National Environmental Health Science & Protection Accreditation Council

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

EHAC Annual Meeting of the Council*

July 29, 2023 - Hybrid Meeting Minutes

*__Abbreviations used in these minutes:__ American Industrial Hygiene Association (AIHA), Association of Environmental Health Academic Programs (AEHAP), Board for Global EHS Credentialing (BGC), National Environmental Health Science and Protection Accreditation Council (EHAC), Environmental Health (EH), Environmental Health Officer Professional Advisory Committee (EHOPAC), Graduate (G), Graduate Environmental Health Certificate (GEHC), Junior Commissioned Officer Student Training and Extern Program (JRCOSTEP), Program Director (PD), National Environmental Health Association (NEHA), National Environmental Health Internship Program (NEPHIP), Undergraduate (UG)

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1. Call to Order: Chair Dr. Tim Murphy called the meeting to order at 8:08am CST.

1.1 Welcome and Introductions: EHAC Chair Dr. Tim Murphy

- **Invited Board, current and elected Council Members to introduce themselves**
- **EHAC 2023 Council Attendees:**
  - Onsite: Chair - Dr. Tim Murphy, Vice Chair for Undergraduate Programs - Dr. Dave Gilkey, Vice Chair for Graduate Programs - LCDR Kai Elgethun, Secretary – CDR Jason Lewis, Member at Large - Cindy Weckwerth, Dr. Gary Brown, Dr. Mari Eggers, DeBrena Hilton, Dr. Wendell Moore, Dr. Lee Newman, Dr. Priscilla Oliver, Dr. Clint Pinion, CAPT Mike Quinn, Dr. Welford Roberts, Dr. Anne Marie Zimeri,
  - Virtual: Chair - Dr. Timothy Murphy, Treasurer - Dr. Rania Sabty, Dr. Swatantra Kethireddy, Dr. Lok Pokhrel,
  - **Council Members Absent:** Chad Brown, Tom Deem
  - **Guest attendees:** 2023-2024 Council Members Elect: Sandra Long, Chris Sparks, Dr. Michele Morrone, Dr. Tania Busch Isaksen Others: Dr. Jennifer Laifa, Dr. Bryan Brooks
  - **EHAC Staff:** Leslie Mitchell
- **Zoom Logistics**
- **Approval of Agenda:**
  - **Motion:** Weckwerth moved to approve the agenda
  - **Second:** Dr. Gilkey
  - **Discussion:** None
  - **Decision:** Unanimously Approved

2.0 Officer Reports

2.1 Chair's Report: Dr. Murphy

- **2022-2023 Activities**
  - **Program Recruitment:**
  - Onsite visit to Lamar University
  - Multiple virtual meetings with:
    - Howard University,
    - Morehouse School of Medicine,
    - Tuskegee University,
    - Virginia State University,
    - University of Pittsburg
    - Creighton University
  - **Partnership development**
    - NEHA
    - Group of 5
    - Board for Global Environmental Health Science Credentialing
  - **EHAC Strategic Visioning and Planning Effort**
  - **Board Management**
    - Board and Budget Meetings

2.2 Executive Director's Report: Leslie Mitchell

- **2022-2023 Annual Update Information:**
  - 37 Accredited Degree Programs (28 Undergrad/9 Graduate)
  - UG Enrollment continued a downward trend from 1055 in 2021-22 to 943 in 2022-2023

- Graduate Enrollment fell from 251 in 2021-2022 to 208 in 2022-2023 UG graduation numbers rose a bit in 2021-2022 (304) but are predicted to fall in 2022-2023 (261).
- Graduates of Masters Degree Programs fell in 2021-2022 (90) and are predicted to drop again in 2022-2023 (72).

- **2022-2023 Activities:**
  - **Committee work:**
    - Finalized revision of Undergraduate Requirements for final review by Council
    - Completed first draft revisions of the Graduate Guidelines
    - Revised EHAC Policy 4.6 to emphasize the importance of timely reporting of any significant changes to accredited degree programs for Council consideration
    - Group of 5 created to discuss forming an alliance to identify potential priority areas where the associations can be more effective in working together in a deliberate way to enhance the environmental health (EH) profession and professional and increase the environmental health workforce. Develop "End State" or vision – *to have well-educated, well credentialed, well supported, and well valued Environmental Health practitioners. Group includes EHAC, AEHAP, AAS, NEHA, APHA*
  - **Accreditation/Reaccreditation**
    - Coordinated three reaccrediting programs and associated Self-study reviews and Site Visits
    - Coordinated HBCU program recruitment efforts along with CDC NCEH Division of Environmental Health Science and Practice – resulting in 3 potential applicants in the next 1 – 3 years.
  - **EHAC Strategic Visioning and Planning - Dr. Wendell Moore has been facilitating this effort;**
    - SWOT Survey sent to Council and Program Directors
    - Most of Sunday will be dedicated to the visioning and planning process.
  - **Partnership Efforts**
    - **AEHAP**
    - **NEHA**
    - **National Council for Environmental health & Equity (EH Council)** (formerly the National Environmental Health Partnership Council and the Environmental Heath and Equity Collaborative)
      - Workforce and Education Committee
      - Communication Committee
    - **Board for Global Environmental Health Science Credentialing**
- **Looking Forward:**
  - **Complete revisions for implementation and publication on the EHAC website of:**
    - Undergraduate Requirements
    - Graduate Guidelines
  - **Strategic Vision and Planning for EHAC's future:**
    - Complete Plan and begin implementation
    - Develop Business Plan to support fundraising related to strategic goals and objectives
  - **EHAC/AEHAP planning support**
  - **Group of 5 development**
  - **Maintain HBCU recruitment energy and partnership with NCEH Health Equity Chief - Dr. Ayana Perkins**
    - Continue effort to include Tribal Colleges and Universities (TCUs) and other Minority Serving Institutions (MSIs)

- **Manage 2023-2024 Initial and Reaccreditation Process and Mentorship of Degree Programs interested in accreditation**
  - 10 Reaccrediting Programs
  - 2 Initial Applications for Accreditation

2.3 Secretary's Report: CDR Jason Lewis

- Review of the minutes of June 26-27, 2022, EHAC Annual Meeting (previously approved by Council). CDR Lewis reported on 2022 Annual meeting actions and events:
  - **Full Accreditation granted to:**
    - Baylor University's Graduate Program – **NEW program!**
    - Baylor University's Undergraduate Program
    - Colorado State University's Undergraduate Program
    - Ohio University's Undergraduate Program
    - Western Kentucky University's Undergraduate Program – **NEW program!**!
  - **Council voted to create a Fundraising and Development Standing Committee**
  - **Revised EHAC Governing Policy approved**
  - **Initial Revisions to Undergraduate Requirements approved**
  - **Initial direction for revision of Graduate Guidelines approved**
    1.5-hour meetings added for every other month

2.4 Treasurer's Report: Dr. Rania Sabty presented the financial documents

- **FY 2022-2023 Financial Report: October 1, 2022 – June 30, 2023**
  - **Balance Sheet:**
    - Total Assets: $76,4214.53 as of June 30, 2023
    - Liabilities: $1,408.82
    - Total Equity: $75,005.71
    - Total Liability and Equity: $76,414.53
  - **Profit and Loss Report:**
    - Gross income: $96,844.64
    - Income from Accreditation: $88,250
    - Payroll expenses: $49,233.83
    - Net income: $21,586.27
  - **Projections:**
  - **Proposed EHAC Budget for 2023-2024 (fiscal year from October 1 - September 30):**
    - **Motion**: Brown
    - **Second**: Elgethun
    - **Discussion: None**
    - **Decision: Unanimously approved**

2.5 Vice Chair for Undergraduate Programs Report: Dr. David Gilkey

- **Program Recruitment Visit to BYU with Vice Chair LCDU Kai Elgethun and NEHA Program Director Jesse Bliss**
- **Protocol Visit to Colorado State University to present a plaque in celebration of their 50th year of EHAC accreditation.**
- **Updates of Decisions of the Board:**
  - New Program Directors approved by Board in 2022-2023
    - California State University - San Bernardino: Dr. Mahmood Nikbakht Zadeh
    - East Tennessee State University: Dr. Phillip Scheuerman
    - Old Dominion University: Charlene Brassington

- **2022-23 Programs up for Reaccreditation:**
  - Benedict College: BS Environmental Health Science
  - University of Wisconsin Eau Claire: BS Environmental Public Health
  - Western Carolina University: BS Environmental Health Sciences
- **2023-2024 Programs up for Reaccreditation:**
  - East Carolina University
  - East Tennessee State University
  - Eastern Kentucky University
  - University of Findlay
  - University of Georgia, Athens
  - University of Washington
  - Distribute sign-up sheets for Volunteer Self-study Reviewers and Site Visitors
- **Undergraduate Degree Programs Being Actively Mentored**
  - Brigham Young University
  - Tuskegee University
  - Howard University
- **Undergraduate Degree Programs Interested in Accreditation:**
  - VA State University
  - Lamar University - TX

2.6 Vice Chair for Graduate Programs: LCDR Kai Elgethun

- **Program recruitment Visit to Creighton University in Nebraska**
- **New Program Directors approved by Board in 2022-2023:**
  - Mississippi Valley State University - Dr. Ntombekhaya (Jennifer) Laifa
- **Actively Mentoring:**
  - Morehouse School of Medicine - creating a Master pf Public Health Environmental Health program
- **2022-2023 Reaccrediting graduate degree programs:**
  - University of Washington
  - University of Pittsburgh
- **2022-2023 Self-Study Reviewer and Site Visitor Signups**

3.0 Nominations Committee Report - Dr. Priscilla Oliver

- **2023-2024 newly elected Academicians:**
  - Dr. Tania Busch Isaksen (1st term)
  - Dr. Michele Morrone (1st term)
  - Dr. Lee Newman (2nd term)
  - Dr. Laura Suppes (1st term)
- **2023-2024 newly elected Practitioners:**
  - Sandra Long (1st term)
  - CAPT Mike Quinn (2nd term)
  - Christopher Sparks (1st term)
- **Board Officer Nominations:**
  - **Slate of Board Nominees: announcement and call for additional nominees for 2023-2024 EHAC Board offices for closed vote. Nominees include:**
    - General Chair: Dr. Tania Busch Isaksen
    - Vice Chair for Undergraduate Programs: Co-Chairs CDR Jason Lewis & Dr. Tim Murphy
    - Vice Chair for Graduate Programs: LCDR Kai Elgethun
    - Secretary: Dr. Laura Suppes

- Treasurer: Cindy Weckwerth
- Director-at-Large: Dr. Lee Newman
- Nominations Chair (appointed): Christopher Sparks

4.0 Protocol Visits

4.1 NEHA - President Dr. Gary Brown:

- Focus on students: predicted that would continue under Tom Butts and new Board
- EH Professional Pipeline discussion:
  - NEHA is supporting the professional pipeline via NEPHIP, creating marketing packets for affiliates to use in high schools, broader marketing efforts, involvement with the Canadian Environmental Health Association's "What is EH?" marketing effort, $25 student membership fee and lowered AEC registration fees for students. Dr. Murphy requested that EHAC receive the marketing packets so they can be passed on to EHAC Program Directors. Dr. Oliver added that there is a student representative on all committees at NEHA and the AAS/NEHA scholarship is available. She observed a disconnect between NEHA and EHAC and encouraged EHAC Council to attend the NEHA AEC and to present at the AEC and publish research in the JEH. Oliver added that NEHA needs support of EHAC as well and she suggested that EHAC Council Members should run for NEHA office, as well.
  - Dr. Newman cited the $250 AEC registration fee for students and pointed out that there are other conferences that are much less cost if the student presents. If there is any way to lower the cost, that would be more incentive for faculty to bring their students. Dr. Brown suggested he could take a lower price to the NEHA Board, also suggested fundraising within EH school clubs.
- EH Rebranding Discussion:
  - Dr. Sabty suggested that the term "Sanitarian" needs an update, as this is an unattractive term to current students. She highlighted AIHA's redirection to Occupational and Environmental Health & Safety "careers" and less emphasis on the term Industrial Hygiene. Dr. Brown cited NEHA's consideration of moving to Environmental Public Health and also submitted that the terminology falls under the purview of the American Academy of Sanitarians (AAS)

4.2 COSTEP - CAPT Michael Quinn provided an update on COSTEP related activities:

- Ongoing JRCOSTEP issues:
  - Shifting, timing and short-term nature of the JRCOSTEP application period. Only 3 JRCOSTEPS were assigned for 2023 and other agencies found alternative ways to take on interns outside of JRCOSTEP. These alternative methods may be the way of the future.
  - Dr. Newman submitted that the June 1- July 21 JRCOSTEP application period is horrible timing and a very short two-month window after you have completed 2 years of undergraduate work. CAPT Quinn responded that there is little flexibility or understanding at the administration level. Dr. Newman also reported that her student applicant couldn't meet the BMI requirement for USPHS JRCOSTEP and was denied a spot via the USPHS. Instead, the Indian Health Service offered her a position directly (through USA jobs). CAPT Quinn will take to leadership again as he has in the past.
- Contraction of EHOs in USPHS:
  - From a high of 375 officers in the USPHS last year, officer number are down to 300 right now. Need to bring folks in to the Corps, but barriers to interest are increasing, including changes in promotion structure and retirement opportunities.

- COVID impacted Corps recruitment overall, but the situation is improving. Quinn is liaison between EHAC and the recruitment effort at USPHS. They are trying to recruit from the SRCOSTEP program as well.
- CAPT Tim Jiggins (Chief EHO) is at NEHA this week, good opportunity to talk with him about different ways to bring folks into the Commissioned Corps and how to support the EH profession.
  - Dr. Murphy reported recent communication with CAPT Jiggins re: JRCOSTEP application challenges.
- There has also been communication with agencies that have not historically used EHOs but are becoming interested - USGS, USAID, working on the BLM and Bureau of Reclamation as well.

- Brown suggested that EHAC Program Directors need to help fill these positions with EHAC students.

4.3 AEHAP: President Dr. Michele Morrone

- New AEHAP Board Members:
  - President: Dr. Kim Lichtveld of University of Findlay
  - Past-President: Dr. Benjamin Ryan of Baylor University
  - President-Elect: Dr. Michele Morrone of Ohio University
  - Secretary: Jamie Hisel of Eastern Kentucky University
  - Treasurer: Dr. Vonia Grabeel of Eastern Kentucky University
  - Member-at-Large: Dr. Stephanie Richards of East Carolina University
  - Member-at-Large: Geraldine Riouff of Western Carolina University
- 2022-23 Summary of Activities:
  - Hosted Fall student Seminar (Internships & Awards)
  - Facilitated spring Student Symposium, SRC presentations
  - Facilitated student chapters
  - Strengthened working partnerships with EHAC, NEHA and AAS.
  - Recruitment ideas, goals, and information to participants from the 2022 Annual Meeting.
- Current AEHAP Resources:
  - Part-time administrator
  - Volunteer Executive Director
  - Volunteer Board
  - 22 +/- Members
  - Cash (June 2023)
  - About $28,000
  - 2022 Expenses
  - About -$26,000
- Future of AEHAP:
  - Do nothing, continue to operate as is
  - Suspend operations for a time:
    - to develop a sustainable strategy or
    - sunset the organization
  - Look for formal collaboration and maintain nonprofit status
  - Dissolve the organization and transfer assets to EHAC
- AEHAP Status Survey:
  - 63% of survey respondents (80) reported a need for an organization like AEHAP
  - 45% of survey respondents have participated in AEHAP actives including: the Student Research Competition, Faculty Roundtable, Fall Student Seminars, Student Symposium, NEPHIP

- 42% reported interest in participating in AEHAP activities like those listed above.

- AEHAP Board of Directors for 2023-2024
  - President: Dr. Michele Morrone of Ohio University
  - Past-President: Dr. Kim Lichtveld of University of Findlay
  - President-Elect: Open
  - Secretary: Jamie Hisel of Eastern Kentucky University
  - Treasurer: Vonia Grabeel of Eastern Kentucky University
  - Member-at-Large: Dr. Stephanie Richards of East Carolina University
  - Member-at-Large: Geraldine Riouff of Western Carolina University

5.0 Accreditation Action: Western Carolina University – Undergraduate

- **Strengths**: Site Visit Lead CAPT Mike Quinn, Dr. Clint Pinion, and Dr. Rania Sabty reported being very impressed by university facilities and program.
  - Pre-internship seminar required that is track through online CANVAS software.
  - Program embeds EH into general education requirements very well – available as a General Education Requirement. There is also an emphasis on EH across the campus and EH gets more exposure than normal – they use a "rest of the story" technique to address mis and disinformation related to EH topics in the news.
  - Program does their own advising in addition to university wide advising.
  - Impressive thread of connection among classes, content, and needs of the community
  - Emphasized pre-internship seminar.
  - Faculty help with finding internships, but students choose the opportunities they want to pursue.
  - Their Advisory Board is in reinvigoration mode after COVID and includes expanding who's involved.
  - There are many support mechanisms for students having difficulty with STEM issues.
- **Recommendations:**
  - Determine if the course currently being used to fulfill the biological science requirement under EHAC's Natural Science foundational course requirement – BIOL 102 – Human Genetics w/Lab (3 hours) provides an "understanding of the natural science principles and practice necessary to competently assess, develop solutions and communicate environmental health and protection problems impacting the health of human populations" and obtain EHAC approval to replace the previously approved course – BIOL 104 – Human Biology w/Lab (4 hours).
  - Increase exposure to Occupational Safety and Health, one of six EHAC-required Environmental Health Technical Areas, to ensure that related topic areas are adequately covered in one or more courses.
  - Reinvigorate the program's advisory board.
  - Seek to reduce perceived student barriers to the program's natural/physical science requirements.
  - Provide opportunities for advanced elective courses in water/wastewater.
  - Continue to engage with students during advising and orientation days.
  - Provide opportunities for students to practice public speaking and risk communication.
  - Facilitate existing corporation between tenure and non-tenure track faculty.
  - Encourage all faculty to adopt high-impact teaching techniques and problem-based learning pedagogy.
  - Incorporate additional technology and opportunities for data analysis and risk communication into course requirements.

- **Program Director Comments: Dr. Brian Byrd**
  - Dr. Bird thanked the Site Visit Team for their efforts and appreciated the evaluation and recommendations for improving the program. WCU is actively addressing the recommendations and especially those related to faculty and reinvigorating the Advisory Committee.
  - Regarding Biology requirement - the Biol 102 Genetics course has been determined to be the most broad and inclusive related to:
    - content includes a wholistic approach that includes BIOL 313 as well.
    - accessibility
    - preparation for toxicology course.
- **Motion: Site Visit Team moved that the Bachelor of Science in Environmental Health Degree at Western Carolina University be granted six-year reaccreditation from July 2023 to July 2029 (pending a discussion of BIOL 102 course).**
- **Vote: Motion carried**
- **Letter:**
  - **Dr. Murphy suggested CAPT Mike Quinn and Dr. Dave Gilkey work on a letter that includes strong wording recommending changes to improve the current BIOL 102 Genetics course (to include more foundational biology topics).**
  - **Further discussion on clarification of the meaning of "Biological Sciences" was suggested.**

5.1 Accreditation Action: Benedict College - Bachelor of Science in Environmental Health Science

- **Strengths:** Dr. Anne Marie Zimeri presented for the Site Visit Team of Dr. Dave Gilkey and CDR Jason Lewis
  - Leadership – Central, College, Program (Productivity Analysis)
  - Faculty expertise and commitment
  - Sincere caring and support for student success (Passionate)
  - Succession planning (Plan in place)
  - Quality teaching and learning
  - Curriculum – Science-based
  - Summer Undergraduate Research Institute (SURI)
  - Student EH Association (SEHA)
  - Internships – Leads to jobs in EHS - (Water Tx Plant, HD, 3 - NEPHIP)
  - Service learning – All students
  - Job opportunities – Strong employment record – Career services
  - Connections – Established and new as employers come to Columbia
  - Professional society participation
  - Scholarships – wide selection of internal and external awards
  - Student success center tutoring
  - Career closet for interview attire
- **Recommendations:**
  - Students, Faculty, Advisory Committee Comments:
    - More faculty
    - Internship coordinator
    - Dedicated advisor
    - More industry connections
    - Directed internships
    - More Electives / Special topics

        - Certificate opportunities
        - Graduate EHS program
        - More help with career development
    - EHAC Site Visitor Recommendations
        - Capture more detail on internships
        - EHS minor for other majors
        - Special topics / Electives
        - Internship coordinator
        - Dedicated advisor
        - Certificate opportunities
        - Increased lab skills
        - Graduate EHS program
        - EHS base SURI topics
        - Lessen faculty teaching loads
        - Capstone report results and judges' forms documentation
        - Digitize internship and capstone project documents
- **Program Director Comments: Dr. Milton Morris**
    - Dr. Soma is a brand-new hire as Associate Program Director. Dr.. Morris is very excited, as Dr. Soma has a great deal of both academic experience and practical experience.
    - Morris thanked the Council and Site Visitors as well.
- **Motion: The Site Visit Team moved for full reaccreditation for the Bachelor of Science in Environmental Health Science degree at Benedict College for six years: July 2023 - July 2024.**
- **Vote: Approved**
- **Letter:**
    - Address suggestions of Students, Faculty, and Site Visit Team

5.2 Accreditation Action: University of Wisconsin, Eau Claire - Bachelor of Science in Environmental Public Health - Site Visit Lead: Dr. Tim Murphy, Practitioner Dr. Wendell Moore, Trainees: LCDR Kai Elgethun and Cindy Weckwerth

- **Strengths:**
    - Networking opportunities
    - Internship opportunities
- **Recommendations:**
    - Students and Alumni:
        - More risk communication
        - Training on conflict resolution
        - Required job shadowing
        - Real world monitoring/sampling and analysis/field analytical
        - Sustainability information/courses
    - Site Visit Team:
        - Less course work in physics
        - More marketing of Program (internal and external)
        - Standardized syllabi learning outcomes
- **Program Director Comments: Dr. Crispin Pierce**

- Program is already acting on Site Visit Team recommendations re: less physics and more sustainability classes. The new MPH program will be instituting standardized syllabi and Dr. Pierce is hopeful that the BSEPH program will adopt that structure, as well.
- REHS prep exam assistance and AEHAP roundtable
- Working to ensure a 4+1 pathway from the BSEPH to MPH program.
- Appreciate Dr. Murphy's idea of a two-tiered REHS exam – would be a great option for students.
- Thinks AEHAP dues should be raised.
- UW EC has recently produced video clips with (alumni) response related to EH topics – they will be sharing these situational videos.

- **Motion: The Site Visit Team moved that the University of Wisconsin - Eau Caire Bachelor of Science in Environmental Public Health degree be reaccredited for 6 years: July 2023 – July 2029**
- **Vote: Unanimous approval**
- **Letter:**
  - Include recommendation to be much more rigorous about internship reporting requirements. disappointed in program internship reports as UW EC internship were insufficient.

[NOTE - create a list of expectations for internship reporting]

6.0 Undergraduate Requirements Final Draft Revisions – Vice Chair Dr. Dave Gilkey

- **Changes of Note:**
  - **IV. Curriculum Table, A. Foundation Course:**
    6. COURSE/CREDIT EQUIVILANCY: Transfer and prior learning credit (e.g., Advanced Placement Exams (AP), College Level Examination Program (CLEP), etc.) granted by the institution shall be substantiated by institutional criteria and policy. Transfer credits should be applied at the equivalent level that they were taken (i.e., a lower-division course should transfer as a lower-division course and an upper-division course should transfer as an upper-division course). However, all coursework taken at a community or junior college is generally considered lower division. Quarter and semester hour conversions must align with institutional requirements. University policies/documentation regarding the application/acceptance of transfer and prior learning credit should be available for review by Site Visitors when requested.
    - **Motion: Approval of IV. Curriculum Table, A. Foundation Course: 5. Course/Credit Equivalency**
    - **Discussion:**
      - Dr. Zimeri noted that it is in the best interest of universities not to accept transfer credit (financially), so she thinks that this wording is strong enough.
    - **Vote: Unanimous Approval**
  - **C. ENVIRONMENTAL HEALTH TECHNICAL AREAS**
    Interpretation
    - Required exposure in List 1
    - Required exposure for additional technical areas in List 2 (25% of List 2 required)
    - Required in depth study in any 4 technical areas in List 3 - students may individually tailor the in-depth study areas (List 3 includes all of the technical areas)
    - Any in-depth course can satisfy the requirements of List 1 or List 2
    - Additional topics in environmental health that are not in List 2 or List 3 may be proposed by a Program
    - **"Exposure" is interpreted as at least 3 instructional hours (single course or multiple courses)**

- **"In depth" is interpreted as at least 20 instructional hours (single course or multiple courses).**
- **Motion: Approval of C. Environmental health Technical Areas Interpretation – addition of explanations of "Exposure" and "In depth".**
- **Discussion:**
- **Vote: Unanimously approved**

- **D. ENVIRONMENTAL HEALTH PRACTICE**
  - In addition to classroom instruction, it is important that each student be afforded the opportunity to experience environmental health as it is practiced in his or her community or other appropriate setting. Environmental health faculty should maintain liaison with governmental environmental control and public health agencies, institutions, and industries which can provide students with exposure to the applied aspects of environmental health.
    PROFESSIONAL/FIELD EXPERIENCE
    Students shall be exposed to equipment, data collection and data interpretation through a minimum of 180-clock hours total in professional/field practicum, internship, or transcriptable equivalent experiences. From this experience students should demonstrate
    - Problem solving skills
    - The ability to work as part of a team
    - Effective communication
    - Knowledge of organizational dynamics

    The Council strongly encourages experiences outside of the university, unless within the university environmental health and safety facilities (non-academia, e.g., EH&S). Research-specific projects may be included in the experience but may not be the only component of the experience.

    Documentation must be provided for tracking hours and type of work performed during the internship.

    Link to Interpretation in Appendix 1.
    - **D. ENVIRONMENTAL HEALTH PRACTICE**
      - **Interpretation**
      - Professional/Field Experience, internship or equivalent experiences shall encompass a minimum of 180-clock hours total.
      - The Council strongly encourages professional/field experiences outside of the university, so that the student gains field experience. Alternatively, professional/field experiences may be acquired within the university if it has a non-academic environmental health control facility that supports the institution and can accommodate student involvement. Environmental Health related research-project may be included in the professional/field experience but may not be the only component of the experience. **Alternatives to professional/field experience may be considered by the Institutions.** Programs considering an alternative should contact the Council for further clarification.
    - **Motion: Approve changes to D. Environmental Health Practice**
    - **Discussion:**
      - CDR Lewis commented that research can be a meaningful practical experience. It is the task of advisor and faculty member to come up with a complete research/practical experience that meets EHAC requirements.

- Quinn added that there are places where research can be helpful in an experience form, but rigor and results need to be maintained.
- Gilkey submitted that internship selection will be based on student career goals – may be research and/or practice oriented and the requirement needs to be flexible enough to address both.
- Quinn and Elgethun emphasized setting internship related expectations – objectives, accountability, and traceability and creating a template for reporting obligations to ensure that students are getting impactful hands – on experiences.

- **Vote: Unanimous Approval**
  - **Action: Send out a letter to PDs clarifying that students can take a paid or unpaid internship according to requirements of the University.**
  - **Action: Develop expectations for internship requirements and reporting obligations related to EHAC internship criteria in order to ensure accountability and traceability of experience. A template similar to course syllabus would be helpful.**
  - **Action: January 2024 implementation, with 2 years to implement. So, programs up for reaccreditation and 2026 will submit a Self-Study in December 2025 based on January 2024 approved Undergraduate Accreditation criteria. Mitchel will send a letter of notification to Program Directors in September 2023 that includes the revised Requirements with changes highlighted.**
  - **Action: Determine if changes need to be made to the biology requirement in for clarification, e.g., require "general biology" instead of "biological sciences", etc. to ensure basic biology is being taught/learned.**

7.0 Graduate Guidelines Revisions: LCDR Kai Elgethun led a discussion of the draft revised Graduate Guidelines.

- **Discussion of questions/issues raised by Program Directors:**
  - Definition of a technical skill
  - The issue of acquiring knowledge vs. skills and additional burden of demonstration competency raised by a reviewer
  - Inclusion of language to help address difference between online, in person, and hybrid programs
  - Program competency evaluation: Self-Study Review and Site Visitors
  - Site Visitor selection process
  - **Discussion:**
    - **"Skill":** a skill can be demonstrated. It is defined as "the ability to use one's knowledge effectively and readily in the execution of one's performance". It is "repeatable".
      - **ACTION: add this language for additional clarity.**
    - **Bloom's Taxonomy:** LCDR Elgethun and Dr. Busch Isaksen explained that Bloom's Taxonomy was used as the basis for developing the competencies keeping graduate level rigor in mind.
    - **Online, hybrid, onsite programs:** Dr. Murphy emphasized that it is the programs job to show how/to demonstrate how they are meeting the criteria (how they successfully met the requirements). EHAC does not need to tell them how to meet the criteria. We want to know how student papers are graded fairly (for example). Busch Isaksen submitted that teaching methods are the same in both instances and as long as the program is demonstrating how they are addressing criteria for online formats – that's great. It is up to the program to demonstrate how students are meeting competencies.
  - **Action: EHAC will provide a 60-day comment period for Council and PDs so that all issues will/can be addressed in writing by the Guidelines Committee.**

  - **Goal: Guidelines will be ready for a vote during the Summer 2024 Annual Meeting. This timing will include all of the extra documentation as well preamble, glossary, crosswalk spreadsheets, Self-Study templates, etc.**
- **III. Graduate Environmental Health Science and Protection Degree Criteria**
  It is recognized that each institution has its own unique requirements or constraints that may dictate the depth and breadth of a curriculum. The resources at hand, including the availability and qualification of faculty, will determine the areas and the degree of emphasis on specific subjects. The National Environmental Health Science and Protection Accreditation Council recognizes these factors and expects variation among environmental health curricula. The Council also recognizes that progress toward the development of the "optimum" environmental health curriculum requires the skillful application of imagination and creativity. The Council, therefore, welcomes the opportunity to review innovative programs and curricula in environmental health science and protection.
- **IV. EXPECTATIONS**
  In broad terms, students are expected to experience the complete operationalization of the risk framework (through one or multiple opportunities) as follows: identify an environmental/occupational health problem, evaluate the problem (data collection/analysis) propose/create solution/intervention, develop an evaluation strategy for the solution, and communicate the findings to stakeholders (various audiences). Graduating students from EHAC-accredited graduate programs apply critical thinking with the tools founded in evidence-based science; and apply an equity, diversity, and inclusion lens to assess, manage and communicate risks.
- **V. CURRICULUM COMPONENTS**
  Programs will establish their own prerequisites required for acceptance to their Masters' degree track. We expect programs to require a basic knowledge prerequisite OR corequisite expectation in the areas of natural sciences. All graduates of accredited programs shall demonstrate sufficient knowledge and understanding of the natural science principles and practice necessary to competently assess, develop solutions, and communicate environmental health and protection problems impacting the health of human populations. Students should be able to apply basic science knowledge to environmental public health problems. These requisites should meet the expectations of the various states' EH and/or national EH registration boards. This knowledge of natural sciences includes biological sciences, chemistry, physical science and other natural sciences, as defined by the university. The curriculum must be responsive to the mission, goals, and objectives of the program. The curriculum must be organized and structured to integrate and sequence its content in an orderly and logical fashion.
- **VI. Competencies: Students graduating from EHAC accredited graduate programs must demonstrate competency in each of the following:**
  A. Foundational Environmental Public Health Science
  B. Risk Assessment
  C. Risk Management
  D. Communication
  E. Technical Environmental Public Health science knowledge and skills
  F. Equity and Justice
  G. Culminating experience
  - **Discussion:**
    - Risk is the foundation of the Guidelines document
    - Technical EPH science knowledge and skills – some highlighted that it might be difficult to demonstrate 10 or more competencies (for some PDs)

- Guidelines provide for having some very specialized programs be able to meet these guidelines
- Elgethun submitted that the committee wanted to be very specific about requirements - to ensure everyone is getting a STEM based accreditation.
- **Action: create a glossary for standardization. Council and PDs will highlight terms and standards that may need to be defined or that may be able to be interpreted in different ways. Highlighted items will be included in a glossary. LCDR Elgethun suggested that a bibliography would be helpful as well. Include guidance around employing Bloom's Taxonomy.**

- **VI. Competencies: Students graduating from EHAC accredited graduate programs must demonstrate competency in each of the following**:

A. Foundational Environmental Public Health Science

1. Identify systems, policies, and events impacting environmental public health.
2. Describe the process and importance of building community and organizational. relationships with stakeholders to promote community/workplace health and resilience.
3. Develop a research question and chose research and analytical methods appropriate for testing hypotheses to answer the research question.
4. Demonstrate basic knowledge of informatics within the context of environmental public health research, practice, and teaching.
5. Apply systems thinking concepts using a variety of frameworks (e.g., One Health, big data, social-ecological, planetary health, total worker health) to consider complex environmental public health problems.
6. Apply epidemiological methods and principles to assess the distribution and determinants of health outcomes associated with an environmental and/or occupational health risk.
7. Apply toxicological concepts such as ADME and dose-response threshold/non-threshold to evaluate potential risks from exposures to toxicants important in environmental public health.
8. Apply appropriate quantitative/qualitative statistical methods to analyze data associated with an environmental public health problem and/or intervention.
9. Apply environmental public health sciences in delivering the 10 Essential Services.

B. Risk Assessment:

10. Apply appropriate research methods to collect, manage, and analyze data.
11. Apply the concepts of hazard identification, dose response, exposure assessment, and risk characterization for a community and/or occupational health problem.

C. Risk Management:

12. Identify factors that affect the health of a community and/or workplace.
13. Apply appropriate qualitative and/or quantitative methods to assess a community or workplace setting's specific needs and political dynamics that impact risk management activity.
14. Apply behavior change theory to inform risk management strategies.
15. Identify relevant risk management regulations and their relationship to the authority and responsibilities of environmental public health professionals.
16. Develop culturally appropriate risk management strategies for a community and/or occupational health problem including planning for the assessment, implementation, and evaluation of those strategies.
    - **Discussion:**
      - Have tried to go higher on the bloom taxonomy chart

- #16 – good example of how competencies are flexible in how they can be accomplished "occupational health problem" – program sets up a scenario to create a culturally appropriate risk management strategy. Still translates as competencies being able to be demonstrated – allowing flexibility. There is NO implication that we expected this would be happening in the real world = scenarios. Sabty also added that not all competencies are at the highest level of Bloom's Taxonomy.

D. Communication:

17. Evaluate the scientific rigor and plausibility of association/causality when reading scientific literature and applying findings to making decisions.
18. Apply health behavior theoretical constructs to design culturally and linguistically appropriate risk communication product(s) for diverse audiences through multiple modes.
19. Demonstrate interpersonal (written, oral, nonverbal, and listening) communication skills necessary to effectively interact with diverse audiences.
20. Demonstrate interprofessional communication skills necessary to effectively interact with professionals in other fields that support a team approach to problem solving.
21. Respond to information, misinformation, and disinformation.
22. Facilitate communication and collaboration among individuals, groups, and organizations.
    - **Discussion:**
      - Communication skills are reportedly very important to include from both students and advisory committee members.

E. Technical Environmental public health science knowledge and skills:

23. Describe environmental conditions, systems, and policies affecting community and occupational health and resilience.
24. Demonstrate general technical knowledge and skills in at least half of the environmental health science areas listed in Table 1.
25. Demonstrate specialized technical knowledge and skills appropriate, at a graduate level, in at least one environmental health science area listed in Table 1.

F. Equity and Justice:

26. Recognize the ways in which social and environmental inequities undermine community and workplace health.
27. Recognize and reflect on the role implicit bias plays in undermining equitable environmental public health work.
28. Apply principles of diversity, equity, inclusion, accessibility, and justice to the assessment, management, and communication of community and/or workplace health risks.
29. Advocate for health equity through identification of stakeholders.
    - **Discussion**:
      - Intended to be wholistic and capture workplace and community spaces where people are working and interacting.

G. Culminating experience:

30. Create an independent product that synthesizes learning across the curriculum. Programs shall require a culminating experience (mentored experiential learning and/or research –not less than 160 hours) for their students. This experience should include the production of a written piece of work of professional quality appropriate to graduate level education (e.g., thesis, capstone, professional paper, essay case study, etc.). **An oral presentation of the culminating experience is required. The oral presentation can be but does not have to be tied with an exam.** ~~**strongly**~~

~~recommended.~~ A written exam may also be required but does not take the place of experiential and/or research experience.

- **Discussion**:
  - The majority of Council feels that an oral presentation is very important enough to be required. Dr. Murphy suggested that the issues might be a moot point, as most programs already do require oral presentations.
  - The "oral presentation" could be a presentation to a student club, presented research, internship. The audience doesn't matter, as the goal is for students to develop better skills at communicating at a graduate level to a variety of audiences.
- **ACTION: create a guidance document for help with transition to new Guideline – that speaks explicitly to "oral presentation" requirement.**
- **ACTION item: develop glossary and bibliography ASAP.**
- **ACITION item: Council will thoroughly review a revised draft that includes the change suggested at this meeting.**
- **ACTION Item: Create a guidance document for the draft Guidelines Revisions. Provide examples within crosswalk documents in a crosswalk template - provide examples prior to sending out the guidelines. This will be included with the Guidance Document that will be created.**
- **Mari Eggers Question: is there a graduate level text book that encompasses this material? Council didn't think so. Eggers asked if there someone that might want to take that on? It could serve as a backbone for degree program instruction.**

- **VIII. PROGRAM EXPECTATIONS BEYOND CURRICULUM COMPONENTS**

A. Programs are expected to seek out teaching and/or research experiences that connect students to environmental health practice.

B. Programs are expected to have an external advisory committee. The Council leaves operational format of this committee to the Institution to best fit the program needs, e.g., formal meeting, teleconference, email, etc. Input from the committee must be documented and available for Council review during the site visit.

C. Programs are expected to create or promote opportunities for students to connect with environmental health practitioners (e.g., practitioner instructors/guest speakers in core classes, internship/externship/volunteer opportunities, speed mentoring with practitioners, practice-based research opportunities, etc.).

D. Programs are expected to create opportunities for students to engage in community partnership building, including practicing concepts important to successfully build and maintain partnerships.

E. Programs are expected to create opportunities for students to practice and demonstrate leadership skills, including consensus building and team and project leadership.

F. Programs shall assess student achievement across all competencies. Programs are required to:

1. include competencies specific to a course and their associated learning objectives, in the course syllabus.
2. provide a crosswalk* to learning objectives and learning assessments for each individual competency.
3. develop a competency assessment plan that evaluates competency achievement across all students and a quality improvement plan for any needed curriculum changes identified through the evaluation.
4. review competency achievement annually.
5. present a summary to the external advisory committee.

- **Criteria Crosswalk Spreadsheet - Competencies:**

Competency	Course or Experience	Learning obective specific to competency	Indivdual student assessment or deliverable	EHAC competency/Learning Objectives included in syllabi?
A. Foundational Environmental Public Health Science				
1. Identify systems, policies, and events impacting environmental public health.				
2. Describe the process and importance of building community and organizational relationships with stakeholders to promote community/workplace health and resilience.				
3. Develop a research question and chose research and analytical methods appropriate for testing hypotheses to answer the research question.				
4. Demonstrate basic knowledge of informatics within the context of environmental public health research, practice, and teaching.				
5. Apply systems thinking concepts using a variety of frameworks (e.g., One Health, big data, social-ecological, planetary health, total worker health) to consider complex environmental public health problems.				
6. Apply epidemiological methods and principles to assess the distribution and determinants of health outcomes associated with an environmental and/or occupational health risk.				
7. Apply toxicological concepts such as ADME and dose-response threshold/non-threshold to evaluate potential risks from exposures to toxicants important in environmental public health.				
8. Apply appropriate quantitative/qualitative statistical methods to analyze data associated with an environmental public health problem and/or intervention.				
9. Apply environmental public health sciences in delivering the 10 Essential Services.				

Purpose of guidance spreadsheet: guidance as to how to demonstrate meeting competencies. Competency format should be familiar to most programs that have gone through CEPH accreditation**.**

Vision for guidance spreadsheet: that there is something in every box.

What this spreadsheet isn't: this document does put not EHAC in position of making decisions on what the programs are teaching from an individual student perspective. What reviewers want to know is if 60% of students are passing, for instance, what is a program doing to help the other 40% who aren't passing?

- **Criteria Crosswalk Spreadsheet - Technical Tab/Sheet:**

Technical Areas (from Table 1)	Course or Experience	Learning obective specific to competency	Indivdual student assessment or deliverable	EHAC competency/Learning Objectives included in syllabi?
Air Quality and Health				
All-hazard Preparedness				
Built Environment (e.g., Structural Needs, Community Needs)				
Diseases and Control Measures				
Disease Prevention				
Emerging Hazards				
Emerging Technology (e.g., Nano, Big Data)				
Environmental Health Planning				
Food Protection				
Geographic Information Systems				
Geology				
Global Climate Change and Human Health				
Global Environmental Health				
Hydrogeology				
Injury and Violence Prevention				
Institutional Health				
Occupational Health and Safety				
Radiation Health				
Recreational Environmental Health				
Risk Analysis				
Soils				
Solid and Hazardous Material and Waste Management				
Water and Wastewater				
Zoonotic and Vectorborne Diseases and Control Measures				

8.0 Board Elections - Closed Vote for entire slate of Board Officers

- General Chair: Dr. Tania Busch Isaksen
- Vice Chair for Undergraduate Programs: Co-Chairs CDR Jason Lewis and Dr. Tim Murphy
- Vice Chair for Graduate Programs: LCDR Kai Elgethun
- Secretary: Dr. Laura Suppes
- Treasurer: Cindy Weckwerth
- Director-At-Large: Dr. Lee Newman
  - **Motion**: Dr. Brown moved to accept the consent agenda
  - **Second:** Dr. Roberts second
  - **Vote**: Unanimously Approved

9.0 Certificates and Acknowledgement of 2 term Council Members and 2022-2023 Board Members

- **Academics:**
  - **Dr. Gary Brown (2nd Term)**
  - **Dr. Dave Gilkey (1st Term)**
  - **Dr. Oreta Samples (1st Term)**
- **Practitioners:**
  - **Chad Brown (1st Term)**
  - **Tom Deem (2nd Term)**

Self-Study Reviewers and Site Visitors:

- **Chad Brown**
- **Dr. Gary Brown**
- **Tom Deem**
- **Dr. Marri Eggers**
- **LCDR Kai Elgethun**
- **Dr. Dave Gilkey - Site Visit Lead**
- **DeBrena Hilton**
- **Dr. Swatantra Kethireddy**
- **CAPT Jason Lewis**
- **Dr. Wendell Moore**
- **Dr. Tim Murphy - Site Visit Lead**
- **Dr. Lee Newman**
- **Dr. Priscilla Oliver**
- **Dr. Clint Pinion**
- **Dr. Lok Pokhrel**
- **CDR Michael Quinn - Site Visit Lead**
- **Dr. Welford Roberts**
- **Dr. Rania Sabty**
- **Dr. Oreta Samples**
- **Cindy Weckwerth**

- **Dr. Anne Marie Zimeri**

10.0 Board Election Results

- General Chair: Dr. Tania Busch Isaksen
- Vice Chair for Undergraduate Programs: Co-chairs CDR Jason Lewis and Dr. Tim Murphy
- Vice Chair for Graduate Programs: LCDR Kai Elgethun
- Secretary: Dr. Laura Suppes
- Treasurer: Cindy Weckwerth
- Director-At-Large: Dr. Lee Newman
- Nominations Chair: Chris Sparks
  - **Motion** to approve consent agenda by Dr. Gary Brown
  - **Second**: Dr. Oliver
  - **Vote**: Unanimous

11.0 New Chair Appts. Nominations Committee Chair: Chris Sparks?

12.0 Meeting adjourned at: 4pm Central

Respectfully Submitted,

CDR Jason Lewis, 2022-23 EHAC Secretary

Jason Lewis

Leslie D. Mitchell, Executive Director

Leslie D Mitchell