

AUDIO SCRIPT

[M1: Male Interviewer; F1: Female Interviewee]

M1: Citizen science, or crowd-sourced science, is scientific research conducted by nonprofessional scientists, people like you and me. Today we have Kerry McNichol, associate director at the Citizen Science Coalition. Kerry, welcome to Science Hour.

F1: Thank you, Calvin.

M1: Are there very many scientific breakthroughs as a result of citizen science?

F1: Absolutely. Citizen science involves everyday people—just like you—who volunteer to help scientists with their research. This is not as novel an idea as you might assume. In fact, it is something that has persisted for a very long time.

M1: How so?

F1: As early as the 17th century, networks of citizen scientists were collaborating, working together, to accumulate information for professional scientists. For example, a Norwegian bishop assembled a large number of priests, all from rather distant areas, to send him observations and data. This increased the parameter of his research tremendously. There were many such scientists and researchers who enlisted citizen scientists. The Swedish naturalist Linnaeus, well known for his classification system, obtained much of his information and countless samples and specimens from amateur researchers. In truth, citizen science was appreciated and encouraged more in centuries past. Now it's become popular again.

M1: I'll say. It's all the rage!

F1: I suppose. The point is, citizen scientists are nothing new, and their value will only continue to grow. There are some pretty exciting things happening thanks to citizen scientists. For instance, a team of persistent gamers have produced an answer to an enzyme riddle that experts haven't been able to figure out for more than a decade.

M1: Yes! I have that in my notes. These videogame players solved a puzzle that could hold the key to finding a cure for AIDS. That's incredible. Tell us about it.

F1: The gamers used a collaborative online game called Foldit, which is a bit like Tetris. As I'm sure you know, Tetris has you fitting tiles together; likewise, Foldit encourages players to fold a protein into detailed shapes. For over ten years, a team of scientists from around the world has been trying to figure out the precise molecular structure of a type of protein, an enzyme from a virus, similar to HIV,

Inside Listening and Speaking 3

Unit 4 Assessment

INSIDE LISTENING AND SPEAKING 3

which causes AIDS, found in monkeys. These enzymes play a key role in the spread of the virus. Researchers have been trying to figure out their structure.

M1: I see. So, if they can figure out the structure, they can design drugs to stop the virus.

F1: That's the hypothesis. Scientists know which pieces make up a particular protein, but they cannot always figure out how those parts fit together. Since proteins act like locks and keys, the structure is crucial. This is where the gamers come in.

M1: Is this why the game ... What's it called?

F1: Foldit.

M1: Right. This is why they designed Foldit to be played like Tetris, with locking pieces, to simulate the enzyme?

F1: Exactly. You see, people have spatial reasoning skills.

M1: Spatial reasoning skills?

F1: Yes. Spatial reasoning skills, meaning the ability to understand the relation of space between objects. This is something computers still aren't good at. Computers can simulate a lot of human-like qualities, but not this one. One day, for sure, but not yet... Anyway, Foldit, and other games, provide a place where people's strengths and computers' strengths can come together.

M1: So, how was the structure of the enzyme discovered or solved?

F1: The game is collaborative, so all the many, many people who played the game contributed to the answer. But the final move was made by a single player.

M1: A single player? Wow. That's astounding.

F1: It's really boosted support for citizen science and the Citizen Science Coalition.

M1: And that's good news for you.

F1: You bet. Likewise, we hope an increased awareness of the scientific process will increase support for scientists.

M1: I can't imagine it won't. What's the future of citizen science?

F1: I think it's really promising, not only for the significant contributions of citizen scientists, and how they could lead to valuable new insights; I think that this renewed interest in science, on a public level, could engage the public more in research projects, as well as improve scientific literacy, for the general public and in schools. We have some great citizen science projects available to schools and parents on our website that reinforce these ideas.

M1: We'll make that site available as a link on our homepage. Kerry McNichol, thank you so much for being here with us.

F1: Thanks for having me.