



2014 AWARD Fellow
Mojisola Esther Ojebode

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Position	Chemical Laboratory Analyst
Institution	Ar-Rahman International School, Nigeria
Country	Nigeria
BSc	Applied Biochemistry, Federal University of Technology, Akure, 2012
Mentor	Adegoke Emmanuel Adegbite, Head, Biological Science Department, Ondo State University of Science and Technology
Research Area	Use of metabolomics to analyze and develop crop-protection agents safe for consumers and the environment, while combatting pest resistance, thus increasing crop yields.

Mojisola Esther Ojebode is the firstborn in a family of three girls whose parents were supportive of higher education. An inquisitive child, she remembers wondering how food expiry dates are determined. “I have always loved anything to do with science, and I studied it in the hope that it would enable me to combat environmental issues in my community, such as the pest problem on farms.”

Ojebode’s area of research is metabolomics, the scientific study of chemical processes involving metabolites, which are extracted from plants. “Metabolomics entails using a robust approach to discover what pesticides are doing, and to ensure that they work on the pest and not on the humans applying them,” she explains. “In other words, they need to be bioselective.”

The process involves taking a model plant that has already been sequenced through genetic coding. Next, they take compounds whose bioactivities are already known. “We apply these to the model plant, to get their metabolic ‘fingerprints’ via gas chromatography instrumentation,” says Ojebode. “This will show us the effect that the applied compounds have on the plant. We do that on several plants using several compounds so we have a large range to examine.”

Ojebode has conducted such tests on lemongrass and dongoyaro (*Azadirachta indica*), a medicinal plant that people sow around their houses to deter insects. She now has enough information to contribute to the databases of scientific bodies, such as the International Metabolomics Society. “My intention is to figure out the exact properties of these plants and extract them for direct use.”

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AWARD is a career-development program that equips top women agricultural scientists across sub-Saharan Africa to accelerate agricultural gains by strengthening their research and leadership skills through tailored fellowships. AWARD is a catalyst for innovations with high potential to contribute to the prosperity and well-being of African smallholder farmers, most of whom are women.

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Ojebode has applied for a master’s degree in Industrial and Nutritional Biochemistry at the University of Ibadan, and hopes to begin soon. “I intend to tackle problems facing the agrochemical industry, such as crop-protection agents that are not bioselective,” she says. “They want to deal with this by using chemicals, but I want to influence them to use natural products derived from plants that have protective properties. You need to be selective—rather than spraying ‘willy-nilly’—in order to protect the crops and those who consume them.”

Ojebode wants to design a technology specifically for smallholder farmers, most of whom are women, which will enable them to treat their crops using natural methods. She plans to organize a career fair to teach the women how to use these products. “This is where metabolomics comes in—you can measure using instrumentation.”

Concerned that fewer people are now engaged in agriculture, Ojebode wants to be a role model, especially for young women. When she sees that people are applying what she has taught them and are earning money as a result, she is more than satisfied. “I feel like I’m touching lives and not just existing for myself.”

Ojebode is delighted to be an AWARD Fellow and is sure it will strengthen her resolve to progress in her profession. She looks forward to working with her mentor and expects to increase her confidence as she reaches a wider audience with her research. “I believe that being an AWARD Fellow will help my institution, as well. I will share the knowledge I gain, and I hope to organize seminars and symposiums for staff and students to encourage them to take up their responsibility regarding the environment. Thanks to AWARD, they will have a better me.”