

Greenworks: Science, Role-Playing, and Community Transformation

Lev Horodyskyj^{1,2,3}, Halikuddin Umasangaji⁴, Lily Ishak⁴, Roberto Greco⁵, Tara Lennon⁶

¹Science Voices, ²Blue Marble Space Institute of Science, ³University of the Virgin Islands, ⁴Universitas Khairun, ⁵Universidade Estadual de Campinas, ⁶Arizona State University

levh@sciencevoices.org | Tara.Lennon@asu.edu | www.sciencevoices.org/greenworks

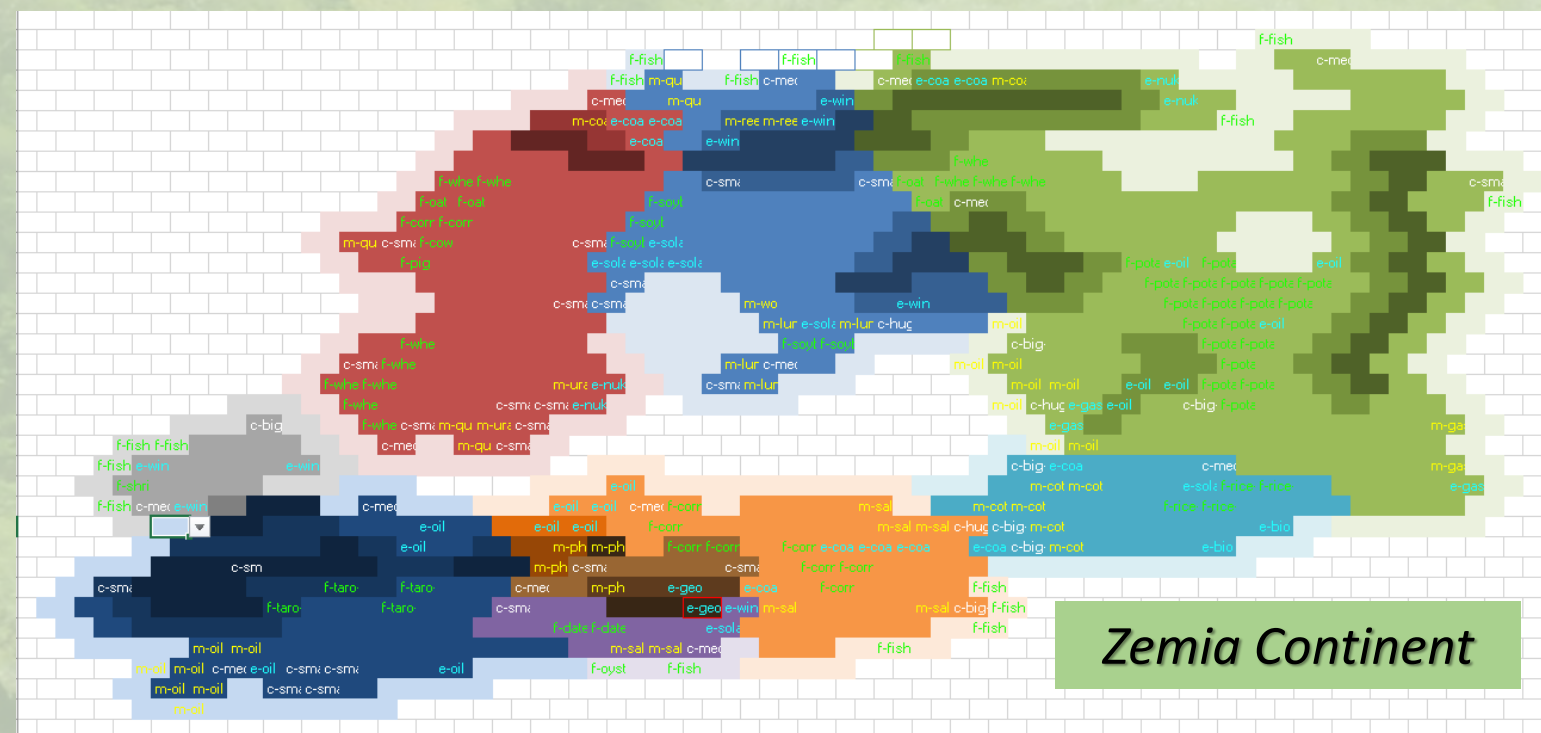


About Greenworks

Greenworks is a Global North-South partnership program where university students take part in a five week curriculum focused on governance, environmental science, and diplomacy.

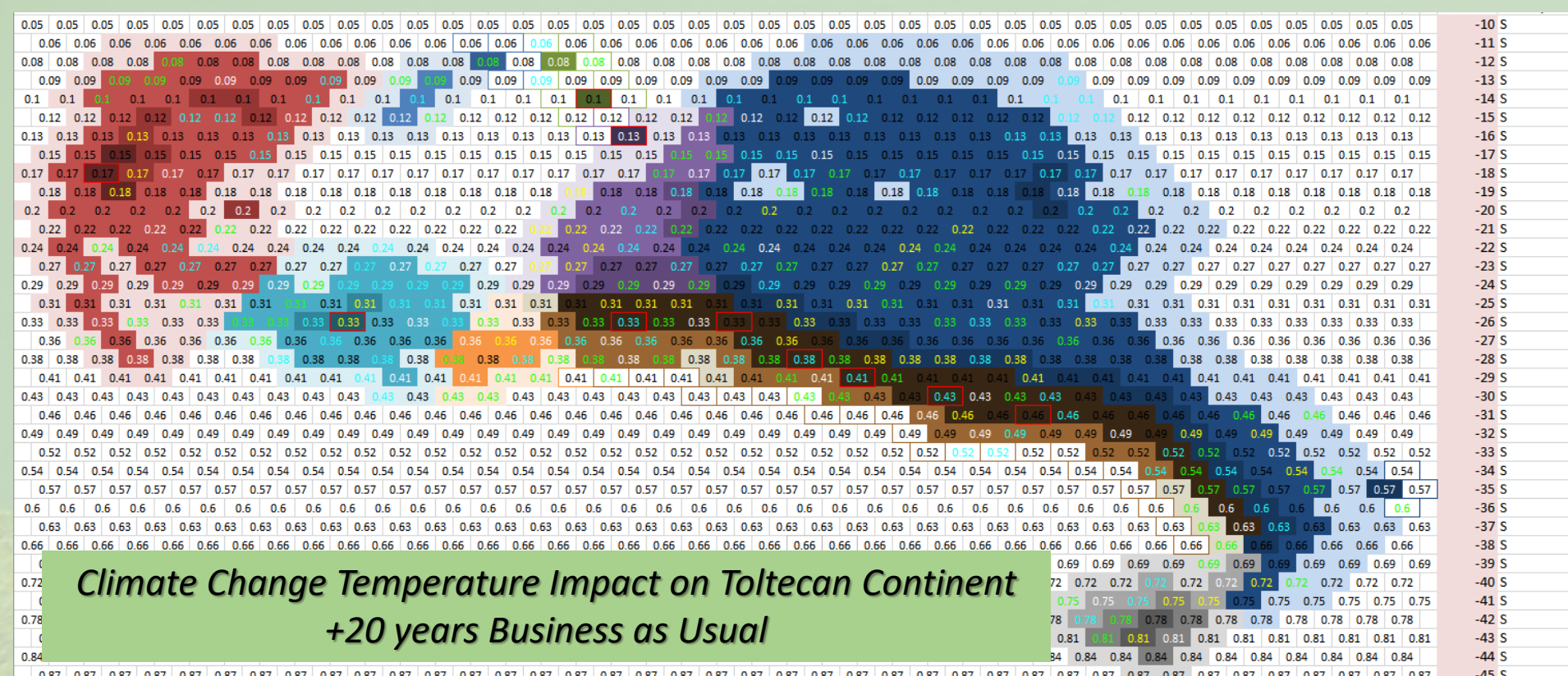
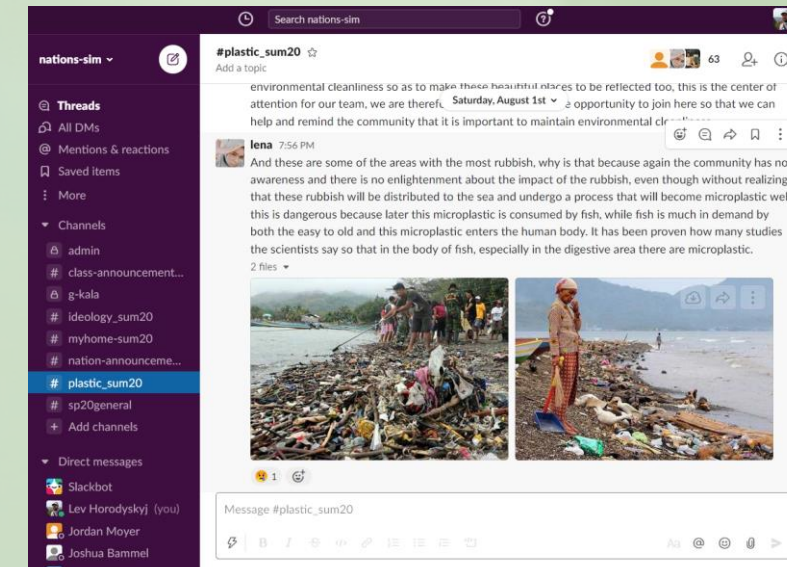
Students participate as part of courses or independent study at their university. Science Voices facilitates collaborations and provides tools for running the game world and its scenarios.

Environmental Diplomacy Game



Students **play in teams**, each role-playing as a different fictional country. Countries have different governance systems, ideologies, and resources, allowing students to explore constraints on decisions.

Slack acts as the central communication channel for the experience with **private country channels** and **public negotiation channels**. Students negotiate on Slack and private channels, then post diplomatic agreements on Google Sites for gamemaster review.



Control spreadsheets with simple scientific models allow the gamemasters to determine country resource distribution, budgets, and impacts of various events.

Spring 2021 Events

Week 1

Game Intro
Meet-and-Greet

Week 2

Country Exploration
Trade Relations

Week 3

Climate Change
(result: failure to
mitigate emissions)

Week 4

Plastic Pollution
(result: global pact
to mitigate plastics)

Week 5

Deforestation
(result: food
security prioritized)

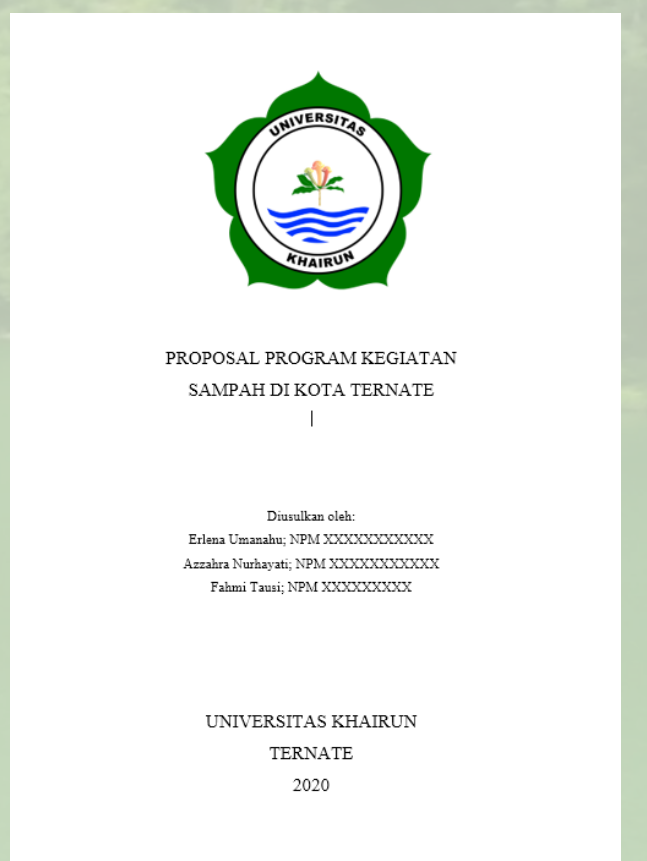
Student Projects

Non-US students who complete the five week environmental diplomacy game and associated curriculum are able to propose a community project to address an important local environmental issue.

Science Voices helps students develop their proposal so that it is sustainable and impactful. When funding is available, Science Voices funds student projects and monitors impacts.



Summer 2020 Cohort Students (Erlena, Kurniawan, and Azzahra) with their upcycled trashcans for installation in local schools, along with a waste management curriculum



Summary

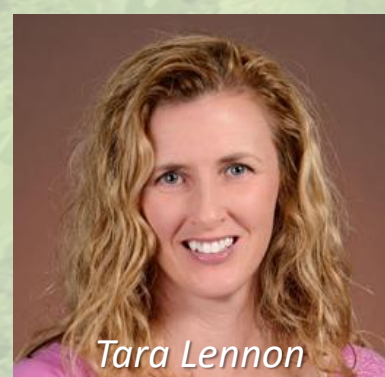
The Spring 2021 Cohort included 48 US students in a political science course, 10 Indonesian students in independent study, and 6 Brazilian students in a geography course. Students negotiated to establish trade relations between countries, attempt to mitigate climate change, deal with plastic pollution, and tackle deforestation.

US and Brazilian students were very engaged. Indonesian students had more difficulty engaging due to language barrier and unfamiliarity with active learning classrooms. Indonesian students who successfully completed the curriculum will build on the upcycled trashcan project, with composting and plastic reuse projects.

Goals for the next games (July 2021) include formalizing collaborations between universities, training Indonesian students in active learning, developing an interactive online version of game world, and securing funding for Brazilian student projects.



Lev Horodyskyj



Tara Lennon

USA
Science Voices
Arizona State University

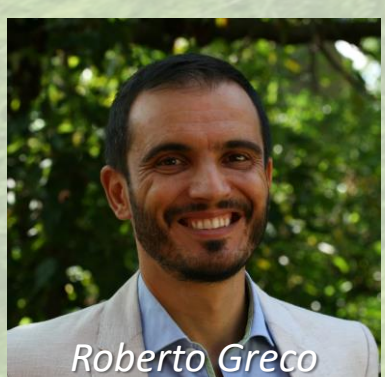


Lily Ishak



Halikuddin Umasangaji

Indonesia
Khairun University



Roberto Greco

Brazil
Universidade Estadual
de Campinas