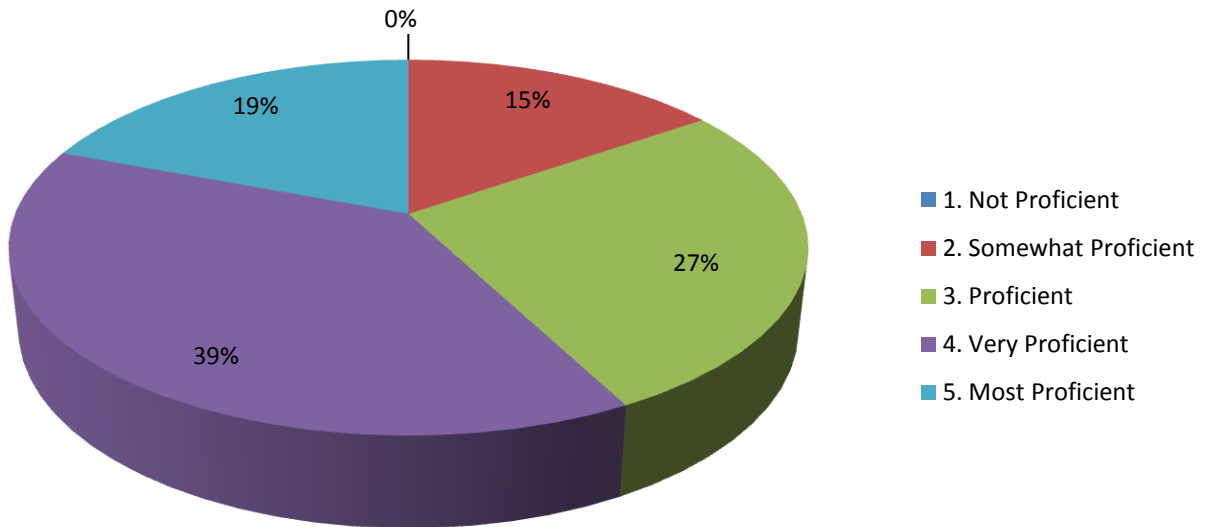


Chart 8

### Applying research methods and problem solving

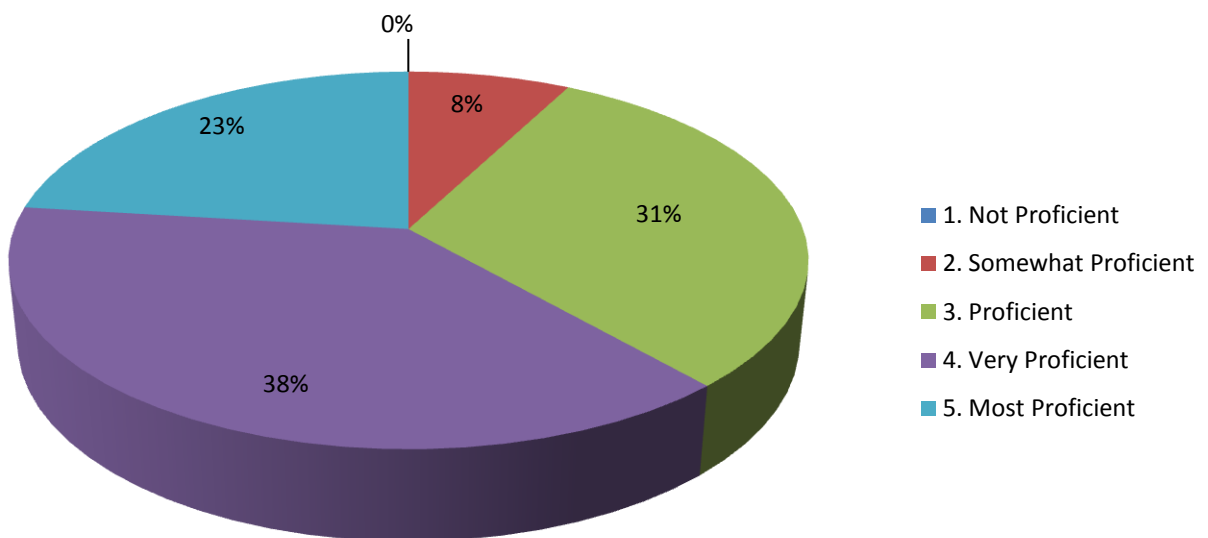


Chart 9

### Working in a team setting

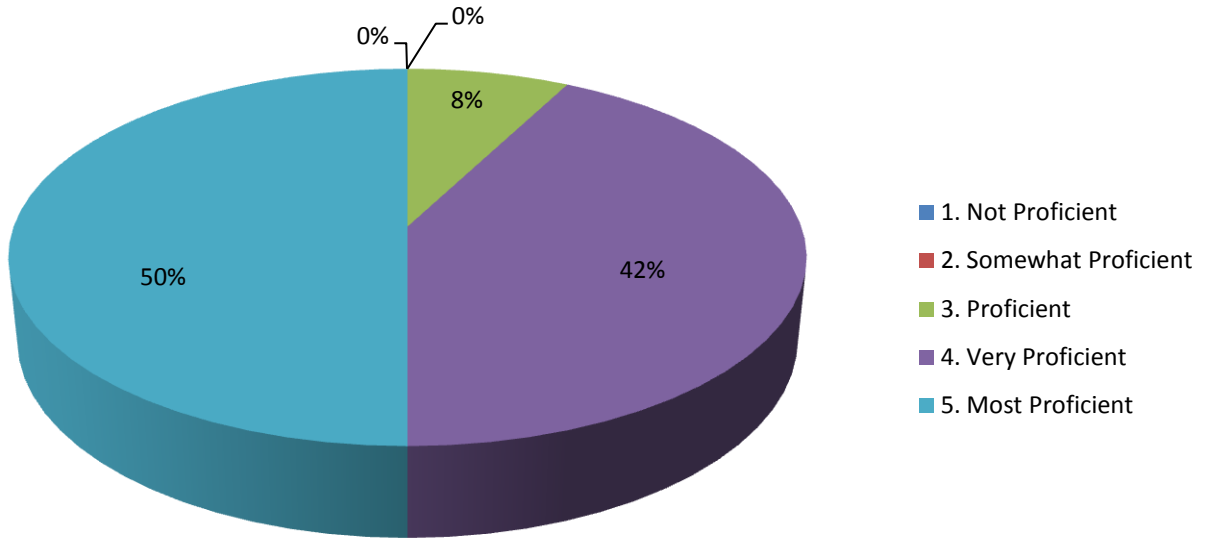


Chart 10

### Leadership skills

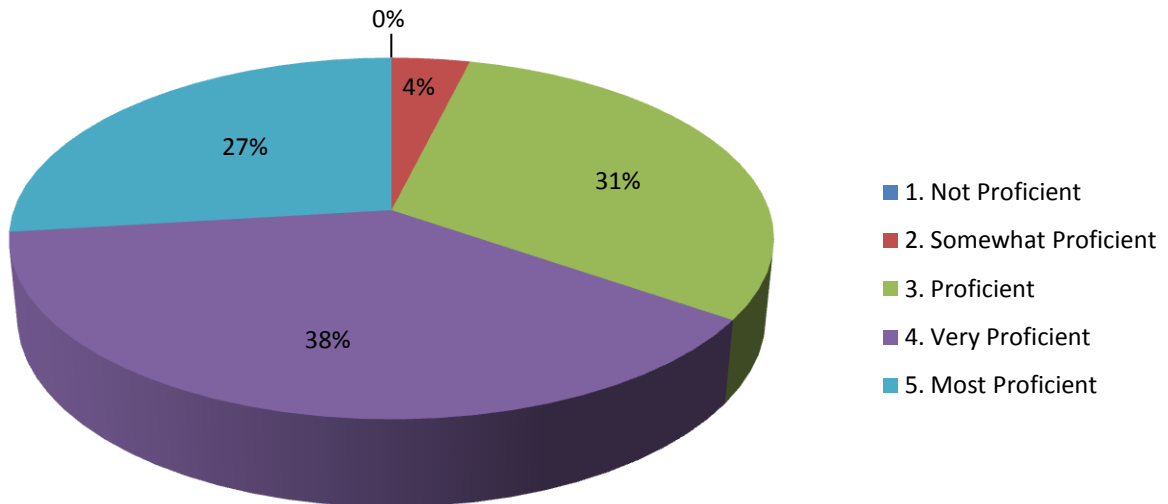


Chart 11

### Organizing work flow

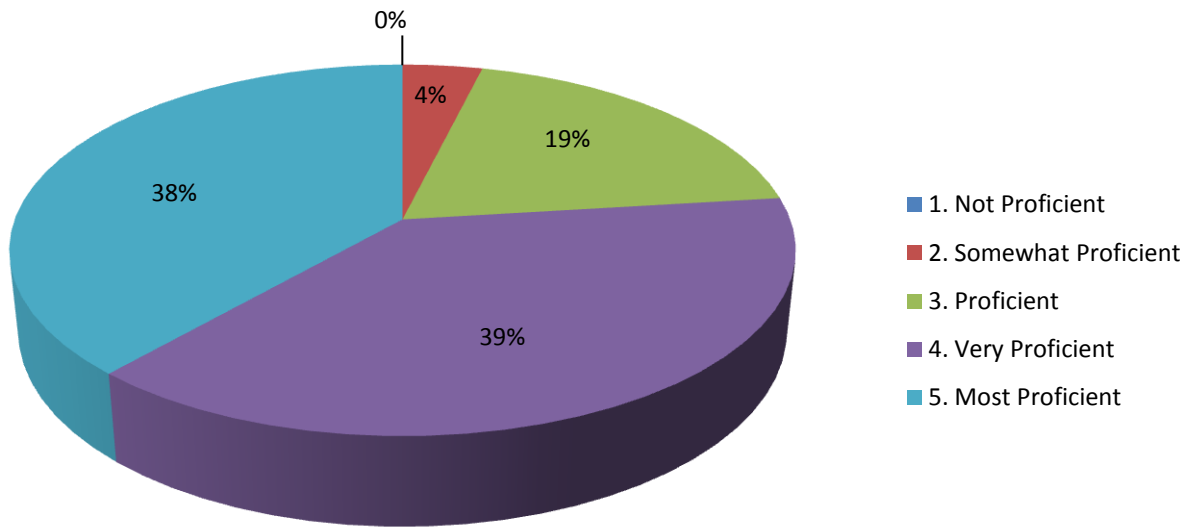
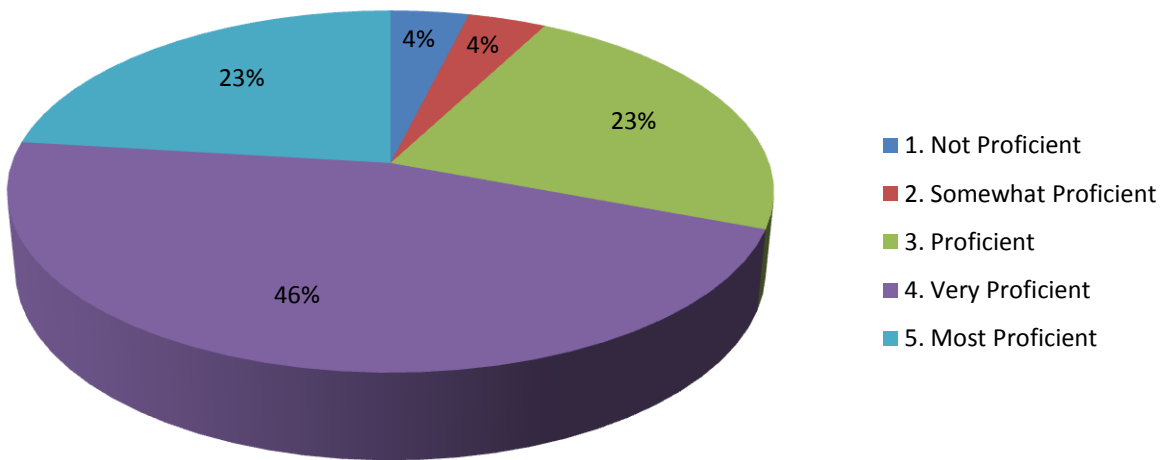


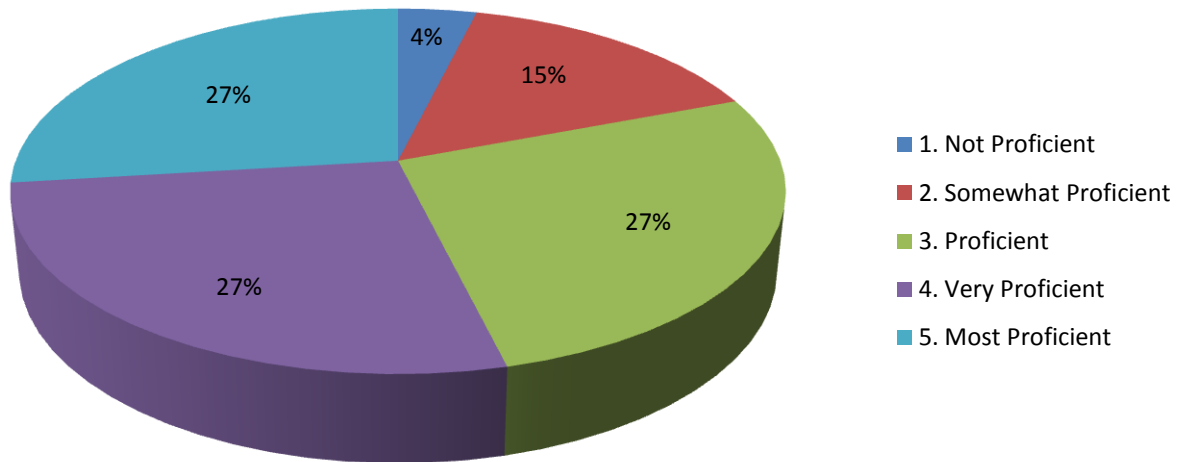
Chart 12

### Time management



**Chart 13**

**Project planning and management**



Respondents were asked to rate their skill-level (5=Best, 1=Worst) in the following areas:

**Table 2.**  
**Graduate Skills-All Respondents (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Information Technology/Computer Skills	26	3.62
Public Speaking	26	3.85
Technical Writing	26	3.62
Identify reliable and relevant information.	26	4.00
Drawing Appropriate Conclusions	26	4.08
Choosing and defending an appropriate course of action	26	3.92
Conducting a statistical analysis and interpreting data	26	3.62
Applying Research methods and problem solving	26	3.77
Working in a team setting	26	4.42
Leadership Skills	26	3.89
Organizing work flow	26	4.12
Time management	26	3.81
Project planning and management	26	3.58
Epidemiology	26	3.00
Toxicology	26	3.00
Risk Assessment	26	3.84
Risk Communication	26	3.80
Risk Management	26	3.72



**Table 3.**  
**Graduate Skills- Missouri Southern State University (5=Best, 1=Worst)**

<b>Skills</b>	<b>Number of Respondents</b>	<b>Average</b>
Information Technology/Computer Skills	14	3.36
Public Speaking	14	3.50
Technical Writing	14	3.36
Identify reliable and relevant information.	14	3.79
Drawing Appropriate Conclusions	14	3.86
Choosing and defending an appropriate course of action.	14	3.64
Conducting a statistical Analysis and Interpreting Data	14	3.43
Applying Research Methods and Problem Solving	14	3.43
Working in a team setting	14	4.43
Leadership Skills	14	3.64
Organizing Work Flow	14	3.93
Time Management	14	3.57
Project Planning and Management	14	3.21
Epidemiology	14	3.08
Toxicology	14	2.75
Risk Assessment	14	3.85
Risk Communication	14	3.77
Risk Management	14	3.62

**Table 4.**  
**Graduate Skills- Old Dominion University (5=Best, 1=Worst)**

<b>Skills</b>	<b>Number of Respondents</b>	<b>Average</b>
Information Technology/Computer Skills	10	3.70
Public Speaking	10	4.10
Technical Writing	10	3.80
Identify reliable and relevant information.	10	4.10
Drawing Appropriate Conclusions	10	4.30
Choosing and defending an appropriate course of action.	10	4.20
Conducting a statistical Analysis and Interpreting Data	10	3.70
Applying Research Methods and Problem Solving	10	4.00
Working in a team setting	10	4.40
Leadership Skills	10	4.10
Organizing Work Flow	10	4.20
Time Management	10	4.00
Project Planning and Management	10	3.80
Epidemiology	10	3.10
Toxicology	10	3.20
Risk Assessment	10	3.70
Risk Communication	10	3.70
Risk Management	10	3.70

**Table 5.**

**Graduate Skills- West Chester University (5=Best, 1=Worst)**

<b>Skills</b>	<b>Number of Respondents</b>	<b>Average</b>
Information Technology/Computer Skills	2	5.00
Public Speaking	2	5.00
Technical Writing	2	4.50
Identify reliable and relevant information.	2	5.00
Drawing Appropriate Conclusions	2	4.50
Choosing and defending an appropriate course of action.	2	4.50
Conducting a statistical Analysis and Interpreting Data	2	4.50
Applying Research Methods and Problem Solving	2	5.00
Working in a team setting	2	4.50
Leadership Skills	2	4.50
Organizing Work Flow	2	5.00
Time Management	2	4.50
Project Planning and Management	2	5.00
Epidemiology	2	2.00
Toxicology	2	3.50
Risk Assessment	2	4.50
Risk Communication	2	4.50
Risk Management	2	4.50

**Course Relevance**

Respondents were asked to answer yes or no if their job required knowledge in the following areas found in environmental health. The last two columns to the far right represent the respective percentages reflecting “knowledge required” and “knowledge not-required” in the jobs of (26) survey respondents:

**Table 9.**

<b>Job requires knowledge of:</b>	<b>Individual Yes</b>	<b>Individual No</b>	<b>N/A</b>	<b>Total</b>	<b>% Yes</b>	<b>% No</b>
Air Quality Control	11	13	2	26	0.42	0.50
All-hazard Preparedness	19	6	1	26	0.73	0.23
Built Environment	9	15	2	26	0.35	0.58
Disease Prevention (e.g. vectorborne, zoonotic, etc.)	16	9	1	26	0.62	0.35
Disease Prevention	17	8	1	26	0.65	0.31
Environmental Health Planning	16	8	2	26	0.62	0.31
Food Protection	16	9	1	26	0.51	0.35
Geographical Information Systems (GIS)	8	16	2	26	0.30	0.62
Global Environmental Health	8	16	2	26	0.31	0.62
Hydrogeology	1	23	2	26	0.04	0.89
Injury Prevention	15	9	2	26	0.58	0.35
Institutional Health	9	15	2	26	0.35	0.58
Occupational Health and Safety	15	9	2	26	0.58	0.35
Radiation Health	6	18	2	26	0.23	0.69

Recreational Environmental Health	13	12	1	26	0.50	0.46
Risk Analysis	18	7	1	26	0.69	0.27
Soils	8	16	2	26	0.31	0.62
Solid and Hazardous Material and Waste Management	10	14	2	26	0.39	0.54
Vector Control	16	9	1	26	0.62	0.35
Water and Waste Water	17	7	2	26	0.65	0.27

**Specialty Area Knowledge & Program Preparation-All Respondents**

Respondents were asked to answer yes or no if they were well-prepared in the following specialty areas in their undergraduate or graduate program. The last two columns to the far right represent the percentages of the 26 graduates who were well-prepared and under-prepared by their program:

**Table 10.**

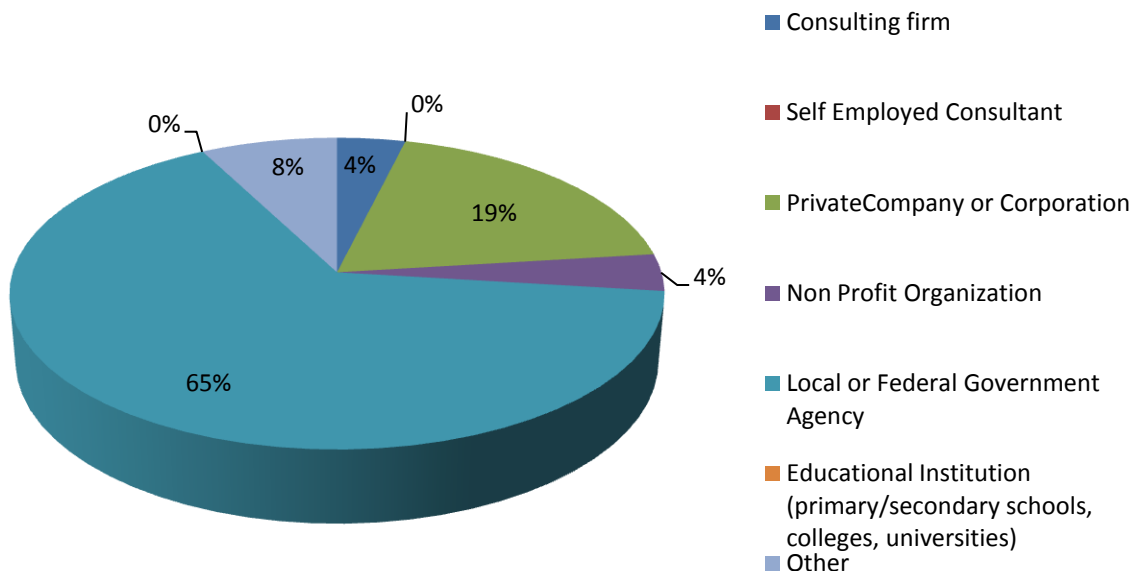
<b>Degree to which EH Program prepared me in:</b>	<b>Well Prepared</b>	<b>Somewhat Prepared</b>	<b>Not Prepared</b>	<b>N/A</b>	<b>%Well Prepared</b>	<b>% Not Prepared</b>
Air Quality Control	7	10	0	9	0.27	0
All-hazard Preparedness	9	14	0	3	0.35	0
Built Environment	9	5	2	10	0.35	0.08
Disease Prevention (e.g. vectorborne, zoonotic, etc.)	16	6	0	4	0.62	0
Disease Prevention	16	5	0	5	0.62	0
Environmental Health Planning	16	6	0	4	0.62	0
Food Protection	19	1	0	6	0.73	0
Geographical Information Systems (GIS)	7	5	3	11	0.27	0.12
Global Environmental Health	9	4	1	12	0.35	0.04
Hydrogeology	2	7	2	15	0.08	0.08
Injury Prevention	15	5	0	6	0.58	0
Institutional Health	9	7	1	9	0.35	0.04
Occupational Health and Safety	15	5	0	6	0.58	0
Radiation Health	5	7	2	12	0.19	0.08
Recreational Environmental Health	12	6	0	8	0.46	0
Risk Analysis	12	10	0	4	0.46	0
Soils	9	5	2	10	0.35	0.08
Solid and Hazardous Material and Waste Management	12	5	0	9	0.46	0
Vector Control	19	3	0	4	0.73	0
Water and Waste Water	16	5	0	5	0.62	0

**Graduate Work Place Data:**

The pie chart below represents job sectors for graduates of the three schools surveyed. Of the respondents, 26 are currently working.

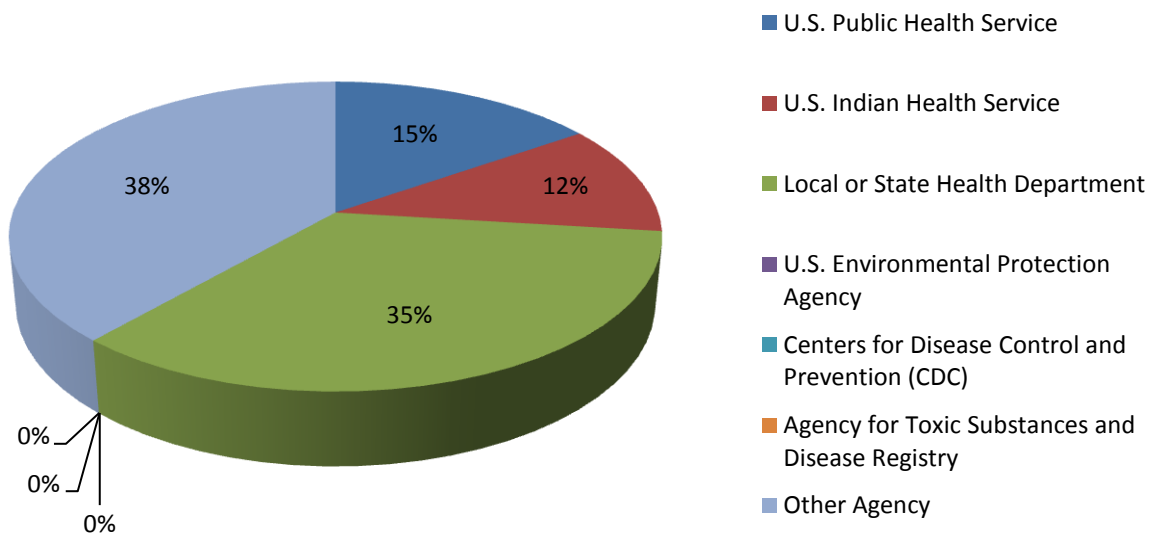
**Chart 12**

**Job Sector Distribution of Working Graduates**



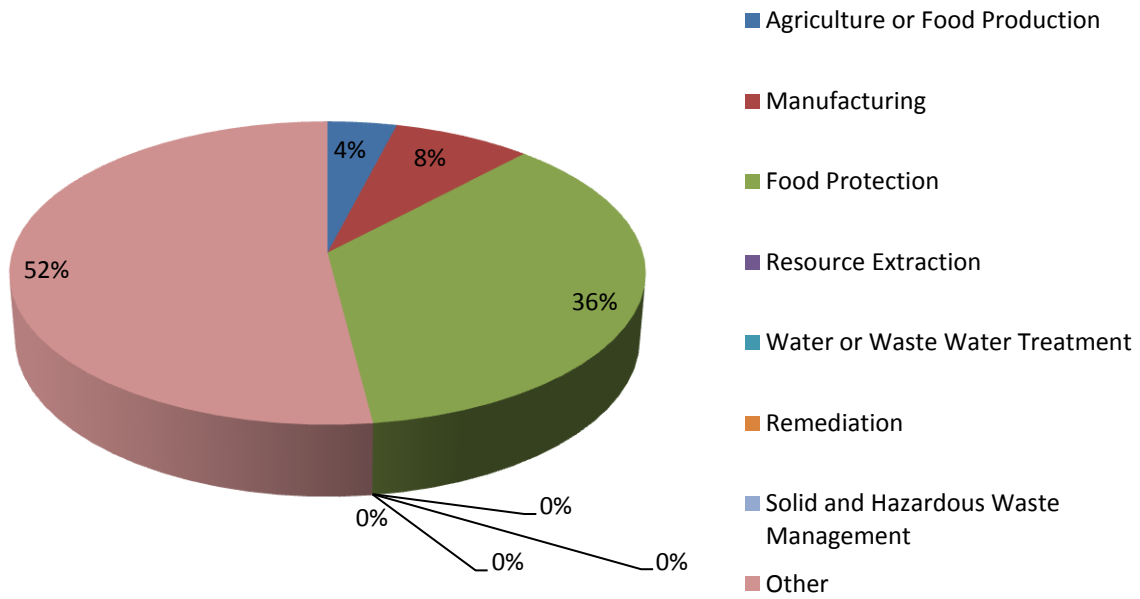
**Chart 13**

**Graduates working in local or federal agency**



**Chart 14**

### Graduates' primary area of work



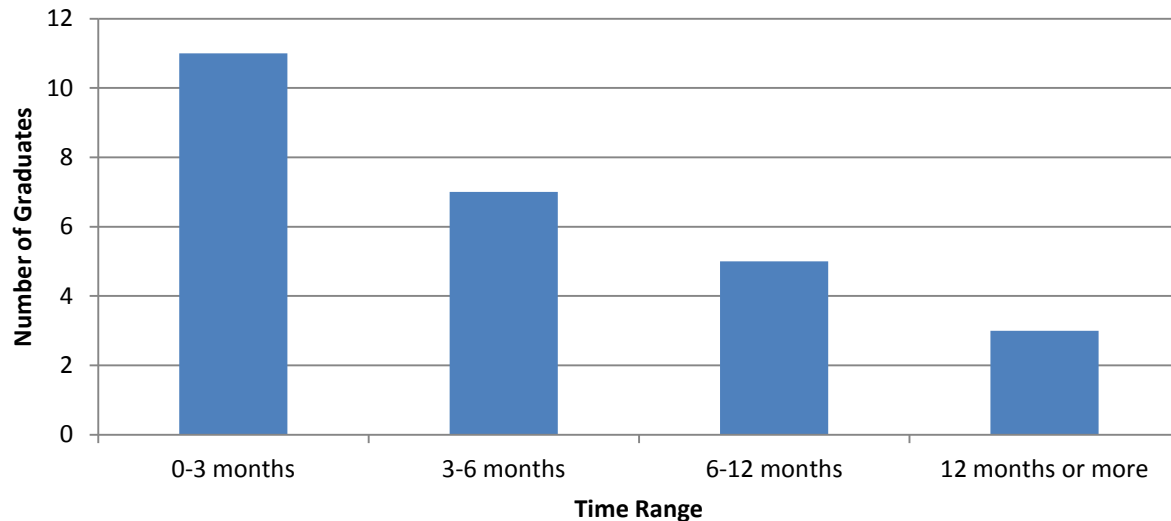
**Chart 15**

### Current Salary of Graduate Respondents



**Chart 16**

### Length of time before obtaining a job in Environmental Health



The following were listed as specific places of employment for 5 out of 10 respondents indicating which one, other agency (please specify):

**Table 11.**

Work for a Consulting Firm	County of Montgomery (Pennsylvania)
I am not working in Environmental Health	Department of Homeland Security
Private Company	

### Graduate Data on Continuing Education and Professional Development

The table below details the degrees completed by graduates after earning a degree in Environmental Health.

**Table 12.**

Degree	Number of Graduates
Completed a Master’s Degree	4

The following were listed as specific professional awards received by 7 respondents:

**Table 13.**

OSHA 30-Hour Completion Course BAS-Basic Safety Officer Course REHS
A metal of services with United Public Health Services, Commissioned to Tanana Chiefs Conference

US Public Health Service Outstanding Unit Citation US Food and Drug Administration Leveraging Collaboration Award Pharmaceutical Technical Exchange Association Award of Excellence
US Public Health Service Commendation Medal, 3 Unit Commendation Awards, Citation, and IHS National Director's Award
CEHS
Certificate of Safety Excellence, Fluor Afghanistan
VDH District Standardization Officer. ServSafe Instructor/Proctor. Tidewater Swimming Pool Certification

The following were listed as specific certificate or credentialing exams passed by 15 respondents:

**Table 14.**

Certified Environmental Health Specialist
CEHS
REHS
Certified Environmental Health Specialist for the state of Missouri
Missouri Certified Sanitarian FEMA NIMS 100, 200, 300, 400, 700, 800, 808 NSPF certified pool operator EHTERS awareness level
Missouri REHS
Registered Environmental Health Specialist/Registered Sanitarian from NEHA
Missouri Environmental Health Specialist Exam. Certified Pool/Spa Operator. Missouri Department of Health and Senior Services Basic and Advanced OWTS Certificate. Principles of Epidemiology Certificate from DHSS FEMA IS-700a, IS-800b, IS-100b, Preparedness and Response, Recovery and Mitigation.
FDA training courses through ORAU NIMS training courses
Certified Environmental Health Specialist/ Missouri Board of Certification for Environmental Health Professionals ServSafe Food Manager Instructor/Proctor
HAZWOPER 24 Hour Universal Refrigerant Certification RCRA DOT HAZMAT
Category 8 Certified Pesticide Applicator; Certified Pool Operator; FEMA ICS-100, ICS-200 and ICS-700; Certified Food Service Manager; Public Health Principles and Communication, Food Safety Laws, Statutes and Regulations; Food Microbiology and Foodborne Illness Investigation; Food Establishment Plan Review.
Environmental Health Specialist Standardization Category 8 Pesticide Certification
NEHA REHS/RS
ISHM Associate Safety and Health Manager BCSP Occupational Health and Safety Technologist

The following were the professional organizations 17 graduate respondents indicated involvement with:

**Table 15**

National Environmental Health Association - Member
EHOPAC- member
Safety Environment of Care Committee (Chair)
Region F Health Care Coalition- Leadership position. Member of the Following, Region F Environmental health committee, Food Advisor Committee, State Food Task Forces, Care leave committee Missouri environmental health association, Missouri Small flows association,
National Environmental Health Association
Missouri/ Milk Food Environmental Health Associations Missouri Mosquito and Vector Control Association
JOAG: Member EHOPAC: Member

National Environmental Health Association member
Missouri Environmental Health Association Food Advisory Committee
Missouri Stream Team
Missouri Board of Certification for Environmental Health Professionals
Virginia Department of Health
NEHA, VEHA Member of both
NEHA
Board of Certified Safety Professionals - member Institute for Safety and Health Management - member
NEHA- member VEHA-member
ASSE- member only AIHA- member only

## Supervisor Survey Results

### Background:

Eight supervisors were surveyed on the skill levels of graduates.

**Table 16.**  
**Supervisor Rating of Graduate Skills-All Respondents (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Information Technology/Computer Skills	8	3.50
Public Speaking	8	3.25
Technical Writing	8	3.25
Identify reliable and relevant information.	8	3.50
Drawing Appropriate Conclusions	8	3.50
Choosing and defending an appropriate course of action.	8	3.50
Conducting a statistical Analysis and Interpreting Data	8	3.00
Applying Research Methods and Problem Solving	8	3.25
Working in a team setting	8	4.00
Leadership Skills	8	3.13
Organizing Work Flow	8	3.63
Time Management	8	3.50
Project Planning and Management	8	3.25
Epidemiology	8	3.20
Toxicology	8	3.00
Risk Assessment	8	3.14
Risk Communication	8	3.00
Risk Management	8	3.00

### Specialty Area Requirements of Jobs-All Respondents

Supervisors of graduates were asked to answer yes or no if the job required the following core competencies. The table below represents the responses of 8 supervisors:

**Table 17.**



Job Requirement	Individual Yes	Individual No	N/A	% Required	% Not Required
Air Quality Control	3	5	0	38%	62%
All-hazard Preparedness	5	3	0	63%	67%
Built Environment	2	6	0	25%	75%
Disease Prevention (e.g. vectorbore, zoonotic, ect.)	2	6	0	25%	75%
Disease Prevention	3	5	0	38%	62%
Environmental Health Planning	1	7	0	13%	87%
Food Protection	3	5	0	38%	62%
Geographical Information Systems (GIS)	1	7	0	13%	87%
Global Environmental Health	2	6	0	25%	75%
Hydrogeology	0	8	0	0%	100%
Injury Prevention	5	3	0	63%	67%
Institutional Health	2	6	0	25%	75%
Occupational Health and Safety	5	3	0	63%	67%
Radiation Health	2	6	0	25%	75%
Recreational Environmental Health	2	6	0	25%	75%
Risk Analysis	6	2	0	75%	25%
Soils	0	8	0	0%	100%
Solid and Hazardous Material and Waste Management	4	4	0	50%	50%
Vector Control	3	5	0	38%	62%
Water and Waste Water	4	3	1	50%	37%

### Specialty Area Knowledge & Program Preparation-All Respondents

Supervisors of graduates were asked to answer yes or no if graduates were well-prepared in the following specialty areas. The table below represents the responses of 8 supervisors:

**Table 18.**

Graduate/Employee Preparedness	Well Prepared	Somewhat Prepared	Not Prepared	N/A	% Well Prepared	% Not Prepared
Air Quality Control	0	3	0	5	0%	0%
All-hazard Preparedness	2	2	1	3	25%	13%
Built Environment	1	0	0	7	13%	0%
Disease Prevention (e.g. vectorbore, zoonotic, ect.)	1	1	1	5	13%	13%
Disease Prevention	1	2	0	5	13%	0%
Environmental Health Planning	1	0	0	7	13%	0%
Food Protection	2	1	0	5	25%	0%
Geographical Information Systems (GIS)	2	0	0	6	25%	0%
Global Environmental Health	1	0	1	6	13%	13%
Hydrogeology	1	0	0	7	13%	0%
Injury Prevention	3	2	0	3	38%	0%
Institutional Health	1	1	0	6	13%	0%
Occupational Health and Safety	4	0	1	3	50%	13%
Radiation Health	1	0	1	6	13%	13%
Recreational Environmental Health	1	1	0	6	13%	0%
Risk Analysis	3	2	1	2	38%	13%

Soils	0	0	0	8	0%	0%
Solid and Hazardous Material and Waste Management	2	1	1	4	25%	13%
Vector Control	2	0	1	5	25%	13%
Water and Waste Water	2	2	0	4	25%	0%

Of the 8 surveyed supervisors, 5 indicated the following specific “other” specialty areas needed for the job:

**Table 19.**

Environmental Sustainability - renewable energy, waste reduction, energy conservation, community resilience
SARA Title III, Asbestos, PCBs,
Fire Safety
Hazardous Materials Shipping, Industrial Hygiene, Spill Prevention, Countermeasure and Control, Storm Water Pollution Prevention, EPCRA
swimming pool sanitation/hotel/motel/barber and beauty/tattoo/rabies