



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

**Outcome Assessment Report 2011**

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**Background:**

The EHAC Undergraduate Guidelines section VI. Reporting Obligations of Accredited and Pre-accredited Programs part D. Program Outcomes Assessment Surve 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 2012</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>
East Carolina University	Undergraduate	2012	1975	2005-2011	6	0
East Carolina University	Graduate	2012	1975	2005-2011	0	0
East Tennessee State University	Undergraduate	2012	1969	2005-2011	16	4
East Tennessee State University	Graduate	2012	1969	2005-2011	9	3
Eastern Kentucky University	Undergraduate	2012	1985	2005-2011	11	2
Spelman College	Undergraduate	2012	2005	2005-2011	1	0
University of Georgia, Athens	Undergraduate	2012	1984	2005-2011	11	2
University of Illinois,	Graduate	2012	2006	2005-2011	4	1

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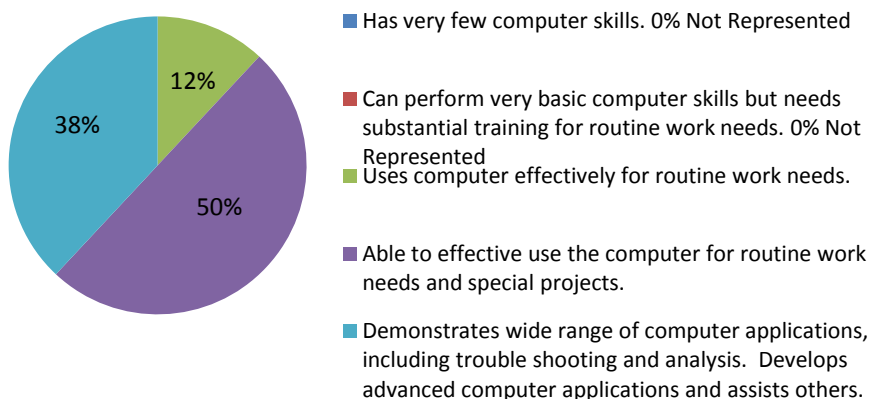
Springfield						
Wright State University	Undergraduate	2012	1977	2005-2011	7	1

## Graduate Skills

Listed below are core competencies in environmental health programs. Graduate respondents were asked to choose the option that most closely described their skill level. The percentages reflect 60 out of the 65 graduate survey respondents as 5 graduates did not respond to this section.

### Chart 1

#### Computer Skills



### Chart 2

#### Communication Skills (Oral)

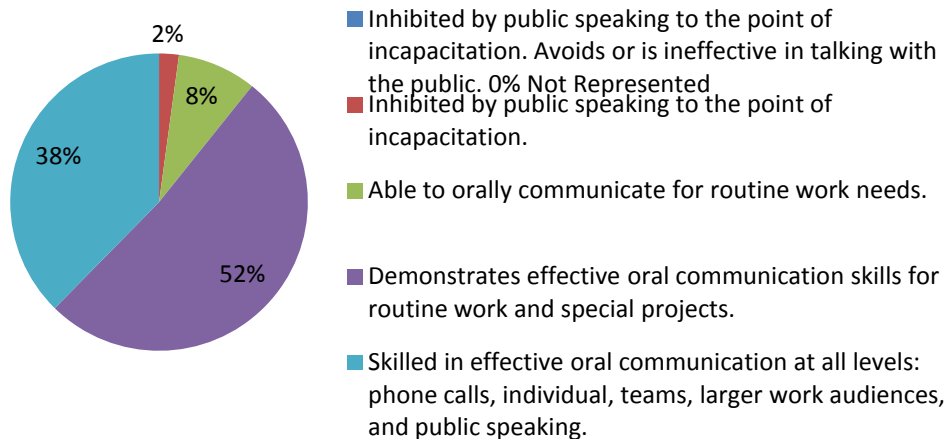


Chart 3

### Technical Skills

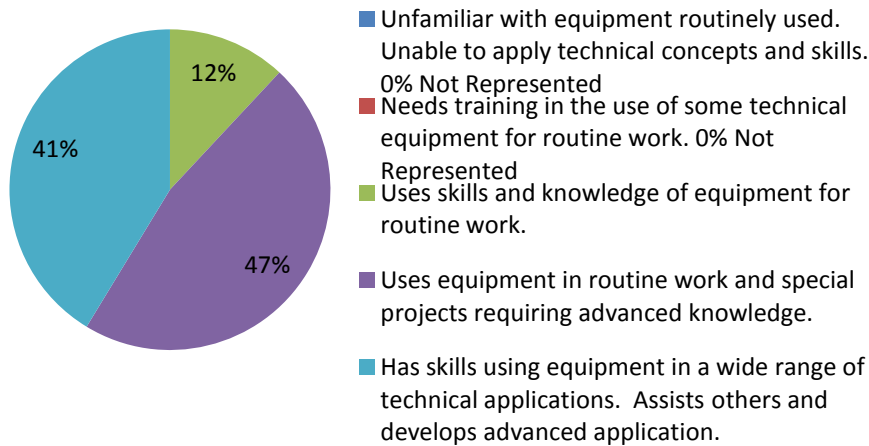
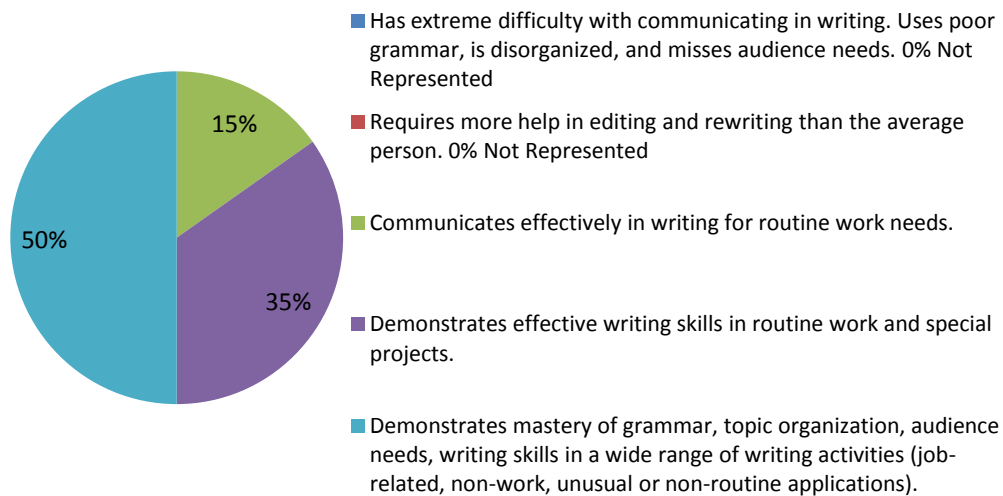


Chart 4

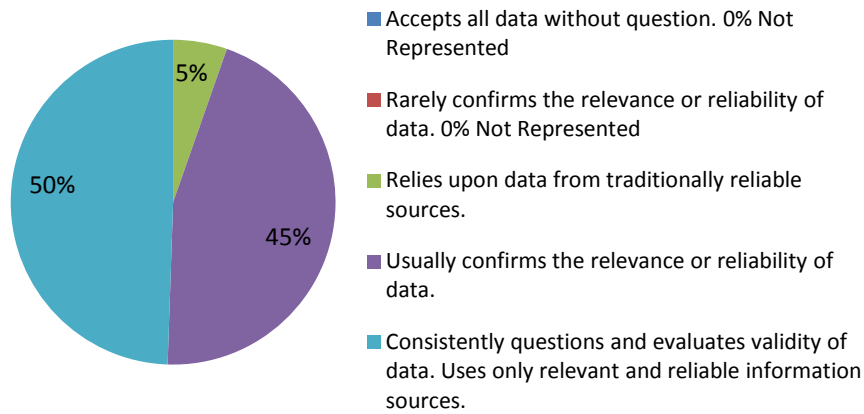
### Writing Skills



**Chart 5**

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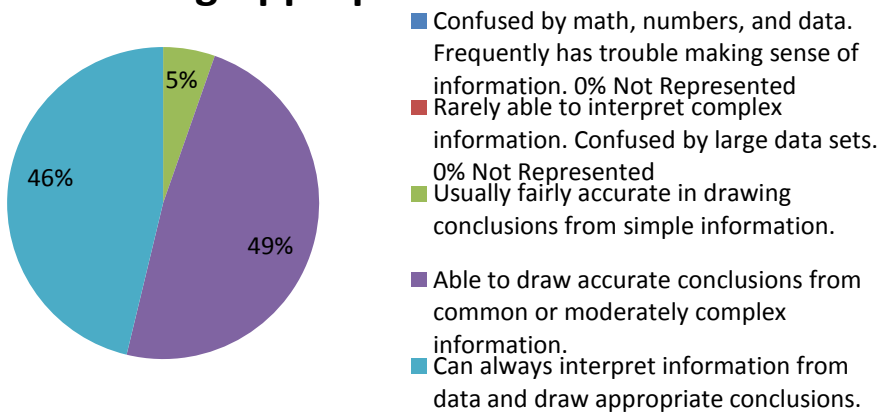
**Identify Reliable and Relevant Information**



**Chart 6**

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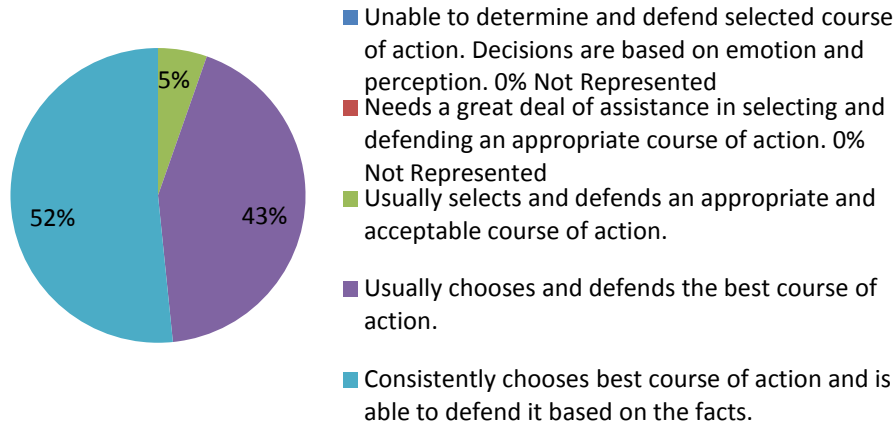
**Drawing Appropriate Conclusions**



**Chart 7**

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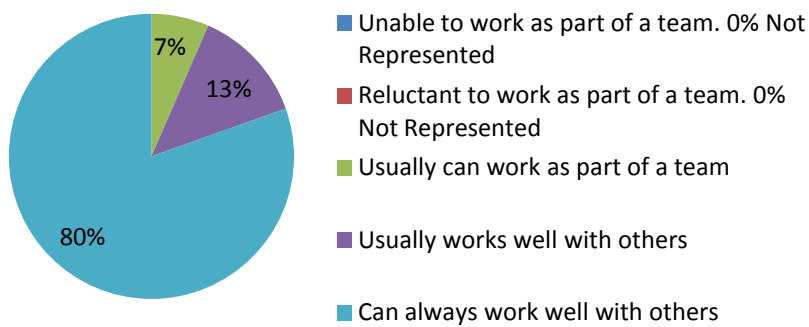
### Choosing and Defending an Appropriate Course of Action



**Chart 8**

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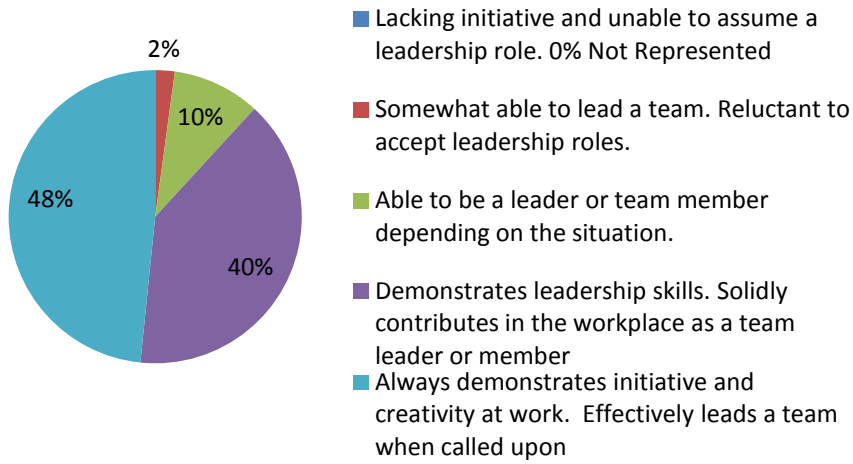
### Ability to work with others



**Chart 9**

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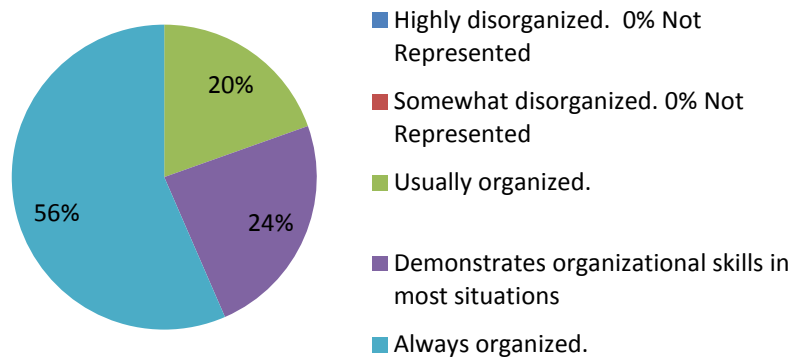
### Leadership Skills



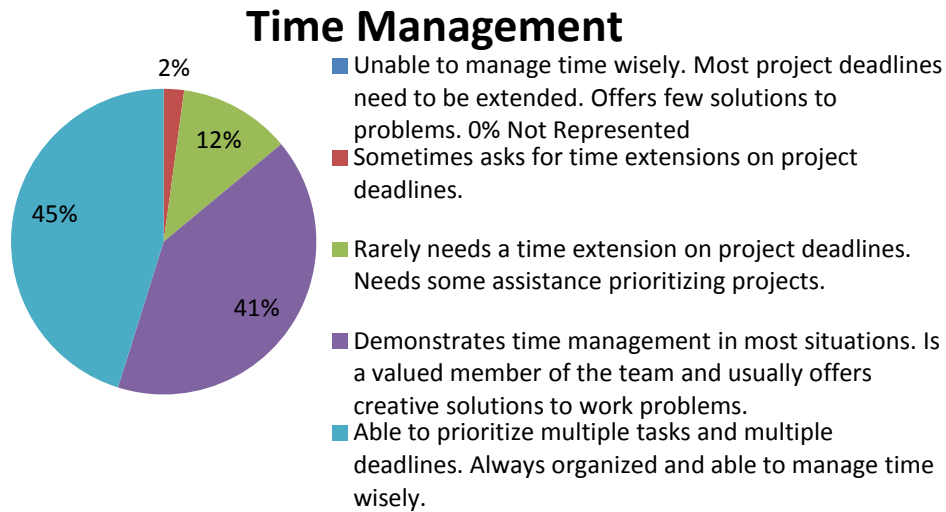
**Chart 10**

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### Organization Skills



**Chart 11**



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
Computer Skills	65	4.28
Communication Skills (Oral)	65	4.28
Technical Skills	65	4.31
Communication Skills (Written)	65	4.36
Identify reliable and relevant information.	65	4.45
Drawing Appropriate Conclusions	65	4.43
Choosing and defending an appropriate course of action.	65	4.47
Ability to work with others	65	4.74
Leadership Skills	65	4.36
Organization	65	4.38
Time Management	65	4.31

**Table 3**  
**Graduate Skills- East Carolina University Undergrad (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Computer Skills	6	4.6
Communication Skills (Oral)	6	4.8
Technical Skills	6	4.6
Communication Skills (Written)	6	4.6
Identify reliable and relevant information.	6	4.4
Drawing Appropriate Conclusions	6	4.6
Choosing and defending an appropriate course of action.	6	4.4
Ability to work with others	6	5
Leadership Skills	6	5

Organization	6	4.8
Time Management	6	4.6

**Table 4**  
**Graduate Skills- East Tennessee State University Undergrad (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Computer Skills	16	4.13
Communication Skills (Oral)	16	4.13
Technical Skills	16	4.2
Communication Skills (Written)	16	4.33
Identify reliable and relevant information.	16	4.47
Drawing Appropriate Conclusions	16	4.33
Choosing and defending an appropriate course of action.	16	4.4
Ability to work with others	16	4.73
Leadership Skills	16	3.93
Organization	16	3.93
Time Management	16	3.93

**Table 5**  
**Graduate Skills- East Tennessee State University Graduate (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Computer Skills	9	3.89
Communication Skills (Oral)	9	4.44
Technical Skills	9	4.56
Communication Skills (Written)	9	4.56
Identify reliable and relevant information.	9	4.33
Drawing Appropriate Conclusions	9	4.44
Choosing and defending an appropriate course of action.	9	4.33
Ability to work with others	9	4.89
Leadership Skills	9	4.56
Organization	9	4.33
Time Management	9	4.11

**Table 6**  
**Graduate Skills- Eastern Kentucky University (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Computer Skills	11	4.55
Communication Skills (Oral)	11	4.27
Technical Skills	11	4.55
Communication Skills (Written)	11	4.27
Identify reliable and relevant information.	11	4.55
Drawing Appropriate Conclusions	11	4.45
Choosing and defending an appropriate course of action.	11	4.55
Ability to work with others	11	4.64
Leadership Skills	11	4.45



Organization	11	4.64
Time Management	11	4.73

**Table 7**  
**Graduate Skills- Spelman College (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Computer Skills	1	5
Communication Skills (Oral)	1	5
Technical Skills	1	5
Communication Skills (Written)	1	5
Identify reliable and relevant information.	1	5
Drawing Appropriate Conclusions	1	5
Choosing and defending an appropriate course of action.	1	5
Ability to work with others	1	5
Leadership Skills	1	5
Organization	1	5
Time Management	1	5

**Table 8**  
**Graduate Skills- University of Georgia, Athens (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Computer Skills	11	4.11
Communication Skills (Oral)	11	3.89
Technical Skills	11	3.78
Communication Skills (Written)	11	4
Identify reliable and relevant information.	11	4.22
Drawing Appropriate Conclusions	11	4.33
Choosing and defending an appropriate course of action.	11	4.56
Ability to work with others	11	4.56
Leadership Skills	11	4.11
Organization	11	4.33
Time Management	11	4.22

**Table 9**  
**Graduate Skills- University of Illinois Springfield (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Computer Skills	4	4.33
Communication Skills (Oral)	4	4.33
Technical Skills	4	4
Communication Skills (Written)	4	4.33
Identify reliable and relevant information.	4	4.33
Drawing Appropriate Conclusions	4	4.33
Choosing and defending an appropriate course of action.	4	4.33

Ability to work with others	4	5
Leadership Skills	4	4.33
Organization	4	4.67
Time Management	4	4.33

**Table 10**  
**Graduate Skills- Wright State University (5=Best, 1=Worst)**

Skills	Number of Respondents	Average
Computer Skills	7	4.43
Communication Skills (Oral)	7	4.29
Technical Skills	7	4.29
Communication Skills (Written)	7	4.43
Identify reliable and relevant information.	7	4.71
Drawing Appropriate Conclusions	7	4.43
Choosing and defending an appropriate course of action.	7	4.57
Ability to work with others	7	4.57
Leadership Skills	7	4.57
Organization	7	4.43
Time Management	7	4.43

### 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 all (65) survey respondents:

**Table 11**

My job requires knowledge of:	Individual Yes	Individual No	N/A	Total	Percent Yes	Percent No
Epidemiology	19	28	18	65	29%	43%
Statistical Methods	38	12	15	65	58%	18%
Toxicology	25	21	19	65	38%	32%
Environmental Economics	13	33	19	65	20%	51%
Environmental Health Management	22	25	18	65	34%	38%
Risk Assessment	33	15	17	65	51%	23%
Risk Communication	31	16	18	65	48%	25%
Air Quality Control (Indoor & Outdoor)	23	24	18	65	35%	37%
Environmental Chemistry	27	21	17	65	42%	32%
Environmental Law and Public Policy Development	30	19	16	65	46%	29%
Environmental Epidemiology	21	24	20	65	32%	37%
Environmental Microbiology	23	24	18	65	35%	37%
Food Protection	18	29	18	65	28%	45%
Global Environmental Health	15	31	19	65	23%	48%
Environmental Health Planning (Land Use, Transportation, Energy, Urban Development, Resource Conservation)	21	24	20	65	32%	37%

Hazardous Materials	29	20	16	65	45%	31%
Hydrogeology	13	34	18	65	20%	52%
Industrial Hygiene	20	25	20	65	31%	38%
Injury Prevention	32	15	18	65	49%	23%
Noise Control	17	28	20	65	26%	43%
Occupational Health and Safety	29	16	20	65	45%	25%
Radiation Health (Ionizing and Non-Ionizing)	19	27	19	65	29%	42%
Recreational Environmental Health	16	29	20	65	25%	45%
Institutional Health (Including infection control and infectious waste)	22	24	19	65	34%	37%
Soils	14	32	19	65	22%	49%
Solid Waste Management	23	24	18	65	35%	37%
Vector Control	18	28	19	65	28%	43%
Waste Water	25	21	19	65	38%	32%
Water Quality	33	15	17	65	51%	23%
Water Supply	22	23	20	65	34%	35%

**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 all (65) graduates who were well-prepared and under-prepared by their program:

**Table 12**

<b>My program prepared me in:</b>	<b>Individual Yes</b>	<b>Individual No</b>	<b>N/A</b>	<b>Total</b>	<b>Percent Yes</b>	<b>Percent No</b>
Epidemiology	37	3	25	65	57%	5%
Statistical Methods	40	8	17	65	62%	12%
Toxicology	35	5	25	65	58%	8%
Environmental Economics	10	26	29	65	15%	40%
Environmental Health Management	32	7	29	65	49%	11%
Risk Assessment	33	10	22	65	51%	15%
Risk Communication	32	10	23	65	49%	15%
Air Quality Control (Indoor & Outdoor)	36	5	24	65	55%	8%
Environmental Chemistry	35	7	23	65	54%	11%
Environmental Law and Public Policy Development	41	3	21	65	63%	5%
Environmental Epidemiology	31	6	28	65	48%	9%
Environmental Microbiology	35	8	22	65	54%	12%
Food Protection	30	10	25	65	46%	15%
Global Environmental Health	28	12	25	65	43%	18%
Environmental Health Planning (Land Use, Transportation, Energy, Urban Development, Resource Conservation)	29	9	27	65	45%	14%
Hazardous Materials	40	4	21	65	62%	6%
Hydrogeology	18	20	27	65	28%	31%
Industrial Hygiene	36	4	25	65	55%	6%
Injury Prevention	29	12	24	65	45%	18%
Noise Control	26	12	27	65	40%	18%
Occupational Health and Safety	34	5	26	65	52%	8%

Radiation Health (Ionizing and Non-Ionizing)	32	6	27	65	49%	9%
Recreational Environmental Health	22	14	29	65	34%	22%
Institutional Health (Including infection control and infectious waste)	32	7	26	65	49%	11%
Soils	21	16	28	65	32%	25%
Solid Waste Management	34	5	26	65	52%	8%
Vector Control	32	7	26	65	49%	11%
Waste Water	35	5	25	65	54%	8%
Water Quality	44	0	21	65	68%	0%
Water Supply	34	7	24	65	52%	11%

**Graduate Work Place Data:**

The pie chart below represents job sectors for graduates of the six schools surveyed. Of the respondents, 45 are currently working, 7 were not working, and 13 did not respond to this item.

**Chart 12**

**Job Sector Distribution of working Graduates**

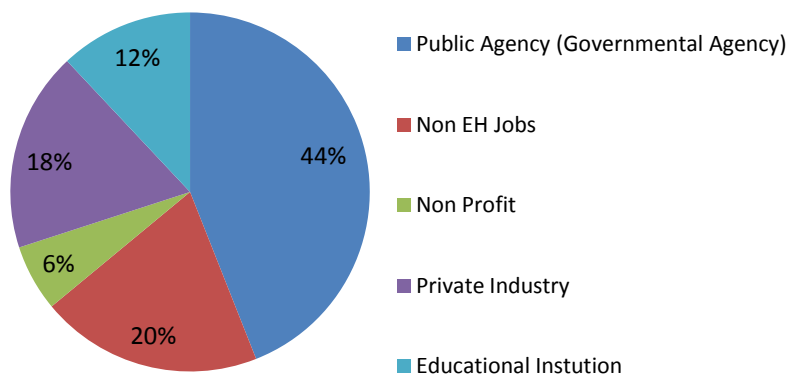


Chart 13

### Graduates Working Within the Public Sector

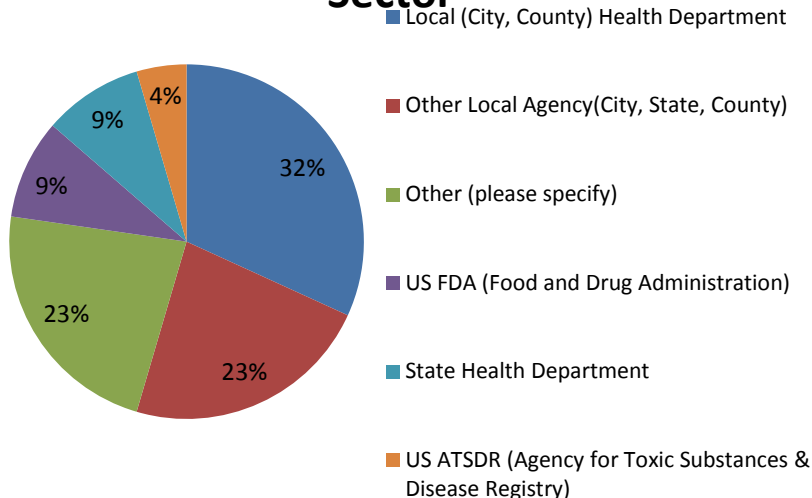
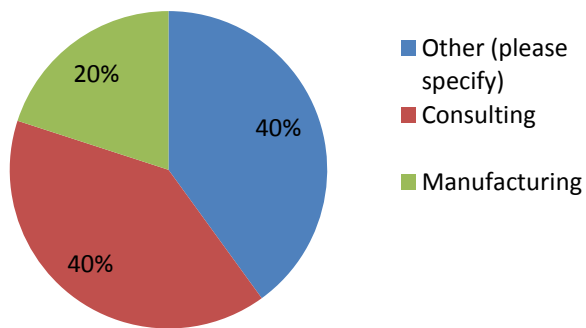


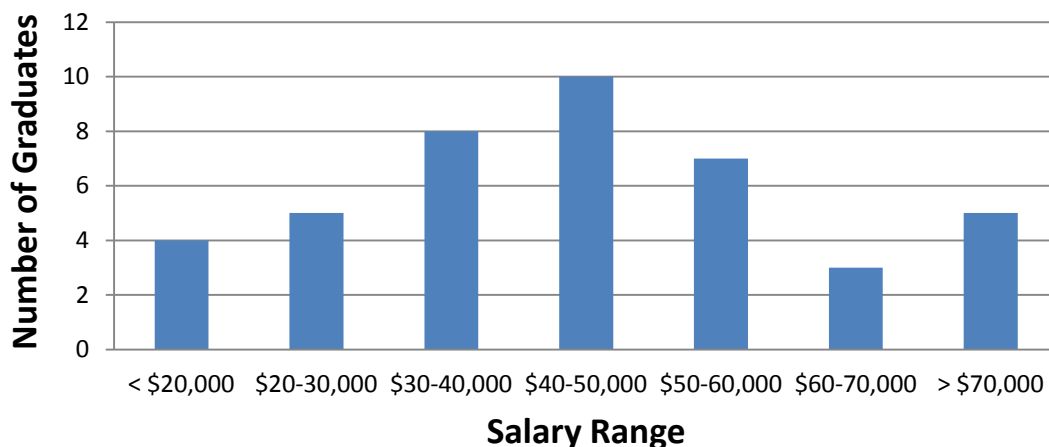
Chart 14

### Graduates Working in the Private Sector



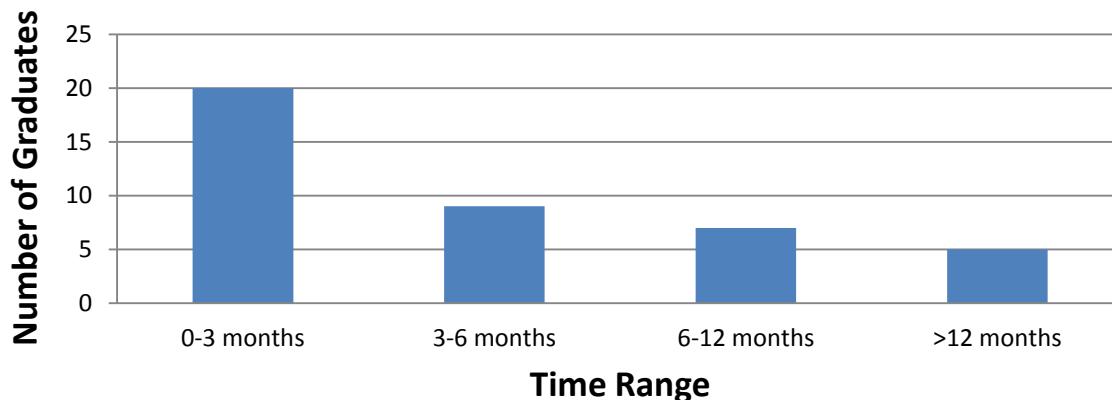
**Chart 15**

**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 19 respondents:

**Table 13**

Private Practice Attorney	Pharmacy Intern
MD Student	Graduate Student-Entomology
Medical Student	Flight Attendant
Graduate Student-Neuroscience	Basic Job
Been looking for a local job for over a year. Can't find employment	Naturalist and Library Clerk
Attorney	Restaurant
Construction	Environmental Laboratory
US Military	US Dept of Veteran Affairs (2)
TVA	US Army

## 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 14**

Degree	Number of Graduates
Completed a Bachelor's Degree	1
Completed a Master's Degree	17
Completed a Doctorate Degree	4

The following were listed as specific degrees for 12 respondents:

**Table 15**

Part way through MPH
MPH-Public Health Practice
Industrial Hygiene
Industrial Hygiene
MSc Global Health
Masters of Public Health (Epidemiology)
Masters Degree is in Environmental Health
Public Health, Public Administration
Working on MS in conservation ecology
Environmental Chemistry and Toxicology in progress
MD (in progress)
Working toward Ph.D. in environmental science and engineering

The 65 graduate respondents indicated if they had participated in the activities listed below to further their professional careers:

**Table 16**

Activity	Number of Participating Graduates
Seminars	36
Teaching/Presentations	26
Professional Organizations	35
Publishing	11

The following were listed as specific professional awards received by 11 respondents:

**Table 17**

2010 Student Presentation Award-Dioxin-San Antonio, TX 2011 BFR Conference Student Presentation Award – Boston, MA
Outstanding Achievement in Health Policy Law Commentary in Journal of Legal Medicine
State Environmental Health Professional of the year award, John C. Eason award, others
Electric Power Research Institute Technology Transfer Award, 2010 and 2012. TVA Technology Innovation and Sustainability 2011 Award for Technical Merit. TVA Technology Innovation and

Sustainability 2011 Award for Cross-Cutting Collaboration.
Distinguished Honor Graduate from U.S. Army Intern Program Time off award (40hrs) for performance
Phi Kappa Phi Honor Society
Over 30 US Public Health Service Commissioned Corps Awards plus 4 management awards
Governor’s Distinguished Service Award FBI Director’s letter of Recognition
Employee of the Year, Extra Mile Award won twice, Environmental Health Specialist of the Year, Employee of the Month
AEHAP Student of the Month
Student of the month for AEHAP, Collaboration Award from WSU, Emerging Leader Award from WSU

The 65 graduate respondents indicated the following certificate or credentialing exams they have passed:

**Table 18**

<b>Exam</b>	<b>Number of Graduates</b>
REHS/RS (NEHA)	8
REHS/RS (PES)	1
REHS (state level)	5
ASP/CSP	0
IHIT/CIH	0
Hazardous Material	5
Water/Wastewater	2

The following were listed as specific certificate or credentialing exams passed by 12 respondents:

**Table 19**

Illinois and Tennessee Bar Exam
OSHA 40 Hour, Radiation Worker II
NEHA Healthy Homes Specialist
Electric Utilities
CPH
OHST
CPFS (NEHA)
40 Hour HAZWOPER; 40 Hour Hazardous Waste Site Worker; Emergency Response-Introductory Level; Train-The-Trainer; IS-00200.HC Applying ICS to Healthcare Organizations I-200 for Health Care/Hospitals; IS-00100 Introduction to the Incident Command System, (ICS 100); IS-00230 Principles of Emergency Management
National Board of Public Health Examiners
Federal Injury Prevention Specialist
40 Hour HAZWOPER
HAZWOPER



The 65 graduate respondents indicated involvement in the professional organizations listed below:

**Table 20**

<b>Professional Organization</b>	<b>Number of Graduates</b>
ACGIH - Current Member	1
AIHA - Current Member	5
NEHA* - Current Member	11
APHA - Current Member	2
AWMA - Current Member	0
AWWA - Current Member	0
WEF - Current Member	0
ASSE* - Current Member	5
SOT - Current Member	0

\*Note: Respondents (2) indicated they held a Leadership Role with NEHA and/or ASSE.

## **Supervisor Survey Results**

### **Background:**

Thirteen supervisors were surveyed on the skill levels of graduates.

**Table 21**

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

<b>Skills</b>	<b>Number of Respondents</b>	<b>Average</b>
Computer Skills	13	4.77
Communication Skills (Oral)	13	4.69
Technical Skills	13	4.77
Communication Skills (Written)	13	4.38
Identify reliable and relevant information.	13	4.54
Drawing Appropriate Conclusions	13	4.62
Choosing and defending an appropriate course of action.	13	4.54
Ability to work with others	13	4.85
Leadership Skills	13	4.38
Organization	13	4.77
Time Management	13	4.69

**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 13 supervisors:

**Table 22**

Job Requirement	Individual Yes	Individual No	N/A	Percent Required	Percent Not Required
Epidemiology	3	9	1	23%	69%
Statistical Methods	9	3	1	69%	23%
Toxicology	3	8	2	23%	62%
Environmental Economics	4	6	3	31%	46%
Environmental Health Management	6	5	2	46%	38%
Risk Assessment	9	3	1	69%	23%
Risk Communication	7	4	2	54%	31%
Air Quality Control (indoor/outdoor)	4	7	2	31%	54%
Environmental Chemistry	8	4	1	62%	31%
Environmental Law & Public Policy	8	3	2	62%	23%
Environmental Epidemiology	4	6	3	31%	46%
Environmental Microbiology	4	6	3	31%	46%
Food Protection	4	6	3	31%	46%
Global Environmental Health	1	8	4	8%	62%
Environmental Health Planning	2	7	4	15%	54%
Hazardous Material	6	3	4	46%	23%
Hydrogeology	3	6	4	23%	46%
Industrial Hygiene	3	6	4	23%	46%
Injury Prevention	8	3	2	62%	23%
Noise Control	4	5	4	31%	38%
Occupational Health & Safety	8	2	3	62%	15%
Radiation Health	3	6	4	23%	46%
Recreational Environmental Health	2	8	3	15%	62%
Institutional Health (Including infectious control & infectious waste)	6	4	3	46%	31%
Soils	4	5	4	31%	38%
Solid Waste Management	7	3	3	54%	23%
Vector Control	4	6	3	31%	46%
Wastewater	6	3	4	46%	23%
Water Quality	9	2	2	69%	15%
Water Supply	5	5	3	38%	38%
Professional Ethics	10	1	2	77%	8%

**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 13 supervisors:

**Table 23**

<b>Graduate Preparedness</b>	<b>Individual Yes</b>	<b>Individual No</b>	<b>N/A</b>	<b>Percent Well-Prepared</b>	<b>Percent Under-Prepared</b>
Epidemiology	6	2	5	46%	15%
Statistical Methods	10	2	1	77%	15%
Toxicology	6	2	5	46%	15%
Environmental Economics	5	1	7	38%	8%
Environmental Health Management	7	0	6	54%	0
Risk Assessment	9	1	3	69%	8%
Risk Communication	7	1	5	54%	8%
Air Quality Control (indoor/outdoor)	5	2	6	38%	15%
Environmental Chemistry	9	0	4	69%	0
Environmental Law & Public Policy	10	0	3	77%	0
Environmental Epidemiology	6	1	6	46%	8%
Environmental Microbiology	6	1	6	46%	8%
Food Protection	6	2	5	46%	15%
Global Environmental Health	3	3	7	23%	23%
Environmental Health Planning	4	2	7	31%	15%
Hazardous Material	7	0	6	54%	0
Hydrogeology	5	1	7	38%	8%
Industrial Hygiene	5	1	7	38%	8%
Injury Prevention	8	1	4	62%	23%
Noise Control	5	1	7	38%	8%
Occupational Health & Safety	9	0	4	69%	0
Radiation Health	4	1	8	31%	8%
Recreational Environmental Health	4	2	7	31%	15%
Institutional Health (Including infectious control & infectious waste)	6	2	5	46%	15%
Soils	6	0	7	46%	0
Solid Waste Management	8	1	4	62%	8%
Vector Control	6	2	5	46%	15%
Wastewater	7	0	6	54%	0
Water Quality	10	1	2	77%	8%
Water Supply	7	1	5	54%	8%
Professional Ethics	10	0	3	77%	0

Of the 13 surveyed supervisors, 5 indicated the following specific “other” specialty areas needed for the job:

**Table 24**

Grant Writing
Molecular biology, bioinformatics
Environmental analytical chemistry
Emergency Management
Recreational Water Safety, Beach Sampling, Integrated Pest Management, Safe Housing/Building Inspections, Rabies Surveillance and Animal Bite Response