

Is the key to sparking climate action a game?

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Research published by *PLOS ONE* found that 81 percent of participants in the World Climate Simulation, a role-playing game of the UN climate talks, showed increased motivation to combat climate change, even among Americans who are free market proponents, a belief strongly linked to denial of human-caused climate change in the United States.

Prof. Juliette Rooney-Varga of the UMass Lowell Climate Change Initiative led the research into how the game affected participants' beliefs, emotional responses, and intent to take action on [climate](#) change. The study examined how World Climate affected more than 2,000 participants from eight countries and four continents, ranging from middle school students to CEOs. Across this diverse population, and regardless of political orientation, cultural identity, age, or gender, participation in World Climate was associated with increased understanding of climate change science, a greater sense of urgency and hope, and increased motivation to learn and do more about climate change. The more people learned through the game, the more their sense of urgency increased. As Rooney-Varga explains, "it was this increased sense of urgency, not knowledge, that was key to sparking motivation to act."

The researchers also found that the game reaches people outside the traditional climate change "choir," including free-market proponents and people who knew and cared little about climate change before participating. In fact, these people experienced greater gains in knowledge, urgency, and motivation to act. This finding is particularly exciting given the failure of many prior climate change communication efforts to reach across the political spectrum and to engage people who are not concerned about the issue. The study relied on statistical analysis of surveys that participants completed before and after experiencing World Climate.

The World Climate game is "an engaging, social experience grounded in the best available climate science," comments Rooney-Varga. Participants take on the roles of national delegates to the UN [climate change negotiations](#) and are charged with creating a global agreement that successfully mitigates climate change. As in the real negotiations, each delegation offers policies for their greenhouse gas emissions. The developed nations pledge contributions to the Green Climate Fund to

help developing nations cut their emissions and adapt to change; the developing nations specify how much they need to do so. Their decisions are then entered into the climate policy computer model, C-ROADS, which has been used to support the real negotiations, giving participants immediate feedback on the expected climate impacts of their decisions. First round results usually fall short, showing everyone the likely harm to their prosperity, health and welfare. Participants then negotiate again, using C-ROADS to explore the consequences of more ambitious emission cuts.

World Climate is designed for ease of use. As of July 2018, more than 43,000 people in 78 countries around the world have participated in it. The simulation has been reviewed by independent educators and scientists, found to support national science education standards in the US, and designated as an official resource for schools in France, Germany, and South Korea.

Co-author, Prof. John Sterman of MIT Sloan School of Management, notes that "research shows that showing people research doesn't work. World Climate works because it enables people to express their own views, explore their own proposals and thus learn for themselves what the likely impacts will be."

Dr. Rooney-Varga of UMass Lowell adds, "For most of human history experience has been our best teacher, enabling us to understand the world around us while stimulating emotions—fear, anger, worry, hope—that drive us to act. The big question for climate change communication is: how can we build the knowledge and emotions that drive informed action without real-life experience which, in the case of [climate change](#), will only come too late? The answer appears to be simulated experience."

Co-authors Eduardo Fracassi and Florian Kapmeier have used World

Climate extensively across South America and Europe. Fracassi has seen World Climate inspire "life-changing insights," with many participants "embracing projects that reduced greenhouse gas emissions in the real world and taking steps to protect people from future climate risks." Kapmeier shared the simulation with the Germany Ministry of Education, which designated World Climate as an official resource for German high schools. As Kapmeier explains, the German government "realized that education is a key means to move [climate policy](#) forward" and "appreciates that the C-ROADS climate model in World Climate is used by actual policymakers."

Co-author Andrew Jones of Climate Interactive sees relevance for climate communication more generally: "Our findings may be useful to anyone who is engaging others on climate action. It suggests three key ingredients: information grounded in solid science, an experience that helps people feel for themselves, on their own terms, and social interaction arising from conversation with their peers."

More information: J. N. Rooney-Varga et al, Combining role-play with interactive simulation to motivate informed climate action: Evidence from the World Climate simulation, *PLOS ONE* (2018). [DOI: 10.1371/journal.pone.0202877](https://doi.org/10.1371/journal.pone.0202877)

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