Background

The advancement of occupational and environmental health and safety (OEHS) protection depends on the elements of an evolving, self-improving system: that is, cutting-edge research, training, and practical application. As humans in the 21st century will enjoy longer lifespans, on average, than at any previous point in history, intervening actions to reduce OEHS risks are critical opportunities to prevent death and disability. In addition, with new materials being introduced to commerce at an ever-increasing pace, identifying worker populations producing and using these new materials will allow us to conduct research on exposures and outcomes that can contribute to the technical bases for health protection programs. Our two organizations are comprised of OEHS professionals and academics advocating for the creation and dissemination of the knowledge necessary to take advantage of these opportunities.

Historically, AIHA has lacked a defined process for helping researchers investigate areas of research that can be identified by members and allied stakeholders and supporting the incorporation of research results into everyday practice.

Purpose of Initiative

AIHA and ACGIH seek to define, manage, and advocate for a standing OEHS research agenda. Through this agenda, we will be able to inform and guide academics, third party research organizations, volunteer groups, and OEHS practitioners on what research is most critically needed and facilitate the partnerships necessary to accomplish those research goals. We can then play a better and more integral role in preparing students and practitioners to conduct research on those essential topics and integrate new findings into their workplace procedures.

For more information, visit AIHA’s Defining the Science (DTS) Advisory Group webpage. Refer to Appendix A for a brief overview of potentially intersecting OEHS programs and initiatives.

Methodology

The overall model for DTS is the Practice-To-Research-To-Practice™ model illustrated in Figure 1.
Introducing the DTS Advisory Group

The task of managing a research agenda falls to the DTS Advisory Group (DTS-AG), whose mission is to develop and maintain a national OEHS research agenda endorsed by the AIHA and ACGIH Boards of Directors. The DTS-AG is a collaborative venture between AIHA and ACGIH and includes representatives from both organizations.

The advisory group is tasked with addressing such matters as:

- Identifying areas of practice that do not hold up to current OEHS scientific findings, so AIHA, ACGIH, and other stakeholders may improve practice through focused outreach, promotion, and training.
- Identifying research initiatives needed to advance the state of OEHS science and address gaps in practical knowledge.
- Identifying opportunities to answer OEHS research questions through studies of at-risk workers.
- Defining a transparent, open process across volunteer groups, local sections, and allied stakeholders as to how the DTS-AG can create and sustain a living research agenda on behalf of the profession and how project ideas may be prioritized for future funding.
- Determining how AIHA’s and ACGIH’s role as facilitators for OEHS science research, both for funded research opportunities that come our way and as “bundler” of partners, needs, and ideas to be brought before funding organizations.

DTS-AG Members

- John Mulhausen, PhD, CIH, FAIHA – AIHA Member
- Anthony Oliveri, PhD, MPH – AIHA Member
- Paul Wambach, CIH – AIHA Member
- Cullen Charles Whittaker, CIH, CSP – AIHA Member
- Donald Weekes, CIH, CSP, FAIHA – AIHA Member
- Gary Spies, CIH, CSP – ACGIH Member
- Alison Elder, PhD – ACGIH Member
- Paul Middendorf – AIHA Member
- Christy Forrester – NIOSH Liaison
- Kimberly Castillon, CIH – AIHA Board Liaison
- Michele Twilley, DrPH, CIH – AIHA Staff Liaison

Process Overview

Input from AIHA and ACGIH volunteer committees and other interested parties is submitted using this web submission form link. The DTS-AG reviews and assigns each research question or problem a weighted score, aggregated across predetermined criteria. Projects that receive a higher score will be given higher priority on the AIHA research-to-practice agenda. The agenda will be communicated to a variety of audiences, including but not limited to NIOSH, other governmental agencies, academic institutions, and for-profit research entities. Over time, DTS-AG’s goal is to identify suitable research partners that are positioned to fund their own research. AIHA and ACGIH stand ready to assist these projects at various phases, depending on their needs. There is also a possibility that AIHA or ACGIH might consider underwriting a particular project, which would require formal approval by the organizations’ respective boards of directors.
Defining the Science Initiative: A Guide for Members

Guidance Document

3141 Fairview Park Dr., Suite 777 | Falls Church, VA 22042
aiha.org

3640 Park 42 Drive | Cincinnati, OH 45241
acgih.org

Research Categories

The DTS-AG defines “ideas” generally as concepts that will advance the OEHS practice or OEHS profession as follows:

- **OEHS Practice**: Ideas that advance the OEHS practice by enabling practitioners to conduct their work armed with the latest methods and techniques based on sound, science-supported research. This category encompasses more traditional “pure” research topics (e.g., Qualitative Judgment Accuracy, Defining Appropriate Bayesian Priors).

- **OEHS Profession**: Ideas that help advance understanding of the profession from a more holistic perspective. For example, these ideas might improve OEHS practitioners’ appreciation of their roles in building certification programs (e.g., the LEED rating system and WELL Building Standard), product stewardship, and general management and leadership—areas in which OEHS practitioners are increasingly being held responsible. This research will be based in science but not necessarily center on traditional IH topics.

Scoring Rounds

To facilitate idea submission and scoring, DTS-AG divides the calendar year into multiple rounds as follows:

- **Round 1**: Submissions received by July 17, 2021 (COMPLETE)
- **Round 2**: July 17, 2021–October 15, 2021 (COMPLETE)
  - NOTE: This round includes themes and specific research ideas extracted from our inaugural virtual brainstorming sessions, which were held September 21 and 23, 2021.
- **Round 4**: January 16, 2022–April 15, 2022
- **Round 5**: April 16, 2022–July 15, 2022
- **Round 6**: July 16, 2022–October 15, 2022

Following each round, the DTS-AG will convene to review aggregate scores and recommend priorities based on the criteria referenced above.

Frequently Asked Questions

**Q1: What happens after my idea is submitted via the portal?**

**A1:** All ideas are reviewed and scored by the DTS-AG following the end of each scoring round. All ideas are added to the new National OEHS Research Agenda and published on the AIHA’s and ACGIH’s websites. We plan to promote the agenda through multiple channels, including through working with our NIOSH contacts to assess the agency’s interest, ability, and capacity to pursue ideas.

**Q2: I participated in the September 2021 brainstorming sessions. What will the DTS-AG do with this information?**

**A2:** The DTS-AG has condensed research ideas based upon a detailed review and analysis of our notes and recorded transcripts of the sessions. These ideas may need to be further refined and revised by technical committees with aligning areas of interest. Ultimately, these ideas will be added to the research agenda.

**Q3: What is the role of AIHA or ACGIH committees in developing research ideas?**

**A3:** If you are serving on a committee that has an area of focus relevant to a research idea accepted by the DTS-AG, your committee may be asked to discuss and, if necessary, further refine the idea. Any updates will be reflected in the research agenda. Your committee may also suggest the development of a guidance document, course, or other resource that would help address a “barrier to practice” based on an existing body of research.
We suggest that each committee consider creating a new “research and development (R&D)” volunteer officer position. This individual would help review already submitted ideas and consolidate interest in developing new research ideas for consideration. According to the Board for Global EHS Credentialing, this position would be eligible to earn 0.5 CM points (BGC) for each 12 months of service, similar to a committee elected officer.

Q4: How will AIHA and ACGIH prioritize the list of ideas for further consideration?

A4: The DTS-AG conducts an initial evaluation of each idea based on these factors: its applicability to practitioners, its impact on practice integrity, the number or percentage of workers that will be positively impacted, its impact on affected workers’ health, and the idea’s likelihood of success. While some ideas may be evaluated more favorably than others against these criteria, the research agenda will reflect all ideas.

Q5: How will we be notified if our idea is funded for research?

A5: We intend to promote the research agenda through various channels, including those accessed by academic faculty, students, and other research institutions. Ultimately, we hope some ideas will be selected by third parties that will then undertake the research. However, we cannot guarantee this will be so.

Q6: What is the role of NIOSH?

A6: NIOSH has two designated representatives that have been invited to attend all DTS-AG meetings. However, they must refrain from participating in the evaluation process due to conflicts of interest. AIHA has been invited to engage with the agency at multiple levels, both through NORA council representatives and at the executive level through the office of Dr. John Howard, the director of NIOSH, to help generate awareness about the DTS research agenda.

Appendix: Similar OEHS Programs and Initiatives

DTS may intersect with other programs and initiatives being led by AIHA and ACGIH members. These include:

The Content Portfolio Advisory Group (CPAG)

AIHA’s mission includes providing cutting-edge education and training resources that help members protect and improve the OEHS profession. Creating content with AIHA provides great opportunities for OEHS professionals and students to publish creative intellectual works, nurture the skills they need for success, and cultivate their professional development. This process is overseen by CPAG, which prioritizes ideas that support one or more of five content priorities:

- Big Data and Sensor Technologies
- Communicating OEHS Concepts
- Exposure Banding
- Serving the Changing Workforce
- Total Exposure Health

To learn more, visit AIHA’s publications and content channels webpage.

The Grand Challenges Initiative

In 2020, the AIHA Board of Directors approved a Grand Challenges special project that will work towards the following goals:

- Define critical Grand Challenges that improve worker health, safety, and well-being across disciplines, sectors, and geographic boundaries
- Increase public recognition of the value of the OEHS profession
- Engage allied professions, business leaders, workers organizations, international OEHS leaders, and others to garner ideas for Grand Challenges
This initiative is in its initial stages, and further developments are planned for 2022.

**The WHWB Global Challenges Initiative**

Occupational health has historically been a low priority for global public health initiatives and international health organizations. However, the COVID-19 pandemic has shone new light on the importance of workplace exposures to hazards such as infectious diseases. Now is an opportune moment to raise the profile of occupational health.

In 2021 Workplace Health Without Borders (WHWB) convened a round table discussion on advancing primary prevention and occupational health within the global public health agenda. Participants included representatives from ACGIH, the International Commission on Occupational Health (ICOH), the Occupational Hygiene Training Association (OHTA), the Canadian Centre for Occupational Health and Safety (CCOHS), the Institute for Work and Health (IWH), the African Union, OSHAfrica, the National Institute of Occupational and Environmental Health of Vietnam, the International Occupational Hygiene Association’s Developing World Outreach Initiative, and WHWB and its branches. Their discussion covered three key questions:

- How can we elevate occupational health on the global health agenda?
- Are there two or three specific issues which we should focus on?
- Can or should OEHS organizations collaborate on raising the profile of OEHS?

This effort is in the very early stages of development.

**NIOSH’s Future of Work Initiative**

NIOSH describes its Future of Work Initiative as “a collective effort of transdisciplinary research, and communication throughout NIOSH, other government agencies, and organizations.” The agency launched the initiative, which will follow Total Worker Health principles, in response to the ways in which work, the workplace, and the workforce are changing. To address the future of work in the U.S., NIOSH’s initiative will find new research solutions, practical approaches, and partnership opportunities. This initiative has four primary goals:

- Compile studies on the future of work
- Feature current and relevant research projects
- Promote research among new industries, technologies, organizational design, job arrangements, risk profiles, and ways to control risk
- Connect trends in workplace, work, and workforce changes to prepare for the future of occupational safety and health

More information can be found on NIOSH’s Future of Work webpage.