iGEM 2013 Basic Safety Form

Team name: University of British Columbia

Deadline: 30th of August 2013

Submission method: email form to the correct email list for your region:

safety_forms_asia@igem.org
safety_forms_europe@igem.org
safety_forms_north_america@igem.org
safety_forms_latin_america@igem.org

Students can complete this safety form, but it must be read and signed (electronic or hard copy) by your team's faculty advisor. Your advisor must verify the information contained in this form and sign it.

The iGEM Safety Committee must be able to easily reach the advisor with questions or other follow-up communication. If you have made changes to your project (new coding regions or organisms) you must re-submit your safety form before wiki freeze (date TBD).

Key points to remember as you complete the safety assessment process:

- For help in completing questions 1 and 2, you may find it useful to consult the Risk Groups section of the Safety Resources List [2013.igem.org/Safety].
- The iGEM Safety Committee will be reviewing your project. To avoid temporary suspensions, answer these questions completely and accurately.
- The Safety Committee needs to be able to communicate with your faculty advisor about any safety concerns. If we cannot reach your advisor in a reasonable amount of time, you may be subject to restrictions at the Jamboree.
- Your safety page, wiki project page and poster should be consistent with each other. If you change your project, submit an updated Basic Safety Page to the iGEM Safety Committee before the wiki freeze. (Your faculty advisor must also read and sign the updated page.)
- We understand that projects may still be changing at a late date. However, large discrepancies between what you submit on the Basic Safety Page and what you present at the Jamborees may result in restrictions at the Jamboree.

Basic Safety Questions for iGEM 2013

a. Please describe the chassis organism(s) you will be using for this project. If you will be using more than one chassis organism, provide information on each of them:

	Species	Strain no/name	Risk Group	Risk group source link	Disease risk to humans? If so, which disease?
Ex	*E. coli* (K 12)	NEB 10 Beta	1	www.absa.org/riskgroups/bacteriasearch.php?genus=&species=coli	Yes. May cause irritation to skin, eyes, and respiratory tract, may affect kidneys.
1	E. coli	E. cloni 10G	1	http://lucigen.com/store/E.-cloni-10G-and-10GF-Chemically-Competent-Cells	Yes. May cause irritation to skin, eye and respiratory tract, may affect kidneys.
2					
3					
4					
5					
6					
7					
8					

*For additional organisms, please include a spreadsheet in your submission.

2. Highest Risk Group Listed:

1 (●) Greater than 1 ( )

If you answered 1+, please also complete the iGEM Biosafety form part 2 for any organisms in this category.

3. List and describe *all* new or modified coding regions you will be using in your project. (If you use parts from the 2013 iGEM Distribution without modifying them, you do not need to list those parts.)

	Part number.	Where did you get the physical DNA for this part (which lab, synthesis company, etc)	What species does this part originally come from?	What is the Risk Group of the species?	What is the function of this part, in its parent species?
Ex	BBa_C0040	Synthesized, Blue Heron	Acinetobacter baumannii	2	Confers tetracycline resistance

1	BBa_K1129010	Synthesized, Integrated DNA Technoloigies	T4 Phage	1	35 bp segment of T4 genome
2	BBa_K1129011	Synthesized, Integrated DNA Technoloigies	T7 Phage	1	35 bp segment of T7 genome
3	BBa_K1129008	Synthesized, Integrated DNA Technoloigies	Streptococcus thermophilus	1	Involved in post-transcriptional processing of CRISPR
4	BBa_K1129009	Synthesized, Integrated DNA Technoloigies	Streptococcus thermophilus	1	Involved in posttranscriptional processing of CRISPR
5	BBa_K1129007	Synthesized, Integrated DNA Technoloigies	Combo - T4 and Streptococcus thermophilus	1	This sequence is not known to naturally exist in any organism.
6	BBa_K1129012	Synthesized, Integrated DNA Technoloigies	Combo - T7 and Streptococcus thermophilus	1	This sequence is not known to naturally exist in any organism.
7	BBa_K1129006	gDNA from Streptococcus thermophilus	Streptococcus thermophilus	1	Nuclease involved in the CRISPR dsDNA silencing
8	BBa_K1129000	gDNA from Rhodobacter sphaeroi	Rhodobacter sphaeroides	1	Conversion of tyrosine to p-coumaric acid

*For additional coding regions, please include a spreadsheet in your submission.

4. Do the biological materials used in your lab work pose any of the following risks? Please describe.

a. Risks to the safety and health of team members or others working in the lab?

No. Upon assessment, our engineered parts, source organisms and chassis present a very low risk to the safety

b. Risks to the safety and health of the general public, if released by design or by accident?

As explained in part (a), none of the organisms, parts or created compounds are pathogenic, infections or toxic at the safety levels we are working at. The team follows the local proper disposal procedures.

c. Risks to the environment, if released by design or by accident?

No. None of the parts, chassis or created compounds are pathogenic, infectious or toxic.

d. Risks to security through malicious misuse by individuals, groups, or countries?

It does not seem feasible to maliciously misuse our organisms or reagents since they do not pose a serious or immediate health or environmental threat.

5. If your project moved from a small-scale lab study to become widely used as a commercial/industrial product, what new risks might arise? (Consider the different categories of risks that are listed in parts a-d of the previous question.) Also, what risks might arise if the knowledge you generate or the methods you develop became widely available? (Note: This is meant to be a somewhat open-ended discussion question.)

Transitioning our project from bench-scale to a commercial food-grade product would require substantial regulatory approval. While we do not anticipate any new risks, all potential risks would be rigorously evaluated during regulatory approval.

6. Does your project include any design features to address safety risks? (For example: kill switches, auxotrophic chassis, etc.) Note that including such features is not mandatory to participate in iGEM, but many groups choose to include them.

No, we have not included any design features to address safety risks.

7. What safety training have you received (or plan to receive in the future)? Provide a brief description, and a link to your institution's safety training requirements, if available.

Each student on our team has gone through basic laboratory safety courses put on by UBC Risk Management Services (http://riskmanagement.ubc.ca/courses/intro-lab-safety). The basic laboratory safety course covered topics such as WHMIS, biohazards, hazardous chemicals and radioactive material

8. Under what biosafety provisions will / do you work?

a. Please provide a link to your institution biosafety guidelines.

http://www.ors.ubc.ca/contents/biohazard-policies

b. Does your institution have an Institutional Biosafety Committee, or an equivalent group? If yes, have you discussed your project with them? Describe any concerns they raised with your project, and any changes you made to your project plan based on their review.

UBC does have a Biosafety Committee. We have not directly consulted with them as we are only working in lab space with the appropriate biosafety designation using approved procedures under the supervision of a principal investigator that has been approved to do similar research.

c. Does your country have national biosafety regulations or guidelines? If so, please provide a link to these regulations or guidelines if possible.

The two responsible Canadian departments, The Public Health Agency of Canada and the Canadian Food Inspection Agency have collaborated to produce biosafety standards and guidelines http://canadianbiosafetystandards.collaboration.gc.ca/cbsg-nldcb/assets/pdf/cbsg-nldcb-eng.pdf

d. According to the WHO Biosafety Manual, what is the BioSafety Level rating of your lab? (Check the summary table on page 3, and the fuller description that starts on page 9.) If your lab does not fit neatly into category 1, 2, 3, or 4, please describe its safety features [see 2013.igem.org/Safety for help].

Our lab space in the Hallam laboratory in the Life Sciences Institute at UBC is classified as a category 2.

e. What is the Risk Group of your chassis organism(s), as you stated in question 1? If it does not match the BSL rating of your laboratory, please explain what additional safety measures you are taking.

Our chassis organism is classified as a Risk Group 1 organism.

Faculty Advisor Name:

Dr. Steven Hallam

Faculty Advisor Signature: