

Human Practices

How your work affects the world and the world affects your work



How to make your project responsible and good for the world ?



iGEM Human Practices Program

Start from a few questions

Synthetic biology is one of the most powerful technologies to shape the world



Start from a few questions

- What kind of future do you want to create?
- What kind of challenges do you want to solve?
- Do other people want that future as well?
- How can you make sure your project could really make some impacts on the world?
- How would you know your project will be accepted by your targeted customers?



AUG 26

iGEM & the Sustainable Development Goals

Human Practices

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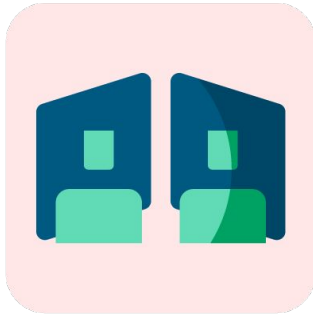
**Why we need Human Practices?
What is Human Practices?**

What is Human Practices?

"Human Practices is the study of how your work affects the world, and how the world affects your work."

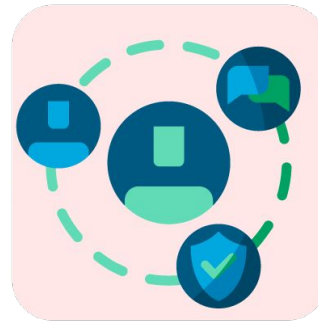
— Peter Carr, Director of Judging
... but that can mean a lot of things

Through **Human Practices**, you consider whether your project is responsible and good for the world. **How?**



BE REFLECTIVE

Think about what values and needs you are prioritizing, and where you are compromising.



BE RESPONSIBLE

Communicate honestly and consider how your project could impact the world, for better or worse.



BE RESPONSIVE

Listen to and learn from stakeholders and others you engage with.

Human Practices is a lot of things...

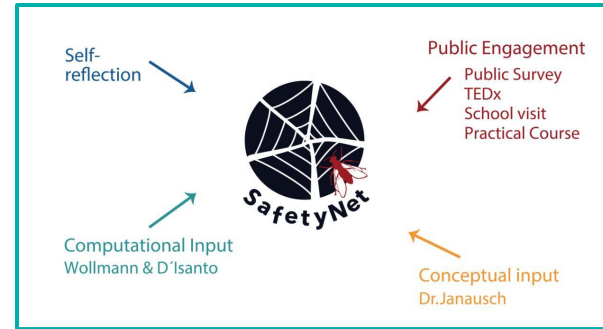
Because the point is to be **responsible synthetic biologists** and examine whether our projects are going to be **good for the world**, not to do any specific activity.



What is Human Practices?



Researching policies and practices



Designing and/or documenting new frameworks and tools



Enabling equal opportunity in scientific practice



Engaging with stakeholders, users, and other experts



Developing new philosophical and ethical insights

Education	Research groups	Bioartists
With a friendly-user software, Printeria is designed to be an educational tool	Printeria automatizes protocols, and enhances the experiments reproducibility.	Printeria offers a compact and friendly toolkit for the bioartist entire disposal

Assessing the impact and feasibility of potential products

Human Practices is not:

- Outreach / 1-way Science Communication
- Education
- Sales/marketing pitches
- Red Tape
- Regulation
- Lots of Diversity & Inclusion work that's not related to project topic
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Human Practices is not any specific activity or set of activities. While the most successful iGEM teams will engage with Human Practices issues throughout their project lifecycle, this engagement can take many shapes, reflecting the diverse contexts and intentions of iGEM projects.



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How can we do human practices?

**Think deeply and
creatively about your
projects!**

**Example 1.
Calgary Team 2019
(Best Integrated HP)**



Think deeply and creatively about your projects!

**Example 2.
Wageningen Team 2019
(Runner-up Best Overgrad
Project, Best Food &
Nutrition)**

iGEM 2022



XYLENCER

Silencing *Xylella fastidiosa*



ETHICAL CONSIDERATIONS



Responsibility

From the ethics lectures we learned that two mayor kinds of responsibility exist. Briefly, forward-looking responsibility concerns the duties one has, and backward-looking responsibility concerns the ways one is accountable. In this section, we will reflect on our duties and our accountability.

Types of Responsibility



Our responsibility

How to do Human Practices?

responsibility.igem.org/guidance/responsible-design

iGEM Competition Projects Community Technology Responsibility Startups Leagues Jamboree

Guidance

- Responsible Design
- White List
- Risk Groups
- Surveys & Interviews
- Informed Consent
- Working Safely
- Human Practices
- Safety Policies
- About R&R Program

Responsible Design

Human practices resources for responsible design

Resources on Ethics and Responsible Research

Research ethics and its regulations vary from country to country. Yet there are some basic principles, such as informed voluntary participation, confidentiality, anonymity and minimising harm, that could be regarded as universal.

- The [iGEMer's Guide to the Future](#) to the Future offers your team exercises and frameworks to get your Human Practices work started. The guide was developed during the Synenergine project and is based on the Responsible Research and Innovation (RRI) principles.
- While carrying out social research and outreach, [UNESCO's Code of Conduct for](#)

Resources on Conducting Public Engagement

Engaging with the public is a two-way process, involving interacting with people outside of your team or lab with a goal of generating mutual understanding and mutual benefit. This not only means letting the public know what you are doing, but also requires you to understand the relevant publics' needs and concerns, and to try to incorporate these into your research design. A two-way dialogue often requires you to stay in regular contact with relevant stakeholders throughout your project to acquire feedback and suggestions. Survey, interviews and focus groups can all be part of the public engagement process. You can also take more innovative approaches (e.g., art, social media, podcasts).


How to do Human Practices?

We provide some guidance on:

- Responsible Design
- Public Engagement
- Ethics and Responsible Research
- Safe and secure project design
- Surveys and Interviews
- Informed Consent



How to do Human Practices?



iGEM


iGEM Competition Projects Community Technology Responsibility Startups Leagues Jamboree

Responsibility

- Guidance
- Human Practices**
 - What?
 - Why?
 - How?**
 - HP Committee
- Safety Policies
- About R&R Program

How to do Human Practices

Tips from iGEM teams: How to do Human Practices?



"We developed our own approach involving as many stakeholders as possible. As a large nationwide team, we were able to address a macro problem at the national level. The experience motivated us to seek and use all the necessary resources and capabilities of the team to go beyond what was planned. For this same reason, we made contact with different communities close to urban places and also in a rural area, so that we can have a variety of opinions and validation of our project. We would have liked to have less bureaucracy with some institutions and much more support. However, these challenges showed us that we need to be prepared in this set of skills, achieve more experience, so that we can do much more and make sure we're always prepared to rise above and learn."

— 2021 Bolivia team (Best Integrated Human Practices)

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How can I get help/assistance from iGEM?

Resources for You

- **Website:**
<https://responsibility.igem.org/human-practices/what-is-human-practices>
- **FAQ:** <https://competition.igem.org/participation/faq>
- **Contact HP Committee:** If you have questions or suggestions email us at humanpractices@igem.org
- **HP Workshops:** we are going to hold several HP workshops for your regions

Poll Time

- ***What kinds of actions*** do you want to take for human practices this year? [Multiple Choice]
- What do you call human practices ***in your language***? [Open Response]
- ***In a few words***, how would you define “human practices”? [Open Response]



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Q&A