



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

## **Outcome Assessment Report 2015**

EHAC Staff: Leslie Mitchell

### **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 for distribution to their graduates. The graduates then provide the supervisor survey link to their supervisors.

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

**Figure 1.**

| <b>EHAC Re-Accreditation Applicants 2015</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> |
|--|----------------|----------------------------------|------------------------------|---|----------------------------------|------------------------------------|
| Baylor University                            | Undergraduate  | 2016                             | 2010                         | 2011, 2013, 2014                          | 6                                | 1                                  |
| Benedict College                             | Undergraduate  | 2016                             | 2004                         | 2012, 2013, 2015                          | 4                                | 0                                  |
| Colorado State University                    | Undergraduate  | 2016                             | 1973                         | 2009-2015                                 | 56                               | 27                                 |
| Dickinson State University                   | Undergraduate  | 2016                             | 2010                         | 0   | 0                                | 0                                  |
| Mississippi Valley State University          | Undergraduate  | 2016                             | 1997                         | 2011, 2012                                | 2                                | 0                                  |
| Ohio University                              | Undergraduate  | 2016                             | 1982                         | 2011-2014                                 | 11                               | 4                                  |
| West Chester University                      | Undergraduate  | 2016                             | 2008                         | 2011                                      | 1                                | 1                                  |

*The National Environmental Health Science & Protection Accreditation Council (EHAC)*

*POB 66057 Burien, WA 98166 Office: 206.522.5272 Fax: 206.985.9805*

*Email: ehacinfo@aehap.org www.ehacoffice.org*

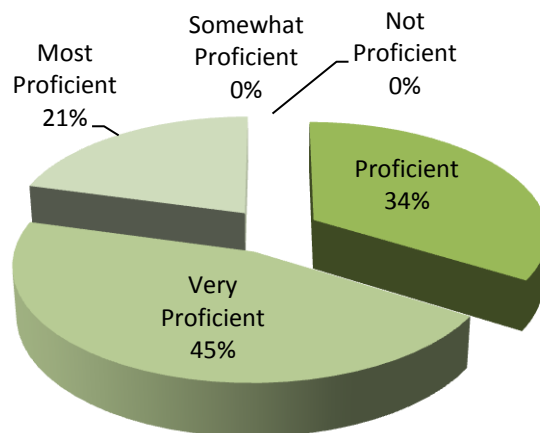
## Undergraduate Skills

Listed below are core competencies in environmental health programs. Respondents were asked to choose the option that most closely described their skill level. The percentages reflect 78 out of the 78 graduate survey respondents.

**Chart 1**

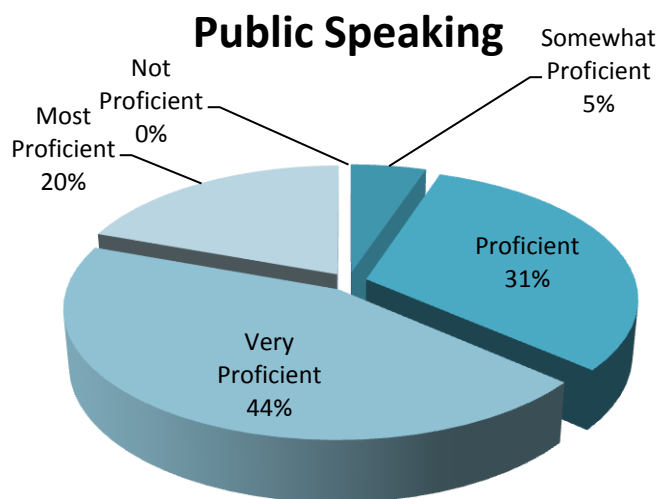
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### Information Techonology/ Computer Skills



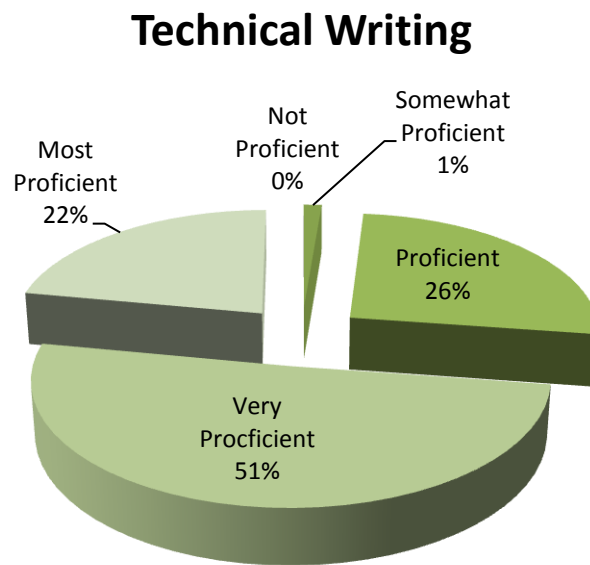
**Chart 2**

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**Chart 3**

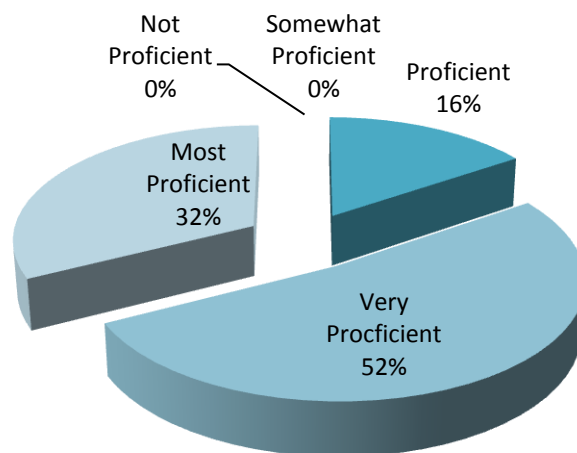
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**Chart 4**

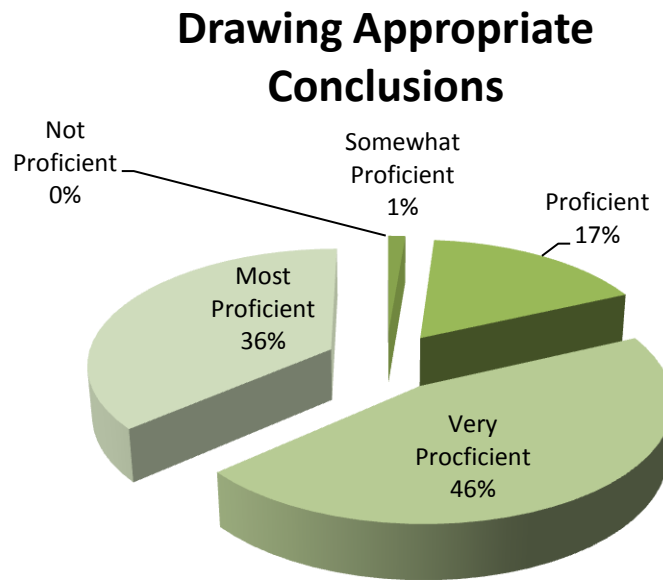
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### Identify Reliable and Relevant Information



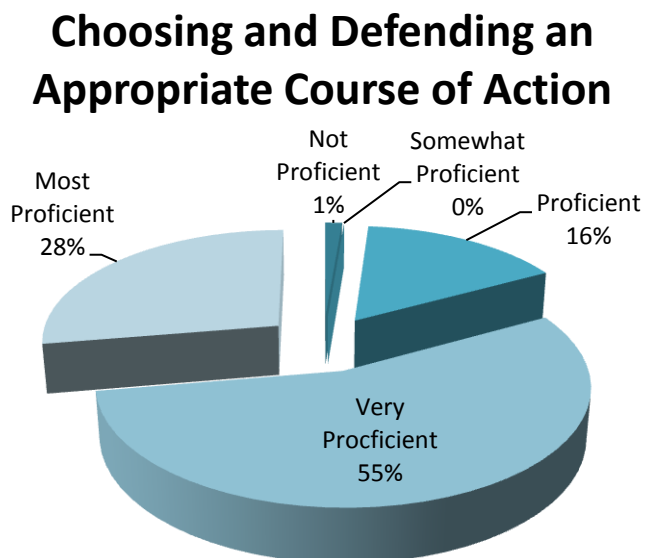
**Chart 5**

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**Chart 6**

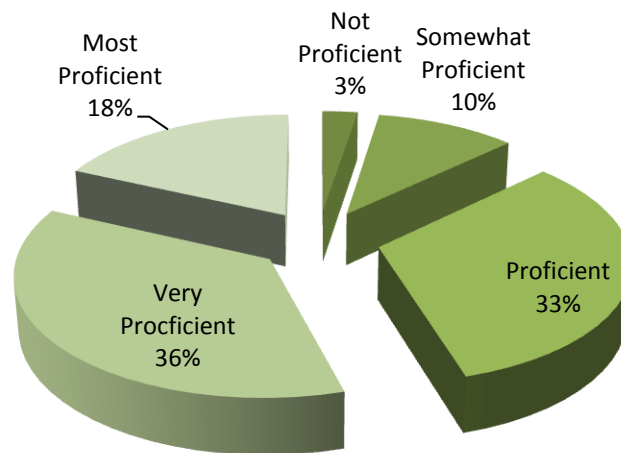
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**Chart 7**

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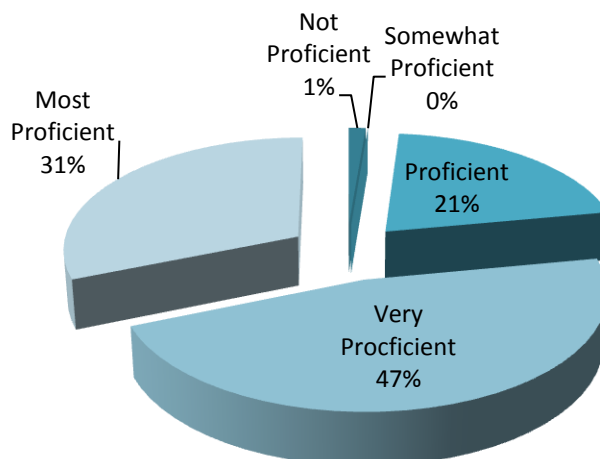
### Conducting Statistical Analysis and Interpreting Data



**Chart 8**

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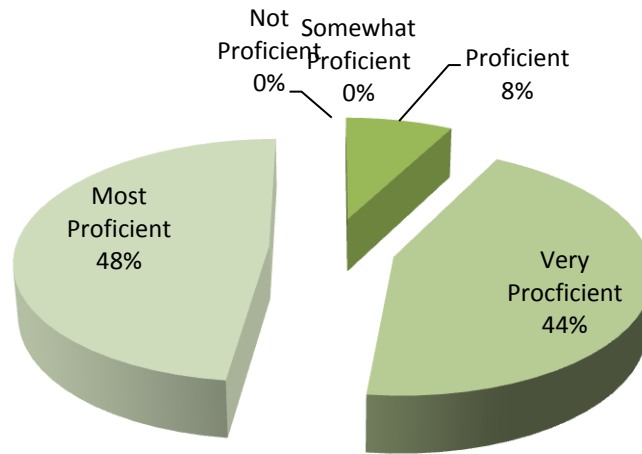
### Applying Research Methods and Problem Solving Skills



**Chart 9**

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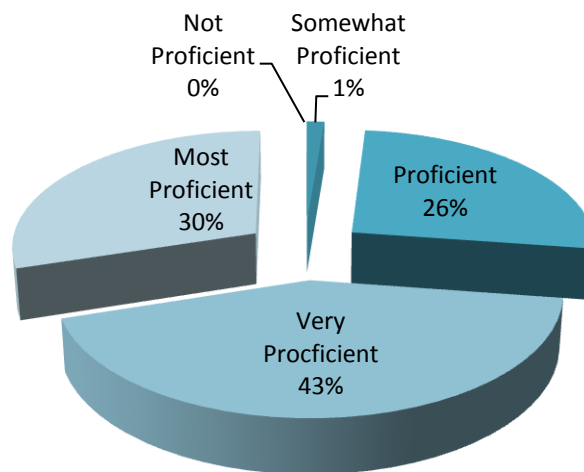
### Working in a Team Setting



**Chart 10**

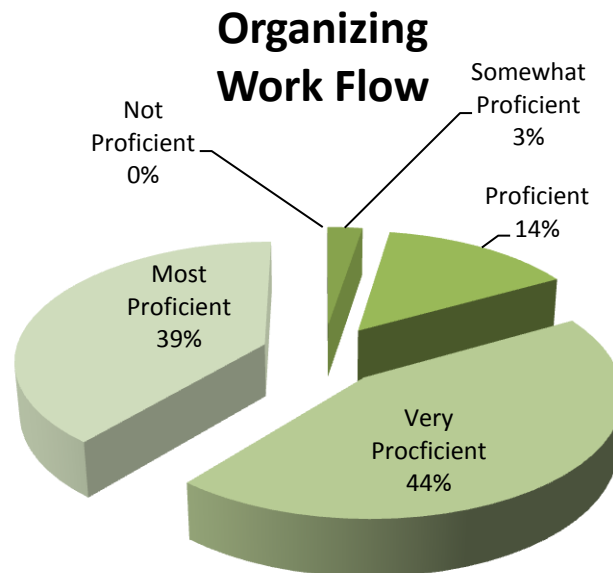
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### Leadership Skills



**Chart 11**

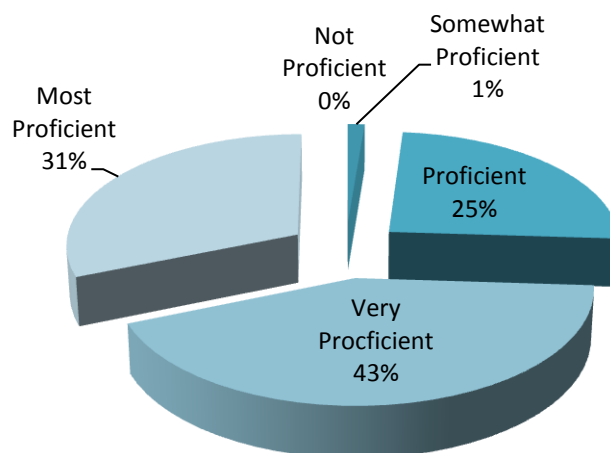
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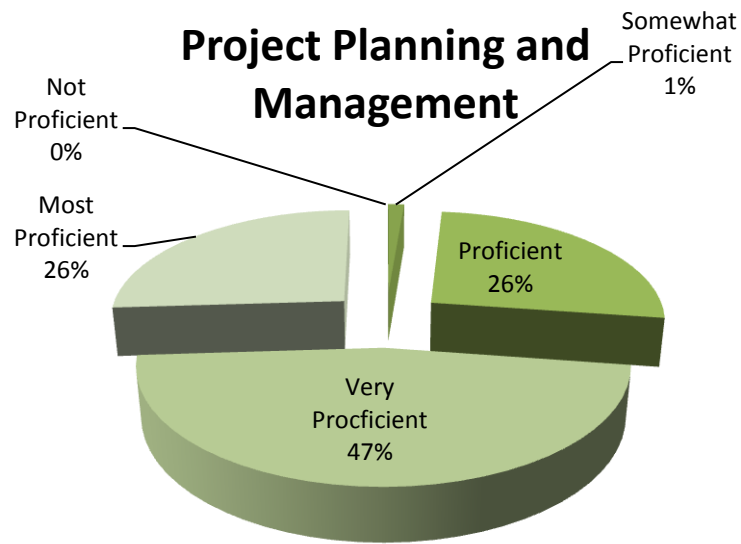
**Chart 12**

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### Time Management



**Chart 13**



**Chart 14**

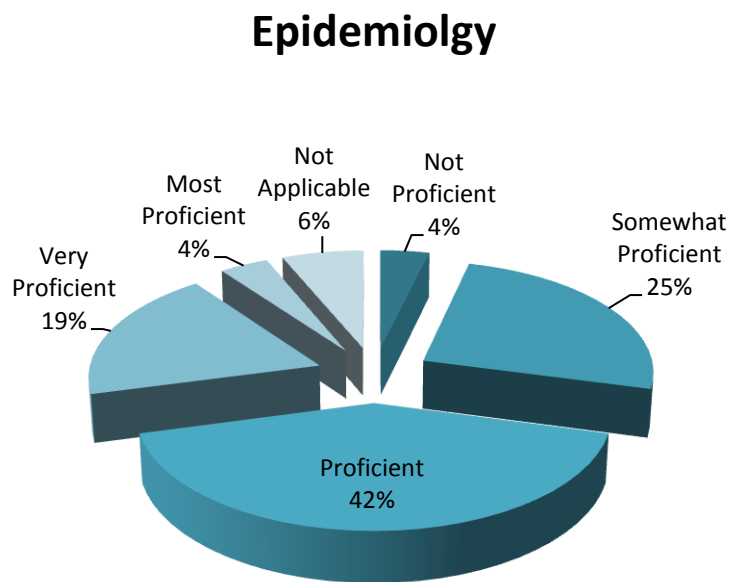




Chart 15

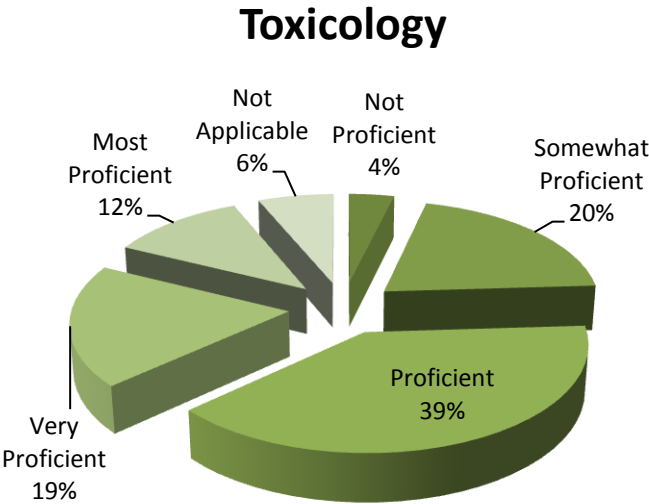


Chart 16

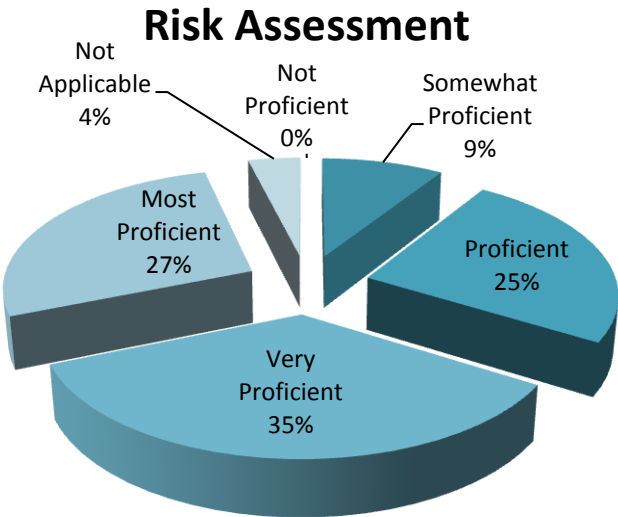


Chart 17

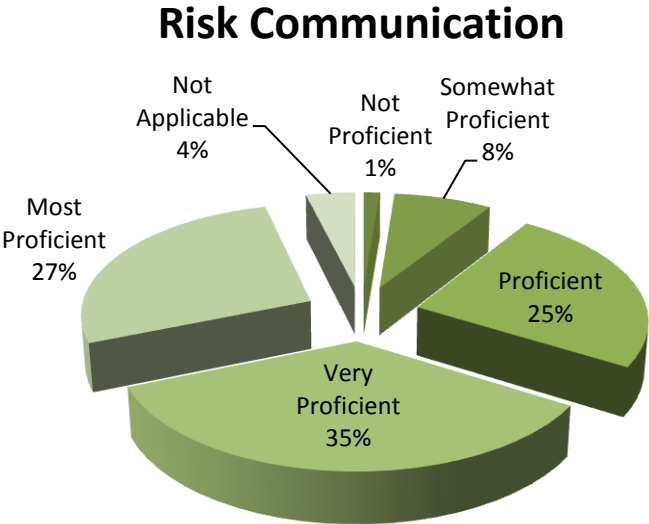
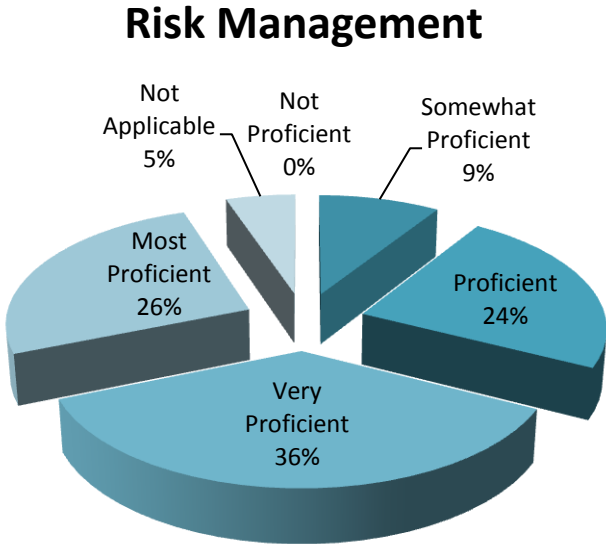


Chart 18



## **Skill Levels of Recent Graduates**

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

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

| <b>Skills</b>   | <b>Number of Respondents</b> | <b>Average</b> |
|---|------------------------------|----------------|
| Information Technology/Computer Skills                  | 77                           | 3.66           |
| Public Speaking   | 77                           | 3.79           |
| Technical Writing                                       | 77                           | 3.93           |
| Identify Reliable and Relevant Information              | 77                           | 4.17           |
| Drawing Appropriate Conclusions                         | 77                           | 4.17           |
| Choosing and Defending an Appropriate Course of Action  | 75                           | 3.97           |
| Conducting a statistical Analysis and interpreting Data | 77                           | 3.75           |
| Applying Research Methods and Problem Solving           | 77                           | 3.94           |
| Working in a Team Setting                               | 77                           | 4.4            |
| Leadership Skills                                       | 77                           | 4.01           |
| Organizing Work Flow                                    | 77                           | 4.20           |
| Time Management   | 77                           | 4.04           |
| Project Planning and Management                         | 77                           | 3.97           |
| Epidemiology  | 79                           | 2.70           |
| Toxicology  | 79                           | 3.14           |
| Risk Assessment   | 77                           | 3.69           |
| Risk Communication                                      | 77                           | 2.31           |
| Risk Management   | 77                           | 3.66           |

**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 survey respondents:

**Figure 3.**

| <b>Job requires knowledge of:</b>                      | <b>Individual Yes</b> | <b>Individual No</b> | <b>N/A</b> | <b>Total</b> | <b>% Knowledge Required</b> | <b>% Knowledge Not Required</b> |
|--|-----------------------|----------------------|------------|--------------|-----------------------------|---------------------------------|
| Air Quality Control                                    | 36                    | 36                   | 0          | 72           | 0.50%                       | 0.50%                           |
| All-hazard Preparedness                                | 46                    | 24                   | 3          | 73           | 0.63%                       | 0.33%                           |
| Built Environment                                      | 22                    | 51                   | 0          | 73           | 0.30%                       | 0.70%                           |
| Disease Prevention (e.g. vector-borne, zoonotic, etc.) | 30                    | 44                   | 0          | 74           | 0.41%                       | 0.59%                           |
| Disease Prevention (e.g. vector-borne, zoonotic, etc.) | 38                    | 35                   | 0          | 73           | 0.52%                       | 0.48%                           |
| Environmental Health Planning                          | 43                    | 30                   | 0          | 73           | 0.59%                       | 0.42%                           |
| Food Protection  | 29                    | 44                   | 0          | 73           | 0.40%                       | 0.60%                           |
| Geographical Information Systems (GIS)                 | 18                    | 55                   | 0          | 72           | 0.25%                       | 0.76%                           |
| Global environmental Health                            | 14                    | 58                   | 0          | 72           | 0.19%                       | 0.81%                           |
| Hydrogeology   | 14                    | 58                   | 0          | 72           | 0.19%                       | 0.81%                           |
| Injury Prevention                                      | 44                    | 28                   | 0          | 72           | 0.61%                       | 0.39%                           |
| Institutional Health                                   | 27                    | 47                   | 0          | 74           | 0.36%                       | 0.64%                           |
| Occupational Health and Safety                         | 28                    | 24                   | 0          | 52           | 0.54%                       | 0.46%                           |
| Radiation Health                                       | 30                    | 42                   | 0          | 72           | 0.42%                       | 0.58%                           |
| Recreational Environmental Health                      | 27                    | 43                   | 0          | 70           | 0.39%                       | 0.61%                           |
| Risk Analysis  | 54                    | 18                   | 0          | 72           | 0.75%                       | 0.25%                           |
| Soils  | 22                    | 50                   | 0          | 72           | 0.31%                       | 0.69%                           |
| Solid and Hazardous Material and Waste Management      | 48                    | 27                   | 0          | 75           | 0.64%                       | 0.36                            |
| Vector Control   | 21                    | 51                   | 0          | 72           | 0.29%                       | 0.71                            |
| Water and Waste Water                                  | 47                    | 27                   | 0          | 74           | 0.64%                       | 0.36                            |

**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 program. The last two columns to the far right represent the percentages of all graduates who were well prepared and not prepared by their program:

**Figure 4.**

| <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>% Somewhat Prepared</b> | <b>% Not Prepared</b> |
|--|----------------------|--------------------------|---------------------|------------|------------------------|----------------------------|-----------------------|
| Air Quality Control                                    | 16                   | 21                       | 1                   | 0          | 0.42                   | 0.55%                      | 0.03%                 |
| All-hazard Preparedness                                | 29                   | 19                       | 1                   | 0          | 0.59                   | 0.39%                      | 0.02%                 |
| Built Environment                                      | 10                   | 12                       | 0                   | 0          | 0.45                   | 0.55%                      | 0%                    |
| Disease Prevention (e.g. vector-borne, zoonotic, etc.) | 25                   | 5                        | 0                   | 0          | 0.83                   | 0.17%                      | 0%                    |
| Disease Prevention (e.g. vector-borne, zoonotic, etc.) | 29                   | 9                        | 1                   | 0          | 0.74                   | 0.23%                      | 0.03%                 |
| Environmental Health Planning                          | 27                   | 14                       | 2                   | 0          | 0.63                   | 0.33%                      | 0.05%                 |
| Food Protection  | 22                   | 7                        | 0                   | 0          | 0.76                   | 0.24%                      | 0%                    |
| Geographical Information Systems (GIS)                 | 4                    | 11                       | 5                   | 0          | 0.20                   | 0.55%                      | 0.25%                 |
| Global environmental Health                            | 9                    | 5                        | 0                   | 0          | 0.64                   | 0.36%                      | 0%                    |
| Hydrogeology   | 6                    | 6                        | 1                   | 0          | 0.46                   | 0.46%                      | 0.08%                 |
| Injury Prevention                                      | 32                   | 12                       | 1                   | 0          | 0.71                   | 0.27%                      | 0.02%                 |
| Institutional Health                                   | 14                   | 11                       | 1                   | 0          | 0.54                   | 0.42%                      | 0.04%                 |
| Occupational Health and Safety                         | 40                   | 8                        | 1                   | 0          | 0.82                   | 0.16%                      | 0.02%                 |
| Radiation Health                                       | 16                   | 13                       | 1                   | 0          | 0.53                   | 0.43%                      | 0.03%                 |
| Recreational Environmental Health                      | 14                   | 11                       | 1                   | 0          | 0.54                   | 0.42%                      | 0.04%                 |
| Risk Analysis  | 37                   | 13                       | 4                   | 0          | 0.69                   | 0.24%                      | 0.07%                 |
| Soils  | 8                    | 9                        | 6                   | 0          | 0.35                   | 0.39%                      | 0.26%                 |
| Solid and Hazardous Material and Waste Management      | 30                   | 18                       | 1                   | 0          | 0.61                   | 0.37%                      | 0.02%                 |
| Vector Control   | 13                   | 8                        | 0                   | 0          | 0.62                   | 0.38%                      | 0%                    |
| Water and Waste Water                                  | 34                   | 14                       | 1                   | 0          | 0.69                   | 0.29%                      | 0.02%                 |

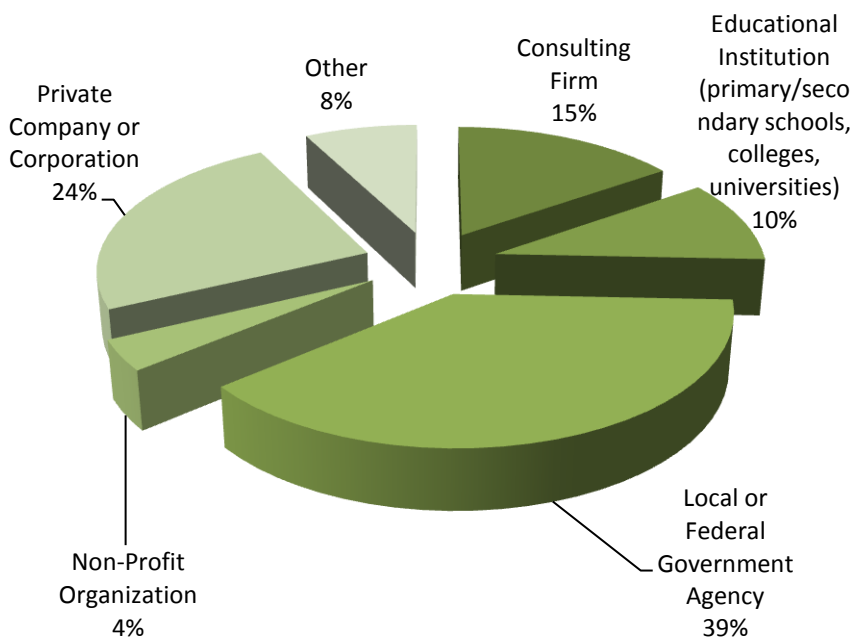
### Graduate Work Place Data:

The pie chart below represents job sectors for graduates of the six schools surveyed. Of the respondents, 78 are currently working, 2 are not working\

**Chart 19**

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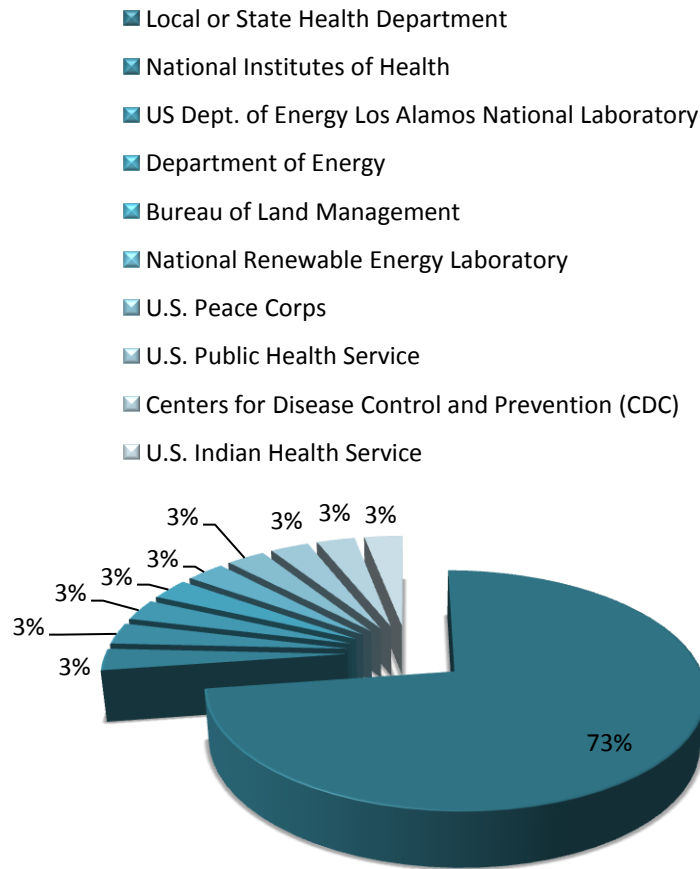
### Job Sector Distribution of Working Graduates



**Chart 20**

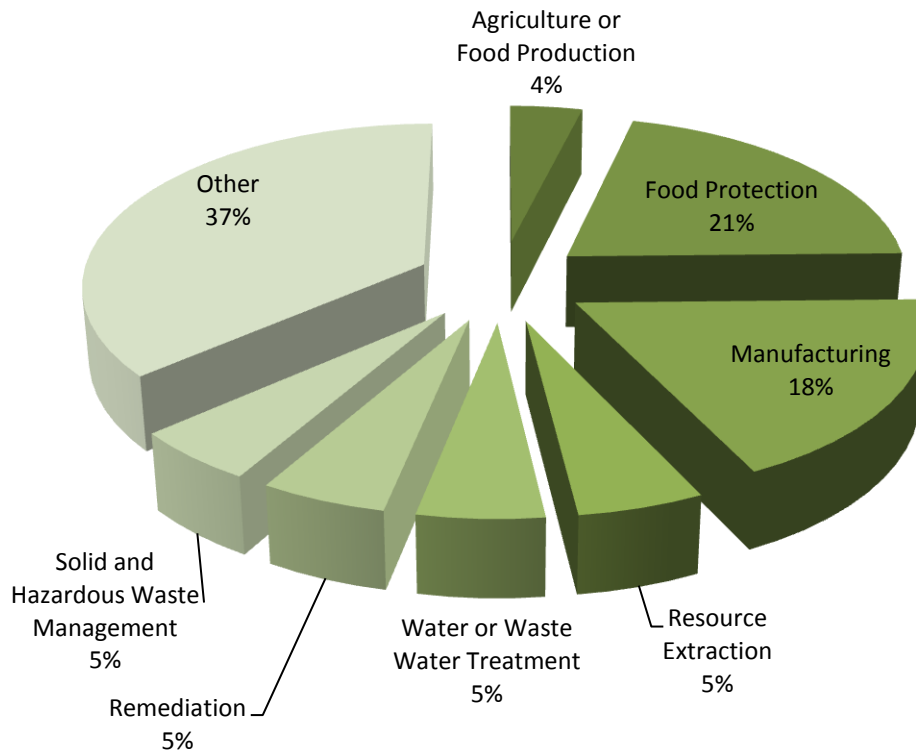
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## Graduates Working in Local or Federal Government



**Chart 21**

## Graduate's Primary Area of Work

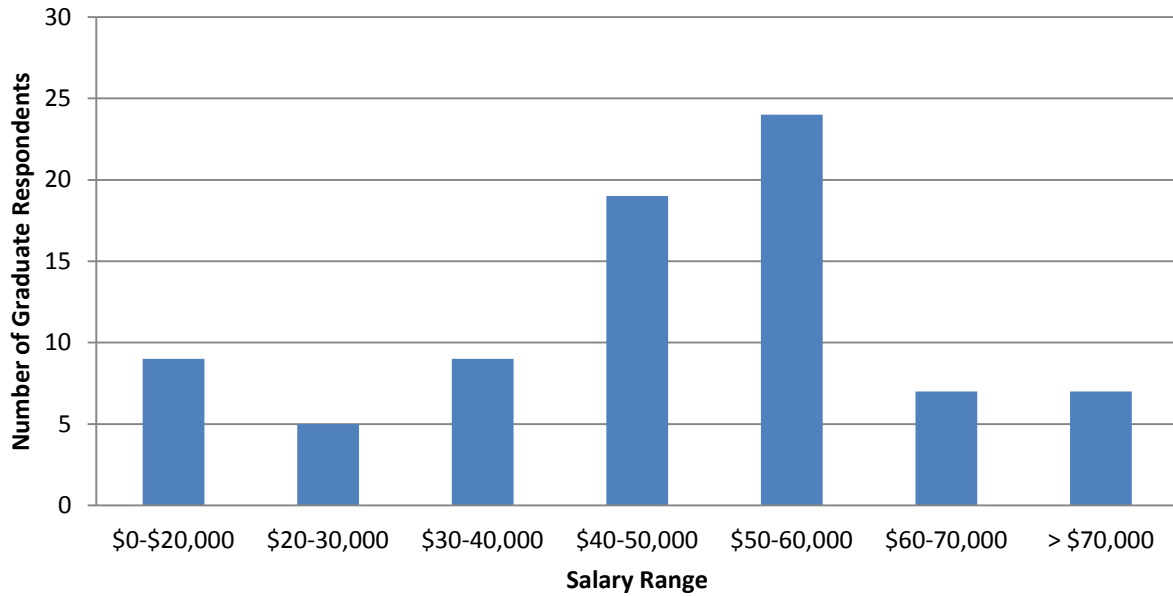


“Other” includes: Pharmacogenomics, Toxicology, Research, Manufacturing, Healthcare, Construction, Telecommunications, Animal health, Air Program, Zoonosis, Solid Waste and Recycling Management, Water, Waste Management, Safety, Radiation Protection, Providing OSHA Consultation services to private industry, Renewable Energy Research, Student Geology disaster prevention



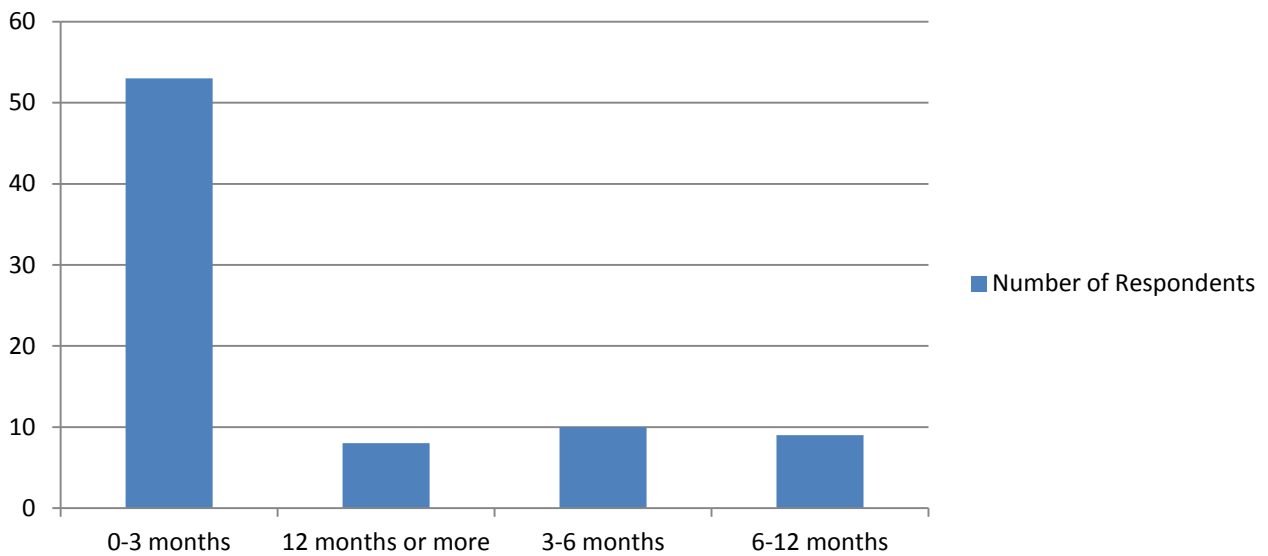
**Chart 22**

### Current Salary of Respondents



**Chart 23**

### How Long Did it Take You to Find Employment Post Graduation?



**Specific Places of Employment**

The following were listed as specific places of employment for 42 respondents indicating which one, other agency (please specify):

**Figure 5.**

|  |
|--|
| Private Corporation                      |
| Work for a Consulting Firm               |
| I am not working in Environmental Health |
| N/A or none                              |

**Graduate Data on Continuing Education and Professional Development**

**Post Undergraduate Education**

The Figure below details the types of degrees completed by graduates after earning a degree in Environmental Health:

**Figure 6.**

| <b>Number of Graduates that have Completed Post-baccalaureate Degrees</b> | <b>Types of Master Degrees</b>  |
|---|---|
| 12  | MS Environmental Health and Toxicology, MPH, MPH Environmental Health concentration, MS Exposure Science, MS Industrial Hygiene, MS Radiological Health Sciences, MS Health Physics |

**Professional Awards Received**

The following were listed as specific professional awards received by 12 respondents:

**Figure 7.**

|   |
|---|
| AEHAP Student of the Month (January 2013) AEHAP Student Research Competition Winner (July 2013) 1st Place Best Undergraduate Research Presentation, Society of Environmental Toxicology and Chemistry (November 2013) U.S. EPA Greater Research Opportunities Fellowship (August 2012-May 2014)                   |
| CDC Public Health Associate Fellowship Program  |
| Creighton University School of Medicine Community Oriented Primary Care Scholarship   |
| Elected president of CEHA   |
| Employee of the month   |
| Individual Achievement Awards and Team Achievement Awards   |
| Kleinman grant for volcano research recipient (2012), Association of Environmental & Engineering Geologists grant/scholarship recipient (2013), Michigan Technological University graduate scholarship recipient (2012)   |
| OSHA VPP Special Government Employee  |
| Outstanding Environmental Health graduate for the class of 2013. -Completed a six month standardization process conducted by five Michigan Department of Agriculture Standardized Field Trainers. -Promoted from Public Health Sanitarian Technician to Public Health Sanitarian within 10 months of being hired. |
| Recipient of ERC grant  |

**Credentials Achieved**

The following were listed as specific certificate or credentialing exams passed by 42 respondents:

**Figure 8.**

|   |
|---|
| 40 hr HAZWOPER  |
| Air Quality Visible Emission Evaluations  |
| Certificate Radiation Safety  |
| CDPHE Air Monitoring Specialist CDPHE Certified Asbestos Building Inspector 40 Hour HAZWOPER DOT Security and Awareness DOT Hazardous Materials Transport CDOT Commercial Drivers License Class C with HAZMAT Endorsement |
| CDPHE Building Inspector, CDPHE Air Monitoring Specialist, CDPHE Project Designer, NIOSH 582  |
| Certificate: Infectious Disease Epidemiology accompanying MPH studies in Environmental and Occ Health   |
| Certified Erosion Prevention & Sediment Control Inspector (CEPSCI) Class Three Landfill Operator Certification for Landfill Managers  |
| Certified Food Protection Manager Certified Pool Operator   |
| Certified Occupational Hearing Conservationist, PEC SafeL and Authorized Instructor.  |
| DOT Hazardous Material Transportation Certification CDPHE Hazardous waste management Certification  |
| FEMA NIMS FEMA NIMS Command System  |
| Hazwoper and Hazwoper supervisor, First Aid, MSHA   |
| National Association of Wastewater Technicians- Inspector; National Swimming Pool Foundation- Certified Pool Operator   |
| OSHA 10 certification - general industry OSHA 10 certification- construction  |
| OSHA 30-hr. General Industry Training Course National Safety Council Fundamental of Industrial Hygiene PEC Premier SafeLand USA Oil Field Safety American Red Cross First Aid/CPR Certified                               |
| OSHA 40 Hour hazwoper MSHA Training   |
| part 1 of the Certified Health Physics exam. This exam is managed by the American Board of Health Physics   |
| Part I of the Certified Health Physicist Exam (American Academy of Health Physics)  |
| Radiation Safety Officer, preparing for ASP exam  |
| Registered Environmental Health Specialist  |
| registered professional sanitarian, registered professional environmental specialist  |
| REHS/RS, CPO, AFO, ServSafe Instructor, NV Restricted-Use Pesticide Applicator  |
| REHS-IT   |
| RS  |
| REHS  |
| Standardization Certificate for Retail Food Establishment CPOW - visual and tactile evaluation Training Reduced Oxygen Packaging Environmental Health Training in Emergency Response - Center for Domestic Preparedness   |
| State Certified Asbestos Building Inspector   |
| State of Ohio Registered Sanitarian   |
| Stormwater Management and Erosion Control Training Western States Project Environmental Enforcement Training Verbal Judo Training   |
| TCEQ Class C Surface Water Operator License   |
| Teaching certificate  |
| USMLE Step 1 USMLE Step 2 CK USMLE Step 2 CS BLS ACLS   |

**Professional Organizations**

Forty-seven graduate respondents indicated involvement in the professional organizations listed below:

**Figure 9.**

|  |
|--|
| ACGIH  |
| ACGIH member only  |
| AIHA - member; ASSE - member; VPPPA - member   |
| AIHA-RMS, member only ASSE-Colorado Chapter, member only   |
| American College of Preventive Medicine  |
| American Conference of Industrial Hygienists - Member  |
| American Industrial Hygiene Association American Society of Safety Engineers   |
| American industrial hygiene association - member American society for safety and engineering- member   |
| American Industrial Hygiene Association member Colorado Environmental Professionals Association member<br>American Conference of Governmental Industrial Hygienists member |
| ASSE   |
| ASSE - member Carolina Air Pollution Control Association - member NEHA - member  |
| Assist City of Fort Collins in rule-making for Air Pollution Control,  |
| CEHA (Member), NEHA (Member)   |
| CEHA, WCAEHO - just member   |
| Colorado Environmental Health Association: President   |
| Colorado Environmental Health Association-Member   |
| Colorado Safety Association - member Colorado Environmental Health Association - member  |
| Delta Omega Chapter member; American Public Health Association member  |
| Georgia Environmental Health Association, INC.   |
| Health Physics Society - member  |
| health physics society - member only   |
| Health Physics Society member  |
| I participate in Industrial Hygiene Proficiency Analytical Testing quarterly so that the firm I work for can maintain<br>it's lab accreditation                            |
| member only CEHA, NEHA, CPOW, NOWRA  |
| Member, CEHA Member, CACVT   |
| Michigan Environmental Health Association, member only. National Environmental Health Association, member<br>only.   |
| National Environmental Health Association (member only), Colorado Environmental Health Association (member<br>only)  |
| National Environmental Health Association (member) Colorado Professionals in Onsite Wastewater (member)  |
| NEHA   |
| NEHA - member only   |
| CEHA - Member only   |
| OEHA Member Only   |
| New Mexico Environmental Health Association-Member   |
| OEHA Past President  |
| Ohio Environmental Health Association  |

|   |
|---|
| Oklahoma society of environmental health professionals  |
| Society of Environmental Toxicology and Chemistry   |
| Society of Environmental Toxicology and Chemistry (Vice-Chair of North America Student Advisory Council)<br>Society of Toxicology |
| Southeast Ohio sanitarian association   |
| Texas Master Naturalists- Member Audubon Society- Member  |

## **Supervisor Survey Results**

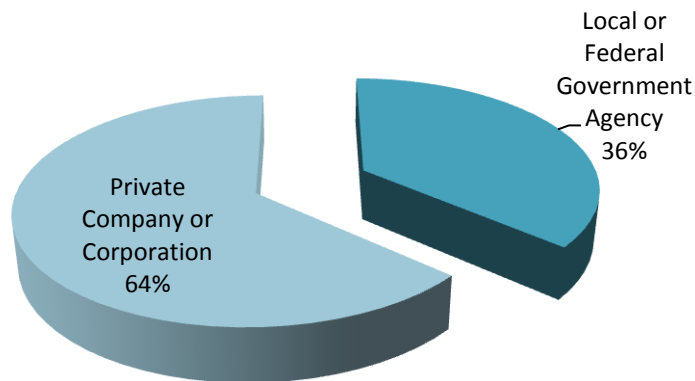
### **Background:**

Thirty-three supervisors were surveyed on the skill levels of graduates. Ten supervisors responded with job sector and primary work area information, which is presented in Charts 22-24.

### **Chart 24**

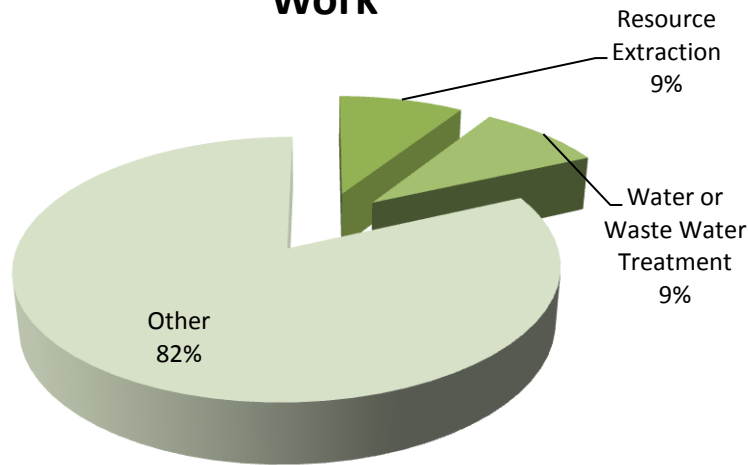
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### **Job Sector Distribution of Supervisors**



**Chart 25**

### Supervisor's Primary Area of Work



“Other” includes environmental health & safety, recycling stormwater compliance, recycling, and grants management.

**Figure 10.**  
**Supervisor Rating of Graduate Skills - All Respondents (5=Best, 1=Worst)**

| Skills  | Number of Respondents | N/A | Average |
|---|-----------------------|-----|---------|
| Information Technology/Computer Skills                  | 33                    | 0   | 4.1     |
| Public Speaking   | 33                    | 0   | 3.67    |
| Technical Writing                                       | 33                    | 0   | 3.82    |
| Identify Reliable and Relevant Information              | 33                    | 0   | 4.3     |
| Drawing Appropriate Conclusions                         | 33                    | 0   | 4.24    |
| Choosing and Defending an Appropriate Course of Action  | 33                    | 0   | 3.97    |
| Conducting a statistical Analysis and interpreting Data | 33                    | 0   | 3.85    |
| Applying Research Methods and Problem Solving           | 33                    | 0   | 4.1     |
| Working in a Team Setting                               | 33                    | 0   | 4.33    |
| Leadership Skills                                       | 33                    | 0   | 3.7     |
| Organizing Work Flow                                    | 33                    | 0   | 3.88    |
| Time Management   | 33                    | 0   | 4       |
| Project Planning and Management                         | 33                    | 0   | 3.97    |
| Epidemiology  | 33                    | 21  | 3.67    |
| Toxicology  | 33                    | 17  | 3.73    |
| Risk Assessment   | 33                    | 5   | 3.77    |
| Risk Communication                                      | 33                    | 7   | 3.96    |
| Risk Management   | 33                    | 8   | 3.3     |

**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 Figure below represents the responses of 33 supervisors:

**Figure 11.**

| <b>Job requires knowledge of:</b>                      | <b>Individual Yes</b> | <b>Individual No</b> | <b>N/A</b> | <b>% Required</b> | <b>% Not Required</b> |
|--|-----------------------|----------------------|------------|-------------------|-----------------------|
| Air Quality Control                                    | 13                    | 16                   | 0          | 0.45%             | 0.55%                 |
| All-hazard Preparedness                                | 19                    | 9                    | 0          | 0.68%             | 0.32%                 |
| Built Environment                                      | 4                     | 23                   | 0          | 0.15%             | 0.85%                 |
| Disease Prevention (e.g. vector-borne, zoonotic, etc.) | 7                     | 21                   | 0          | 0.25%             | 0.75%                 |
| Disease Prevention (e.g. vector-borne, zoonotic, etc.) | 6                     | 22                   | 0          | 0.21%             | 0.79%                 |
| Environmental Health Planning                          | 14                    | 14                   | 0          | 0.50%             | 0.50%                 |
|  |                       |                      |            |                   |                       |
| Food Protection  | 6                     | 22                   | 0          | 0.21%             | 0.79%                 |
| Geographical Information Systems (GIS)                 | 3                     | 25                   | 0          | 0.11%             | 0.89%                 |
| Global environmental Health                            | 3                     | 25                   | 0          | 0.11%             | 0.89%                 |
| Hydrogeology   | 3                     | 25                   | 0          | 0.11%             | 0.89%                 |
| Injury Prevention                                      | 18                    | 11                   | 0          | 0.62%             | 0.38%                 |
| Institutional Health                                   | 7                     | 21                   | 0          | 0.25%             | 0.75%                 |
| Occupational Health and Safety                         | 18                    | 12                   | 0          | 0.60%             | 0.40%                 |
| Radiation Health                                       | 21                    | 8                    | 0          | 0.72%             | 0.28%                 |
| Recreational Environmental Health                      | 6                     | 22                   | 0          | 0.21%             | 0.79%                 |
| Risk Analysis  | 20                    | 10                   | 0          | 0.67%             | 0.33%                 |
| Soils  | 6                     | 22                   | 0          | 0.21%             | 0.79%                 |
| Solid and Hazardous Material and Waste Management      | 18                    | 10                   | 0          | 0.64%             | 0.36%                 |
| Vector Control   | 7                     | 21                   | 0          | 0.25%             | 0.75%                 |
| Water and Waste Water                                  | 16                    | 12                   | 0          | 0.57%             | 0.43%                 |

**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 Figure below represents the responses of 33 supervisors.

**Figure 12.**

| <b>Graduate/Employee Preparedness</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                                    | 9                    | 4                        | 0                   | 0          | 0.69%                  | 0%                    |
| All-hazard Preparedness                                | 12                   | 8                        | 0                   | 0          | .60%                   | 0%                    |
| Built Environment                                      | 3                    | 1                        | 0                   | 0          | 0.75%                  | 0%                    |
| Disease Prevention (e.g. vector-borne, zoonotic, etc.) | 6                    | 1                        | 0                   | 0          | 0.86%                  | 0%                    |
| Disease Prevention (e.g. vector-borne, zoonotic, etc.) | 5                    | 1                        | 0                   | 0          | 0.83%                  | 0%                    |
| Environmental Health Planning                          | 12                   | 2                        | 0                   | 0          | 0.86%                  | 0%                    |
| Food Protection  | 6                    | 0                        | 0                   | 0          | 100%                   | 0%                    |
| Geographical Information Systems (GIS)                 | 2                    | 1                        | 0                   | 0          | 0.67%                  | 0%                    |
| Global environmental Health                            | 2                    | 1                        | 0                   | 0          | 0.67%                  | 0%                    |
| Hydrogeology   | 2                    | 1                        | 0                   | 0          | 0.67%                  | 0%                    |
| Injury Prevention                                      | 12                   | 6                        | 0                   | 0          | 0.67%                  | 0%                    |
| Institutional Health                                   | 4                    | 0                        | 0                   | 0          | 100%                   | 0%                    |
| Occupational Health and Safety                         | 9                    | 9                        | 0                   | 0          | 0.50%                  | 0%                    |
| Radiation Health                                       | 4                    | 3                        | 0                   | 0          | 0.57%                  | 0%                    |
| Recreational Environmental Health                      | 4                    | 2                        | 0                   | 0          | 0.67%                  | 0%                    |
| Risk Analysis  | 16                   | 4                        | 0                   | 0          | 0.80%                  | 0%                    |
| Soils  | 3                    | 2                        | 1                   | 0          | 0.50%                  | 0.16%                 |
| Solid and Hazardous Material and Waste Management      | 11                   | 6                        | 1                   | 0          | 0.61%                  | 0.55%                 |
| Vector Control   | 5                    | 2                        | 0                   | 0          | 0.71%                  | 0%                    |
| Water and Waste Water                                  | 10                   | 5                        | 1                   | 0          | 0.63%                  | 0.6%                  |

**Specialty Areas Knowledge Needed**

Of the 33 surveyed supervisors, 4 indicated the following specific “other” specialty areas needed for the job.

**Figure 13.**

|  |
|--|
| Storm water  |
| Industrial Hygiene-Somewhat Prepared   |
| Asbestos management Biological safety Ergonomics Hearing protection Construction safety Sustainability   |
| He stepped into a health physics position and has done great with on the job training, but a little more knowledge in radiological control would have been helpful. We have a hard time finding people who have the air control background and radiological control as well. |



**Narrative**

EHAC accredits environmental health academic programs in order to create a cadre of educational institutions that produce environmental health graduates that are well prepared academically and have the fundamental skills to successfully enter and thrive in the environmental health field. EHAC’s primary mission is to enhance the education and training of students in environmental health science and protection by ensuring students receive premium quality education and training from institution of higher education.

An aggregation of supervisor and graduate responses to skill level and preparedness assessments presented in this report shows a high level of success for EHAC accredited organizations regarding the preparedness of environmental health graduates from both the graduate and the supervisor perspectives. As shown in Figure 13, graduate rate their preparedness in specialty areas at an average of 61% well prepared, while supervisors rate their new employees at average of 71% well prepared. These averages point to a high level of competence for environmental health graduates as well as leaving room for improvement in a number of specialty areas including air quality control, soils, occupational health and safety, built environment and hydrology, where assessments levels were slightly lower. Both graduates and supervisors reported lower levels of preparedness in radiation health in particular.

**Figure 13. Comparison of Graduate and Supervisor Responses Regarding Knowledge Required and Graduate Preparedness**

| <b>Specialty Area</b>                                 | <b>Job requires knowledge of Specialty Area: Graduate Response - %Yes</b> | <b>Job requires knowledge of Specialty Area: Supervisor Response - %Yes</b> | <b>Graduate Assessment of Their Preparedness in Specialty areas - % Well Prepared</b> | <b>Supervisor Assessment of Graduate Preparedness in Specialty Areas - % Well Prepared</b> |
|---|---|---|---|--|
| Air Quality Control                                   | 0.50%   | 0.45%   | 0.42%   | 0.69%  |
| All-hazard Preparedness                               | 0.68%   | 0.68%   | 0.59%   | 0.60%  |
| Built Environment                                     | 0.30%   | 0.15%   | 0.45%   | 0.75%  |
| Disease Prevention (e.g. vectorborne, zoonotic, etc.) | 0.41%   | 0.25%   | 0.83%   | 0.86%  |
| Disease Prevention (e.g. vectorborne, zoonotic, etc.) | 0.52%   | 0.21%   | 0.74%   | 0.83%  |
| Environmental Health Planning                         | 0.59%   | 0.50%   | 0.63%   | 0.86%  |
| Food Protection                                       | 0.40%   | 0.21%   | 0.76%   | 100%   |
| Geographical Information Systems (GIS)                | 0.25%   | 0.11%   | 0.67%   | 0.67%  |
| Global environmental Health                           | 0.19%   | 0.11%   | 0.64%   | 0.67%  |
| Hydrogeology  | 0.19%   | 0.11%   | 0.46%   | 0.67%  |
| Injury Prevention                                     | 0.61%   | 0.62%   | 0.71%   | 0.67%  |
| Institutional Health                                  | 0.36%   | 0.25%   | 0.54%   | 100%   |
| Occupational Health and Safety                        | 0.54%   | 0.60%   | 0.82%   | 0.50%  |
| Radiation Health                                      | 0.42%   | 0.72%   | 0.53%   | 0.57%  |
| Recreational Environmental Health                     | 0.39%   | 0.21%   | 0.54%   | 0.67%  |
| Risk Analysis   | 0.75%   | 0.67%   | 0.69%   | 0.80%  |
| Soils   | 0.31%   | 0.21%   | 0.35%   | 0.50%  |
| Solid and Hazardous Material and Waste Management     | 0.64%   | 0.64%   | 0.61%   | 0.61%  |
| Vector Control  | 0.29%   | 0.25%   | 0.62%   | 0.71%  |
| Water and Waste Water                                 | 0.64%   | 0.57%   | 0.69%   | 0.63%  |

Figure 14 also shows a high level of satisfaction of both graduates and supervisors regarding the skill level of graduates in eighteen different job skills areas, with graduates rating their skill levels at an average of 3.75 out of 5 (5 = best, 1 = worst) and supervisors rating recent graduates at an average of 3.91 out of 5. Epidemiology and risk communication were the lowest ranked skill levels for graduates rating themselves, while public speaking and risk management were ranked lowest by supervisors. Challenging areas cited by both graduates and supervisors include information technology/computer skills, public speaking, technical writing, choosing and defending an appropriate course of Action, conducting a statistical analysis and interpreting data, applying research methods and problem solving, project planning and management, epidemiology, toxicology, risk assessment, risk communication, and risk management.

**Figure 14. Comparison of Graduate's Job Skills Assessment with Supervisor Assessment of Graduate Skills (5 = Best, 1 = Worst)**

| <b>Skills</b>   | <b># of Graduate Respondents</b> | <b>Graduate's Assessment of Skills - Average</b> | <b># of Supervisor Respondents</b> | <b>Supervisor's Assessment of Graduate Skills - Average</b> |
|---|----------------------------------|--|------------------------------------|---|
| Information Technology/Computer Skills                  | 77                               | 3.66   | 33                                 | 4.10  |
| Public Speaking   | 77                               | 3.79   | 33                                 | 3.67  |
| Technical Writing                                       | 77                               | 3.93   | 33                                 | 3.82  |
| Identify Reliable and Relevant Information              | 77                               | 4.17   | 33                                 | 4.30  |
| Drawing Appropriate Conclusions                         | 77                               | 4.17   | 33                                 | 4.24  |
| Choosing and Defending an Appropriate Course of Action  | 75                               | 3.97   | 33                                 | 3.97  |
| Conducting a statistical Analysis and interpreting Data | 77                               | 3.75   | 33                                 | 3.85  |
| Applying Research Methods and Problem Solving           | 77                               | 3.94   | 33                                 | 4.10  |
| Working in a Team Setting                               | 77                               | 4.40   | 33                                 | 4.33  |
| Leadership Skills                                       | 77                               | 4.01   | 33                                 | 3.70  |
| Organizing Work Flow                                    | 77                               | 4.20   | 33                                 | 3.88  |
| Time Management   | 77                               | 4.04   | 33                                 | 4.00  |
| Project Planning and Management                         | 77                               | 3.97   | 33                                 | 3.97  |
| Epidemiology  | 79                               | 2.70   | 33                                 | 3.67  |
| Toxicology  | 79                               | 3.14   | 33                                 | 3.73  |
| Risk Assessment   | 77                               | 3.69   | 33                                 | 3.77  |
| Risk Communication                                      | 77                               | 2.31   | 33                                 | 3.96  |
| Risk Management   | 77                               | 3.66   | 33                                 | 3.30  |