National Environmental Health Science & Protection Accreditation Council

Enhancing the education and training of students in environmental health science and protection

Undergraduate Outcome Assessment

2024-2025

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Chapter 1. Introduction

This report details analysis of the data provided by former undergraduates of programs seeking reaccreditation during the 2024-2025 academic year and a number of their supervisors.

Background

EHAC Undergraduate Requirements Section VI. Reporting Obligations of Accredited Programs Part D. Program Outcomes Assessment Survey states that:

> "At the time of reaccreditation, 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 evaluation review for reaccreditation purposes for a given institution. The Council will use the compiled information from all institutions undergoing reaccreditation to evaluate and consider changes to the requirements of accreditation."

The outcome assessment tool consists of two surveys conducted via surveymonkey.com, one for current employees and the other for their supervisors. It is distributed to the reaccreditation candidate Program Directors for distribution to former students. The graduates then provide the survey link to their supervisors for survey completion.

Chapter 1. Introduction

Survey Context and Summary

EHAC's core mission is to accredit Environmental Health (EH) Programs that provide a scientifically rigorous and practical based education, which prepares graduates to enter the EH field "work force ready" and prepared to problem solve using critical thinking skills acquired during their university education. Toward this end, EHAC is continuously identifying strengths and weaknesses related to graduates successfully entering and progressing in the EH field of their choice. Survey responses from both graduates employed in the EH field (employees), and their supervisors assist EHAC in assessing and adapting Undergraduate Requirements and Graduate Guidelines for accreditation to the ever-evolving arena of Environmental Health.

Questions for both employees and their supervisors focus on assessing the adequacy and effectiveness of an employee's knowledge, skills, and abilities related to their EH job, with employees conducting self-assessments and supervisors evaluating their current employees.

The following report provides a graphic representation of the results of the surveys. Table 1 presents the EHAC accredited undergraduate degree programs going through the 2023-2024 reaccreditation process, the number of employee responses, their dates of graduation, and the number of supervisor responses. There were 12 total employee respondents to the survey. All of these respondents are currently employed in EH-related professions. One respondent is in graduate school. Three supervisors of Undergraduate EH employees participated in the survey and their responses are included in this report, as well.

Chapter 1. Introduction

Survey Context and Summary

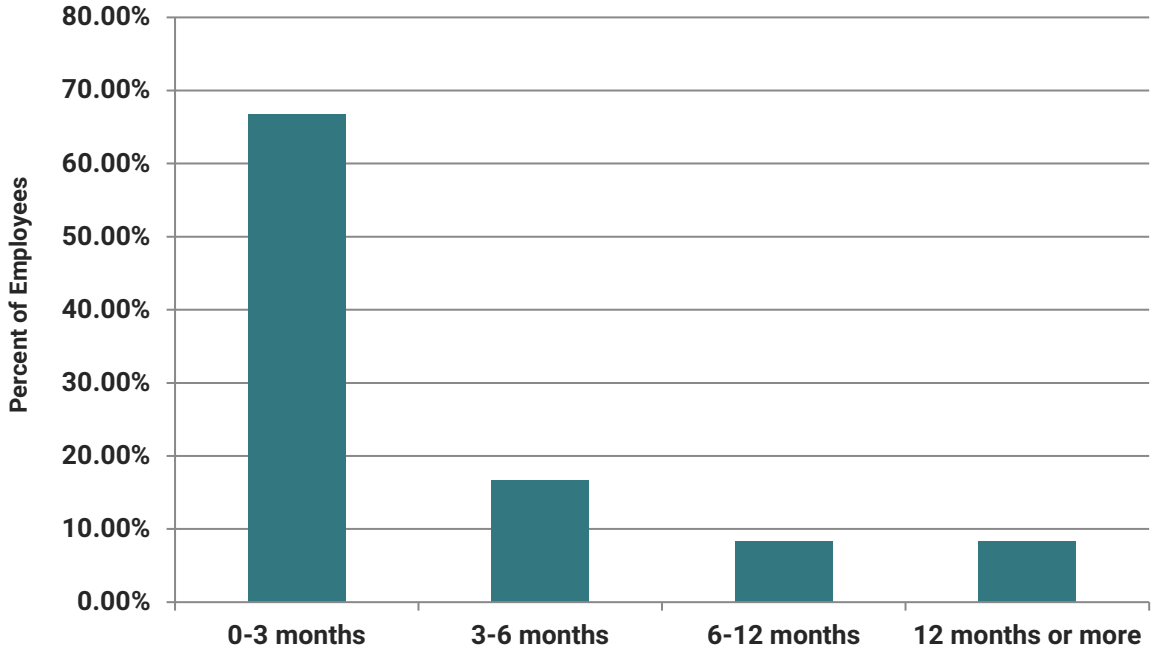
Table 1: 2024-2025 Outcome Assessment Respondents from Undergraduate Programs

Re-accreditation Applicants	Next Accreditation Review	Initial Accreditation Year	Graduating Classes Reflected	Number of EH Employee Respondents	Number of Supervisor Respondents
California State University, San Bernardino	2025	2004	2019, 2021	3	0
Central Michigan University	2025	2013	2019, 2021	3	1
East Tennessee State University	2025	1969		0	0
Illinois state University	2025	1977	2021, 2022	2	
Montana State University	2025	2019	2021, 2022	3	2
Texas Southern University	2025	2006	2019	1	0
Total				12	3

Chapter 2. Undergraduate Employee Results

EH Employee Workplace Data

Chart 1: Length of Time to First EH Employment Post Graduation (N=12)



- More than 60% of respondents gained EH employment within 3 months of graduating.

Chapter 2. Undergraduate Employee Results

EH Employee Workplace Data

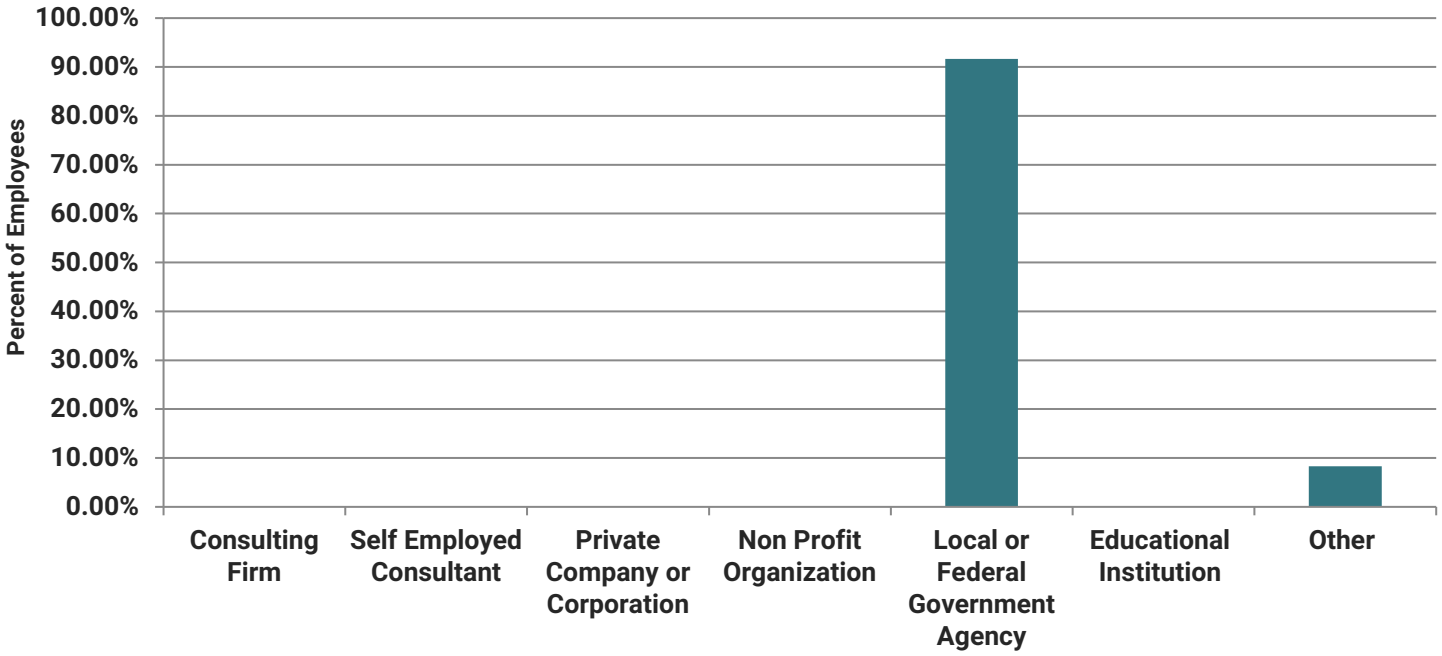
Table 2: Job Titles of Employee Respondents

Job Title	Total
EHS Program Manager	1
Environmental Investigation II	1
Environmental Health Specialist	2
Environmental Health Specialist 1	1
Environmental Health Specialist 2	1
Environmental Health Sanitarian, Lead Inspector/Risk Assessor & EBL Investigator	1
Environmental Health Specialist/Registered Sanitarian, Compliance Sanitarian	1
Public Health Sanitarian	1
Sanitarian/Environmental Health Specialist	1

Chapter 2. Undergraduate Employee Results

EH Employee Workplace Data

Chart 2: Job Sector Distribution of Employees (N=12)

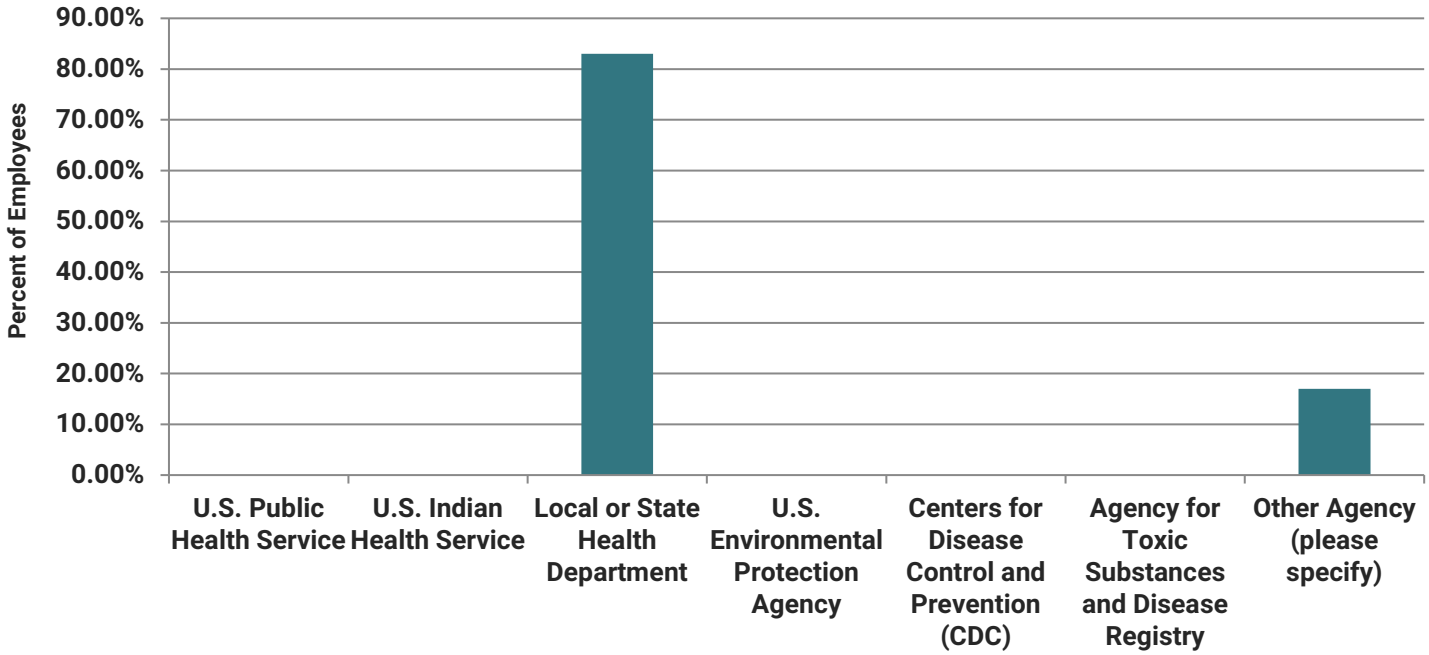


- "Other" included:
  - NA
  - Manufacturing

Chapter 2. Undergraduate Employee Results

EH Employee Workplace Data

Chart 3: Distribution of Employees Working at Local, State, or Federal Government Agencies (N=12)

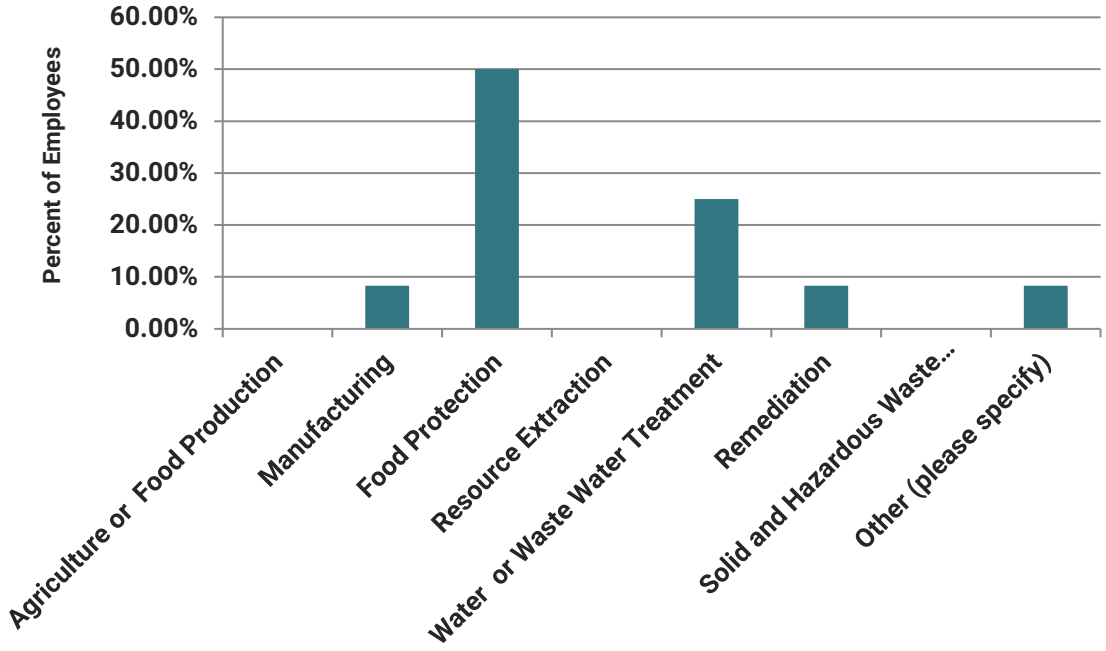


- "Other" included:
  - NA
  - Manufacturing

Chapter 2. Undergraduate Employee Results

EH Employee Workplace Data

Chart 4: Primary Areas of Employee Work (N=12)

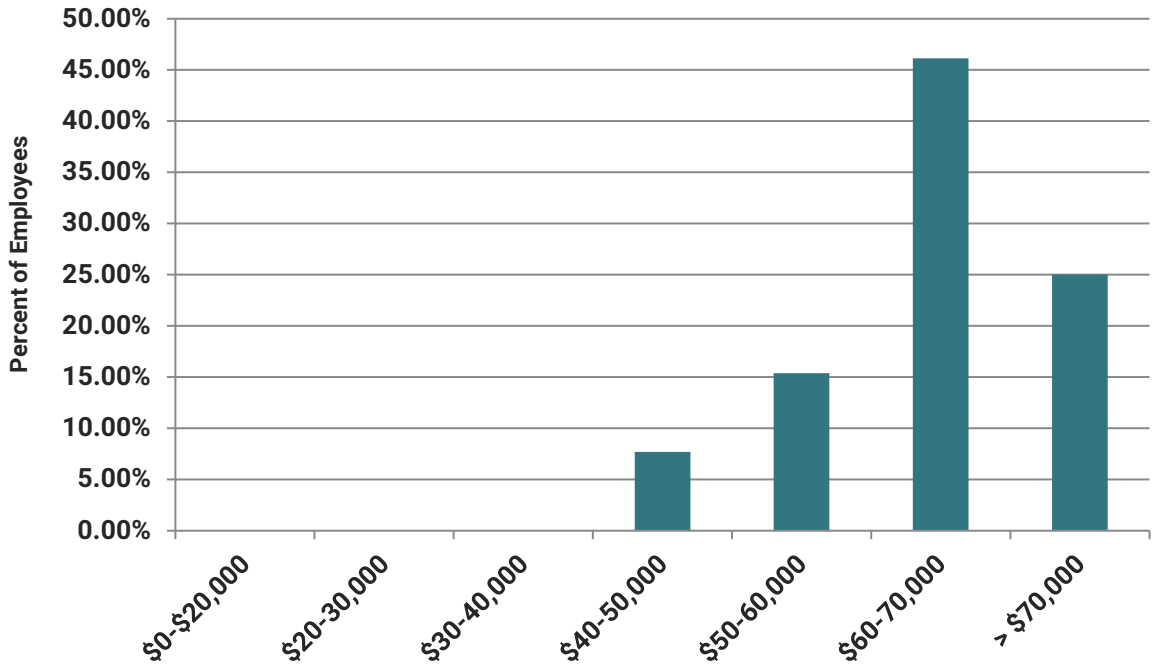


- "Other" Primary Areas of Employee Work include:
  - Lead Paint Inspection and Elevated Blood Lead Level Investigation
  - Licensed facilities (pools, trailer courts, hotels/motels, retail food, manufactured food, etc.)

Chapter 2. Undergraduate Employee Results

EH Employee Workplace Data

Chart 5: Salary Ranges of Employees in EH Job Sectors (N=12)



- $70,0000+ = Manufacturing
- $40,000 - $70,000 = Local or State Health Department

Chapter 2. Undergraduate Employee Results

EH Employee Data on Continuing Education and Professional Development

Table 3:

Continuing Education and Professional Development Pursuits
No employees reported achieving Master Degrees

Table 4:

Professional Recognitions Earned
Montana Environmental Health Association - A Vernon E. Sloulin RS Rookie of the Year Award 2022
All star award- teamwork and dependability

Chapter 2. Undergraduate Employee Results

EH Employee Credentials Achieved and Professional Association Affiliations

Table 5:

Certifications	Total
REHS	7
Certified Food Protection Manager	1
Food Manger Certification/Certified Food Operator	1
State of Michigan Lead Inspector/Risk Assessor & EBL Investigator and EPA Renovate, Repair, and Painting Certification	1
State of Montana Sanitarian License, Food Manger Certification/Certified Food Operator	1
Montana Sanitarian License	1
ServSafe	1

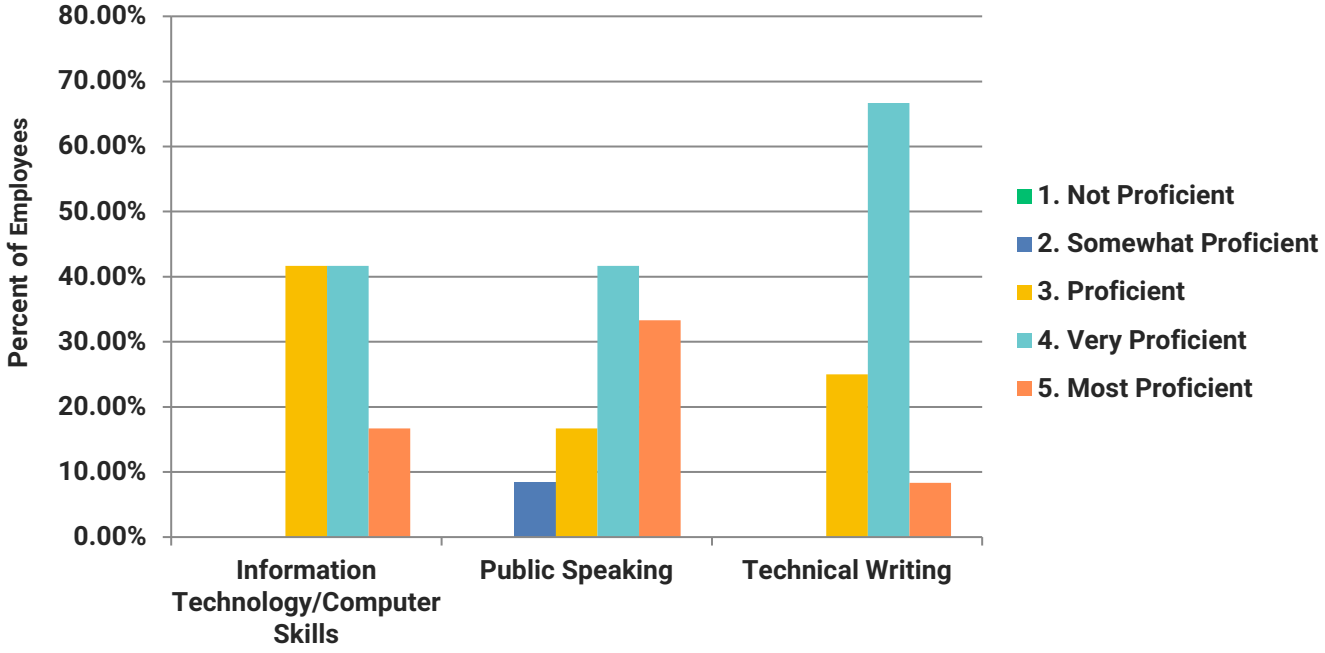
Table 6:

Professional Organization – Members of:	Total
California Environmental Health Association	2
DuPage County Health Department – EH Services	1
Michigan Environmental Health Association	1
Michigan Association of Housing Officials	1
Montana Environmental Health Association (1 MEHA member is running for a MEHA Board of Director Position)	2
National Environmental Health Association (1 NEHA member is running for a NEHA Board of Director position)	2
Texas Environmental Health Association	1
Western Association of Food and Drug Officials	1

Chapter 2. Undergraduate Employee Results

Employee Skills

Chart 6: Employee Assessment of General Job Skills (N=12)

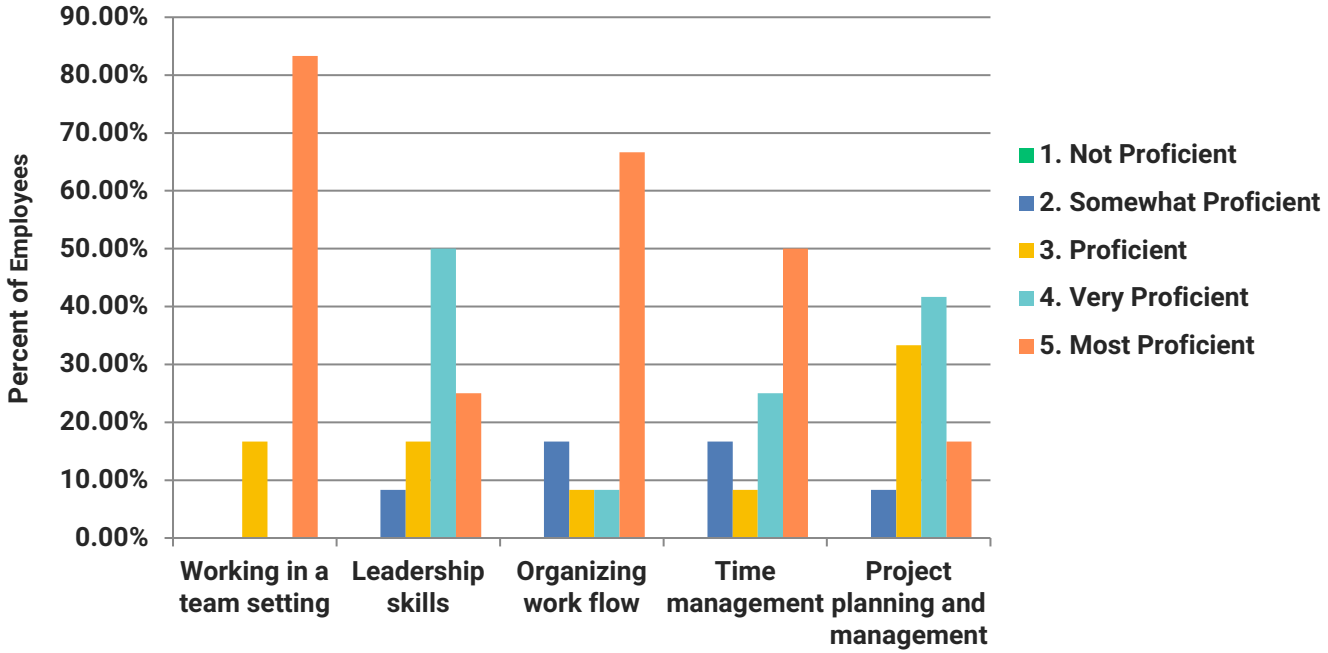


- Employees rated themselves Somewhat Proficient or higher in all General Job Skills categories.

Chapter 2. Undergraduate Employee Results

Employee Skills

Chart 7: Employee Assessment of Interpersonal Skills (N=12)

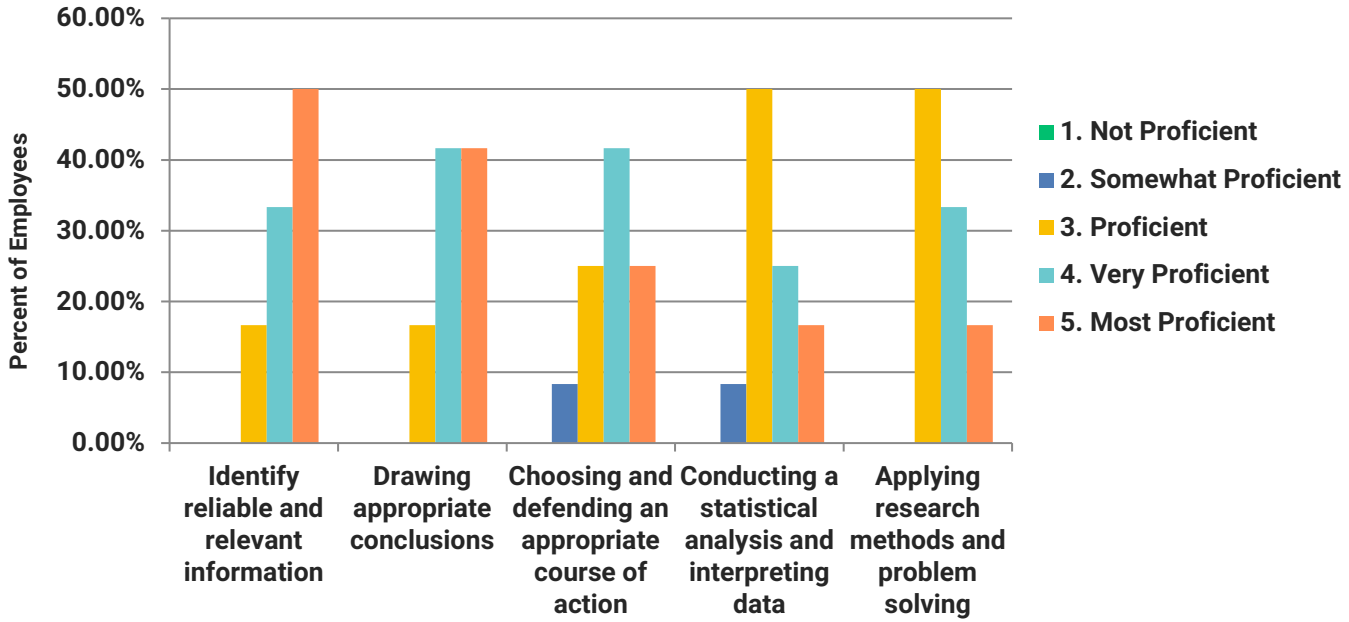


- Most employees rated themselves as Proficient or higher in all Interpersonal Skills
- Less than 20% of employees rated themselves as only Somewhat Proficient

Chapter 2. Undergraduate Employee Results

Employee Skills

Chart 8: Employee Assessment of Ability to Interpret Data (N=12)

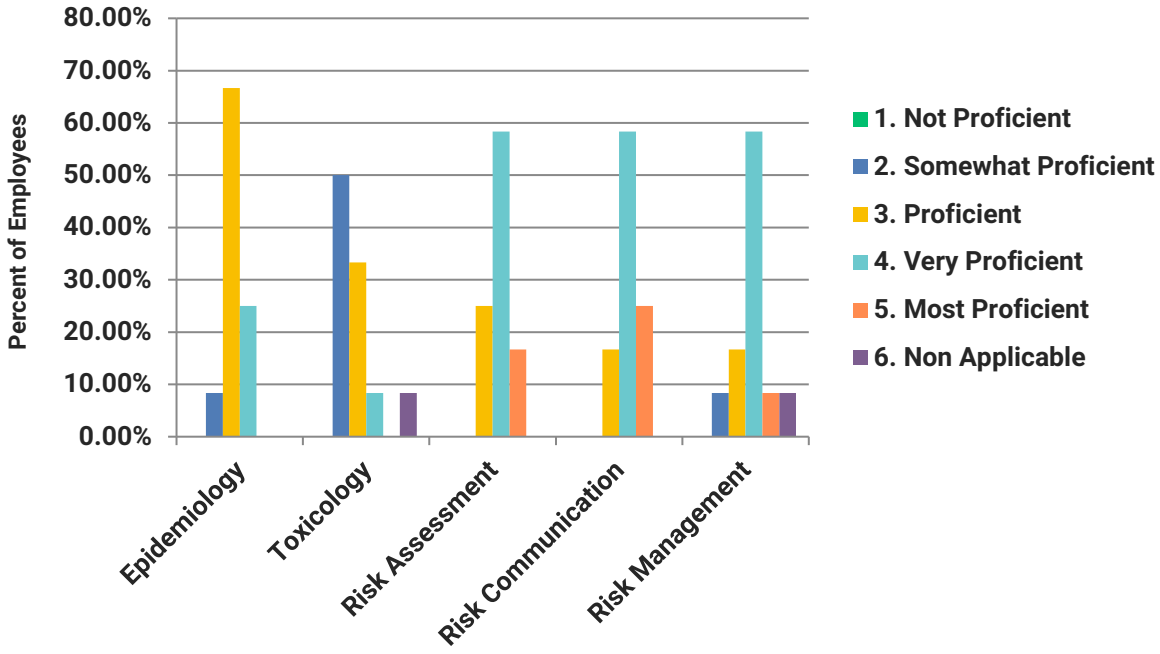


- The majority of employees rated themselves Proficient or better in all skills related to Interpreting Data.
- One employee reported being Somewhat Proficient in Choosing and Defending an Appropriate Course of Action and Conducting a Statistical Analysis and Interpreting Data.

Chapter 2. Undergraduate Employee Results

Employee Skills

Chart 9: Employee Assessment of Competency in EH Specific Areas (N=12)

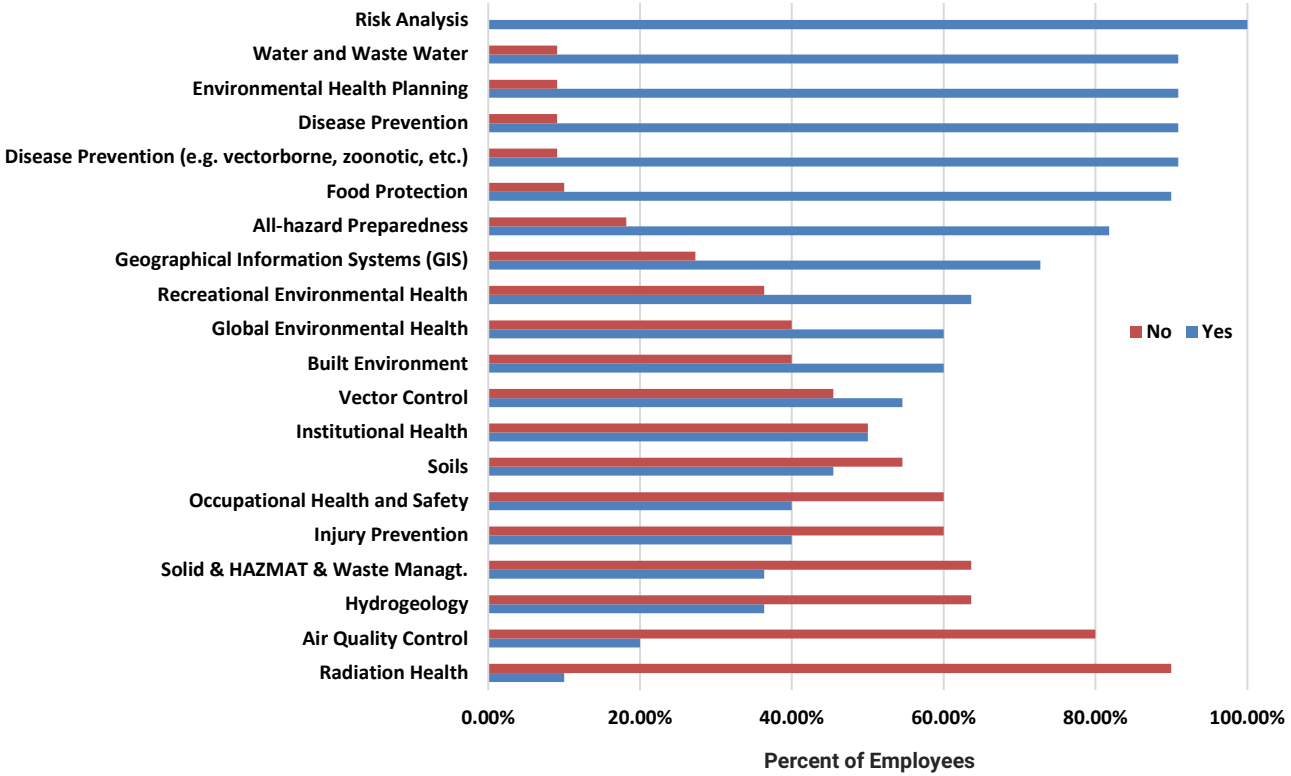


- Most employees reported being Somewhat, Very, or Most Proficient in all EH Specific Areas
- One student found Risk Management and Toxicology Non-Applicable to their job

Chapter 2. Undergraduate Employee Results

EH Specialty Area Relevance

Chart 10: Job Requires Knowledge of the Following EH Specialty Areas – Employee Assessment (N=11)

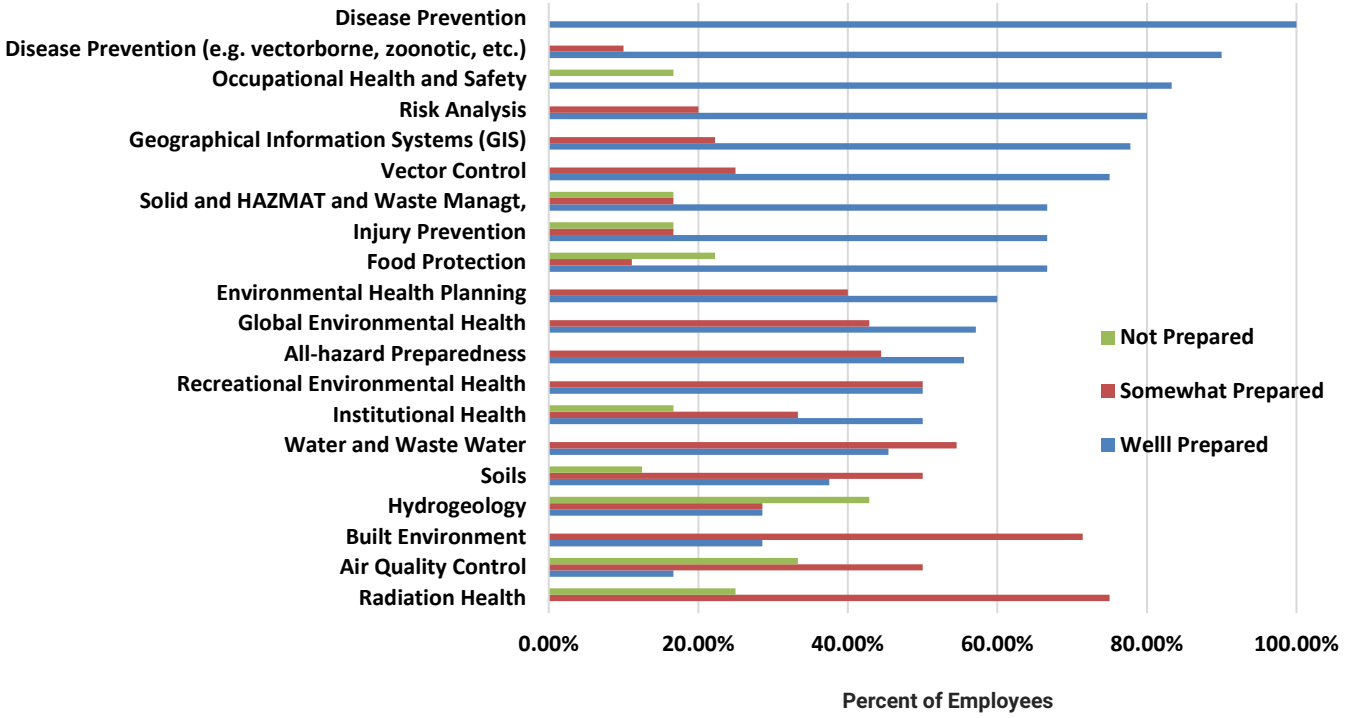


- 50% or more of employees found knowledge required in the following EH Specialty Areas:
  - Risk Analysis
  - Water and Waste Water
  - Environmental Health Planning
  - Disease Prevention
  - Disease Prevention (e.g. vectorborne, zoonotic, etc.)
  - Food Protection
  - All-hazard Preparedness
  - Geographical Information Systems (GIS)
  - Recreational Environmental Health
  - Global Environmental Health
  - Built Environment
  - Vector Control
  - Institutional Health
- More than 50% of respondents found knowledge unnecessary in the following EH Specialty Areas:
  - Radiation Health
  - Air Quality Control
  - Hydrogeology
  - Solid & HAZMAT & Waste Management
  - Injury Prevention
  - Occupational Health and Safety
  - Soils

Chapter 2. Undergraduate Employee Results

EH Specialty Area Program Preparation

Chart 11: Employee Assessment of Preparedness in EH Specialty Areas (N=11)

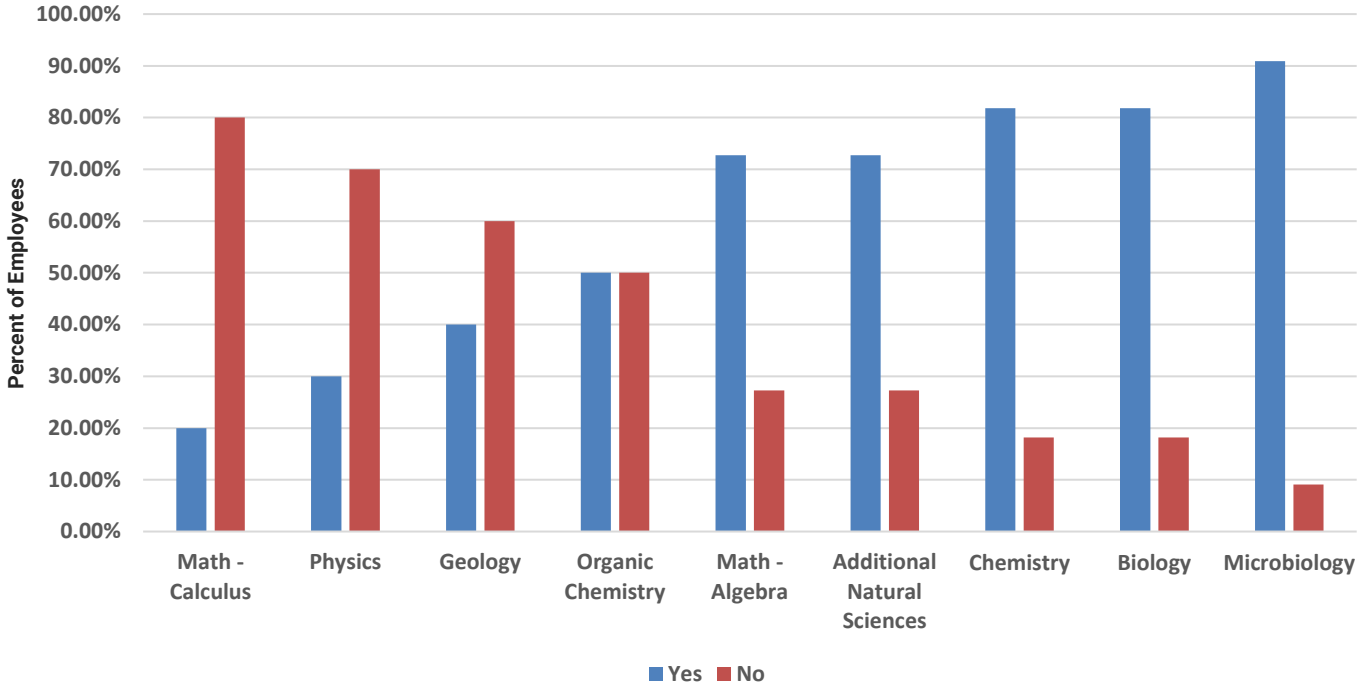


- Half or more of employees reported being Well Prepared in the following EH Specialty Areas:
  - Disease Prevention
  - Disease Prevention (e.g. vectorborne, zoonotic, etc.)
  - Occupational Health and Safety
  - Risk Analysis
  - Geographical Information Systems (GIS)
  - Vector Control
  - Solid and HAZMAT and Waste Managt.
  - Injury Prevention
  - Food Protection
  - Environmental Health Planning
  - Global Environmental Health
  - All-hazard Preparedness
  - Recreational Environmental Health
  - Institutional Health
- Half of respondents reported being Somewhat Prepared for:
  - Radiation Health
  - Air Quality Control
  - Built Environment
  - Water and Waste Water
  - Soils
  - Recreational Environmental Health
- Note: Most Specialty Areas in which most Employees reported unpreparedness were also reported as not required knowledge for their positions including:
  - Hydrogeology
  - Air Quality Control
  - Radiation Health
  - Injury Prevention
  - Soils

Chapter 2. Undergraduate Employee Results

EH Related Science and Math Requirements

Chart 12: Job Requires Knowledge of Math and EH Related Sciences (N=12)



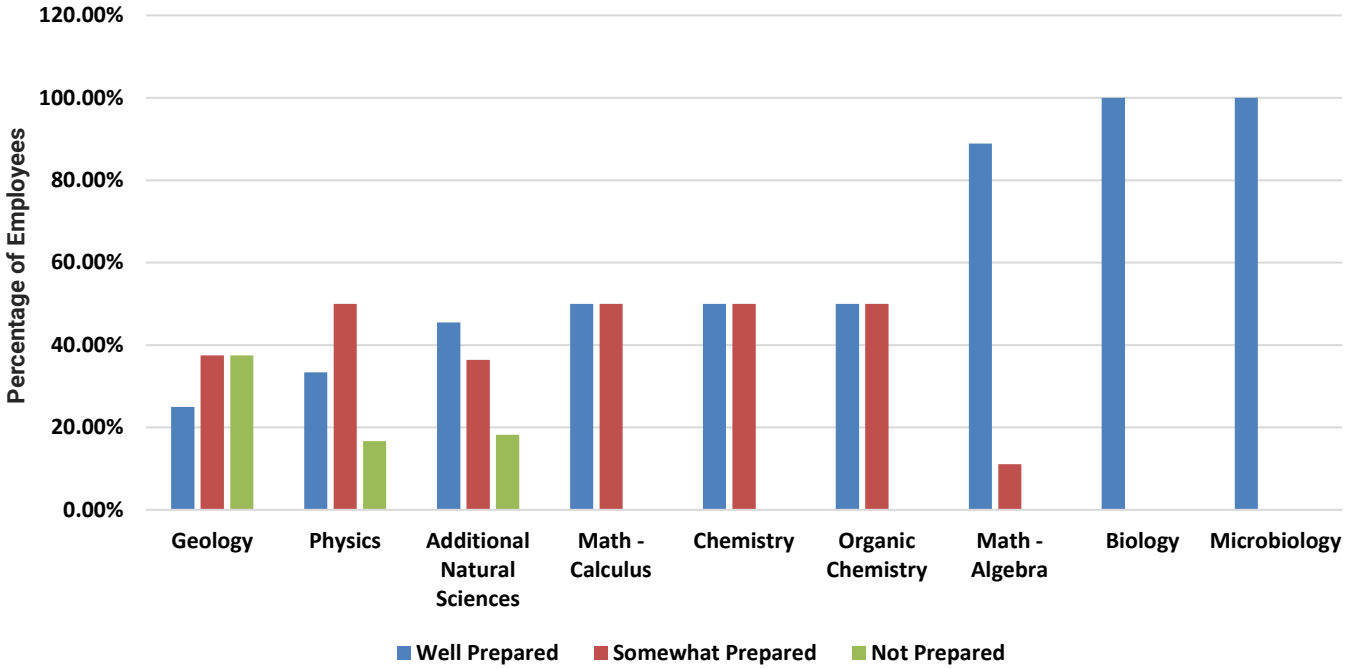
- Half or more of employees found the following necessary for their employment:
  - Microbiology
  - Biology
  - Chemistry
  - Additional Natural Sciences
  - Math-Algebra
  - Organic Chemistry

- Half or more respondents found knowledge unnecessary for their jobs in:
  - Math-Calculus
  - Physics
  - Geology
  - Organic Chemistry

Chapter 2. Undergraduate Employee Results

EH Related Science and Math Requirements

Chart 13: Employee Assessment of Preparedness in EH Related Sciences and Math (N=12)



- Half or more respondents reported themselves Somewhat or Well Prepared in all EH Related Sciences and Math except:
  - Additional Natural Sciences
  - Geology
  - Physics
- Note that half, or more, of respondents found the following topics unnecessary for their jobs:
  - Math-Calculus
  - Physics
  - Geology
  - Organic Chemistry

Chapter 3. Undergraduate Supervisor Results

Supervisor Summary:

Supervisors of graduates of 2024-2025 reaccrediting programs were asked to assess the skills and preparedness of their employees.

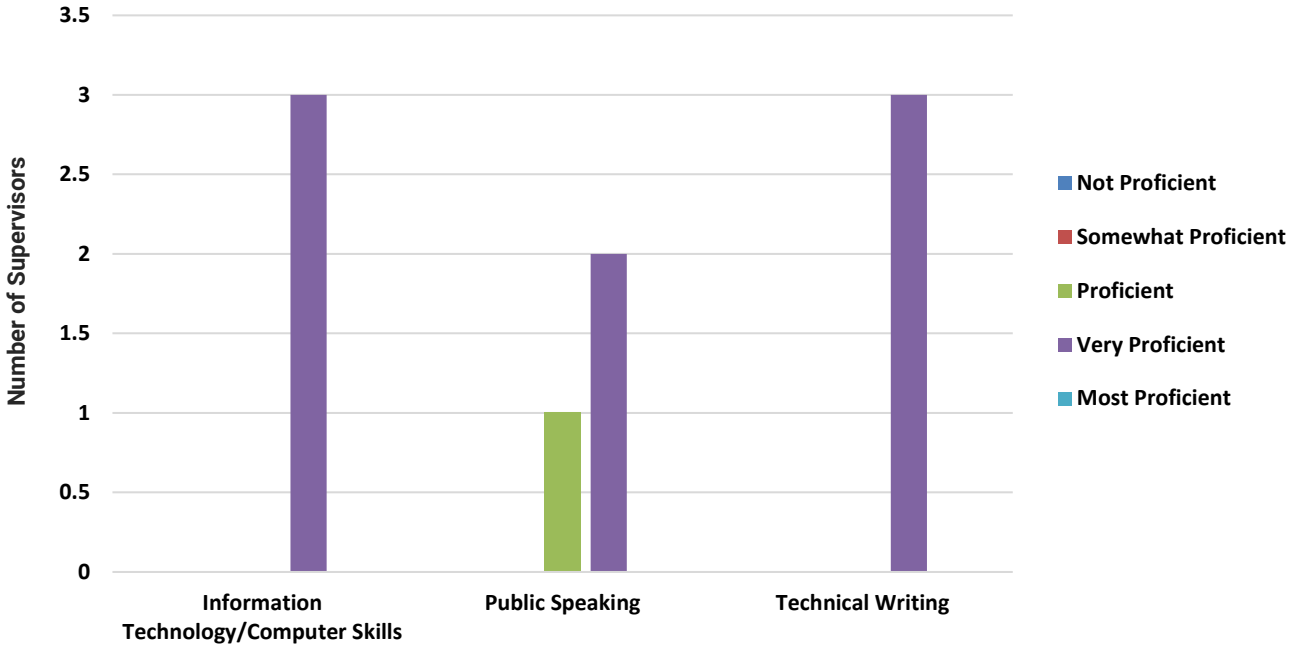
Each of the Supervisor respondents work at local or state health departments as a Director of Environmental Health and two sanitarian supervisors in the EPH fields of manufacturing, food protection, water or waste-water treatment, remediation and lead inspections, housing, and hording.

Their employee related responses are presented on the following pages.

Chapter 3. Undergraduate Supervisor Results

Employee Skills

Chart 14: Supervisor Assessment of Employee General Job Skills (N=3)

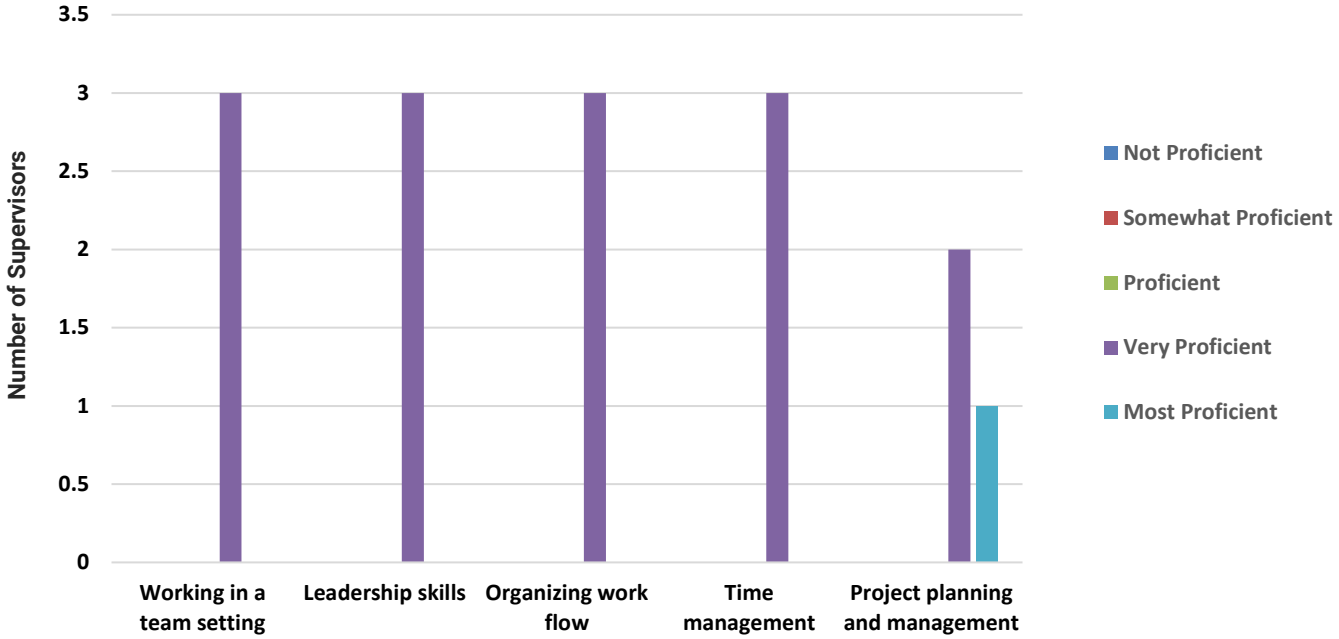


- Supervisors found employees to be Proficient or Very Proficient in all General Job Skills

Chapter 3. Undergraduate Supervisor Results

Employee Skills

Chart 15: Supervisor Assessment of Employee Interpersonal Skills (N=3)

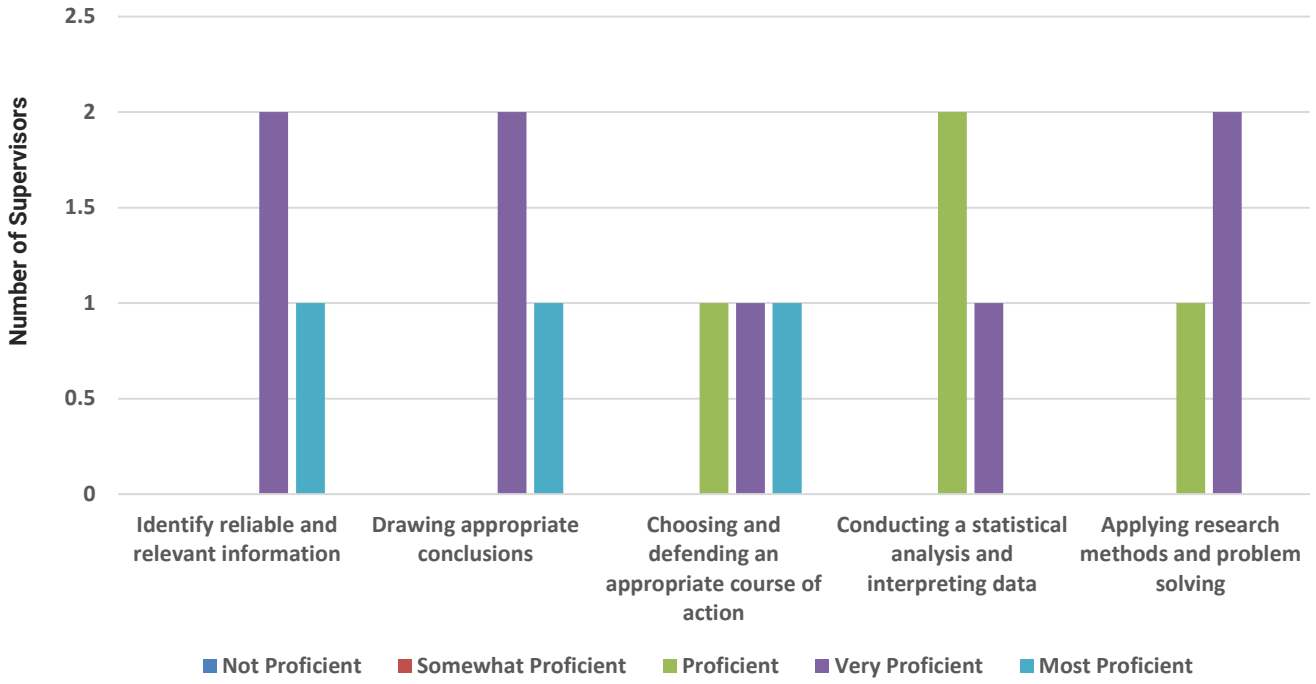


- Supervisors reported employees as Very or Most Proficient in All Interpersonal Skills

Chapter 3. Undergraduate Supervisor Results

Employee Skills

Chart 16: Supervisor Assessment of Employee Ability to Interpret Data (N=3)

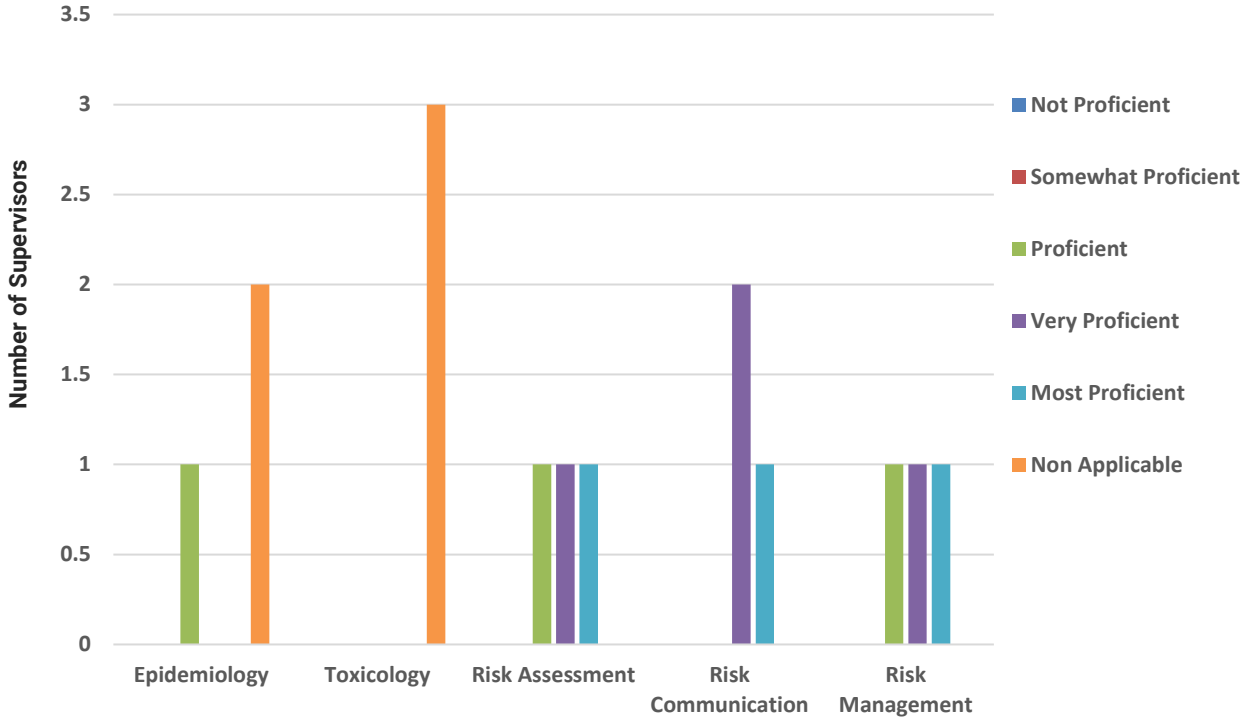


- Supervisors reported employees' Ability to Interpret Data as Proficient or higher for all Ability to Interpret Data categories

Chapter 3. Undergraduate Supervisor Results

Employee Skills

Chart 17: Supervisor Assessment of Employee Proficiency in EH Specific Areas (N=3)

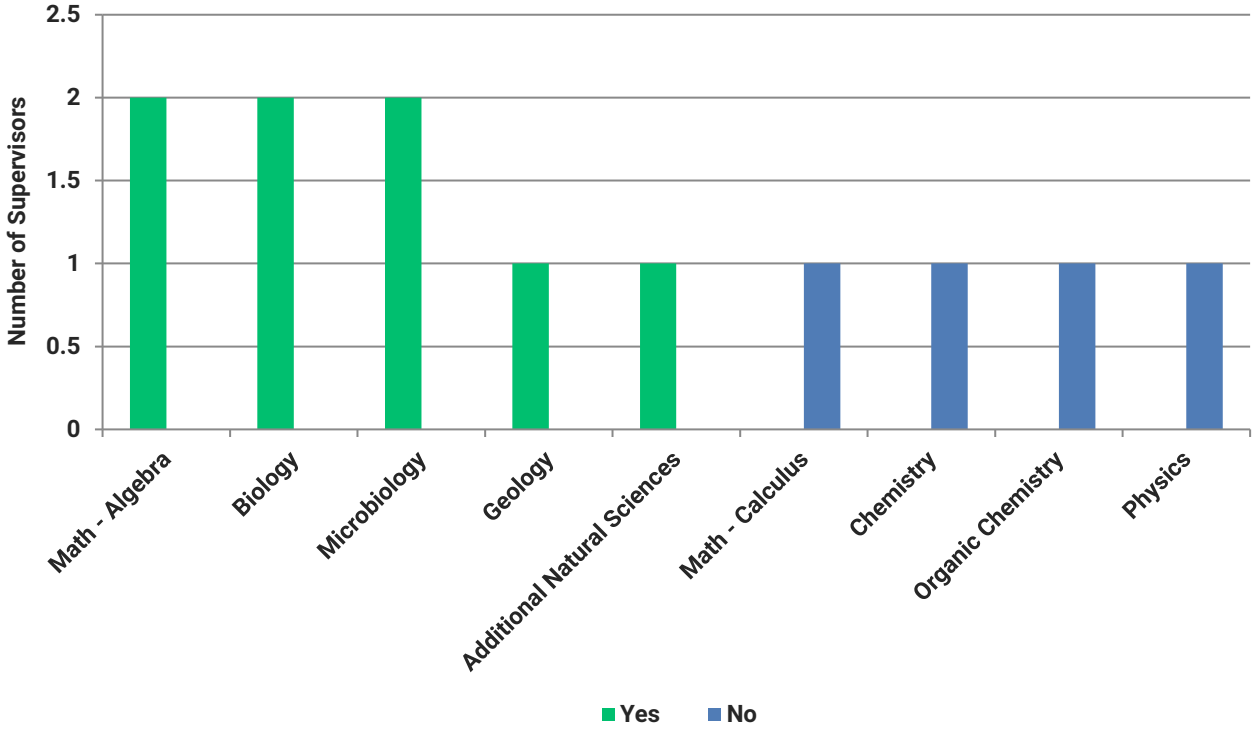


- Employees were rated Proficient or higher for all EH Specific Areas, with one Supervisor reporting a Most Proficient student in the Risk topics, three Supervisors reporting Toxicology as Non-Applicable, and two Supervisors reporting Epidemiology as Non-Applicable

Chapter 3. Undergraduate Supervisor Results

EH Related Science and Math Requirements

Chart 18: Job Requires Knowledge of Math and EH Related Science (N=3) - Supervisor Assessment

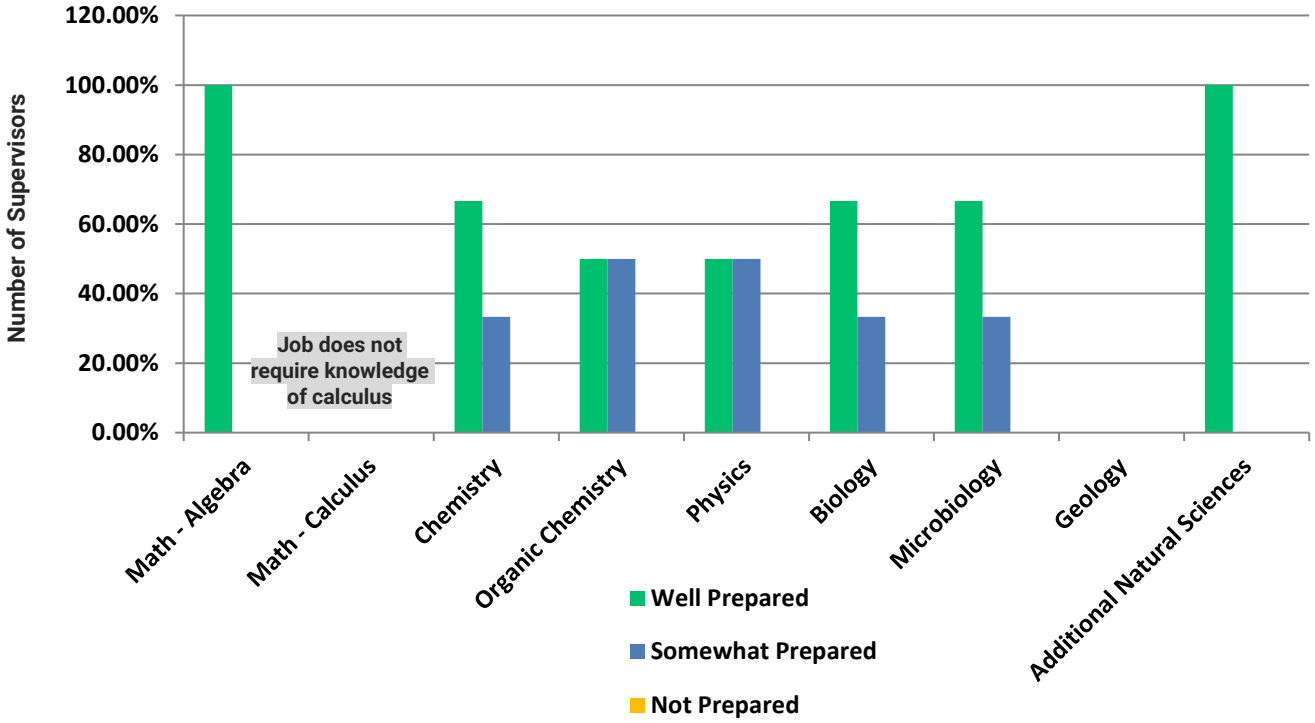


- Supervisors reported Employee jobs require knowledge of:
  - Algebra
  - Biology
  - Microbiology
  - Geology
  - Additional Natural Sciences.

Chapter 3. Undergraduate Supervisor Results

EH Related Science and Math Requirements

Chart 19: Supervisor Assessment of Preparedness in EH Related Sciences and Math (N=3)

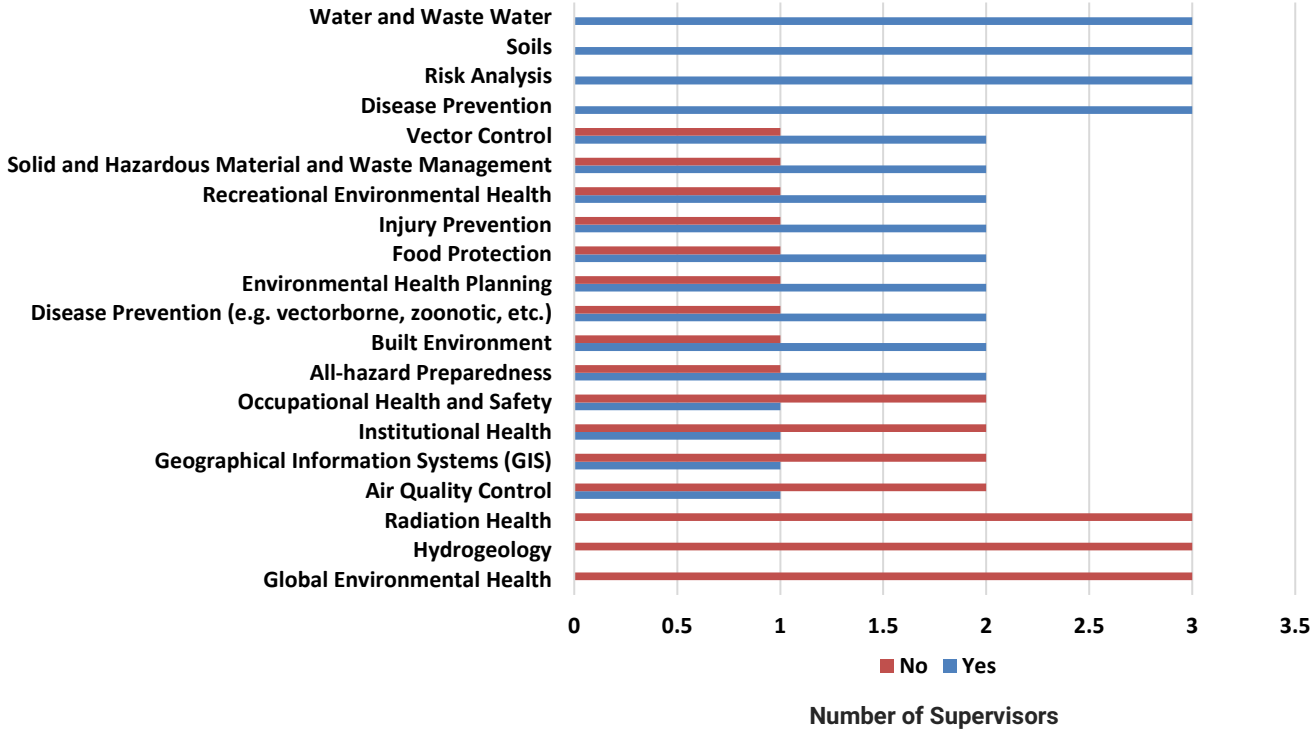


- Supervisors reported Employees as Somewhat or Well Prepared in All EH Related Science and Math areas except:
  - Math – Calculus – reportedly not required for job
  - Geology – reported by only one Supervisor as necessary for job.

Chapter 3. Undergraduate Supervisor Results

EH Supervisors – EH Specialty Areas

Chart 20: Does Employee's Job Require Knowledge of the following EH Specialty Areas

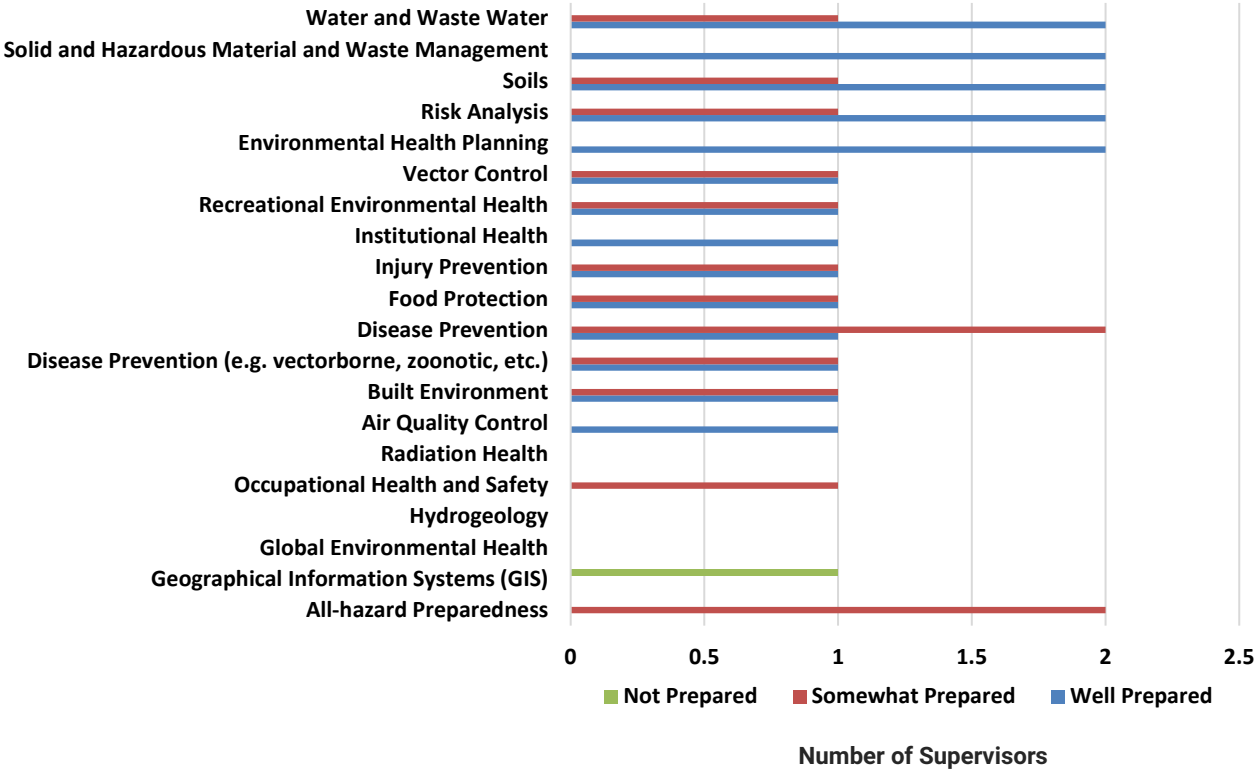


- Two to three Supervisors reported the following as required knowledge for Employees:
  - Water and Waste Water
  - Soils
  - Risk Analysis
  - Disease Prevention
  - Vector Control
  - Solid & HAZMAT Material and Waste Management
  - Recreational Environmental Health
  - Injury Prevention
  - Food Protection
  - Environmental Health Planning
  - Disease Prevention (e.g. vectorborne, zoonotic, etc.)
  - Built Environment
  - All-hazard Preparedness

Chapter 3. Undergraduate Supervisor Results

EH Supervisors – EH Specialty Areas

Chart 21: Supervisor Assessment of Employee Preparation



- **Supervisors reported Employees as Somewhat or Well Prepared in all EH Specialty Areas requiring their knowledge.**

Chapter 4. Undergraduate Narrative and Discussion

Narrative and Discussion:

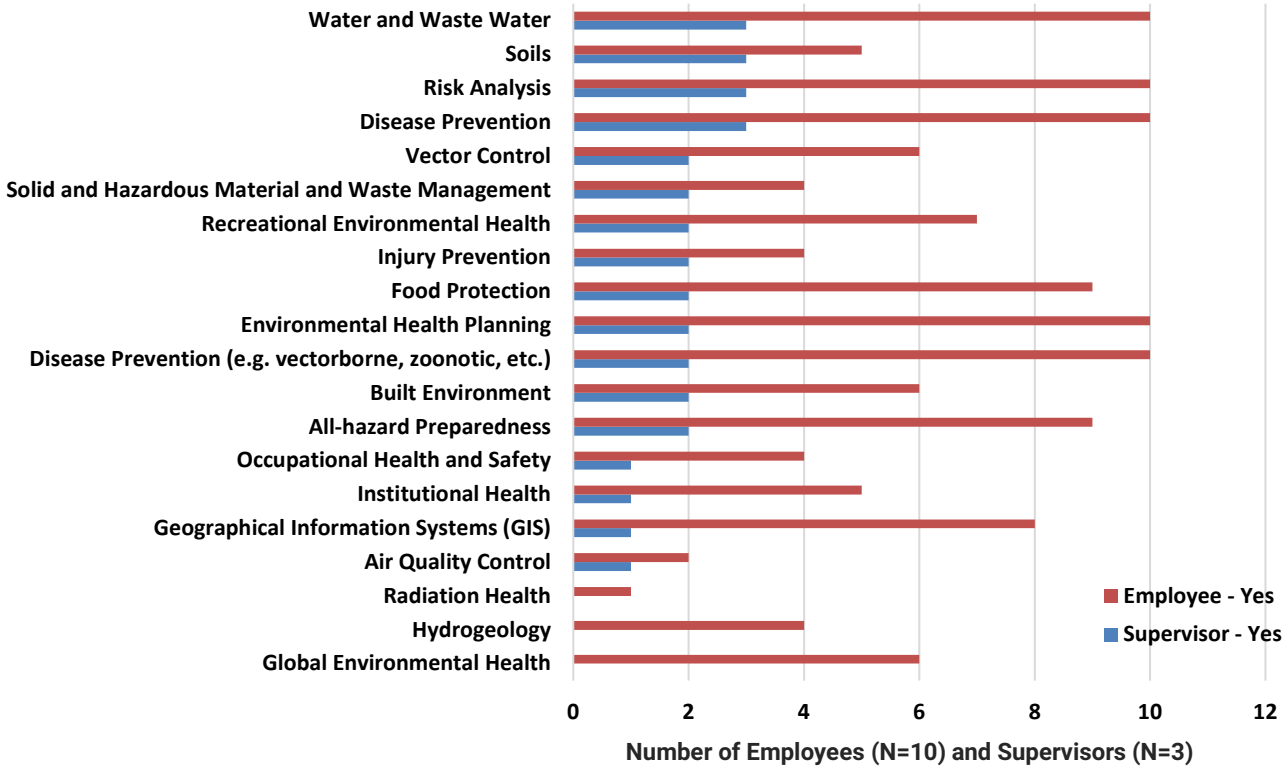
EHAC accredits EH academic programs in order to create educational degree programs that produce EH graduates who are well prepared academically and have the fundamental and practical skills to successfully enter and thrive in the EH field. EHAC's primary mission is to enhance the education and training of students in EH science and protection by ensuring that students receive premium quality education and training from EHAC accredited degree programs.

The following slides show a comparison of data gathered between Employees and Supervisors.

Chapter 4. Employees/Supervisors - Discussion

EH Specialty Knowledge Areas

Chart 22: Employee and Supervisor Assessment of Employee Need for Knowledge in EH Specialty Areas

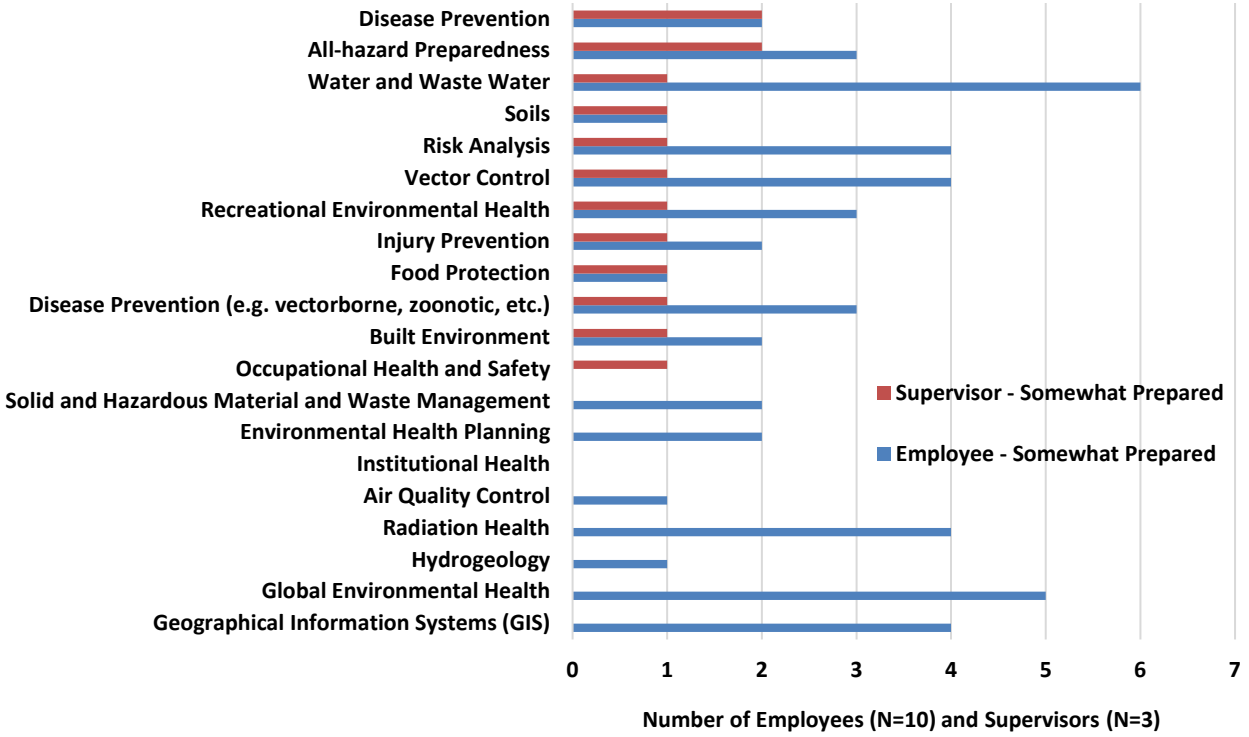


- **Half or more of Supervisors and Employees reported knowledge necessary in:**
  - Water and Waste-water
  - Soils
  - Risk Analysis
  - Disease Prevention
  - Vector Control
  - Solid and hazardous Material and Waste Management
  - Recreational Environmental Health
  - Injury Prevention
  - Food Protection
  - Environmental health Planning
  - Disease Prevention (e.g. vectorborne, zoonotic, etc.)
  - Built Environment
  - All-hazard Preparedness

Chapter 4. Undergraduate Narrative and Discussion

EH Specialty Areas – Job Skills Assessments

Chart 24: Employee and Supervisor Assessment of Employee Preparedness in EH Specialty Areas - Somewhat Prepared

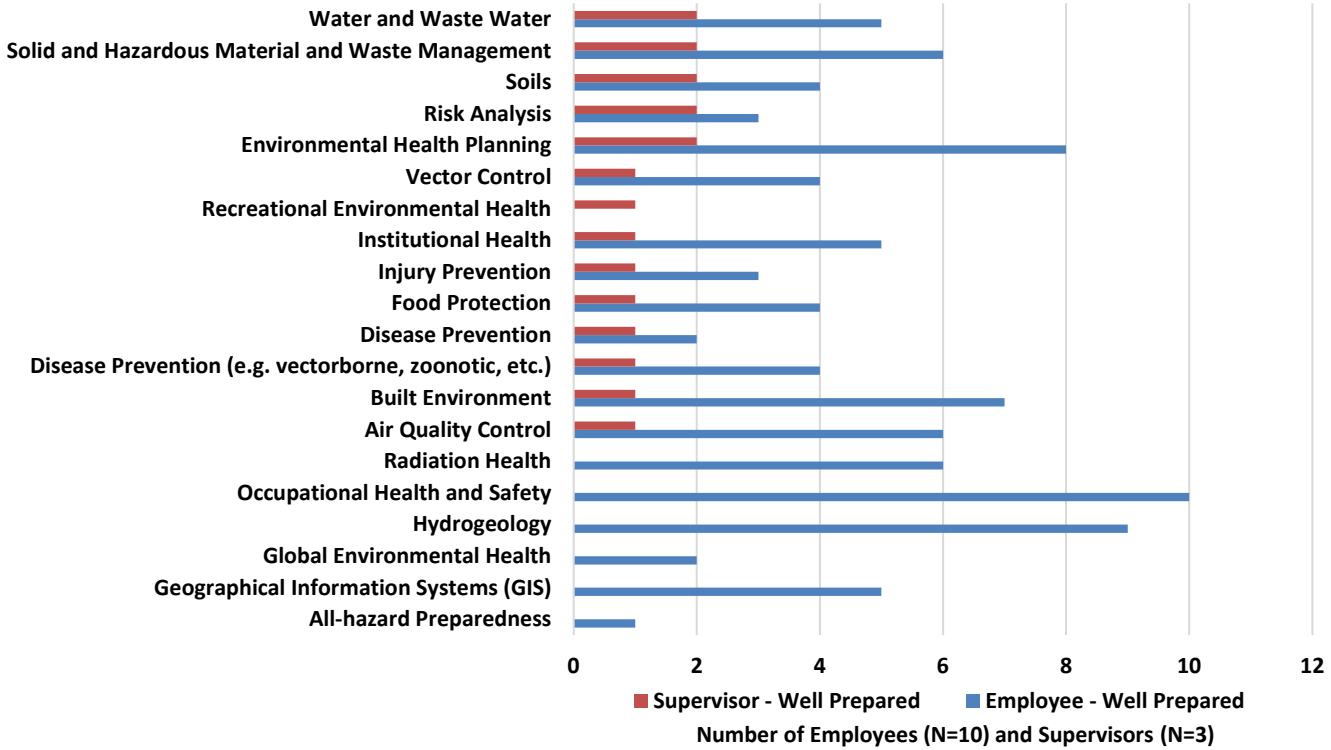


- Supervisors and Most Employees agreed on Employees being Somewhat Prepared for:
  - Disease Prevention
  - All-hazard Preparedness
  - Water and Waste-water
  - Risk Analysis
  - Vector Control

Chapter 4. Narrative and Discussion

EH Specialty Areas – Job Skills Assessments

Chart 23: Employee and Supervisor Assessment of Employee Preparedness in EH Specialty Areas – Well Prepared

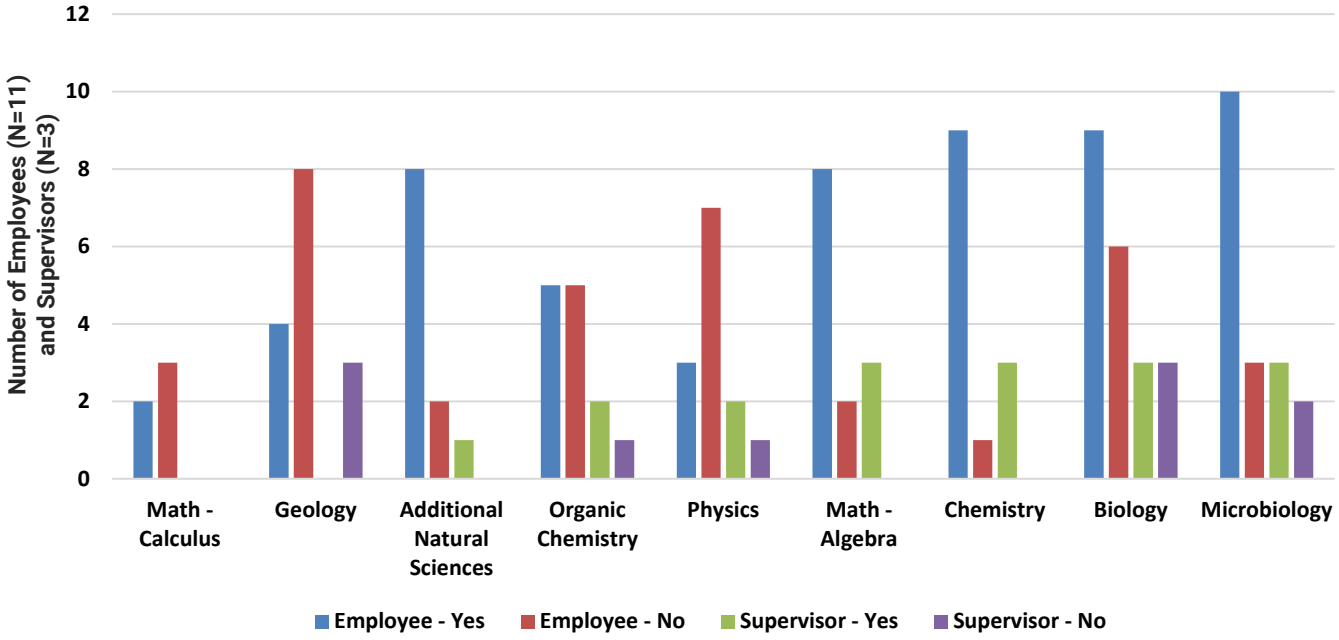


- Half of Supervisors and Employees reported Employees being Well Prepared in the following specialty areas:
  - Water and Wastewater
  - Solid and Hazardous Material and Waste Management
  - Environmental Health Planning

Chapter 4. Undergraduate Narrative and Discussion

EH Specialty Areas – Job Skills Assessments

Chart 25: Employee and Supervisor Assessment of Employee Need for Knowledge of EH Science and Math Areas

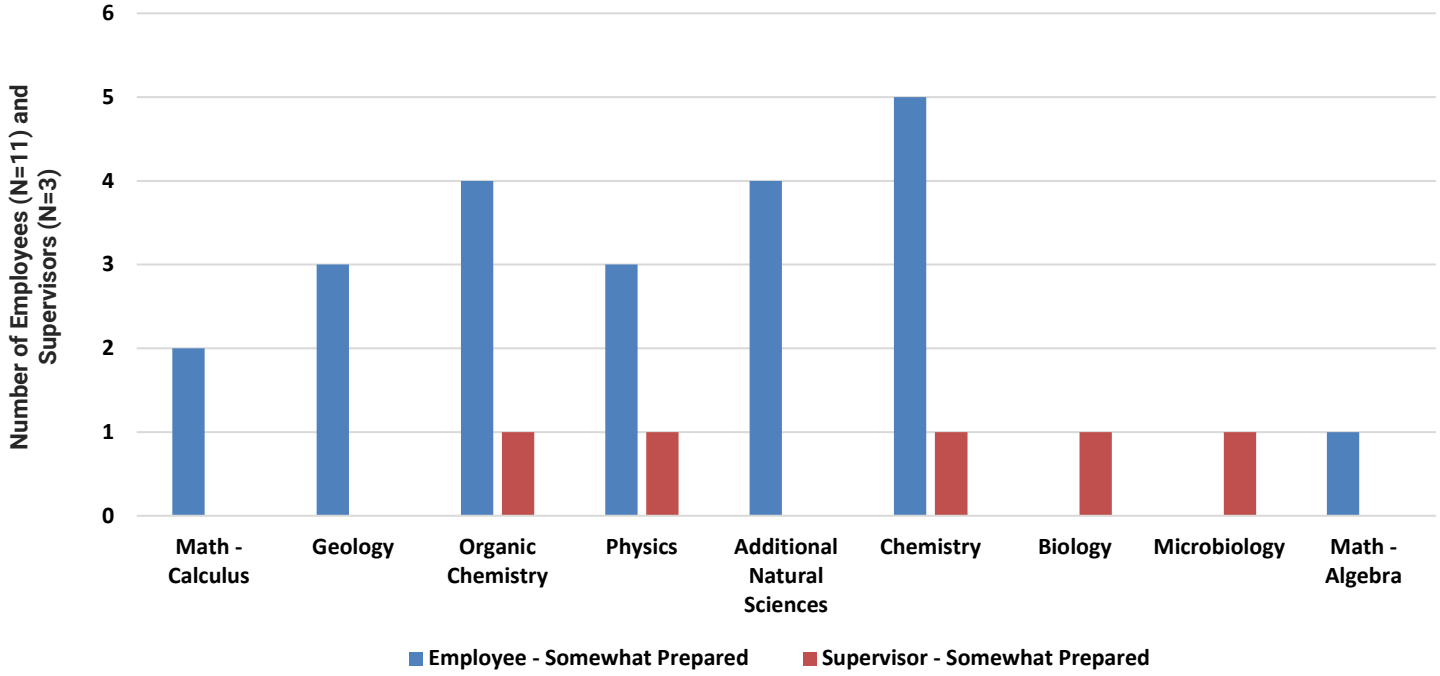


- Most Employees and Supervisors agreed on Employee need for knowledge of the following EH Science and Math topics:
  - Math – Algebra
  - Chemistry
  - Biology
  - Microbiology

Chapter 4. Undergraduate Narrative and Discussion

EH Specialty Areas – Job Skills Assessments

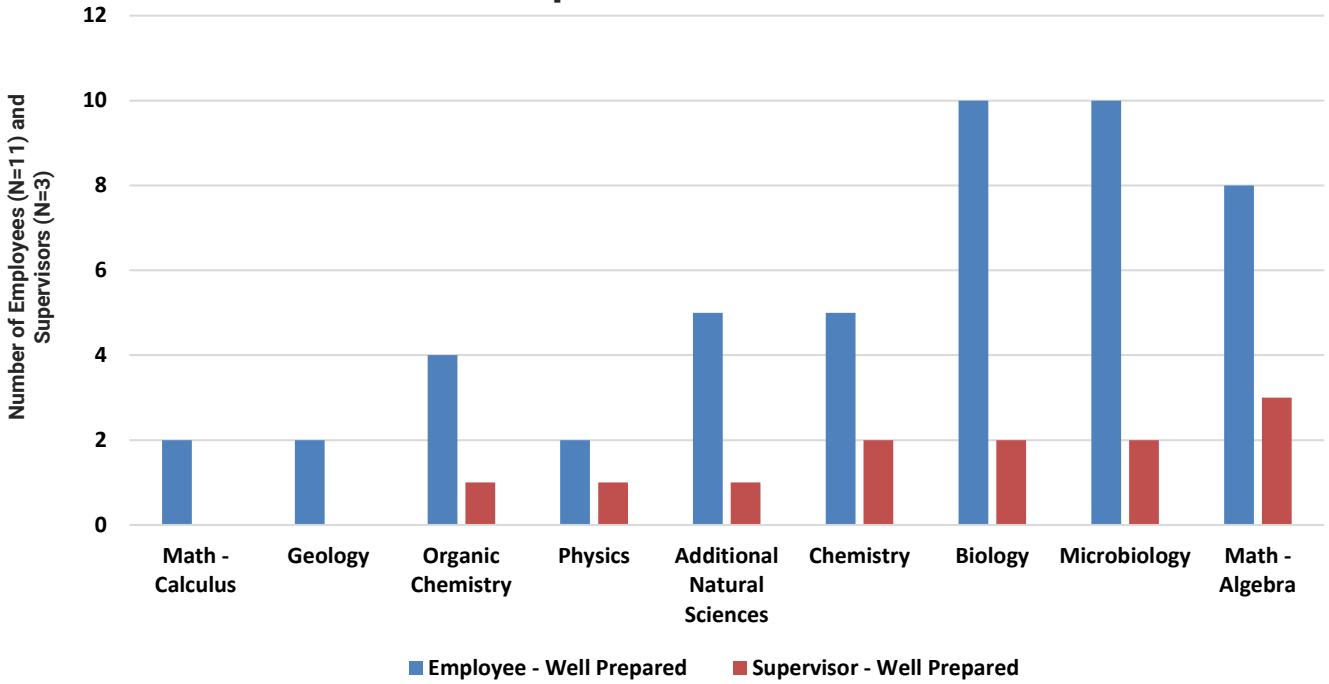
Chart 26: Employee and Supervisor Assessment of Employee Preparedness in EH Science and Math Areas – Somewhat Prepared



- Some employes reported being unprepared in Geology, Physics and Additional Natural Sciences. However, Geology and Physics were also reported by most Supervisors and Employees as unnecessary for Employee positions.

EH Specialty Areas – Job Skills Assessments

Chart 27: Employee and Supervisor Assessment of Employee Preparedness in EH Science and Math Areas - Well Prepared



- Most Employees and Supervisors agreed on a rating of Well Prepared in the EH Science and Math areas of:
  - Biology
  - Microbiology
  - Math – Algebra
  - Chemistry

Thank You!

Questions? Contact Executive Director Leslie Mitchell at executive.director@nehsap.org