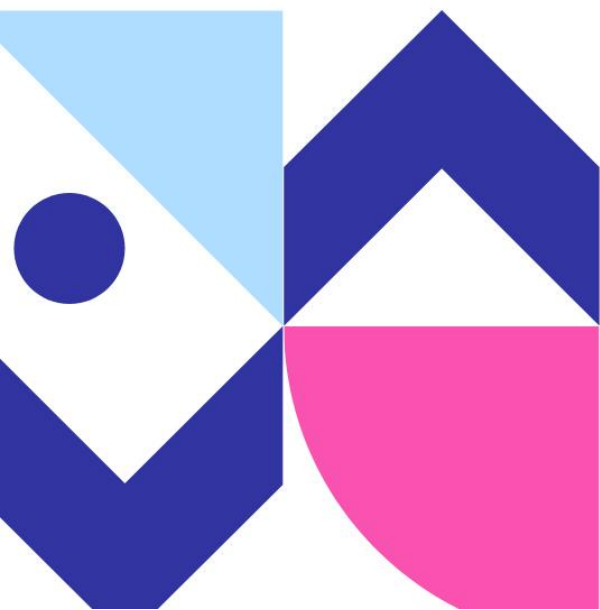


Ready to iGEM!

iGEM Team Handbook

Content

- 1 Starting at iGEM
- 2 Studying at iGEM
- 3 Working at iGEM



UESTC-China
The first edition

A.2021-UESTC-China Training Guide

I. Start at 2021-UESTC-China

- Introduction of UESTC-China projects over the years
- iGEMer Handbook: [📖 iGEMers' Life in UESTC-China](#) (iGEM handbook, must-see items)
- Address: 310 West, Main Building, Shahe Campus, University of Electronic Science and Technology of China
- Time: July 20, 2021-December 1, 2021
- Software:

Download and be familiar with the usage of the following software

- Feishu: Share collaborative editing notes, share files
- Impression notes: tasks, meeting minutes, experimental records storage (later gradually transferred to Feishu)
- QQ group:
 - Material purchasing group: each team member releases the information of the materials that need to be purchased and @the students who are responsible for purchasing the materials in the group, the responsible students will purchase the materials after receiving the information. After the subsequent materials arrive, the students who receive the materials are responsible for releasing the information that the materials have arrived in the group.
 - Art demand group: due to the large demand for art by each part, if there is a demand for art at ordinary times, it will be released in the group and received by art designers.
- Wechat group

II. Learning at 2021-UESTC-China

1. iGEM stuffs

Learn more about iGEM competition by browsing the official website

- Judging Book 2021 <https://2021.igem.org/Judging>
- Engineer Hub <https://2021.igem.org/Engineering>
- Video Hub <https://2021.igem.org/Videos>
- Human Practice Hub https://2021.igem.org/Human_Practices
- Safety Hub <https://2021.igem.org/Safety>

- Competiton Stuff <https://2021.igem.org/Competition>

2. Skills of an iGEMer

Learn the relevant knowledge and skills to lay a good foundation for the next game

- Wetlab: [Wetlab skill learning handbook](#)
- Model: [Modeling at UESTC-China](#)
- Hardware: [Hardware learning](#)
- Wiki: [Html](#)、[CCS/JS learning](#)
- Human Practice: [Human Practice Inspiration](#)
- Art designer: [Art design](#)

III. Working at 2021-UESTC-China

In the process of formal preparation for the competition, the required information and related precautions

3. Calendar <https://2021.igem.org/Calendar>

- Be sure to pay attention to the deadline of the Calendar regularly, and don't miss the joint nodes such as: Wiki freeze Time, Track freeze Time, etc.;
- In addition, when registering an iGEM account, fill in the mailbox to select the commonly used mailbox, and pay attention to browsing the mailbox sent by iGEM (most of which are important time nodes or notifications)
- Key Calendar and other information are organized in Impression Notes → Space → iGEM Experimental Team → 1. Two-year Master Plan

4. Registry

Team registry Example: 2019 team registration webpage <https://igem.org/Team.cgi>

- iGEM Team Registration Tutorial [iGEM Team Registration](#)
- iGEM Giant Jamboree Registration Tutorial [Giant jamboree registration](#)

5. Human Practice

- Operation of each platform [Media platform operation](#)
- [Human Practice Conclusion](#)

6. Wetlab

- [Rules specification](#) Laboratory specification part

- [📄 Laboratory item location record](#)
- **Laboratory safety:** [📄 Laboratory Safety Manual](#)
- **Wet lab Protocol:** Impression notes iGEM experiment records- > protocol
- **Wet lab documents:** Impression notes iGEM experiment records- > Each team's own record notebook

7. Modeling

- [📄 Modeling at UESTC-China](#)

8. Wiki

- Wiki from zero to pit [📄 Wiki from zero to pit](#)

B. iGEMers' Lives in UESTC-China

1. How to be a good iGEMer?

As an iGEMer, learn to enjoy improving yourself in all aspects of the process of doing projects, pay attention to learning, and enjoy collaboration

• **Three commandments**

- 1. Learn while doing: You may encounter many things that you don't know, don't choose to be busy or give up first, learning while doing will make great progress;
- 2. Pay attention to the process: enjoy the world outlook learned in the process, improve the ability to solve things independently, and friendship with teammates;
- 3. Help each other: Be considerate of your teammates, communicate patiently and solve problems;

• **Ten criteria**

- 1. Craft good questions
- 2. Asking for help
- 3. Respect and appreciate your lab mates
- 4. Don't just do your own thing
- 5. Sleep on it
- 6. If you need guidance from your mentor, set up a meeting
- 7. Learn when to be obsessive
- 8. Start with the task you are least excited about, and do it right away
- 9. Balance bouts of focused work with short breaks
- 10. Get organized

• **Yale University's mindset philosophy (seven suggestions for mindset)**

- 1. Be unconditionally confident, even when doing something wrong;
- 2. Don't think too much, clear negative thoughts regularly;
- 3. Learn to forget the pain and make room for sunshine memory;
- 4. Dare to try, not afraid of losing face;
- 5. Every day is new, and troubles and pains do not stay overnight;
- 6. Praise from the heart in the face of others' excellence;
- 7. The highest level of being a human being is not a low profile, nor a flamboyant, but a consistent and unassuming

2. Communication between Mentors, Senior iGEMers and Teammates

Basic principles: interviews, discussions and **meetings** among tutors, classmates and colleagues should have their own **structured thinking** (current situation, problems, their own ideas and needed help), make an appointment in advance and make **records**.

- Large **group meeting:** once a week, time, discuss the stage results and things that need teacher guidance. **Make PPTs and upload them to the large group; make meeting minutes (upload them to impression notes) especially the teacher's suggestions and guidelines, and** make adjustments.
 - Attachment: PPT template for group meeting: [☒ X year x month x day-large group meeting-keyword 1, keyword 2, keyword 3.pptx](#)
- **Group meeting:** once a week, time, discussion and discussion, sharing of views. Make **minutes of the meeting** (upload to impression notes), especially the matters to be implemented next, and actively implement them.
- **Casual Chat:** Discuss things you don't have ideas and thoughts about
- **QQ Group:**
 - Chatting Group (Kindergarten): Life Sharing
 - Working group (two years of happiness): if emergency: need answer within 24 hours
- **Tel: if emergency:** need answer within 1 hours

	Name	Phone	WeChat	QQ	Email
1	Hu Yuwei				
2	Zhou Ying				
3	Wu liyan				
4	Chen Xi				
5	Zhang Zhe				
6	Luo Songwen				
7	Peng Yujiao				
8	Wang Yuanyi				
9	Long Weihang				
10	Li Dubai				
11	Jiang Yuxuan				

12	Wang zirui				
13	Wang Shuheng				
14	Li jianyu				
15	Changsen				
16	Teacher Quan Ling				
17	Teacher Zhang Yong				
18	Miss Tang Lixia				
19	Teacher Zheng Xuelian				
20	Teacher Feng Juan				
21	Meng Qiugu				
22	Tang Xu				
23	Brother Qiu				

3. Laboratory specifications

1. How to integrate into the laboratory as soon as possible?

In your spare time, you should communicate more with your senior brothers and sisters and old team members, absorb the essence, and ask more questions (of course, many questions may be more convenient and efficient GOOGLE). To sum up, you should be proactive, diligent and good at asking questions. In addition, when you are reminded to pay attention to certain matters, you should modestly absorb them, respect each other, and record them.

2. How long do I need to ask for leave in advance if I can't come to the laboratory?

- If there is no sudden/special reason, please ask for leave 2 **days in advance** in a large group (iGEM experimental team) with a mentor, explain the duration and reason, and hand over

your work in advance;

- During the training period from **July 25** - the end of the game, every **30 days** each person can take **4 days** off, team members free allocation of time;
- If you only leave for a few hours, you don't need to ask for leave;
- The time to arrive at the laboratory in the morning is before **8:45** (late -20 yuan).

Leave time and event record

Record method:

1. Calculated according to half a day and 1/3 day
2. According to 8:45-21:45, 13 hours of working time per day, a total of 52 hours of leave can be calculated

	Name	July	August	September	October
1	Hu Yuwei	Home + with mother = 18 hours 34 hours left Friends visit for 5 hours 27 hours left Leave for half a day and 3 hours 24 hours left			
2	ZHOU, YING				
3	Wu liyan				
4	Chen, Xi	$1 + 1/2 = 13+6$			
5	Zhang, Zhe				
6	Luo Songwen	I need to go back in person to apply for a student origin grant loan, take two days off $1 + 1 = 13 + 13$			
7	Peng Yujiao	Home for a day			
8	Wang				

	Yuanyi				
9	Long Weihan				
10	Li Dubai				
11	Jiang Yuxuan	Parents come to visit, 1/2			
12	Wang zirui	Return to Qingshui River to participate in the teaching and research section group meeting 1 day, 13 hours			
13	Wang Shuhen g	Go to the hospital for a review, 1 day, 13 hours Go back to Clearwater River and ask for a day off			
14	Li jianyu	Go back to Qingshui River and ask for two days off			
15	Chang, Sam				

3. How to buy experimental supplies?

(1) Purchase

- **Obvious experimental supplies with an amount less than 1000 yuan:**
 - Students are required to explain the name, purpose, dosage, and the best website in the material purchasing group;
 - Wu Liyan will order from the school material purchasing website or contact the company.
- **Obvious experimental supplies with an amount greater than 1000 yuan:**
 - Students are required to explain the name, purpose, dosage, and the best website in the material purchasing group;
 - Wu Liyan is responsible for contacting teachers in large groups, and after approval, order from the school material purchasing website or contact the company
- **Not obvious experimental supplies but required for experiments:**
 - Students are required to explain the name, purpose and amount in the material purchasing group;

- Hu Yuwei confirms whether there is internal fund purchase or conditional negotiation to obtain funds;
- Students who need to purchase advance payment in Taobao and [JD.com](https://www.jd.com) by themselves, keep payment vouchers, and make advance payment records (Impression Notes iGEM Experimental Team- > A1.4 Material Purchase- > Advance Payment Records);
- Pay attention to invoicing.
- **What should I do if I need general taxpayer information when purchasing scientific research-related supplies?**

The invoice information of our school is as follows:



- University of Electronic Science and Technology of China
- Taxpayer Identification Number: *****
- Address and telephone number: Shahe Campus, University of Electronic Science and Technology of China, Jianshe Road, Chenghua District, Chengdu City, Sichuan Province, China
- Opening bank and account number: China Construction Bank Chengdu Xinhong Sub-branch, CCB card account number issued by its own school

(2) Sign for

consignee, arrival time: recorded in the impression note - > A1.4 material purchase - > material purchase list - > consignee, arrival time

Receipt: Generally, it arrives with the goods and is placed in the folder in the carton under the work desk. It is **recorded** in the impression note- > A1.4 Material Purchase- > Material Purchase- > **Fill in the** arrival form.

Invoice: General express delivery arrives and is signed by Jiang Yuxuan. If it arrives with the goods, **place** it in the folder in the carton under the work desk and notify Jiang Yuxuan. **Record** it in Impression Notes - > A1.4 Material Purchase - > Material Purchase List - > Invoice.

After the arrival of the goods, the consignee will send a group announcement notice in the material purchasing group, and place it well and make a good location record 📄
Laboratory item location record

(3) Reimbursement

Jiang Yuxuan will receive the invoice for reimbursement, and record it in the impression notes after completion - > A1.4 material purchase - > material purchase list - > whether reimbursement has been made

Grou p 2	Li Dubai, Hu Yuwei, Luo Songwen								
Grou p 3	Wang Zirui, Chen Xi, Peng Yujiao								
Grou p 4	Wang Shuheng, Jiang Yuxuan, Wang Yuanyi								
Grou p 1	Li Jianyu, Zhou Ying, Long Weihan								
Grou p 2	Li Dubai, Hu Yuwei, Luo Songwen								
Grou p 3	Wang Zirui, Chen Xi, Peng Yujiao								
Grou p 4	Wang Shuheng, Jiang Yuxuan, Wang Yuanyi								

Remarks:

- Tick the corresponding item after completion
- If you ask for leave, negotiate and adjust yourself, and make a note to change personnel

4. Network issues

6. Shahe Lab Online

For more questions, please visit the Information Center of the University of Electronic Science and Technology of China: <https://www.info.uestc.edu.cn/cjwt2/shxqyxwl.htm>

(1) Open an account (only support members of Xinsoft College or students in Shahe Campus)

- The user himself holds a valid certificate (ID card) to open an account at the West 201 Information Center on the 2nd floor of Xinruanlou, Shahe Campus.

(2) Account recharge

- On-site recharge: 201 Information Center, West, 2nd Floor, Xinruanlou, Shahe Campus, only accepts cash recharge.
- Online recharge: <http://self.uestc.edu.cn>.

(3) Operator account binding (only users who have not opened the operator exit with the education network skip this step)

- Autonomous binding: <http://self.uestc.edu.cn>
- Binding help: http://rz.uestc.edu.cn/files/user_guide.doc

(4) Certification online

- Authentication page: <http://rz.uestc.edu.cn>
- Enter the student ID and password to authenticate

(5) Set the router to routing mode

The routing mode is to authenticate the router as a terminal. Multiple users accessing the router only need one user to authenticate successfully, and other users can directly surf the Internet. In this way, multiple users accessing the router share the same account, share network bandwidth, and the network speed cannot be guaranteed, and all school accounts have been authenticated with their real names. If any network security incidents occur, the shared account must be responsible, so please be sure to abide by the relevant national network security regulations.

- **Currently:**
 - **310 Lab WiFi is iGEM-CHINA, password is iGEM310013**
 - The account password is provided by Chang Sen
 - You can also connect UESTC-WiFi

7. Shahe Hostel

8. Scientific Internet Tutorial

(1) Browser to open the website: <https://zc18.xyz/>

(2) Registered account

(3) Login account

(4) Find downloads and tutorials in the left navigation bar, and download the corresponding software on demand (SSR and V2ray are sometimes available, sometimes only one of the software is available, so it is recommended to download both) [Do not select the copy subscription link for the time being]

(5) After the download is completed, select the store and purchase the corresponding package (if the wallet amount is insufficient, enter my wallet to recharge the corresponding amount first)

(6) Return to download and tutorial, import subscription link

(7) Select the appropriate site, browse the google test, if you still can not access the network to replace the site, if all sites are invalid to replace a software. The problem still cannot be solved You can find the customer service contact channel in the lower right corner of the website.

5. Life and finance

9. What kind of exercise do you usually use?

- In the morning, you can go to the lake or playground outside the east gate of Shahe for a morning run;
- You can play badminton on Sunday.
- There is a basketball in the cabinet under the sink in the laboratory far from the door;

10. Shahe living expenses

- There are many choices of eating, drinking and having fun near Shahe (Jianshe Lane, Fly House outside the East Gate, South Gate Left Turn Impression City, etc.), so pay attention to saving money;
- Be careful not to eat too much unhygienic food.

11. Dormitory life

- Dormitories are generally located in the international student apartment of Building 4 of Xinyuan, where men and women live together (different rooms on the same floor);
- Separate bathroom, dormitory with refrigerator, dormitory each floor has a common washing machine and a common kitchen;
- Pay attention to cleaning and cleaning in the dormitory;
- Pay attention to safety (avoid traveling alone at night);
- If you have something to go out and can't go home, tell the team members (to avoid no trace when accidents happen).

C.1 Wetlab skill learning handbook

一、 Tips for Literature Search

1. Using Pubmed

- (1) Register for an NCBI account
- (2) Create a search rules, for example:

```
(("Nature"[Jour] OR "Science"[Jour] OR "Nature biotechnology"[Journal] OR "Nature Methods"[Jour] OR "Nature Medicine"[Journal] OR "Cell Systems"[Jour] OR "Nature COMMUNICATIONS"[Jour] ) AND (RNA[Title] OR cancer[Title] OR biomarker[Title] )) OR ("Genome Research"[Jour] OR "Genome Biology"[Jour]) AND (RNA[Title] OR cancer[Title] OR biomarker[Title] ))
```

- (3) Search in Pubmed Search box and click 'Creat alert' button to creat search notifications.

2. Using Scopus

- (1) Register for an Scopus account
- (2) User Center—My Scopus—Alerts to creat search notifications.

3. Google Scholar Searching Tips

<http://www.educatorstechnology.com/2013/04/9-tips-every-teacher-should-know-about.html>

http://www.otago.ac.nz/library/pdf/Google_Scholar_Tips.pdf

4. How to quickly discover new important documents

- Go to important magazine websites regularly to see what new articles are published online
 - Tools:
 - medrxiv.org/
 - Boor l' ve.org/
 - Researcher (researcher-app.com/feed)

二、 Tips for Literature Reading

5. Classified storage

- One category: closely related to one's own topic

- Category 2: The topic is not relevant, but the design and method are very good, and it is worth learning from
- Three categories: articles that are not very relevant to their own topics, but are very cutting-edge

6. The first thing: judge the quality of the article

- For a class of articles: such articles should be read intensively in any case, but they need to have a dialectical thinking, because the conclusions of some articles may not be repeated, and the details of some experimental conditions may not be clearly marked, so when they are applied to their own topics, they need to repeat other people's conclusions, not just use them (including things done with senior sisters and brothers in the laboratory)
- For the second category of articles: generally need to see the industry's top to help

7. How to find literature:

- When the project was just beginning: using Google Academic to build a folder system to print out all the important documents and focus on breaking through this "new concept"
- Look for references: when reading some articles that are very important in related fields, the application documents listed in it can sometimes even be no less than one
- When the research is very groundbreaking: there is not much literature to refer to at this time, so you can consider analogizing some related articles. For example, if a gene that your mentor asked you to study has few reports on its function, you can look for its function with other proteins in the family, analyze the domain of these proteins, and find conservative functions. To be more precise, you need to conduct a functional screening test, and then look for the literature on the basis of a general understanding of the function.

8. Literature reading process

- The first step is to screen the paper
 - Look at the title and keywords
 - Read abstracts and conclusions to determine the value of the article to yourself
 - Read the abstract: Understand the main research methods and research results
 - Reading results: If the conclusion part is highly relevant to your topic, then this article can continue reading, otherwise time and efficiency need to be considered
- The second step is to read the article
 - First browse the chart and annotations: first scan the chart and its title and annotations, and have a preliminary judgment on the data content of the article (you can also check whether your interpretation of the chart is consistent with the content of the article you will read later)

- Back to the introduction to understand the research background and research reasons
- The third step, intensive reading of literature
 - Intensive reading results and conclusions
 - The experimental part needs to be pondered and studied over and over again
 - How to conduct experiments
 - How to get initial data
 - Perform data analysis
 - Interpretation of data content
- Step 4, take notes
 - Use document management system
 - Endnote
 - Mendeley
 - Research Xiaobai: Summarize each paragraph in the experiment, results, and discussion chapters in one sentence in English to form reading notes
 - Scientific research talents:
 - New experimental method
 - Different experimental conditions from other studies
 - New ideas when reading
- Can refer to (critical reading)

5.Science | 形态学正常的人体尿路上皮细胞的克隆扩增

笔记本: 乱七八糟科研阅读

创建时间: 2021/6/12 18:23

更新时间: 2021/6/20 15:41

作者: 周颖

URL: about:srcdoc

一、背景知识

1.为什么要研究正常组织中体细胞突变积累的过程和突变克隆的扩张以及演化?

一些关键基因的突变, 可能导致携带突变的体细胞获得生长和竞争上面的优势, 从而造成体细胞突变克隆的形成和扩张, 最终导致疾病和衰老过程。癌症的发生就是体细胞在内外源因素的作用下逐渐积累突变并发生克隆扩张, 最终导致癌症的产生。研究**正常组织中体细胞的突变积累过程, 以及突变克隆的扩张及演化, 对于更好地理解癌症的早期发生发展具有重要的意义。**

key point: ①正常组织 (癌症早期发生发展) ②突变积累过程 (帮助早期诊断)

2.为什么选择尿路上皮组织作为研究对象?

尿路上皮组织更新速度很快, 且在受损的情况下会迅速再生, 且尿路上皮持续的暴露于一些潜在的致癌代谢产物和环境因素之中, 因此突变累积产生的风险很大; 而且2017年徐涛和白凡课题组在一个病例的组织形态学正常的尿路上皮中检测到了大量的体细胞突变。**尿路上皮肿瘤病例也有许多。**

3.为什么关注和肿瘤发生相关基因与衰老有关基因?

- 以往的研究表明正常细胞中与衰老相关的内源性突变过程的关键作用, 突变率与年龄呈正相关;
- 要判断怎么样的突变会导致癌症;

3. Management literature notes

- a. It is recommended to use impression notes or other note-taking software to record the documents you read, and name them according to a certain level catalog for easy search;
- b. Manage the notebook/space of the document, which needs to be named and numbered to facilitate searching;
- c. If you want to learn how to manage and record notebooks in detail, you can refer to the book *Bullet Notes* <https://www.zhihu.com/question/58521083>

4. Experimental design

9. Know details about the experiment that you are going to do

Before doing the experiment, we should carefully think about and check the principle of the experiment, so that when designing the experiment, we can consider which false positives and false negatives will appear, and then we can further design a good experiment.

10. Positive and Negative Control ! ! ! ! ! Very important

The result is completely wrong if it doesn't have control. When designing the experiment, you must carefully consider what the principle is and what the positive control and negative control are!! Otherwise, the experimental results you get cannot count.

Without treatment group experiments, effective experimental results cannot be obtained. A good treatment group (Control) can not only improve the efficiency of experimental exploration, but also help to find the cause of experimental failure. The most basic Control includes positive control (Positive control) and negative control (Negative control). The former can not only exclude the differences of individual experimenters, but also exclude the differences of experimental environment; the latter can evaluate the possibility and influence of false positives.

Therefore, no matter what the Control result is, it makes each of our experiments "progressive" in the knowledge structure, which can improve the success rate and efficiency of the next experiment.

Author: Sauerkraut

Link: <https://zhuatlan.zhihu.com/p/342535734>

Source: Zhihu

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11. Considering the result

When designing the experiment, we should take into account the aesthetics of the final experimental results that should be presented. For example, the PCR marker and the protein ladder of the sds can be designed on both sides of the glue at the beginning of the design, or on both sides of the middle point, so that there is no marker when making the result diagram later.

5. Record of experiments

Recommended reading:

- ① Experimental records of graduate students: <https://www.zhihu.com/question/59130980/answer/1565999206>
- ② [How to write experimental records: How do all predecessors write experimental records? - Zhihu](#)
- ③ Why do you need to remember the details:

12. Don't think the experimental records are useless

As the saying goes, a good memory is not as good as a bad pen. People's memory is limited, so after the experiment is over, you must make a good record of the experiment in time. Because the experimental record is not only a true and objective record of the experimental steps, reagents and data, but also a legal document that can ensure that your intellectual property rights are not violated, and it is also the "scientific research wealth" you leave to the laboratory, perhaps your academic influence starts to expand from this experimental record. Therefore, the experimental data should be analyzed and sorted out in a timely manner. If you can't do it on the same day, at least every week.

A small detail in an experiment is often the key to the success of the experiment. If there is no detailed record of the details, once the experiment goes wrong, it is difficult to find the cause. For example, if the reagent is easy to fail in the experiment, be sure to indicate the reagent name, configuration time, reagent expiration date, configurator and other necessary information. Keep the experiment record clean and tidy. If it is too scribbled, it will be difficult to find relevant information when you need to find it.

13. The completion of the experimental record can be before the experiment

Before the experiment, you can sort out all the steps to be done. When you really do the experiment, you just need to mark the modified parts and the corresponding experimental results on this organized document. This has two benefits:

(1) It is not easy to be confused and add wrong reagents when doing experiments, because the detailed experimental steps have been sorted out, and I have an impression after thinking in

my mind. At the same time, it is not easy to remember wrong things when looking at words, so I just need to go step by step.

(2) The arrangement of experimental records is fast and not very rough. After the experiment is completed, it is very convenient to record the results and modify the operation. It does not take a long time to force yourself to calm down and arrange the experimental records.

14. Experimental Record Template

	A	B	C
1	实验记录本		
2	实验总标题 Experimental Title		
3	起始日期 Start Date		
4	实验总目的 Experimental Goal		
5	实验设计和流程 Experimental Design		
6			
7	实验日期 Date: 实验人员 People:	实验小标题 Experiment	
8		实验目的 Goal	
9		实验准备 Preparation	
10		实验流程 Procedure	
11		实验结果 Result	
12			
13	实验日期 Date:	实验小标题 Experiment	
14		实验日期 Date	
15		实验人员 People	
		实验目的	

16	实验人员 People:	实验目的 Goal	
17		实验准备 Preparation	
18		实验流程 Procedure	
19		实验结果 Result	

6. Experimental Operations Training

Before entering the iGEM laboratory, the following experiments in an iGEM synthetic biology training are the first experiments you need to learn. You can follow this training guide to start the initial experimental training.

2019 iGEM 和合成生物学实训

12月15日实验 蛋白质含量测定、质粒 DNA 的小量制备	2
实验一、蛋白含量测定	2
实验二、热击感受态菌的制备	4
实验三、质粒 DNA 的小量制备	5
12月28日 重组 DNA CD072 的构建	6
实验一 PCR 及琼脂糖凝胶电泳	6
实验二 DNA 的限制性内切酶酶切	8
实验三 DNA 片段的回收	10
实验四 目的基因片段与载体连接 (T4 连接)	12
实验五 细菌转化	14
12月29日 菌落 PCR 与 SDS-PAGE	16
实验一 转化克隆的筛选和鉴定	16

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7. Scientific mapping

<https://www.163.com/dy/article/GM66TKTT0552G221.html>

1. SCI picture drawing requirements

Periodicals generally have requirements for picture size, format, color mode, resolution, color matching, line segments, fonts, and font size. Take CELL as an example. CELL journals

stipulate the size of pictures. The width of single-column pictures is 85 mm, the 1.5-column is 114 mm, and the double-column is 174 mm. The font uses Helvetica or Arial. The stroke thickness cannot be finer than 0.5 pt. The picture format likes TIFF or PDF format. Resolution: color pictures ≥ 300 dpi, black and white pictures ≥ 500 dpi, line pictures ≥ 1000 dpi. Color mode is RGB. The picture comes from cell The picture comes from cell

2. Picture size specification

Single column drawing: that is, the layout is divided into two columns, and the picture occupies one column. When drawing, it is recommended that everyone set the width to **80 mm**, and the height is appropriate.

Chu C, et al. Nature. 2019 Oct.

1.5 Column: The layout is divided into two columns, the picture occupies 1.5 columns, and the width is recommended to be set to **110 mm**.

Zhang N, et al. Cell. 2020 Sep.

Two columns: The layout is divided into two columns, the picture occupies 2 columns, and the width is recommended to be set to **170 mm**.

Chu C, et al. Nature. 2019 Oct.

3. Picture format

The format is mainly divided into two categories: **bitmap and vector** map. Bitmap is shown on the left of the following figure, composed of small pixel dots, magnified and visible like a mosaic of small pixel dots. Vector map is shown on the right of the following figure, composed of paths and anchor points, arbitrary zoom in and out without the same clarity. **Common bitmap formats are .tiff, .jpg, .png, .psd, and are commonly used in scientific research drawing for photos, such as immunohistochemistry and other pictures taken by microscopes or cameras. Common formats for vector diagrams are .ai, .pdf, .eps, .emf, which are commonly used for statistical charts and pattern diagrams.**

4. Resolution

The resolution setting is related to the image type. For example, the resolution of color pictures is ≥ 300 dpi, **black and white pictures are ≥ 600 dpi, and line pictures are ≥ 1000 dpi**. In drawing software such as AI, PS, graphpad, etc., when creating and exporting pictures, there will be prompts for resolution settings, and the corresponding settings will be good. When submitting articles here at resolution, we often encounter a problem. The editor said that the resolution of the picture is too low and asked to improve the resolution before uploading. The treatment of this problem will be explained in detail in our next class.

5. Color mode

Color modes are mainly divided into **RGB and CMYK**. There is no need to delve into the principles of these color modes. You just need to remember that **RGB is suitable for online**

reading, while CMYK is suitable for paper reading, and CMYK's color expressiveness is weak, which is difficult to convert to RGB, but RGB can be converted to CMYK. According to this principle, we recommend submitting articles in **RGB format, unless the journal says to use CMYK**, such as science, but most magazines still require RGB. Because RGB mode is highly expressive in color, it is suitable for editors and reviewers to read online. If the magazine requires CMYK format at the publishing stage, and then convert, PS and AI can easily convert RGB to CMYK.

6. Line thickness

It is recommended that the lines should not be smaller than 0.25 pt, nor too thick, more than 1.5 pt, too thin or too thick will affect the beauty.

7. Font and size

On fonts, the **Apple system recommends using helvetica and the windows system recommends using arial**, both of which are pre-installed fonts of the system. The font size is recommended not to be less than 5 pt, otherwise it is too small to recognize the text.

C.2 Modeling at UESTC-China

The most important thing:

To be a modeler working on an iGEM team, you don't need to have a deep mathematical background or strong computer knowledge. What you need most is a spirit of exploration and fear of suffering.

Basic Skills

Before you get into the team, you need to have some basic knowledge of math and computers so that you can get down to business with ease.

1. You should have basic programming skills, such as C/C++, Python, etc.
2. You should have a theoretical foundation in data structures and databases.
3. You should know some basic modeling ideas, such as optimization problems.
4. You should be patient enough to tackle an area that you have never touched before.

Improvement

What we've mentioned above are the basic skills you should master before you get on the team, and you'll learn more as you get on the team.

5. It is very important that you find areas that are suitable for modeling.
6. You need to learn to search literature efficiently.
7. You need to pay attention to the rigor of academic papers and some academic drawings.

C.3 Hardware learning

Basic competencies:

Electronic design technology (digital circuit, analog circuit, single-chip microcomputer writing, embedded development, etc.); CAD technology

Detailed required technology

Human interaction:

GUI design; APP development

Measurement:

Sensor technology; Digital to analog conversion technology; Digital signal processing technology; Filter design; Amplifier design;

Control:

Motor control; PWM control; mechanical principle; power supply design

Packaging:

3D modeling technology

Other:

Artificial intelligence model use, etc

Ability to possess

Diligent in learning, ask and learn if you don't understand

C.4 Human Practice Guidance

1. Understanding of HP

First of all, HP is very different from the way we work with other team members in the laboratory, especially the nature and content of his work, which leads him to face objects that may seek more help from the outside world. And this is not quite the same as the work of our classmates in the laboratory to carry out some projects within their own team, to carry out some is experiments ah, or mathematical modeling, this more scientific field of things.

The other is. The particularity of HP is also reflected in its role as a highlight of the whole of our competition, or a core competition point, its outburst is reflected in saying that it should be a more able to bring some external and external energy to the team, the team, and then bring some more novel views, bring some more solid reality, based on the reality of some help of such a content.

Therefore, it is necessary to make a better human practice activity, or to be a better human practice worker's responsibility and responsibility. In fact, it is still a test of a person's career and his planning.

2. Skills and abilities required to make outstanding HP

As for saying that mentioned HP need to have what kind of ability and skills ah, we first talk about the ability? Ability first, so let's do this, I I divide the ability and skills into a soft, a hard, soft is in, in that brain should be that you can do it out.

(1) Global understanding

So let's start by saying that the soft is the ability. I think the first one is to have a more **global understanding**, because a good HP like I said, should be more integrated into the world, no a good project should be more integrated into the world, in order to bring his vitality to the project in various fields. So, a good HP should do is to have a global understanding and mastery of each field, to be able to understand from the beginning of the project a we do this project, he should be to what kind of field, play what kind of work and effectiveness.

Even including saying, you need to have a very clear understanding of what kind of people you should come into contact with, what kind of resources you should use, how to interact with him, and what kind of output you can get in this field. Then, when you finally summarize and summarize these contents, you should consider how integral and coherent your contents are, and how you should design your expressions for him, so that the contents you express are more acceptable to the public and easier to interpret.

Ah, this is the first one to have a holistic understanding.

(2) Sensitivity to the world

The second thing I think is to be a good HP, and secondly, what needs to be considered is or called a better ability, which should be sensitive to the world, that is, HP, which is actually based on the work definition proposed by our official website, is actually a summation, is to lead our project to the outside world, get feedback, have an impact, right? So, in fact, HP needs to do more work is to consider what points of our project. It is possible to attract the outside world, what points of our project need outside help, and these things are often in our skilled experiments, or busy with digital modeling, busy with other parts of the scientific design of workers, they may have little time and energy to discover and touch these so-called blind spots. Then this time we need a good HP to constantly go to the inside to explore, to say that we in the end.

To keep exploring internally, saying that we have something that we need to be able to take out to do a communication, or need to do an iteration through external feedback. The second is that we have to explain what good things we can bring in from the outside, for example, ah, take our project as an example, I think it is necessary to work more with stakeholders, the specific example of this thing in our embodiment here, is that we actually went to find a ah, handicraft handmade paper art talent. Ah, called Granny Hua, and then some linkage with him, and then including that we choreographed a drama, and then ah, its effect is also by showing our IBM philosophy, and the philosophy of our project, and then later attracted more young, younger audience groups, more involved in our entire event design, so that it can have a greater impact, and then help more people understand our environmental cause, and our this. The significance of the project, and I think this means that we must be very sensitive. We must find some unique ways and do some unique activities for some unique groups. Only in this way can we say that we can give full play to what other projects and other teams cannot do in our project from many unique angles. This is the second point, called sensitivity.

(3) Logic

The third point, the third ability, should be must be logical, this logic may be different from the first one I talked about that to have a holistic understanding of that concept point of view, the holistic understanding should be a network structure, that is, you have to keep exploring, say ah, I I have to go to plan well, there are a few points I should go to touch to have logic, this should be you have to go to the various nodes on this network, to do a series, because in fact our expression structure, many times he is a serial. The creative expression structure can both be both on the one hand is very able to say that there is a very very default expression order to understand and accept, but on the other hand is possible that our content has levels, there are different dimensions, that is difficult to show. So a good app must have the ability to say that there is a logic of such a, and then be able to go to this network even. Even such a structure

with a higher dimension than the mesh is connected in series through a logic, and then it is turned into a serial output, and then finally it can be said that a HP with a better effect is the third point, which is called logic.

(4) Independence

The fourth point, I think ah, is the fourth point ability should be called to learn to be independent a little, because many traditional concepts, we think is HP ah, it is actually a project to appendage, although it is a core, but he is more to examine our team's internal opinions, and then go to the corresponding outside world to help, or have an impact on the outside world. But I think a do fine, excellence, to do a certain degree of HP must. Learn to be independent, is when everyone has produced an opinion, maybe he is actually a team of blind obedience, and even said that each of his opinions, his own directivity is different, this time it is difficult for you to get a better, better a path, the team to give you a point out a more clear path, this time may need HP to do some more independent operations, because HP has HP's career, everyone has their own career, HP since it did.

(5) Storytelling ability

I think a very important skill is to learn to tell stories, why do you say that? It's you, you can't even coax your own team of people, then you can't coax the world. In fact, we know what the world is built on, built on trust. Storytelling itself is a very good way to build trust. There is a better idea in our brief history of human beings, that is, more than 150 organizations of more than 150 people, an important thing that sustains it, in fact. The first human society produced religion, religion is through storytelling, constantly attract people to join the story, indulge in the story, and then finally form a very unique human society produced a kind of fetter. So I think our HP itself is the object that we want me to face, the object of our service is our team, but I face the team, the object is the whole world, how do you let the whole world accept you, accommodate you, even say to appreciate you, I think.

- I think the point of storytelling is that you have to first be able to appreciate what kind of mental state the person listening to the story is, for example, you talk to some investors, you think you talk to him about the project, in fact, you talk about money, he does not care what your project does, he does not even he, he does not even care about you you, you are you do environmental protection or do, you are cooking crime, you are doing gray production, he does not care, he only cares that he can be very stable in a posture, get a lot of returns from you, of course, he also bears the corresponding risks. So to tell a story, you have to first design a story according to the expectations of others for you, which is very important.
- The second point is that you must learn to immerse yourself in the story, is a good story, should be her narrator to have a little bit. How do you say? A little perfectionist you, if you do not go to the details, do not go to the emotions, do not go to the time of some rationality, you are not good at telling a story, so you will find a lot of, not to say genius, is a lot of those who have some strong history of certain paranoia. They themselves have achieved very

good results, in fact, is because they are not in themselves can not be bypassed for some places, they themselves will not do a bypassing operation. Of course, a little bit of listening to the gentleman's words, such as listening to the feeling of a speech, but in fact it is but, but in fact, in many ordinary people think that ah, this place is muddled through. Often he will decide whether the matter will be observed by those who want to hear the insight, and then finally to accept as a key factor. So the control of certain details is how to say that the story is determined, not the control of details, but whether you are meticulous enough, paranoid enough, perfect enough. Doctrine is a very basic consideration of your ability to tell a story.

- The third is that you have to make your story attractive to yourself. You can't say something that is, that is, very grandiose words. Then that word can really arouse some better ones. How do you want to resonate or change into beautiful fantasies? However, if you don't believe it yourself, you will feel more and more powerless and you will be more and more unable to weave the story for it, so that he will easily go bankrupt in the end.
- I think it needs to be added that I think storytelling is actually one of many ways of expression, one of many ways of expression, that is, you can't limit yourself to one of them. If you are good at storytelling, I suggest that it is best to touch more different scenes and try to say whether there are other possibilities under the non-lecturer storytelling method. It is through this exercise that you can say that you understand the different scenes and their characteristics before you can tell a better story, I think so.

(6) Expression ability

Ah, I think one ah, the second second very important skill is your expressive skills, or expressive ability, right, why do you say that? Because in fact you you carry out a process of continuous communication and feedback, the most test is not your what what layout, your what design, but that when you establish contact with people, the first step you have to do, the first step is to express yourself well, right? So when we say for example, we talk to a scientist about our work project. We definitely have to talk to a third grader in a scientific way, but we can't talk to a third grader in a scientific way, but we need to talk in a childlike way. Then if we talk to a market industry person, we have to have a concept of market industry, through our own planning of the market and industry of our project to talk to him, but you can not extend this to the policy, those who make it, they may not be. The role of oral expression, not only is not only what you have to sum up what kind of people to use what kind of language, what kind of speech, more importantly, but also to test your own one, such as bold and cautious, these characteristics, is that in many very embarrassing times, you are I will enter a completely unfamiliar field, to have a high-level communication and communication with complete strangers, then at this time you must say to observe others. Yes, do you have any needs, or how can others say to you, be lenient with you, or be sincere with you? You should constantly shape him through your expression and your language ability. Talking with you is a better thing and a

more meaningful thing. Only through such expression can we say, convey our own things, and also make others more willing to convey their things to us.

(7) Aesthetic ability

I think there is also quite an important skill, although he is a skill, he is to see it is based on a certain ability, this ability is called aesthetic, her related skills should be you should have photography skills, you should have arranging skills, you should have the skills of making movies, should have a variety of flat design skills, a variety of art design skills, a variety of music skills, these skills can be very well organized, your your project material ah, present a comparison. More have emotional tension of the work, for example, when you need to say that you want to express some social depth issues, social sensitive issues, then you may be through your aesthetic, naturally speaking, I have to pass some comparison than into, through a more grand and narrow composition, and then through a black and white way to show your material, so that you can say more more more with that. The feeling of reality conflict, then one more, one more example, if you want to express something is warm, maybe you will be more partial, more partial to warm colors, and then you will be more through the characters of their facial expressions, their smiles to present ah, the overall atmosphere should be so how, then through such subconscious, and then to manipulate your those skills, or I just said those painting, those graphic design, those photography skills, and then finally can help your work can be in the affinity, how to say? It is to go to the next level.

D.1 iGEM Team Registration

iGEM Team Registration

- ① Team member registration account
- ② Use Mr. Tang's account to register the team:

Teacher Tang's account registration team information is as follows:



Synthetic Biology
based on standard parts

Apply for a New iGEM 2021 Team

Team Principal Investigator (PI)

This application must be filled out by the PI (principal investigator) for the team. The primary PI accepts responsibility for the team at their institution. iGEM may contact the PI regarding team registration, team safety, judging, or other issues.

This role cannot be filled by a student on behalf of the PI. If you are not the PI, please cancel this application and have the PI start over.

Please verify your contact information below.

Name:	Lixia Tang
User Name:	201009
School:	School of Life Science and Technology of UESTC
Country:	CHINA
Email:	l.x.tang@163.com
Phone:	+86-18080644729

If this information is incorrect, please go to your [User Information](#) page to correct it.

I confirm that I am the primary Principal Investigator for the team and agree to be actively involved with the team, responsible for the team's resources, the team roster, for certifying the safety and judging forms, and for payment of the team's fees. I agree to ensure the team is in compliance with all relevant international, regional, national and institutional laws, regulations and good practices throughout their work.

I have read, accept, and will meet the iGEM 2021 participation requirements. ([See requirements here.](#))

Team name UESTC-China

Team Name

Proposed Team Name:

The team name should be brief and descriptive. It is limited to a maximum of 20 characters. Your team name should indicate your city, state, country (or region). It should not include the words 'iGEM', 'Team', 'University', 'High School', 'Synthetic', 'Biology', 'Year', or '2021'. It must not include the names of your sponsors. If you must have one of these words in your team name, contact iGEM Headquarters.

The wiki may convert underscore to space when displaying your team name. This is unimportant.

See the [Team Name](#) page for details.

Team Kind

Select which kind of team you are registering:

Collegiate High School Commercial Community Lab

Most of the teams in iGEM are associated with a university. Those are our collegiate teams. Some teams are affiliated with a High School (although they may partner with a university). Those are the High School teams. They have additional requirements for registration, such as consent forms and permission from the school's Principal.

Commercial teams are teams run by companies, including companies contracting to run teams for high schools, colleges, and universities, as well as companies recruiting individual members.

Other teams are not associated with a school, but are instead, an incorporated community organization. These Community Lab teams have to meet additional requirements in order to participate in iGEM 2021. These include providing information about lab access and safety training.

See the [Team Kinds](#) page for details.

Team Information

Schools:

Include city, state, country (area or economy), and web site, e.g.

Massachusetts Institute of Technology
Cambridge, MA, USA
web.mit.edu

If the team includes more than one school, please list them all.

Country*:

Region:

Please indicate which region your team comes from.

* The term "country" in normal commercial use may refer to a country, region, province, or other economic area.

Additional Requirements

Clicking the button below will take you to your new Team Information page on igem.org. To complete your team registration, you will need to provide additional information about your team, including shipping information and consent forms (required for high school teams and any team member under the age of 18 as of March 31, 2021). You will also need to pay the team registration fee. More information can be found on the next page.

[Submit Application](#)

③ During the registration process, the name may be used in previous years, so the temporary review is not passed, and HQ will be modified after payment

- be 20 or fewer characters (including letters, and underscore/hyphen)
- should indicate your school name(s) and city, state, country and/or region
- only contain letters A-Z, and a-z
- may contain numbers 0-9
- can contain underscore (_) or hyphen (-)
- **cannot** contain the year (i.e. "21", or "2021")
- **cannot** contain spaces
- **cannot** include the words iGEM, team, or synthetic biology
- **cannot** include the team's project name
- **cannot** include the name of your school mascot
- **cannot** include sponsor names

Note that your team name will need to be approved by iGEM HQ. Failure to follow these rules will delay your team approval.

We have formalized this requirement and show it in the team requirements section on your Team Information Page. Your team name will be easily approved if your team has participated in the past and you use the same team name. If you are a new team or if you are using a new team name, then iGEM HQ will manually approve your team name.

Why is your team name important? Your team name is the official name that you will use throughout the entire iGEM season. After the competition ends this name will be used as an historical record of your team. Your team name is your team identity.

For examples of team names, you can see the [2020 team list](#).

④ Payment

Cost

The team fee covers team participation in iGEM 2021 and associated materials and support.

Please Note: This does NOT include registration for the Giant Jamboree. The Giant Jamboree has a separate [registration fee](#).

Registration	Cost	Deadline	Details
Regular Registration	\$5,500 USD	April 30, 2021 at 23:59 EDT	Payment in full by credit card, check, or wire transfer of \$5,500 USD must be received by April 30, 2021.
Late Registration	\$6,000 USD	May 28, 2021 at 23:59 EDT	Payment in full by credit card, check, or wire transfer of \$6,000 USD must be received by May 28, 2021.

Terms

Payment of the \$5,500 USD regular team fee must be received by iGEM by April 30, 2021 at 23:59 EDT. Payment of the \$6,000 USD late team fee must be received by iGEM by May 28, 2021 at 23:59 EDT.

Payment Instructions

After registering your team with iGEM on the team registration page at [iGEM 2021 Registration](#), please see the table below for how to submit payment.

⚠ Important Note

You will need your **Team Code** (see image below for location of the Team Code on your Team Information page), found on the [Team Information page](#) in order to complete the payment.

Team Name:	Example	(Visit their wiki)	(Part Submissions)	(Judging Form)	(Resource Description)
Team Code:	293179				
Schools:	Boston, MA USA				
Kind:	Collegiate	Application Date: 2019-02-22			
Division:	iGEM	Acceptance Date: Not accepted yet			
Region:	North America				
Country:	United States				
Section:	Unspecified				

You need to pay your team registration fee before your team application will be accepted. Paying the team fee is part of the registration process and your team will not be accepted until the fee has been paid.

You need to pay your team registration fee before your team application will be accepted. Paying the team fee is part of the registration process and your team will not be accepted until the fee has been paid.

Payment Method	Details
Wire Transfer (Preferred Payment Method): Be sure to allow enough time (5-10 days) for the transfer to arrive by the payment deadline.	Please email <i>registration [AT] igem [DOT] org</i> to request an invoice. You need to include the official Team Name (from the Team List), your Team Code, and the billing address you need included on the invoice. Please also include the payment method you will be using (credit card, wire transfer, or check). Once you receive the invoice, you can view the wire transfer payment details on the Wire Transfer Payment page. Be sure to allow enough time (3-5 days) for the transfer to arrive by the payment deadline.
Check: In USD, made payable to iGEM Foundation, Inc.	Please email <i>registration [AT] igem [DOT] org</i> to request an invoice. You need to include the official Team Name (from the Team List), your Team Code, and the billing address you need included on the invoice. Please also include the payment method you will be using (credit card, wire transfer, or check). Print your invoice and mail with check payment to: iGEM Foundation, Inc. 45 Prospect Street Cambridge, MA 02139 USA
Credit Cards: MasterCard, Visa, Discover & AMEX	You may submit online credit card payments via the team payment form at https://www.igemregistration.org .

⑤ The PI list should be checked with Mr. Quan every year, and Mr. Quan is menter

⑥ There are five steps for payment:

1. Login from your account, fill in the information and team code

Team code: the code of the year

Team Name: UESTC-China

Team PI: Lixia Tang (or zhangyong)

Team PI Email: l.x.tang@163.com (ibid.)

Quantity: 1

2. Fill in a personal information

3. Add bank card number

4. Payment:

1, when the payment, do not hang VPN (information protection)

2. Send it to her when you fill in the card number. After the payment is successful, pay for the screenshot and the PDF printed on the payment webpage

3. In the process of payment, fill in all the information and check the address and email

5. Refund policy, please compare the current policy, remember to ask for invoices and report in time

⑦ Pull the team members into the team: the team leader shares the Team code number displayed on the Team page to the team members, and the team members apply to join the team

D.2 Giant jamboree registration

Giant jamboree registration

https://2021.igem.org/Giant_Jamboree/Register

2500刀for regular registration (including students, instructors, advisors, and other team members listed on the [team roster](#))

PAYMENT INSTRUCTIONS

Teams attending the Giant Jamboree must register online. **Registration is now open.**

The following payment methods will be accepted: credit card, check, and wire transfer. All registration fee payments must be received on or before the deadlines posted above to secure the prices associated with those deadlines.

Credit Card MasterCard, Visa, Discover & AMEX	<p>You may submit online credit card payments via the team payment form at the following registration site: https://www.igemregistration.org/igemcompetition</p> <p><i>If you encounter a credit card error, it is usually one of these two issues: 1) personal credit cards often reject international payments - please call the credit card company to inform them you will be making a payment to the US, or 2) institutional credit cards often have per-transaction limits - please contact us so we can set up a partial payment system for you.</i></p>
Check in USD, drawn on a US bank, made payable to iGEM Foundation	<p>Please send an email request to registration [AT] igem [DOT] org for an invoice, print your invoice and mail with check payment to:</p> <p>iGEM Foundation iGEM 2021/Your Team Name 45 Prospect Street Cambridge, MA 02139, USA</p> <p>It is recommended that you send your check payment via a traceable delivery method, such as UPS, Fedex, or DHL, to ensure successful delivery.</p>
Wire Transfer Please allow enough time for the transfer to arrive by the deadline (3-5 business days)	<p>Please send an email request to registration [AT] igem [DOT] org for an invoice, then login to your iGEM account to see the wire transfer information page for details on how to submit payment via wire transfer.</p> <p><i>Confirm that the bank account information is correct before proceeding with the wire transfer.</i></p>

Request invoice

INVOICES

To request an invoice for your team, please email your request to [registration \[AT\] igem \[DOT\] org](mailto:registration@igem.org) and provide the following information: Team Name, Team Code, Contact Name, Contact Email, and Billing Address. Please note we will process invoice requests during our normal operating hours, Monday-Friday 9:00-17:00 EDT. Invoice requests may take 2-3 business days.

INVOICES

To request an invoice for your team, please email your request to *registration [AT] igem [DOT] org* and provide the following information: Team Name, Team Code, Contact Name, Contact Email, and Billing Address. Please note we will process invoice requests during our normal operating hours, Monday-Friday 9:00-17:00 EDT. Invoice requests may take 2-3 business days.

- 1.

D.3 Laboratory item location record



Please return all reagents and articles to their original positions after use. Please place the newly purchased reagents reasonably with relevant personnel, or put them into transparent bags and stick the "not placed" label for temporary storage, which is convenient for induction personnel to identify and place them reasonably.

Test bench 1

Desktop

Shaker

Drawer

1-1

1-2

Hanger

1-3

Tissue culture bottle

1-4

Shelf

1-1

Plasmid extraction kit, gel recovery kit

1-2

Plasmid extraction kit, gel recovery kit

Under the table

Foam box

Test bench 2

Desktop

Drawer

2-1

2-2

Gun adjuster, instant centrifuge assembly

2-3

Tissue culture bottle

2-4

Protective clothing

Shelf

2-1

Medium conical bottle, liquid tank (small)

2-2

Alcohol lamp, glass test tube 50mlBD tube rack (orange)

Under the table

Ethanol machine

Test bench 3

Desktop

Deinking machine

Drawer

3-1

Creative art supplies: colored cardboard, carbon board, metal spray paint, balloons, colored pencils, gas cans, leaf specimens, crayons

3-2

Previous years igem album judging book

3-3

2L large conical bottle

3-4

Methanol

3-5

Iron frame table, plastic basin

Shelf

3-1

Large conical bottle

3-2

Medium conical bottle

Test bench 4

Desktop

Microwave oven, unsterilized tip

Drawer

4-1

Concave lens

4-2

Blood glass tube, recycled waste paper

4-3

96-Well plate

4-4

Shelf

4-1

Plasmid extraction kit, gel recovery kit

4-2

Plasmid extraction kit, gel recovery kit

Test bench 5

Desktop

Vortex mixer, pipette gun holder

Drawer

5-1

96-Well plate

5-2

Plate for centrifuge tube

5-3

N-butanol, acetone, acetonitrile, ethyl acetate, n-hexane triethylamine, isobutanol, isopropanol, xylene, chloroform, pyridine, phenol, n-butanol, diphenylamine dns ammonium ferric sulfate-nitric acid, dimethyl phthalate, dimethyl sulfoxide, ethylene glycol, ethyl acetate, aniline, unknown, perchloric acid

5-4

Shelf

5-1

5-2

Test bench 6

Desktop

Pipette gun rack, centrifuge, water bath pot

Drawer

6-1

Electric rotary cup, nickel column His-Trp affinity chromatography column Empty column tube, dialysis belt, liquid tank, desalination column (HiCap Desalting Smartdex G-25) 250 µl Insert with mandrel interior and polymer feet

6-2

Sealing membrane, rubber band

6-3

Cycloethane, ethyl acetate, glutaraldehyde, cobalt nitrate hexahydrate, methanol, glacial acetic acid, isopropanol, ethanol anhydrous, xylan YS phosphate

6-4

6-5

Basin, broom, brush, iron stand

Shelf

6-1

Electrorotating cup, affinity chromatography column, desalination column

6-2

Sealed membrane (for sterilization) rubber band

Test bench 7

Desktop

Shaker, sterilized gun head

Drawer

7-1

Plastic bag

7-2

Newspaper

7-3

Blue spear head

7-4

Blue spear head

Shelf

7-1

W vitamin B12

X Sodium nitrate, Potassium bromide D-Xylose L-valine, Cobalt nitrate Xylan

Y disodium ethylenediaminetetraacetic acid, calcium oxide, anhydrous sodium sulfite, anhydrous sodium acetate, anhydrous ethanol

Z L-histidine, sucrose

7-2

N citric acid, trisodium citrate Nitritotriacetic acid NN-dicyclohexyl carbonate imine

O

P ProClean300 (antibacterial and preservative) Penicillin boric acid

Q barium hydroxide, sodium hydroxide concentrate, laccase

R RBB substrate dyeing PET

Experiment table 8

Desktop

Drawer

8-1

Float, water bath pot assembly, alcohol lamp head

8-2

Transparent tape, sealing film, sponge tape, red, yellow and blue tape, tweezers, scissors

8-3

Gun head

8-4

Gun head

Shelf

8-1

S SSC buffer, trimethylaminomethane Sodium D-Lactate Sodium selenite Sodium carboxymethyl cellulose, sodium tetraborate, ferric chloride, salicylic acid

T Sodium Bicarbonate, Sodium Carbonate, Tween 20 Calcium Carbonate, Tween 80 Triton X-114 Triton X-100 Tryptone

U

V

8-2

L Anhydrous calcium chloride, manganese chloride, magnesium chloride, ammonium chloride, cobalt chloride, calcium chloride, strontium chloride, potassium dihydrogen phosphate, trisodium phosphate, sodium dihydrogen phosphate

M Sodium molybdate, imidazole, xylan MOPS

Test bench 9

Desktop

Centrifuge

Drawer

9-1

Glass beads, steel beads, sterilized centrifuge tubes

9-2

Blue label ph test paper, filter membrane (size) label paper, flat marking stick, lighter

9-3

9-4

Shelf

9-1

Beaker, conical bottle

9-2

Beaker, conical bottle

Test bench 10

Desktop

Shaker

Drawer

10-1

Hardware tools, wrenches, screwdrivers, pliers, etc

10-2

Shaker parts

10-3

Capillary column

10-4

Shelf

10-1

W vitamin B12

X Sodium nitrate, Potassium bromide D-Xylose L-valine, Cobalt nitrate Xylan

Y disodium ethylenediaminetetraacetic acid, calcium oxide, anhydrous sodium sulfite, anhydrous sodium acetate, anhydrous ethanol

Z L-histidine, sucrose

10-2

N citric acid, trisodium citrate Nitritotriacetic acid NN-dicyclohexyl carbonate imine

O

P ProClean300 (antibacterial and preservative) Penicillin boric acid

Q barium hydroxide, sodium hydroxide concentrate, laccase

R RBB substrate dyeing PET

Experiment table 11

Desktop

Ultrasonic cleaning instrument, electric rotary instrument, whiteness instrument

Drawer

11-1

Trophy

11-2

Hair dryer, lamp tube

11-3

Centrifuge tube (clear, black) 6 ml shaker tube

11-4

Shelf

11-1

S SSC buffer, trimethylaminomethane Sodium D-Lactate Sodium selenite Sodium carboxymethyl cellulose, sodium tetraborate, ferric chloride, salicylic acid

T Sodium Bicarbonate, Sodium Carbonate, Tween 20 Calcium Carbonate, Tween 80 Triton X-114 Triton X-100 Tryptone

U

V

11-2

L Anhydrous calcium chloride, manganese chloride, magnesium chloride, ammonium chloride, cobalt chloride, calcium chloride, strontium chloride, potassium dihydrogen phosphate, trisodium phosphate, sodium dihydrogen phosphate

M Sodium molybdate, imidazole, xylan MOPS

Experiment table 12

Desktop

Water bath pot

Drawer

12-1

Round bottom flask

12-2

Paper mesh frame, toothbrush, nozzle, whiteness meter supplies, electric brush

12-3

Centrifuge tube

12-4

Centrifuge tube

12-5

Potted plants, soil, basketball

12-6

Shelf

12-1

Beaker, conical bottle

12-2

Beaker, conical bottle

Test bench 13

Desktop

Drawer

13-1

13-2

13-3

Plastic tube, cooling fan, sol gun, lead screw, copper coating, glue

13-4

Screw, nut, copper axis, wire, DuPont wire, relay, water pump, small acrylic plate, stepping motor, plug, multimeter, hardware gadgets

13-5

Power supply, lubricating oil, first-generation prototype, matching brush, light bulb, wire, filling column

13-6

Shelf

13-1

Wire, various wires, heating fan

Under the table

Test bench 14

Desktop

Ultraviolet-visible spectrophotometer, ultrasonic cell crusher

Drawer

14-1

Ear washing ball, three-mouth round bottom flask, glass bottle (various)

14-2

Colorimetric dish, microscope bulb, conifer oil, mirror wiping cloth, mirror wiping paper

14-3

Petri dish, empty glass bottle

14-4

Shelf

14-1

\$ 2,2-diazobis (3-ethylbenzothiazoline-6-sulfonic acid) diamine 6-benzylaminopurine α -naphthalene acetate β -Mercaptoethanol arabinose, chlormequin 3,5-dinitrosalicylic acid

A Aluminum potassium sulfate dodecahydrate ABTS Ammonium chloride

B Glacial acetic acid, pyruvate, phenol Bromophenol Blue

C CTAB cobalt sulfate heptahydrate nickel chloride hexahydrate CDS000454-1G

D Potassium iodide D-galactose, p-nitrophenol, p-toluenesulfonic acid, xylo-oligosaccharides

E Dithiothreitol

Ferric citrates, sodium fluoride, phenolphthalein indicator

G Glycine Olive Oil, Congo Red, Amine Persulfate, Mannitol, Sodium Silicate

Under the table

Ice pack

Test bench 15

Desktop

Microscope ph meter, computer

Drawer

15-1

Rifle grooves, biological specimens

15-2

Anaerobic culture zone

15-3

Syringe

15-4

Syringe (large, medium and small)

Shelf

15-1

H Sodium alginate, ciprofloxacin

I Ibuprofen Imidazole

J Polyvinylpyrrolidone K-30 Polyvinyl alcohol, carob acid, potassium sodium tartrate, straw powder

K

L Zinc sulfate, sodium sulfate, ammonium sulfate, copper sulfate, magnesium sulfate, ferrous sulfate, potassium chloride, sodium chloride

pH standard buffer

Test bench 16

Desktop

Electrophoresis machine, electrophoresis accessories, ultraviolet analyzer, glue maker

Drawer

16-1

16-2

16-3

Plugs, glass tubes, glass tube lids, various lids, glass tube right angle type, glass tube straight type, frozen centrifuge plug

16-4

Empty glass bottles, small plastic container boxes

16-5

Bag

16-6

Filter paper NC film

Shelf

16-1

Test bench 17

Desktop

Drawer

17-1

Tin foil, transparent film, cling film

17-2

Coverslips, slides, chromatography plates, blood count plates, weighing paper, spoons, weighing spoons

17-3

Disposable Petri dish

17-4

Disposable Petri dish

Shelf

17-1

Experiment table 18

Desktop

Drawer

18-1

18-2

Latex gloves, plastic gloves

18-3

Gloves, Disposable Petri dishes

18-4

Shelf

18-1

Self-made solution, fixed volumetric flask, measuring cylinder

Refrigerator 1

1. Upper (4 ° C zone)

A, refrigerator door

1, do not move area

2, messy reagent area:

- Foramide formamide
- Bromophenol blue
- Graphene oxide dispersion ✕ 2
- MY
- DPCI color developing agent
- AZO CM- Cellulose (4M)
- Resuspension buffer heavy suspension
- D-xylose
- DNS reagent

3. Enzyme and other canned reagents area:

- Laccase from *Rhus vernifivera* ✕ 2
- Laccase (in bags)
- Green xylase from cellulase
- Cellulase (produced by Sorabol)
- Snail enzyme
- Lipase ✕ 2
- Lipase from *Aspergillus Niger*
- Xylanase ✕ 2
- Coomassie Bright Blue
- Glass beads

4. Antibiotics and other reagents area:

Antibiotics:

- Ampicillin sodium salt Ampicillin sodium salt ✕ 2
- Streptomycin sulfate ✕ 3
- Kanamycin sulfate kanamycin sulfate
- Spectinomycin
- Chloramphenicol ✕ 3
- Ciprofloxacin hydrochloride monohydrate

Other reagents:

- PTT
- Acetosyringone acetyl
- Xylene cyanol FF xylene cyanogen FF
- HS-tag purification resin purification resin
- Albumin Bovine V
- Acetic acid p-nitrophenol
- IPTG
- Vitamin B7 (D-biotin)
- DL-Dithiothreitol solution
- Dopamine hydrochloride
- RNase scavenger

B, one layer

- Benzotriazole-NNNN-tetramethylurea hexafluorophosphate
- Fluorescent Color Kit
- buffer S1 ✕ 5
- bufferW2
- BD tube dispensing reagent
- Sterilized toothpick
- Flag affinity gel
- Myc affinity gel
- Flag Bead Kit
- Myc Bead Kit

C, second floor

- Tapered bottle reagent, culture medium
- 5 ✕ G250
- Chloromethane (extract genome)

Drawer A on the second floor

- Tablet used
- Primer
- Water up
- DNA marker
- gel-red
- Bacterial lysate
- Alkaline phosphatase CIP (unopened)

Drawer B on the second floor

- Plate medium not used

2. Lower (-20 °C zone)

A layer

1. Plasmid cassette
2. Seed protection box
3. Restriction enzyme box
4. Kit:
 - zeocin ~~X~~5
 - T3 super pcr mix ~~X~~7
 - 2 ~~X~~ hi-fi master mix
 - 6 ~~X~~ orange loading buffer
5. Igem202 Preliminary work box
6. Modified coagulant for Yase
7. prestained protein ladder ~~X~~2
8. Aliquot protein loading buffer
9. Restricted enzyme buffer
10. 2021Igem synthetic plasmid

B, second floor

11. Antibiotic bag (purchased in 2019)
12. Antibody bag:
 - anti- rabbit IgG

- myc-tag mouse mAb
- his-tag mouse
- His-tag-rabbit mAb ~~X~~2
- Goat Anti-Rabbit IgG
- anti-flag/DYKDDDK tag rabbit mAb

13. Sundry bag 1:

- Lysozyme
- 6~~X~~DNA loading buffer
- T3 supper PCR mix
- T5 exonuclease ~~X~~2
- 10 ~~X~~ almost digest
- dNTP solution mix
- dNTP mix
- DMSO
- Plasmid PIC9K
- Reagent for coupling
- Taq DNA polymerase
- Salmon essence DNA
- L-arabinose
- BSA Standard
- 2~~X~~PCR buffer
- 10~~X~~buffer for T4 DNA ligase with 10mM ATP
- T4 DNA ligase
- Q5 reaction buffer
- cut smart buffer
- OVER

14. Sundry bag 2:

- Laccase
- BSA Standard
- 5 ~~X~~ protein loading buffer

15. Restricted enzyme bag:

- AVR II ~~X~~ 2
- DpnI

- Sac II
- Lql / sapI
- Bsal-HF ~~X~~2
- NdeI
- EcoR I
- ApaI
-

16. Sundry bag 3

- Xylobiose
- POD

C, three layers: unknown

Refrigerator 2

1. Upper (4 ° C zone)

A, refrigerator door

1, do not move area

2, messy reagent area:

- Recombinant bovine basic fibroblast growth factor topical solution ~~X~~ 2
- 4-Nitrophenyl butyrate
- 1 M tris-hcl buffer
- Beta-xylanase M6
- Feruloyl Esterase
- 10% SDS
- ABTS
- Coomassie Bright Blue ~~X~~ 2
- Bromophenol blue
- Nile red
- 4-Nitrophenol-beta-D-cellulodiglycoside
- carvacrol ~~X~~2
- Ferulic acid ferulic acid ~~X~~ 2

3. SDS-PAGE involves reagents:

- 1.5 M tris-hcl buffer
- 30% glue ✕ 2
- 30% Acr to
- 40% PAGE
- TEMED PAGE gel accelerator
- TMEDA
- TEMED sub-packaging
- DNS
- PAGE glue coagulant
- Chlamydomonas reinhardtii
- Petunia seeds

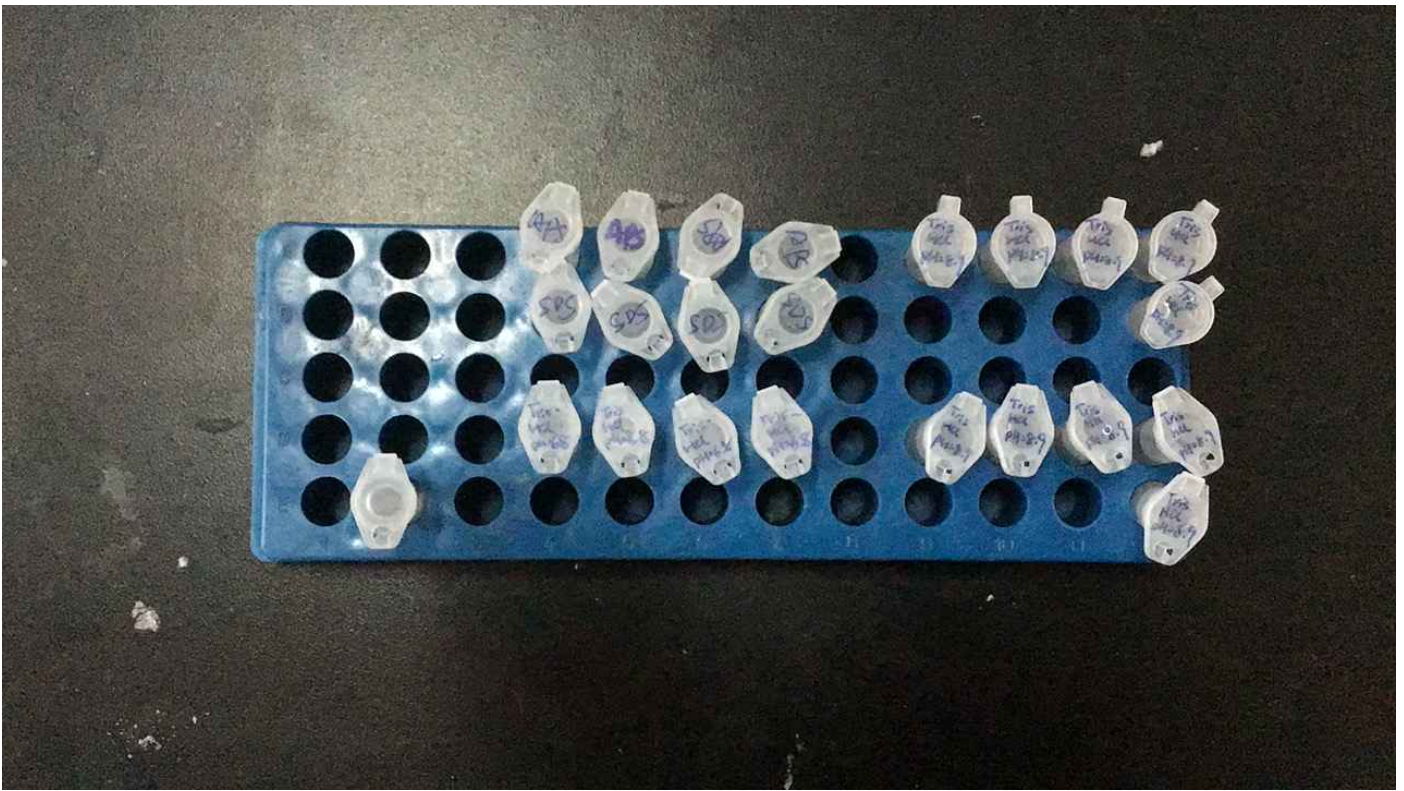
4, alcohol in electric cup

B, one layer

- Western blotting reagent



- Aliquot SDS
- Aliquot tris-hcl
- Aliquot APS



- Aliquot 5 X loading buffer
- TRNzol universal reagent
- FLAG Label Fusion Protein Purification Kit (anti-flag affinity gel under this refrigerator, third layer, together with instructions)



MYC Label Fusion Protein Purification Kit (anti-flag affinity gel under this refrigerator, third layer, together with instructions)

C, second floor

- Enzyme SDS-PAGE Kit
- Lignin content detection kit
- Canned:
- 10~~X~~TBS
- Recover 1 ~~X~~ film transfer solution
- 0.1M PB
- 0.2M PB
- 10mM PB
- Coomassie Bright Blue G250 Liquid
- 20% ethanol
- Bromophenol blue
- 1.5M tris -@ hcl
- 0.2M PBS

D. Drawer:

- 10%SDS
- 1 mg/ml D xylose
- binding buffer
- CaCl₂ · 2H₂O
- K₂HPO₄
- MgSO₄ · 7H₂O
- Na₂CO₄
- NaNO₃~~X~~2
- Trace Medal
- 1M Tris -@ Hcl
- Primer (don't know what it is)

2. Lower (-20 °C zone)

2019Igem supplies

D.4 Laboratory Safety Manual

UESTC-China created in 2021

Laboratory Information

- When taking part in the experiment, you cannot wear slippers or shorts.
- Do not store food, eat or smoke in the laboratory.
- The laboratory is not allowed to use electric stoves to boil water, cook, etc., for domestic use, products cannot be brought into the laboratory. No smoking, cigarette butts, and kindling are allowed in the laboratory.
- Each laboratory staff should keep in mind the following safety regulations:
 - (1) Be familiar with the characteristics and potential hazards of the chemical substances used.
 - (2) Check the performance of the equipment, fully considering the limitations of the use of equipment.
 - (3) Consult senior researchers or other experts in time when encountering questions in the work, and do not blindly operate.
- Keep the test bench clean and tidy and free of accumulation. Clean the test bench at least once a day, usually before leaving work or after completing a specific experiment.

Notes

In order to keep the laboratory clean and ensure the smooth experiment, we need to develop good experimental habits.

- In principle, each person needs to operate on his own laboratory bench;
- When borrowing the test bench, please communicate with the person in charge in advance, pay attention to prevent cross-contamination when using, and restore the test bench to its original appearance after use;
- To do the experiment, you need to wear experimental clothes, masks and gloves;
- Before the experiment, it is necessary to sterilize the ultra-clean table in advance, count the required reagents and thaw;
- In the experiment, the enzyme needs to be placed on ice/ice box to avoid vortex and mark the experimental reagent clearly;
- After the experiment, the pipette gun is adjusted to zero, the table is tidied up, the waste liquid tank is dumped, and the experimental instrument is closed (the centrifuge needs to be opened to prevent condensation);

- When leaving the laboratory, check whether the instrument is closed, whether the refrigerator door is closed, and turn off the lights and close the door.

Precautions for ultra-clean table

- When using the workbench, turn on the ultraviolet lamp 20 minutes in advance to irradiate and disinfect, and treat the microorganisms accumulated on the surface area of the workbench in the purification work area;
- Turn off the UV lamp, turn on the blower, turn on the super-clean table cover to half the height, and put ozone for 20min (everyone out of 310 laboratories);
- Wearing lab clothes, masks and gloves;
- Do not store unnecessary items on the work table to keep the clean air flow in the work area from interference;
- When operating, pay attention to wiping your hands with alcohol spraying, and all items taken into the ultra-clean table need alcohol disinfection;
- The pipette gun, gun head, shelf, rack, etc. in the ultra-clean table cannot be taken out at will;
- After the operation, tidy up the work table, dump the waste liquid tank (classified dumping) and spray with alcohol, wipe the table with detergent and disinfectant for disinfection;
- Turn on the ultraviolet lamp of the workbench, irradiate and disinfect for 30 minutes, turn off the ultraviolet lamp and cut off the power supply;
- Duty students thoroughly disinfect them every week, including: alcohol and RNase Zap wiping, pipette gun, shelf, screen cover cleaning, ultraviolet disinfection

1. Main laboratory samples

At present, the samples involved in the laboratory mainly include:

- Plasmid DNA
- Antibiotics
- Microbial strains of Escherichia coli and Pichia pastoris
- Methanol, ethanol and other flammable products
- Concentrated sulfuric acid and other corrosive products
- Other chemicals

2. Laboratory operating specifications

1. Basic requirements for personal protection in laboratories

个人防护用品 (Personal Protective Equipment, PPE)

减少暴露于气溶胶、喷溅物以及意外接种等危险的一个屏障



生物安全二级实验室个人防护基本要求：

- ◆工作人员进入实验室后应穿工作服，根据操作内容确定是否需要防护服
- ◆应戴口罩和一次性手套，必要时戴防护眼镜
- ◆一次性手套不得清洗和再次使用
- ◆离开实验室时，工作服和防护用品必须脱下并留在实验室区域内，不得穿着防护用品进入办公区域或其他公共场合。



2. Use and maintenance of refrigerators and freezers

Take samples or reagents from the refrigerator and freezer, please take and put them as quickly as possible, close the door of the refrigerator or freezer, to avoid the temperature rise damaging the samples and reagents, or freezing causes the drawer to be difficult to open. Especially for -80°C refrigerators, special attention should be paid to quick pick and place, and close the refrigerator door in time.

3. Laboratory contaminated area (204 photo glue on the second floor)

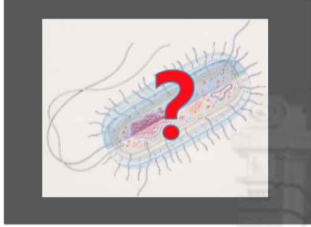
The contaminated area in the laboratory is mainly concentrated on the **test bench for gel electrophoresis and development**. Although the nucleic acid dye Gelsafe has an oily macromolecular structure and theoretically cannot penetrate the cell membrane into the cell, it still has a certain mutagenicity. Therefore, it is important to do **personal** protection when operating in this area. At the same time, prevent ultraviolet rays from entering the eyes for a long time and causing blindness when taking glue.

4. Laboratory disinfection and sterilization

- Disinfection and Sterilization

消毒：杀死微生物的物理和化学手段
但不一定能够杀死芽孢及孢子

灭菌：杀死和/或去除所有微生物及其孢子的过程



一般细菌

- 2% 84消毒液
- 75% 乙醇
- 季铵盐类化合物
- 6% 过氧化氢

产孢子菌(芽孢杆菌)

- 10% 84消毒液
- 戊二醛
- 甲醛
- 6% 过氧化氢

分枝杆菌和真菌

- 10% 84消毒液
- 75% 乙醇
- 酚类化合物
- 6% 过氧化氢



包膜病毒 (HIV, Herpes)

- 2% 84消毒液
- 75% 乙醇
- 季铵盐类化合物
- 6% 过氧化氢

无包膜病毒(Hepatitis, Adenovirus)

- 10% 84消毒液
- 6% 过氧化氢
- 戊二醛
- 甲醛

• 75% alcohol



乙醇

中效消毒剂
常用浓度75%

原理：1) 破坏蛋白质的肽键；2) 侵入菌体，解脱蛋白质表面的水膜，使之失去活性，引起微生物新陈代谢障碍；3) 溶菌作用。

可杀灭细菌繁殖体，破坏多数亲脂性病毒，如单纯疱疹病毒，乙型肝炎病毒，人类免疫缺陷病毒等

使用范围

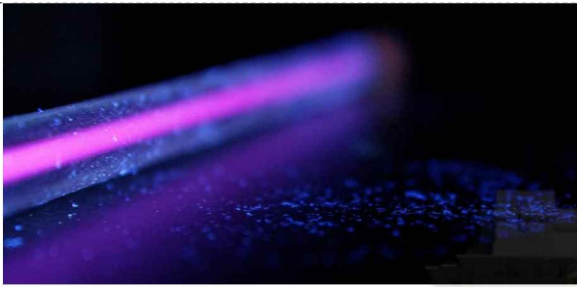
1. 手部及皮肤消毒
75%乙醇喷洒擦拭，
2. 试验台，生物安全柜台面
3. 浸泡小的金属器械

细菌：5min可杀灭细菌繁殖体

病毒：5-10min

不能杀灭孢子
不能杀灭所有类型的非含脂类病毒
易挥发，易燃，避免在明火附近使用

• UV lamp



紫外灯：属于一种低压汞灯

253.7nm 185nm

细菌中的DNA、RNA和核蛋白的吸收紫外线的最强峰在254~257nm。
DNA链断裂，造成核酸和蛋白的交联破裂，杀灭核酸的生物活性，致细菌死亡。

包括细菌繁殖体、芽胞、分支杆菌、冠状病毒、真菌、立克次体和衣原体等

27

使用范围

室内空气
物体表面（超净工作台，生物安全柜）
水及其他液体

照射30分钟

保持紫外灯表面的清洁

消毒室内空气时，房间内应保持清洁干燥，减少尘埃和水雾

温度低于20℃或高于40℃，相对湿度大于60%时应适当延长照射时间

不得使用紫外线光源直接照射到人体，以免引起损伤

· High-pressure steam sterilization pot



SANYO高压蒸汽灭菌锅

热可以灭活一切微生物，包括细菌繁殖体、真菌、病毒和细菌芽孢

确保灭菌效果的组合

134℃	3min
126℃	10min
121℃	15min
115℃	25min

灭菌器柜腔装载要松散，以便蒸汽可以均匀作用于装载物
待温度下降到80℃以下时再打开门，戴手套及面罩防护

3. Laboratory waste disposal

· Waste classification

感染性废弃物

具有感染性的剩余标本、实验用具（接种环、枪头、吸管、试管、培养瓶、培养皿、细胞板等），培养后的培养基、用后可能被污染的手套、口罩、眼罩、隔离衣、隔离鞋套，携带病原微生物具有引发感染性疾病传播危险的实验废物等



损伤性废弃物

注射器针头、缝合针、解剖刀、手术刀、备皮刀、载玻片、玻璃试管、玻璃安瓿等能够刺伤或者割伤人体的废弃的实验锐器。

- For damaged waste: put it in a paper box and put it on the outside with a clear label that glass fragments are vulnerable, and place it next to the garbage can on this floor;
- For liquid infectious waste: high pressure steam sterilization treatment;
- For solid infectious waste: use reliable disinfectant or strong alkali immersion treatment;
- In the treatment of waste bacterial liquid, go to the laboratory on the first floor to borrow the fume hood;
- It is forbidden to pour sundries and strong acids, alkalis and toxic organic solvents into the sink (introduced into the toilet).

How to dispose of waste chloroform (CHCl₃)

1. If the quantity is small, the waste liquid in the container can be incinerated.
2. If the quantity is large, it can be recycled, but blank tests should be carried out before use and can only be used after meeting the standards.

Treatment method: The chloroform waste liquid is placed in a separation funnel, washed with water, concentrated sulfuric acid (the dosage is 1/10 of chloroform), pure water, and hydroxylamine hydrochloride (0.5%, analytically pure). After washing with heavy distilled water, dehydrate with anhydrous potassium carbonate, leave for a few days, filter and distillate, and collect the distillate at 76~ 77 °C.

3. If the quantity is very large, you can find a professional harmless recycling company to deal with it.

4. Laboratory exposure and emergency management

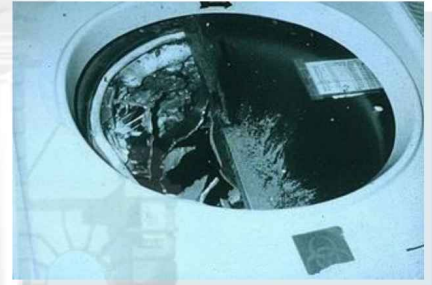


刺伤、切割伤或擦伤

立即脱下防护服，清洗双手和受伤部位，使用适当的皮肤消毒剂
必要时进行医学处理。
记录！

离心管破裂

关闭电源，机器密闭30min使气溶胶沉降。
戴厚橡胶手套，使用镊子清理碎片。
破碎离心管，离心桶，十字轴和转子均应放在无腐蚀性的，已知的对所含微生物具有杀灭活性的消毒剂内浸泡
离心机内腔使用适当浓度的同种消毒剂擦拭两遍，水冲并干燥



Laboratory fire emergency treatment plan:

1. If a fire is found, the on-site staff will immediately take measures to deal with it to prevent the fire from spreading and report it to the school in time;

! (Fire extinguisher is placed at the door) **Dry powder fire extinguisher cannot put out [Metal burning fire]**



2. Determine the location of the fire and judge the cause of the fire, such as compressed gas, liquefied gas, flammable liquid, flammable articles, spontaneous combustion articles, etc.

3. Clarify the surrounding environment of the fire, determine whether there is a major hazard distribution and whether it will bring secondary disasters;

4. Clarify the basic methods of disaster relief, and take corresponding measures to use appropriate fire fighting equipment to put out the fire in accordance with the emergency response procedures; including wood, cloth, paper, rubber and plastic and other solid combustible materials fires, water cooling method can be adopted, but for precious books and archives, carbon dioxide, halogenated alkane, dry powder fire extinguishing agent should be used to extinguish the fire. Flammable and combustible liquids, flammable gases, oils and

other chemical fires, use large doses of foam fire extinguishing agent, dry powder fire extinguishing agent to extinguish the liquid fire. In the case of a fire with live electrical equipment, the power supply should be cut off before extinguishing the fire. Due to on-site conditions and other reasons, the power cannot be cut off. When a live fire needs to be extinguished, sand or dry powder fire extinguishers should be used, and foam fire extinguishers or water should not be used. Flammable metals, such as magnesium, sodium, potassium and their alloys, and other fires, use special fire extinguishing agents, such as dry sand or dry powder fire extinguishers

5. According to the types and hazard levels of hazardous chemical accidents that may occur, delimit dangerous areas, and isolate and channel the surrounding areas of the accident site;

6. Call "119" for help depending on the fire situation, and guide the fire truck to an obvious position.

Emergency treatment plan for laboratory chemical burns:

1. Strong acids, strong bases and other chemicals have strong irritation and corrosive effects. When these chemical burns occur, a large amount of flowing water should be washed, and then low concentrations (2%~ 5%) of weak bases (caused by strong acids), Weak acids (caused by strong bases) are neutralized. After treatment, the next step is taken depending on the situation.

2. When splashing into the eyes, rinse them thoroughly with a large amount of clear water or normal saline immediately and nearby at the scene. There is a special eye washing faucet in each laboratory floor. When rinsing, place the eyes above the faucet, and rinse the eyes with water upward for not less than 15 minutes. Do not close your eyes tightly due to pain. After treatment, send them to the ophthalmic hospital for treatment.

Emergency treatment plan for laboratory poisoning:

If you feel burning throat, discoloration or cyanosis of lips, stomach cramps, nausea and vomiting during the experiment, it may be caused by poisoning. After applying the following first aid depending on the cause of poisoning, you should be sent to the hospital for treatment without delay.

1. First, transfer the poisoned person to a safe area, untie the collar button, make it breathe smoothly, and let the poisoned person breathe fresh air;

2. Those who are poisoned by taking poison by mistake must immediately induce vomiting, gastric lavage and catharsis. The patient is sober and cooperative. It is advisable to drink a large amount of clear water to induce vomiting, or drugs can be used to induce vomiting. If the effect of inducing vomiting is not good or unconscious, you should immediately send to the hospital to wash your stomach with a gastric tube. Pregnant women should use vomiting with caution.

3. For heavy metal salt poisoning, drink a glass of aqueous solution containing a few grams of MgSO₄ and seek medical treatment immediately. Do not take emetics to avoid causing danger or complicating the condition. Arsenic and mercury poisoning must be urgently sought medical treatment.

4. Inhaled irritant gas poisoning, the patient should be immediately transferred away from the scene of poisoning, given 2%~ 5% sodium bicarbonate solution atomized inhalation, oxygen inhalation. Tracheal spasm patients should be given antispasmodic drugs atomized inhalation as appropriate. Emergency personnel should generally be equipped with filtered anti-gas masks, anti-gas clothing, anti-gas gloves, anti-gas boots, etc.

Laboratory electric shock emergency treatment plan:

1. The principle of electric shock first aid is to take active measures to protect the lives of the wounded at the scene.

2, electric shock first aid, first of all, to make the electric shock quickly out of the power supply, the sooner the better, electric shock is not out of the power supply, rescue personnel are not allowed to directly touch the wounded with their hands.

Disconnect the injured from the power supply method:

(1) Cut off the power switch;

(2) If the power switch is far away, dry wooden skis, bamboo poles, etc. can be used to open the wires or live equipment on the electric shock victim;

(3) use several layers of dry clothes to wrap the hand, or stand on a dry board to pull the clothes of the electrocuted person from the power supply;

3. After the electric shock is disconnected from the power supply, it should be determined whether the person is conscious or not. If the person is conscious, he should lie flat on the spot, observe closely, and do not stand or walk for the time being; if he is not conscious, he should lie flat on his back on the spot, and ensure that the airway is unobstructed, and call the wounded or tap his shoulder at intervals of 5 seconds to determine whether the wounded is unconscious. It is forbidden to shake the head of the wounded to call the wounded.

4, the rescue of the wounded should be immediately on the spot adhere to the artificial lung resuscitation method of correct rescue, and try to contact the school infirmary to replace the treatment.

Laboratory explosion emergency treatment plan:

1. When the laboratory explosion occurs, the person in charge of the laboratory or the safety officer must cut off the power supply and pipeline valve in time when he thinks it is safe;

2. All personnel should follow the arrangement of the temporary convener and evacuate the explosion site through the safety exit or other methods in an organized way.

3, the emergency plan leading group is responsible for arranging rescue work and personnel resettlement work.

D.5 Wiki from zero to pit

Preface

This is a poor front-end people's process from zero to entry, if you are the front-end boss, please ignore the bad people's crankiness and complaints. Because my team's last wiki leader was busy and gave me limited guidance, so many of me are feeling the stones across the river, so I wrote this to hope that the next session to avoid the pit, and can play some "fun" things.

Wiki parsing

Say complain again before garbage server!!!

1. Before you say it, you can look at some instructions on the official website:

https://2019.igem.org/Resources/Wiki_Editing_Help

<https://2019.igem.org/Competition/Deliverables/Wiki>

(Change the year is new ==) Take my year as an example. Generally speaking, external links cannot be referenced. For example, the iframe tag is not allowed to be used, and the toolbar cannot be moved. Here is some shadows for the 3D behind

2.wiki editing tools

Originally, I was not going to talk about the editing tools here. Later, I thought that I had been groping for a long time. It is true that the navigation on the official website is still very poor, but I can see that it has been improving.

Question 1: Where to edit and put the code?

Click with edit and go in to edit.



Upload files here to upload files

History Remember him, if you can't go back after jumping to the page with the bom object (cause: the captain said that last year I watched another team's wiki and then went to watch an episode of Animal World hhh so I played bom), you can go back through this History.

Question 2: How to create a page?

Generally speaking, the official website will create some basic pages for you. If you want to create a new one, you can enter the new interface by changing the suffix directly after the website, then go in Create and edit it.

Question 3: How to call CSS/JS?

You can take a look at this URL first (these pages are for me to find)

https://2019.igem.org/Resources/Using_HTML_CSS_and_Javascript

Here I want to complain, as he said, the wiki is not strict in the code format on the reference, but the code he gave has a lot of errors, direct reference to move on their own page has problems (hhh here I will not complain to see just fine). And because of the update iteration problem, if you look at last year many teams of reference format used in this year also can not, at that time almost collapsed == I have never seen in the call format can be so messed up, pure waste of time.

Finally, my CSS call uses the `{{}}` template provided by the official website

And if JS uses templates, some statements will be escaped, so use the reference format, here to use `https` My last year many teams are still using `http` harmed me for a long time..

```
<script src="https://2019.igem.org/Template:UESTC-China/js/bootstrap_min_js?action=raw&ctype=text/javascript"></script>  
<script src="https://2019.igem.org/Template:UESTC-China/js/jquery3.4.1_min_js?action=raw&ctype=text/javascript"></script>
```

Then in fact, there is still a problem here, here to pay attention to the order of Js calls, bootstrap.js need jQ, to understand the order of JS calls, and then I also changed to reference the official JQ, which is the following kind,

```
<script src="https://2019.igem.org/common/tablesorter/jquery.tablesorter.min.js"></script>  
<script src="/Template:UESTC-China/js/bootstrap_min_js?action=raw&ctype=text/javascript"></script>
```

3. External style of the official website

When you put the locally adjusted code on it for the first time, you may find that the style is completely different. If you don't make good use of the checking function provided by the browser, the reason alone will be easy for you to find.

Here's why:

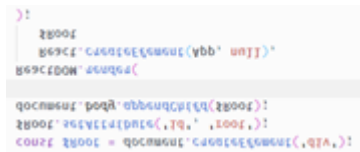
The editing interface provided by the wiki is just a small epitome of his framework, that is, after you have compiled it, the upper layer of your code will have his class or id limiting your

style. So use JS to remove these constraints, if you have not learned JS, you can see the official website to your team template has such a line of code, (here only 2019 for reference)

```
$(document).ready(function() {  
    //remove the HQ_page id  
    $("#HQ_page").attr('id', '');  
});
```

Remove whatever is in the way, but be careful not to remove the top black box (function bar).

If you dare not remove the use of Vue or React, adjust the style position, you can write like this



Dabbling in 3D models

1. Ask the way

Ask Du Niang, search CSDN, and then search a lot of 3D models to upload and buy and sell websites, foreign is better sketchfab, dynamic 3D, which dynamic 3D provides ifram tag embedding, but the first said the official ban ==, and then webgl own rendering production ==

2. Dawn reappearance

Because I have known some particle effects and some basic operations of canvas before, I searched and found a good thing à three.js <https://threejs.org/>

Briefly, this is a special used to do 3-dimensional JS library, that is to say, it is more than enough to put the model, and find the introductory tutorial inside is to provide web page embedding local obj and gltf 3D format, but need to involve the blender software (free animation) to render.

3. Frustration

Just when I initially learned that I can put the model locally and prepare to upload it, I suddenly found a problem. The uploadable file provided by the wiki does not have 3D format inside!!! == I can't use the code to draw a handle on the canvas by myself == At that time, I felt that the road was impassable and gave up.

Note: Looking back now, you can actually draw an interactive picture directly on H5 through An (the previous flash), but An needs to learn a little deeper, and An's advanced

tutorials on the Internet are not easy to find (too few people use it, but it does provide interactive code to adapt to H5. To clarify for flash, flash elimination refers to the plug-in that is no longer updated. In fact, the software that originally did flash and renamed An continue to update in the adaptation era)

Let's give up, but there are teams that have done this model interaction before, such as [http://2018.igem.org/Team: Stockholm's homepage](http://2018.igem.org/Team:Stockholm) has the analysis of protein structure, so how do they do it? This is also the "source of all evil", which makes me do much work for nothing ==

This team is a bit hidden, and I will directly explain the reason here (perhaps you want to ask how to find it? Check other people's code yourself and look at the JS files quoted by others to understand)

It is a small model based on NGL Viewer (hereinafter referred to as NGL). What is NGL? In fact, it is a JS library developed based on many underlying 3D libraries specifically for biochemical molecular structure display. The prototype developed also has T hree.js, so you can see how strong three.js is.

<https://www.npmjs.com/package/ngl> this is the official NGL document, and when you read some of the sample code in it, you can see that it is exactly the same as that team.

But there is a problem, you can see that the protein structure data in PDB format is referenced and then displayed directly in the NGL, but the referenced things are also from the PDB database, that is, the referenced external files (wiki strictly prohibited) Then you can observe that the team is by finding the PDB format data of the corresponding protein in the PDB database <https://www.rcsb.org/>, then uploading it to the local reference, and wrapping it with a blob object.

Here, the reason is also found, but the model is still not put up, and the protein structure is not necessary to put, because there is no structure (not yet in the new enzyme database)

Message: If the subsequent official provides 3D file upload can be a try, you can also play some particle effects based on canvas, and learn a little three.js game is good.

Adaptive and Compatible

1. Adaptive

Adaptive this is a long story, this is the first basic skills to get started, for Xiaobai, search a lot of CSDN may still be confused. The following only represents my personal (poor people) understanding of adaptive.

(1) Font unit analysis

We are very familiar with the general is px (pixel), and then is em (adaptive font), and then it is these two fonts will change with the change of screen width, in fact, em than px change a little larger, so called adaptive font, but there is no guarantee that it will not be deformed at all, personal practice, em can be used to do border distance adaptation, so as to avoid using media queries with the percentage to do. Then the percentage, that is,%, unless it is 100%, otherwise it will also change.

But what we ultimately want to do is that with the change of the screen width, no matter how to change, his style will not change, even if you write responsive writing is very good, but also to ensure that it will not have too much deformation, so with the changes of the times, there is another font: vw, this font is completely adaptive according to the screen width, can ensure that it is completely unchanged (pro-test), but there is a problem is that this font appears late, compatibility is not as good as the previous several.

(1) 桌面 PC

- **Chrome**: 自 26 版起就完美支持 (2013年2月)
- **Firefox**: 自 19 版起就完美支持 (2013年1月)
- **Safari**: 自 6.1 版起就完美支持 (2013年10月)
- **Opera**: 自 15 版起就完美支持 (2013年7月)
- **IE**: 自 IE10 起 (包括 Edge) 到现在还只是部分支持 (不支持 v_{max}, 同时 v_m 代替 v_{min})

(2) 移动设备

- **Android**: 自 4.4 版起就完美支持 (2013年12月)
- **iOS**: 自 iOS8 版起就完美支持 (2014年9月)

https://blog.csdn.net/romantic_love/article/details/80868909

Although it is 13 years, but if you want to do a little better compatibility is not recommended to use this font, and now a lot of fonts and border distance mainstream units or px, and the most serious problem is that I can not know whether the wiki is compatible, but there is a good news is that I saw in the home page of Shenzhen University in 18 years that it used this unit, and their ranking is very high, so if you use it, it should not be a big problem, but I wrote a lot of px before it is not much changed, and I am also afraid of a problem on all pages collapse, the absolute layout of the home page I am still ready to use this font, px adaptation is a little difficult, have to use px, you can go to see the 17-year Heisenberg home page, written with pure px.

< SEQ _ BEG > < SEQ _ BEG > < SEQ _ BEG > < SEQ _ BEG > < SEQ _ BEG > < SEQ _ BEG > < SEQ _ BEG > < SEQ _ BEG > < SE

Bootstrap in the adaptive and responsive framework construction is very common, and igem official also specifically mentioned bootstrap, so that you can make full use of bootstrap worry, my responsive navigation bar is to use the bootstrap framework slightly modified under. Then on the main body bootstrap also provides col-x-number XXX this form of adaptive class name, in fact, is the use of width: xx% and media queries to adapt.

(3) Media inquiries

What is a media query? Their own Baidu QAQ basic adaptive CSS statements, you can debug their favorite adaptive feeling (when looking for this syntax are a little effort, direct search adaptive often can not find)

(4) Some small suggestions

1. Judges generally use the tablet to see the page (my captain said), that is to say, in theory, you can not do the phone's adaptation, and on the one hand, the phone's adaptation is difficult to do, on the other hand, if you use the phone to open many other team's pages can be found deformation. But I suggest that even if you don't have to do the phone adaptation, you still have to ensure that you can basically see on the phone.
2. (bootstrap)

The general adaptive statements are 1024px 768px as the boundary, but when I first started to do it, I found that the navigation bar (bootstrap) plug-in is within these two widths. Because the above is to put a few words, it will cause the phenomenon of two lines before folding (here you can see that many teams adjust the width to see that some of them also have this phenomenon, such as our team in 18 years) How to solve it? On the one hand, you need to lock the height of the bootstrap. On the other hand, you can be tricky and change it to fold in 1023px (until the width before the two lines appears, you can test it).

2. Compatibility

(1) JS

JS syntax in Firefox, Google, IE three browsers to achieve the same effect of different writing, however, JQ basically solved this problem, JQ compatibility is very good.

If you really want to know what some JS compatibility is specifically? Recommend an ancient video learning JS as an introduction to JS is still very good (blue teacher)

<https://www.bilibili.com/video/av29885002/?p=19>

But after I learned a little JQ, I actually found that JQ is indeed much better than native JS in many operations, and the official wiki also supports JQ, so it is much more convenient to use JQ directly.

(2) CSS

CSS compatibility in two-dimensional rotation and three-dimensional rotation css3 there are several similar statements and the adaptation of multiple browsers in determining whether the mobile end of this statement are different, and in terms of fonts, you can write a few more sequentially covered, the last one used to guarantee the bottom, gradient statement is the same.

Other (Supplementary)

1. Post-media wiki editing

Later, they may submit parts and add some data or something, not in the previous format, here I am not mainly responsible, there is no deep understanding, and they asked me I just know there is such a thing == here is my dish.

I looked at it a little bit. It seems that every year I write it according to the template of the year before last. The grammar there is really easy to understand. The labels and other things are all encapsulated. If you have enough time, I think you can also optimize the framework.

The following URL is syntax [https://www.mediawiki.org/wiki/Help: Formatting](https://www.mediawiki.org/wiki/Help:Formatting)

2. Introductory learning suggestions

I have learned some html, css before so I will directly start to do, and then learn knowledge while doing, and then the framework is built, it is dedicated to supplement JS, JQ (the earliest just copy other people's code) behind can also be more flexible to optimize, you can also write a little JS, JQ. So I really suggest that you put html, css, js are very clear understanding before writing, because I went to change later when I found a lot of uncomfortable places, but also can not guarantee that I do not have some low-level place, and I wrote a lot of inter-line style before == and a lot of naming is not very standard == bootstrap.css I also changed some things == my own JS is also a bit of a mix and match style == see please ignore the put.

CSS recommendations focus on understanding (position, padding, margin, border,! important, style overlay order)

Map tag hotspot tool with DW is still very good, it is recommended to understand

Then complain about DW, some styles DW will not show up such as window.onload = function (), but directly with the browser to open is good, that is to say, his preview is actually not very reliable (very few cases) and DW a little beginner, but I am this entry, other software is not good under. But I feel that Webstorm for code optimization is still good, but he wants money, the cracked version is a bit difficult to get, VS Code extensibility can, is not bad, but the memory is a bit large, my memory is not much, of course, if you are awesome, notepad is not impossible, hhh

Oh, by the way, due to some static restrictions and the need to host all files on their servers, there are few requirements for forms and input boxes. When learning, you should make clear the key points, and you will do better if you learn with purpose.

About the formula display, I tried MathJax and with Tex syntax, their local page is no problem, but after put on the wiki, poor adaptability, and will appear garbled, taking into account the effect of MathJax compatible browser is good, Sui doubt wiki, and finally use pictures, not easy to appear garbled, this year MathJax and JQ as the official server default to

provide URL but if using LaTeX between lines or line input formula, used \$ may be escaped, and if the wrong words hhh (here later or used MathJax, although Google translation may appear garbled, here simply say two points, 1.html editor compilation seems to be no number (anyway, I did not find), 2. Line html is not \$\$ (markdown applies), is\ (\) this)

If you use the table to interact, it is recommended to use echarts.js and then use the domestic server to load with 20s == hhh and then still use the picture ===== otherwise you can only customize echart JS but I don't have time (don't want to do it) =====

About the loading of pictures, can only say that the garbage server, upload time > 4000 more px can not upload, followed by high pixels, the definition will be very high, but his web page will take several minutes to load, the final test 500X500 is quite appropriate, but it still takes a few seconds, so the slow loading interface is recommended to do a loading interface.

3. Be sure to have a good relationship with the artist's father

The beauty of the web page is entirely dependent on the art dad, we can only do some basic interactive navigation, the early stage must discuss a variety of designs with the art dad, here to praise my session of the art dad is really strong! The best way to do the back of the web page is to learn some PS, or An, AE, many small icons or best to do it yourself.

4. Complain

In any case, last year's wiki also left me valuable suggestions. My main body is still divided into .bigtitle.smalltitle.mainbody.word... some categories according to the framework of last year, but I always feel that there is something worse, because this kind of headline is composed of color blocks, and then the main body always feels worse in black and white, but I can't think of a better layout format. I hope the next generation can break through the mindset and change some.

Of course, the web page I made also has a lot of slots. The times are always improving. I sincerely hope that our team's wiki will be stronger than the previous one. In which year, we will make the best wiki, not water. I don't want anyone to say that the web page is very simple (although it is really simple). It's okay to make a game on the web page, and you can use php js.

Fang Minghao

9.15

-9.27 Supplement

1. Uploading files and loading speed let me re-recognize this wiki hh the following units are PX (pixels)

More than 1000px png must not upload, loading speed, in Google (check network) domestic servers can load a minute close to 2000 gif must not upload, domestic servers can not load

About 600 gif also counted, a few dozen seconds, before I did the 600px loading gif results loading interface are stuck for more than 10 seconds hhh changed to about 200 barely usable; loading should be the captain's demand, only put Team because Team everyone has the most pictures, loading the slowest;

So in the beginning to do the picture must be in a small case, to ensure a certain clarity! Recommended picture pixels in about 500, gif correspondingly a little smaller, if it is a small icon, then a little smaller, high pixels with width: 100% reduction as slow to load

2. Fixed positioning:

Don't use bootstrap's affix (data-spy = "affix") to locate, Google loads slowly, just use css's fixed;

3. JS library can be less:

The official website has upload code length limit, I tried the full version of the echarts.js 27k > 20k can not, with the normal version can barely load, but the load is very slow, load a minute hhh so do not play with fire, and I feel, with min, the official website template page seems to be unable to recognize hhh display effect is not the same (remember not too clear), with the JS library, either with a small, or custom, only call useful to yourself,

4. The full version of the bootstrap.css will be loaded for a few seconds, and you can choose to delete it according to your needs, reducing the initial loading time of 1s

5.bootstrap there will be style overrides that will override some styles in the login bar QAQ it is recommended to use css modules to avoid class name confusion at the beginning

6. It is really a bad template to write only later liver to gather together, through communication, it is recommended to write the framework through V ue.js, write good content in other places, through ajax incoming lazy loading in the later most appropriate.

-10.7

1. MDN is a good thing

Understanding of CSS

<https://developer.mozilla.org/en-US/docs/Web/CSS/Specificity>

< p > </p > Line breaks are segment margins

Direct `
` line wrap is the line margin

2.wiki load pictures with small memory, even if the pixels are slightly larger

3. My personal template is for reference only (dish is the original sin), is written `{{nav}}` dedicated to the top navigation bar and most pages common JS, which in `{{nav}}` referenced bootstrap.css is in the deletion of some of the original bootstrap.css, and added dozens of common CSS statements written by me personally at the end. Then wrote `{{footer}}` for the footer, in each dedicated page inside is written inside the corresponding html and some need to customize the placement of CSS and JS according to the page. Then when I typeset, the fastest way, first in word to add the newline character `
`, and then the corresponding picture new folder named in order 1-n local adaptation, and then upload one by one in the wiki picture and replace it with the url address locally, and finally put it directly on, modify some custom CSS JS can be. JS I personally recommend Mr. Ishikawa blue, JQ Li Nanjiang is also good.

Share the wheel written by SEU boss

<https://github.com/seu-igem/seu-igem2019/tree/master/wiki-tools>

<https://developer.mozilla.org/zh-CN/docs/Web/CSS/@font-face>

Upload the url address of the otf file, only by looking at the source code, or hover to see the bottom left corner, can not click out the url URL like the picture, there will be warning when uploading seems to be all otf files are reported wrong. So don't worry about it

JQ's turn function plug-in page turning is a bit interesting

https://2019.igem.org/Team:AHUT_China/Notebook The team's Notebook style is okay. At first, we wanted to make a calendar, but the result was rejected. Then we made a template that was boring last year.

<https://2019.igem.org/Team:BUCT-China/Team> A photo frame made by Team of Beijing Chemical

The monitor mouse position determines the 3D rotation of the picture, but the words floating up at the end are still a bit stiff.

<https://2019.igem.org/Team:SEU-Nanjing-China>SEU boss wrote the forum style a little something, but also made a skin change and translation plug-in ==! awesome!! film

https://2019.igem.org/Team:NCTU_Formosa Taiwan Jiaotong University style praise!

<https://2019.igem.org/Team:Exeter/Hardware> is also good and full of content

Adaptive: `font-size: calc(23px-0.22vw)` Adaptive width through `+ -vw`, note that there are spaces before and after the `calc + -symbol`.

<https://www.w3cways.com/1963.html>

It's 9102, I'm still considering the compatibility of vw (completely redundant), and I wrote more px.

Self-summary:

Basically realized the production of a simple wiki, and successfully designed some elements, the aesthetic degree of dynamic interaction needs to be improved.

Regrets:

1. The sidebar algorithm does not work, but basically realizes the function. Secondly, the beauty of the sidebar is not enough, and it is not considered as a special side container at the beginning of the design, which makes it difficult to carry out later adaptation. As far as possible, the font cannot exceed the content, so the font may be a little slightly smaller
2. The navigation bar is not perfect, the initial use of bootstrap responsive navigation bar to change, after learning the css3D rotation found that its limitations are a bit large, in the 3-dimensional motion operation is very troublesome, recommend yourself to build a 3D navigation bar from scratch
3. The home page scrolled and monitored that the SVG animation was not produced in a hurry (18 years NCKU). I did not look closely. What I wrote may be similar to the mask layer animation algorithm in An production.
4. The white background may be plain and clean, some teams may use other colors, and some may use white background with frame shadow. I have not used either. I may add frame shadow, which makes me feel better, right?
5. JQ recommended or call a new one yourself, the official version is a bit old animate can not be used ==
6. The home page and the background image I intend to make are 100% adaptive in visual length for various reasons
7. The drop-down arrow was done, and I commented it on the team page, but it was rejected because it formed a crooked feeling with the picture
8. loading interface is only available to Team (there are many pictures of Team), and the cancellation of the loading interface does not make a simple withdrawal animation.

Experience:

It is ok to do dynamic work. If you don't look good, you will definitely be rejected. If you look good, you will also have a certain chance to be rejected. Therefore, you should lay a solid foundation at the beginning of your study. Otherwise, it will be a bit uncomfortable to spend an afternoon doing this.

Write small algorithm:

1.map tag according to the percentage of adaptive click, I put in the footer inside, recommended to use DW's hot tools, did not use the regular, with a simple string operation

2. Audio subtitle line scrolling

Through audio tags

11.13 Update

In fact, worrying about the loading speed is completely unnecessary. It only takes 2s to open the Team page I made in the United States, so if the picture requires clarity, it can be increased to about 1000 pixels.