A screenshot of a graph

AI-generated content may be incorrect.

**Figure 1. Pre-training composite themes that predicted participation in *Eight-Legged Encounters* (ELE).** We compared the composite score – determined by summing participant responses (with response option values 1-5 or 1-4) to pre-training survey statements gauging (A) interest in spiders, (B) intent to engage in science communication in the future, (C) values of attaining science communication opportunities, (D) the perceived costs of participating in science communication, and (E) science identity. We only included participants who gave a response to each statement within the composite theme (*N* provided at the x-axis). The icons indicate whether the composite theme is related to spiders (spider icon) or science communication (speaker icon) with asterisks indicating the level of significance from unpaired t-tests (see Table 1): \*\*\* *P* < 0.001, \*\* *P* < 0.01, \* *P* < 0.05. Grey jittered points represent the raw composite scores, and the orange point and error bars represent the calculated mean and SEM, respectively. Participants who showed greater interest in spiders, stronger intentions to engage, and more robust science identities — as well as those who perceived science communication as having higher attainment value and lower costs — were more likely to choose to participate in ELE.

A group of graphs and charts

AI-generated content may be incorrect.

**Figure 2. Self-reported change in attitudes toward spiders and science communication.** In the post-training survey, participants were asked whether participating in the training changed their outlooks about (A-B) spiders and (C-D) science communication. (A, C) We visualized the proportion of each response option selected and (B, D) compared responses between those who did and did not participate in Eight-Legged Encounters (ELE) using unpaired t-tests: \*\*\* *P* < 0.001, \*\* *P* < 0.01, \* *P* < 0.05, NS *P* > 0.05. Grey jittered points represent the raw composite scores, and the orange point and error bars represent the calculated mean and SEM, respectively. The dashed horizontal line represents neutral response options where points above suggest positive shifts and those below are more neutral or negative. Each response option had a corresponding number (‘Strongly disagree’ = 1 to ‘Strongly agree’ = 7 and ‘Not at all interested’ = 1 to ‘Much more interested’ = 5). Generally, science communication training increased interest in spiders and science communication with ELE participants having particularly improved perceptions of spiders compared to those who only completed the modules.

A close-up of a graph

AI-generated content may be incorrect.

**Figure 3. Shifts in science communication confidence from pre- to post-training surveys.** (A) We compared the pre- and post-training survey responses for each statement with response values 1 (left) to 5 (right) in the science communication confidence theme using a paired t-test: \*\*\* *P* < 0.001, \*\* *P* < 0.01, \* *P* < 0.05, NS *P* > 0.05. The point and error bars are the mean and 95% CI. The middle number and the number to the right are the post-training mean and *N*, respectively. (B) We summed pre- and post-training responses separately (reversing the response option values for opposing statements) and subtracted the two composite scores to compare the shift in science communication confidence between those who did and did not participate in *Eight-Legged Encounters* (ELE) using an unpaired t-test. The jittered grey points and the orange points and error bars represented the raw data and the mean/SEM, respectively. Participants experienced significant positive shifts in their science communication confidence that were stronger for ELE participants than those who only completed the modules.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Composite Theme** | **ELE Participation** | | | **Gender** | | | **Previous Experience** | | |
| a*t* | *df* | b*P* | a*t/W* | *df* | b*P* | a*t* | *df* | b*P* |
| **Pre-Training Survey Composite Scores** | | | | | | | | | |
| Spider Interest | 2.986 | 30.0 | 0.006 \*\* | 0.448 | 25.5 | 0.658 |  |  |  |
| Spider Phobia | 0.311 | 38.8 | 0.757 | a505 |  | 0.020 \* |  |  |  |
| Intent to Engage | 2.639 | 41.3 | 0.012 \* | 0.724 | 27.9 | 0.475 | 1.255 | 65.5 | 0.214 |
| Attainment Value | 2.203 | 30.8 | 0.035 \* | 1.000 | 38.3 | 0.324 | 0.072 | 57.2 | 0.943 |
| Cost Belief Value | 3.033 | 30.7 | 0.005 \*\* | 0.026 | 25.8 | 0.980 | 0.865 | 64.0 | 0.390 |
| Sci Comm Confidence | 0.914 | 57.6 | 0.364 | 0.147 | 30.5 | 0.884 | 0.536 | 63.4 | 0.594 |
| Comm Confidence | 1.058 | 47.8 | 0.296 | 0.233 | 27.8 | 0.818 | 1.018 | 63.1 | 0.313 |  |
| Science Identity | 2.208 | 29.8 | 0.035 \* | 0.619 | 40.2 | 0.539 | 1.784 | 60.3 | 0.079 |
| Echo Chambers | 0.981 | 29.3 | 0.335 | 0.849 | 34.2 | 0.402 | 0.935 | 65.8 | 0.354 |
| **Shift in Composite Score from Pre- to Post-Training Survey** | | | | | | | | | |
| Spider Interest | 1.503 | 32.5 | 0.143 | 0.277 | 25.1 | 0.784 |  |  |  |
| Spider Phobia | 0.930 | 48.4 | 0.357 | 0.127 | 17.2 | 0.900 |  |  |  |
| Intent to Engage | 0.709 | 27.0 | 0.485 | 2.140 | 23.9 | 0.043 \* | 0.378 | 64.9 | 0.707 |
| Attainment Value | 0.851 | 32.9 | 0.401 | 0.406 | 25.8 | 0.688 | 0.693 | 55.3 | 0.491 |
| Cost Belief Value | 0.192 | 22.4 | 0.850 | 1.509 | 31.1 | 0.141 | 0.594 | 59.3 | 0.554 |
| Sci Comm Confidence | 2.533 | 44.1 | 0.015 \* | 0.873 | 34.2 | 0.389 | 0.677 | 58.0 | 0.501 |
| Comm Confidence | 0.609 | 50.5 | 0.545 | 1.567 | 21.7 | 0.132 | 0.919 | 65.8 | 0.361 |
| Science Identity | 1.760 | 31.4 | 0.088 | 1.311 | 22.0 | 0.203 | 0.324 | 63.9 | 0.747 |
| Echo Chambers | 0.558 | 32.1 | 0.581 | 0.348 | 33.6 | 0.730 | 1.429 | 63.3 | 0.158 |

**Table 1. Statistical results comparing the pre-training and pre-to-post change in composite scores for each theme between Eight-Legged Encounter participation, gender (female vs male), and previous science** **communication experience.**

*a Where non-normal tests produced different results between unpaired t-test and Mann-Whitney U-tests, we reported the Mann-Whitney U-test results.*

*b Asterisks indicate the level of significance: \*\*\* P < 0.001, \*\* P < 0.01, \* P < 0.05.*