

How to Change the World by Myself

Kota Honjo (NIT (KOSEN), Kure College)

Today, I would like to share my thoughts on how we can change the world by ourselves. Throughout my life, I've been supported by many people. Perhaps due to having many experiences or gaining inspiration by the opinions of others, I have always had a lingering desire to do something that benefits others.

Over the past two years, I have been actively engaged in two research themes. One is a social research project on community disaster preparedness, and the other is engineering research related to carbon fixation. Both are fields experiencing a growing demand for sustainable societal development.

The social research project on disaster preparedness aimed to address how to establish a disaster preparedness system in areas at high risk of various disasters such as landslides, floods, and tsunamis. Through discussions with local residents, it became apparent that emergency medical services were not functioning correctly in steep slope areas during disasters. This issue was resolved by sharing 3D terrain data and information of road conditions with local authorities.

What was particularly fascinating during this project was that collaborating with people from various social backgrounds led to the emergence of ideas I hadn't initially considered.

I had a similar experience recently during a research internship at the National Institute for Materials Science (NIMS) in Tsukuba. I was working on analyzing and promoting metabolisms through the electrical properties of microorganisms, diverging from the field of metabolic engineering that I usually study. The vibrant discussions with Ph.D. students and researchers from around the world were held weekly, where we constantly sought new solutions, referencing their papers and opinions.

Although carbon fixation research has been controversial for over 5 years with production efficiency issues, I could go over a big wall by using the electrochemical method, enabling more detail of metabolic reactions, and highly improving the cell's energy acquisition rate. I believe that interdisciplinary knowledge played a crucial role in driving that progress because through working across diverse fields, I was able to view organisms from a more macroscopic perspective.

What I want to convey today, based on my experiences and thoughts, is that taking a step toward changing society ONLY begins with collaboration with others. While my research may have started as small challenges, involving many people turned them into social activities with the potential to change society. In a society where people with diverse backgrounds can confidently voice their opinions, more innovative ideas emerge, and fascinating projects become possible.

So, how can we change the world by ourselves?

My answer is that cooperating and sharing are the means to change the world. To transform society, fostering interdisciplinary environments is essential.