

Call for Book Chapter Proposals

Advancements in Human Agent Teaming Research Infrastructure: Testbeds, Metrics, and Concepts

Chapter submissions due: July 23, 2025*

**Original date first posted in April, 2025. Full chapter submissions will continue to be considered until September 27th for U.S.-based contributors, and until December 15th for contributors based outside the U.S. Please reach out to erin.chiou@asu.edu to confirm submission interest and intended submission date.*

Editors:

[Erin K. Chiou](#), [Douglas S. Lange](#), [Jason H. Wong](#), [Julie Marble](#)

Publisher:

CRC Press, Taylor & Francis

Book concept: In 2020, the National Academies Board on Human-Systems Integration was tasked by the Air Force Research Laboratory 711th Human Performance Wing to identify research objectives for realizing effective human-AI teams in complex operational environments. The resulting 130-page report written by an 11-person committee and downloaded globally over 9,800 times as of this writing, identifies 57 objectives. Shortly thereafter, a group of 23 U.S.-based researchers in defense operations, machine learning, and human factors independently gathered in San Diego, CA to further narrow the set of research areas to address. This book is a continuation of that gathering, which identified a need to coordinate and compile testbed research infrastructure and related use cases that have advanced or that promise to advance successful human-AI teams. This edited volume brings together technologists and researchers working to support critical and dynamic decision-making in complex work environments. Each chapter will focus on a central topic area—such as a specific human-AI research testbed, team performance metric or measure, or human factors concept—and how it has advanced operational human-AI teams and the underlying science and technology questions that persist.

Solicitation: We are seeking manuscripts from any domain that describe the work of designing, building, implementing, or evaluating a human-AI team testbed, metric, or concept. While all three areas should be integrated to some extent, the idea is that individual chapters will approach this emphasizing one of the three areas. Questions that would be helpful to address: Why was this testbed needed? Why were you the ones to do it? What required thoughtful consideration and what tradeoffs were required? Did your project distinguish between metrics and measures? What metrics did you refine or refute as a result of your work? What concepts did you include (e.g., trust, situation awareness) and how did you indicate the presence of that concept? What has been the impact of this work?

To help promote rigor and cohesion, full chapter contributors (lead authors or designated co-authors) undergoing review may also be asked to peer-review (single-blind) no more than two total submissions.

Questions or initial submissions can be directed to Dr. Erin K. Chiou, erin.chiou@asu.edu.

Notional Timeline:

Applies to chapters that are submitted by the original deadline, July 23, 2025. Potential contributors submitting to a later, agreed-upon deadline will follow an accelerated timeline.

April 19, 2025 - Chapter solicitation distribution

May 21, 2025 - Abstracts (optional) due - strongly recommended for feedback and fit check

June 4, 2025 - Decisions rendered/feedback on abstracts returned

July 23, 2025 - Chapter submission due

Aug 16, 2025 - Peer reviews due (max 2 assigned per lead author or supervising co-author)

Aug 30, 2025 - Decisions rendered/feedback on submission returned

Sept 27, 2025 - Chapter revisions due

Oct 25, 2025 - Feedback on revised chapter returned

Nov 25, 2025 - Final chapter submission due

Fall 2026 - Publisher's estimated publication time frame

Formatting and Other Requirements:

- We expect submissions to range from 20-30 pages double-spaced, exceptions possible
- Please use APA (7th ed) for references formatting and language guidelines
- Submissions must be in Microsoft Word, 1 inch margins, 12 pt. Times New Roman font
- Each final chapter submission must be accompanied by a 150-200 word abstract and ORCID(s) that will not be published in the book but will be used for search optimization
- Please use tables and figures with captions as needed, but note that print is in BW only
- Contributions must be original work. If you need to include material that is not original or not your own, written permission is required and the authors' responsibility to obtain. AI-generated content will not be accepted. Please review the publisher's AI policy: <https://taylorandfrancis.com/our-policies/ai-policy/>

Example Chapter Titles by Topic (open to other relevant topics):**Testbeds:**

- Human automation interaction testbeds and their application to teaming
- Dynamic decision making testbeds and use cases
- Seminal wizard-of-oz testbeds for future agent teaming

Metrics (or Measures):

- Integrative measures of team performance
- Measuring situation awareness
- Trust assessment in human-agent teaming

Concepts:

- Verification and validation of human-AI teams within current acquisition workflows
- Meaningful human control in human-AI teaming applied to research infrastructure
- Responsivity as an integrative measure of human-AI teaming

Recommended Chapter Structures by Topic Area:**Topic Area 1 - Testbeds**

- A. Introduce testbed and development history including: a short description of capabilities, possible modifications, motivation for development, and design process if available.

- B. Discuss and reference papers that used the testbed and what research questions or use cases were addressed, and to what extent they were addressed.
- C. Discuss limitations of the testbed and how they might be addressed, including whether or not the testbed is available for use by other researchers and how to access it.
- D. Conclude with a discussion of the overall impact of this testbed on human-AI teaming and the state-of-the-science

Topic Area 2 - Metrics

- A. Introduce the metric's literary history including a definition and review of related work leading to or extending from that definition
- B. Review recent empirical studies (e.g., last 20 years) that have used this metric, how it was defined, measured, assessed, and what research questions in human-AI teaming did it contribute to answering
- C. Discuss what has been answered well with this metric, what remains to be done
- D. Conclude with future trajectory of this metric – should it be expanded, deprecated, or reevaluated in the context of research testbeds

Topic Area 3 - Concepts

- A. Introduce the history of this concept including a short definition and review of related historical and seminal work
- B. Review potential use cases that could benefit from this concept, and elaborate on how this concept could be beneficial relative to other related concepts
- C. Discuss what can be answered well with this concept, what remains to be done
- D. Conclude with future trajectory of this concept – how should it be expanded or validated in the context of research testbeds

Notable References:

Testbeds

- Brehmer, B., & Dörner, D. (1993). Experiments with computer-simulated microworlds: Escaping both the narrow straits of the laboratory and the deep blue sea of the field study. *Computers in Human Behavior*, 9, 171–184. <https://doi.org/10/cxzwnm>
- Gray, W. D. (2002). Simulated task environments: The role of high-fidelity simulations, scaled worlds, synthetic environments, and laboratory tasks in basic and applied cognitive research. *Cognitive Science Quarterly*, 2, 205–227.

Metrics

- Howie, Dianne. E., & Vicente, K. J. (1998). Measures of operator performance in complex, dynamic microworlds: Advancing the state of the art. *Ergonomics*, 41(4), 485–500. <https://doi.org/10/ctwxr>

Concepts

- McDermott, P., Klein, G., Thordsen, M., Ransom, S., & Paley, M. (2000). Representing the cognitive demands of new systems: A decision-centered design approach (AFRL-HE-WP-TR-2000-0023). Human Effectiveness Directorate. <https://apps.dtic.mil/sti/tr/pdf/ADA385318.pdf>
- Tsamados, A., Floridi, L., & Taddeo, M. (2024). Human control of AI systems: From supervision to teaming. *AI and Ethics*. <https://doi.org/10/gtzk8m>