

## Response to Referee Comment 2 (RC2)

We sincerely thank the Editor and the reviewer for the careful evaluation of the manuscript and for the constructive and insightful comments provided. The feedback was highly valuable and has substantially improved the clarity, organization, and overall quality of the manuscript. Below, we provide a detailed point-by-point response to each comment. Reviewer comments are reproduced in black, and our responses are provided below in blue each comment.

**General comments:** I think the paper offers a convincing case that short, intensive training efforts can be a valuable way to boost the skills of hydrologists at different career stages. I have some comments that I think might help the reader interpret some of the survey results more easily and highlight some of the lessons learned in the project that may help future efforts.

#We thank the reviewer for the supportive assessment and constructive comments.

### Specific comments:

1. In the paragraph that is lines 74-80, it may be appropriate to cite the new WRR paper about what is taught in hydrology classes (Kelleher, Christa A., John Patrick Gannon, and Dominick Ciruzzi. "The current state of undergraduate hydrology courses in North America: A path forward." *Water Resources Research* 62.2 (2026): e2025WR041736.)

**Response:** Great suggestion and thank you. We have cited Kelleher et al., (2026) in this section and made modifications if deemed necessary.

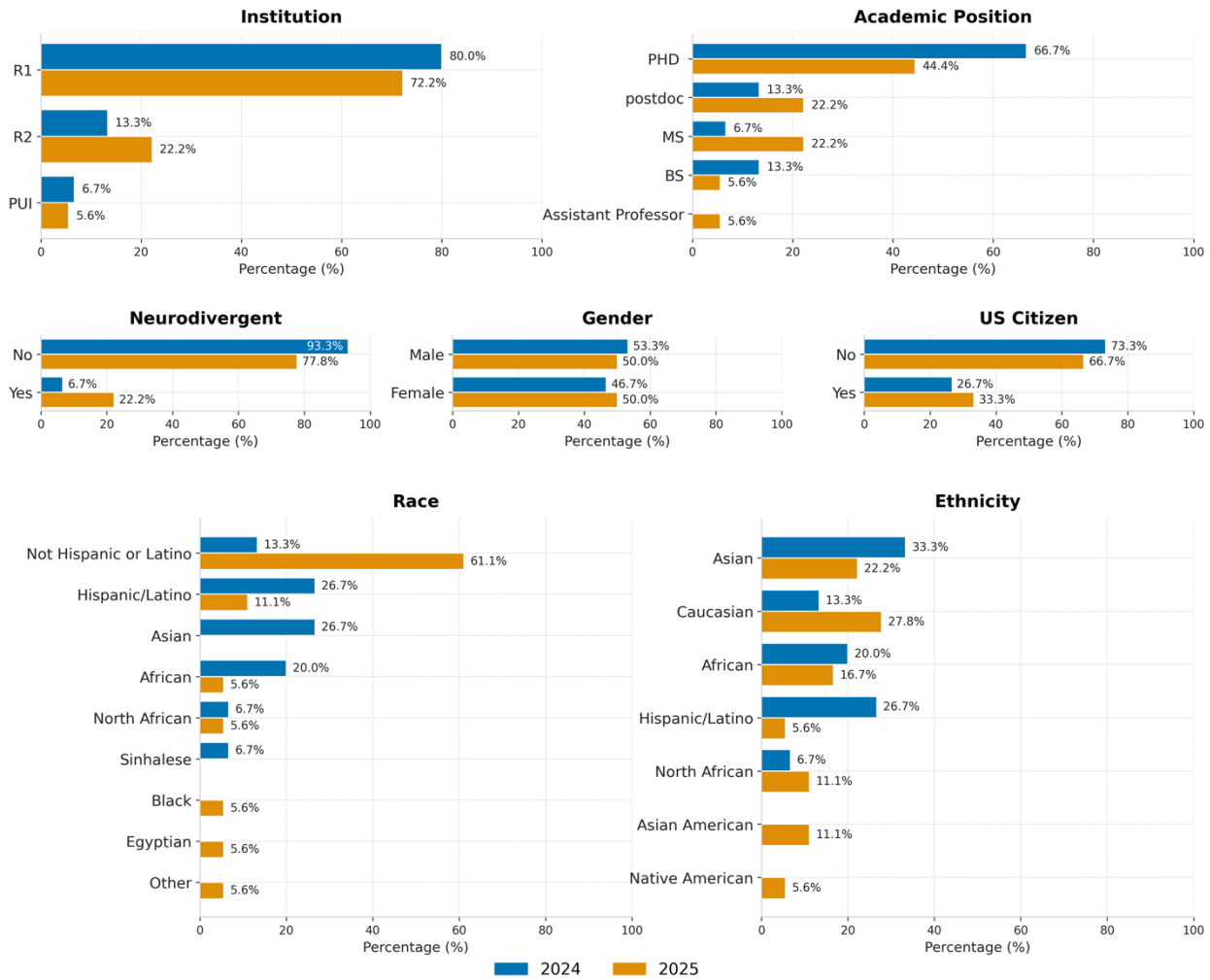
2. In a couple places in the manuscript, large numbers of participants are mentioned (150-300 people, lines 169 and 640) but I didn't catch how those folks engaged with the program. Even if I just missed this, I think it would be good to make it clearer how those people engaged when those numbers are mentioned.

**Response:** Thank you for the comment. It was mentioned in section 2 that 15 to 18 fellows were chosen to participate in both training and hackathon during the 2-week event (both week 1 and week 2), and other participants who applied took part in the general hand-on training session (only week 1). We have revised this section to make it more explicit and clearer with numbers and all.

3. Figure 2: could you make this one figure with paired bars for each of the trainings? For instance, on the institution plot, for R1 there would be two bars, one for each of the trainings. This would make it much easier to see what kind of variation there was between trainings.

**Response:** We thank the reviewer for this comment. We have combined Figures 1 and 2, see below please.

**Demographic Comparison**  
2024: n = 15 2025: n = 18



4. Line 262: I think more details should be given about how the survey was distributed through CUAHSI... newsletter? Was it broader than that?

**Response:** Thank you for your feedback. The survey was distributed through CUAHSI e-news and social media platforms to the broader water science community. This portion is now revised.

5. On the survey: the sample sizes are pretty small. I think it would be good to highlight that and the limitations associated with making conclusions based on that many responses.

**Response:** Thank you for this comment. We have included this as a limitation in the revised manuscript. We added below to address the reviewer' comment.

“Because the survey responses were anonymous, unmatched, and limited in sample size, the study was not designed to support formal statistical inference regarding participant learning gains. Consequently, the findings should be interpreted primarily as exploratory and descriptive indicators

of participant experiences and perceived skill development rather than statistically generalizable outcomes.”

6. Additionally: I’m a little unclear who filled out the survey from the figure captions. Initially I read it as people CUAHSI got to via whatever mechanism was used. But figure 3 says 13 people completing the survey where figure 4 says “participants completing pre-event survey” so where the respondees people who were going to take the training or just general hydrologists?

**Response:** We thank the reviewer for this comment. Figure 3 presents the broader pre-program needs-assessment survey distributed through CUAHSI to the general water science community, whereas Figure 4 presents the post-event survey responses collected specifically from WaterSoftHack participants after the cybertraining. We have revised the caption to specify this.

7. Finally, do you have demographic info on the respondents? It would be good to know things like career stage, etc. of people who identified these needs.

**Response:** We thank the reviewer for this comment. Unfortunately, we didn’t collect the demographic information regarding the participants that would be relevant.

8. Figure 8: Similar to the previous par chart, I think if the two trainings were paired in one figure so that for example the “software development” bar had two bars, one for pre and post, it would make them easier to interpret. It would be awesome if Figure 8 and 9 could be combined to compare results between trainings too... but that might be tough.

**Response:** We thank the reviewer for this helpful suggestion. We revised Figures 8 and 9 to include paired pre- and post-training bars within each year to improve readability. We also considered combining the two figures; however, because the 2024 and 2025 trainings focused on different topics and learning objectives, direct comparison may not be appropriate and combining them would reduce figure clarity.

## 2024 Survey

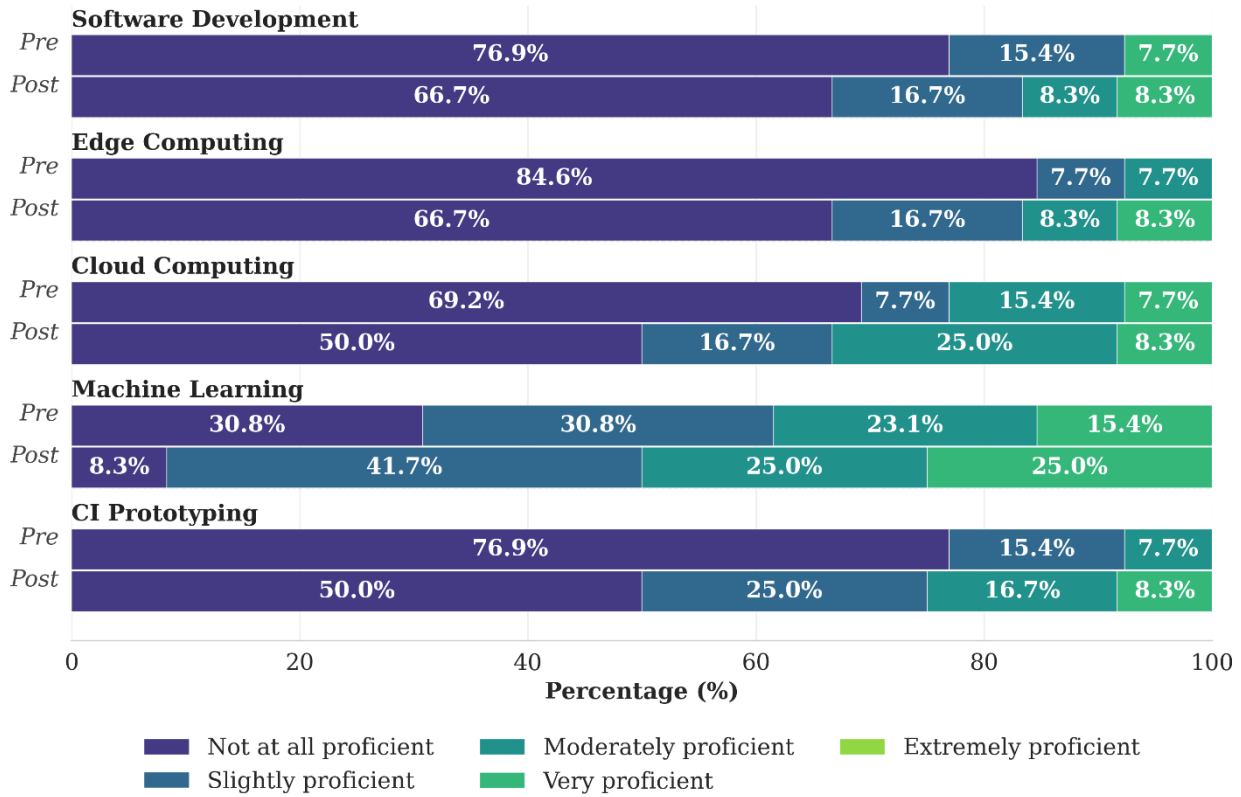


Figure 8. The results of pre- and post-cybertraining survey results conducted among the Fellows for WaterSoftHack 2024. 13 out of 15 Fellows responded to the pre-survey and 12 out of 15 Fellows responded to the post-survey.

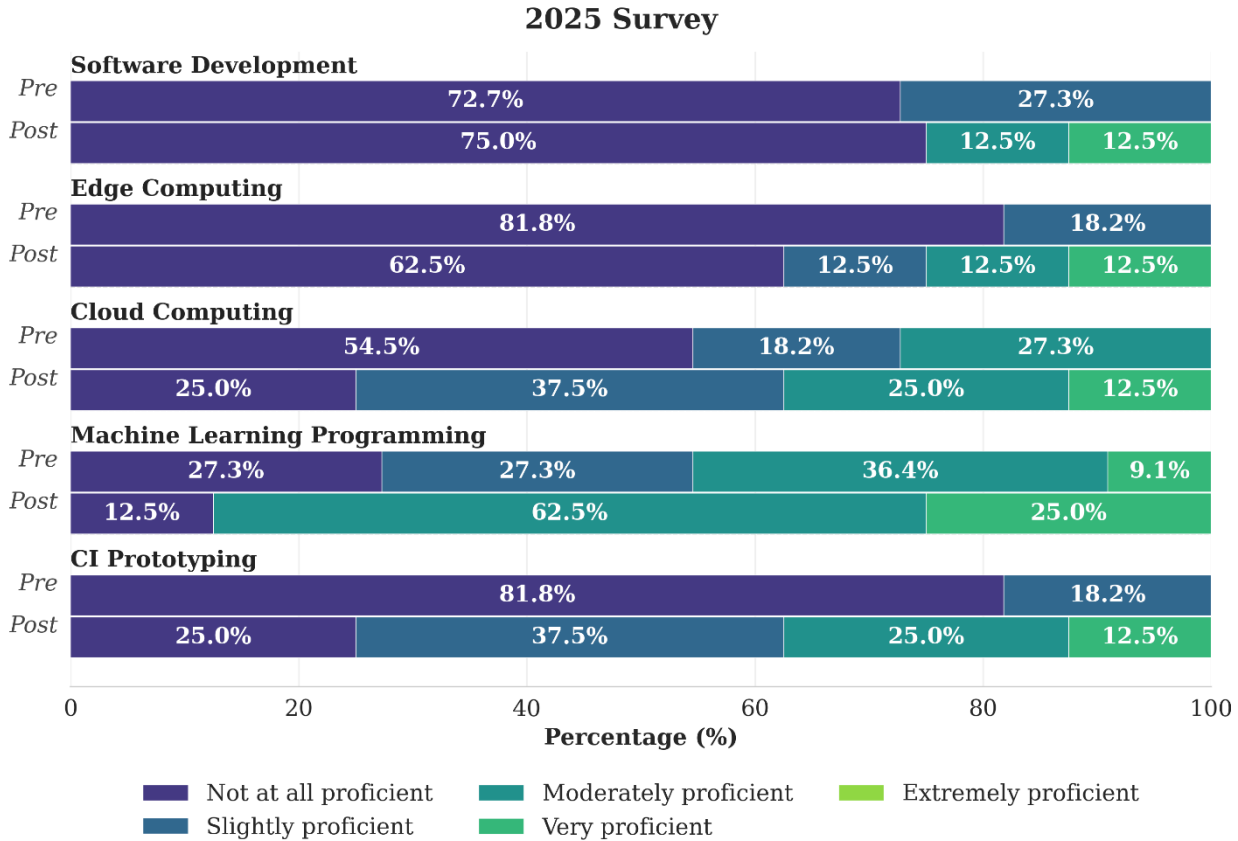


Figure 9. The results of pre- and post-WaterSoftHack cybertraining survey results conducted among the Fellows for WaterSoftHack 2025. 11 out of 18 Fellows responded to the pre-survey and 8 out of 18 Fellows responded to the post-survey.

9. In the participant experience section: much of the interpretation of what worked well aligns very well with what the science of teaching and learning tells us about how people learn. I think this section could be strengthened by citing some of this literature and highlighting similarities and/or differences.

**Response:** We thank the reviewer for the positive comment. This section focuses primarily on the direct experiences and reflections of WaterSoftHack participants; therefore, extensive pedagogical citations were not added here. However, relevant educational and cybertraining literature has been incorporated in other sections of the revised manuscript.

10. In the last paragraph of section 4.5 you mention the schedule changed quite a bit based on responses. I think a figure or even just description of the full timeline you arrived at for these trainings would be something people trying to do similar things could use! Basically, a roadmap for what should happen by when.

**Response:** We thank the reviewer for this comment. The schedule itself was not modified, but participants recommended adjustments due to time zone differences between the U.S. East and West Coasts. In response, we added a Lessons Learned and Recommendations section summarizing practical guidance and suggested timelines for future cybertraining events.

11. One last thing in the discussion and conclusions: Events like yours definitely seem awesome and powerful and it seemed you learned a lot about how to teach these topics. I was wondering at the end: Are any of the lessons you learned relevant to a traditional classroom/semester long course? Can you give any advice for someone trying to add these topics to a course or develop a course on them? I think that could be very valuable for those of us who might not have the resources to run an intensive workshop but do have the flexibility to teach a new course or adapt an existing one.

**Response:** You raised a valid point and thank you. We have included some of these points in Lessons Learned and Recommendations section. Parts of the topics are already being taught in several courses. the content we have created as part of this training can certainly be incorporated into a semester-long course with project-based evaluation—all materials are freely available at

<https://watersofthack.github.io/about/>

<https://github.com/watersofthack/WaterSoft>

Thanks for writing this and developing the resources! I'll definitely be looking for ways to use them.

#We thank the reviewer for the supportive assessment and constructive comments.

#### **References:**

Kelleher, C. A., Gannon, J. P., & Ciruzzi, D. (2026). The current state of undergraduate hydrology courses in North America: A path forward. *Water Resources Research*, 62(2), e2025WR041736.