



PREPARING FOR USABO AND REGENERON

Amber Luo
July 9, 2022

 **MENTUM
LEARNING**

Preparing for USABO and Regeneron



July 9 (Saturday) 7-8PM CT
Preparing for USABO and Regeneron

Regeneron STS 3rd Place Winner
RSI Scholar, Top 5 Paper & Presentation
2-time USABO National Finalist
ISEF Grand Prize Winner



Amber Luo
MIT '26

Presentation Outline



USA
BIOlympiad

Introduction

A little bit about myself: my background, passions, and hobbies! :)

1

REGENERON
SCIENCE TO MEDICINE®

Research

How do I find a mentor in high school? Why should I do research? Can I submit my research to competitions?



3



Questions!

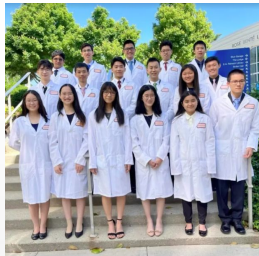
Ask me anything – Olympiads, research, college apps, favorite foods, etc.

5

2

USABO

The ins and outs of the Biology Olympiad: study tips, myths, resources, communities, and textbooks!



4

Life Tips

How I managed my time, found activities I'm passionate about, and survived high school :D





About Me

Biology



Favorite subfields:

- Anatomy & physiology! <3
- Genetics
- Cell Biology

Experiences:

- 2-time USABO (USA Biolympiad) National Finalist
- 2022 USABO Silver Medalist (Top 8)
- Science Olympiad <3

Research



Favorite subfields:

- Applied mathematics
- Bioinformatics
- Computational Biology

Experiences:

- 2021 RSI Scholar w/ Top 5 Paper & Top 5 Presentation
- Regeneron STS 3rd Place Winner
- ISEF Grand Prize Winner



Math

Experiences:

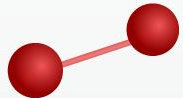
- 5-time AIME qualifier
- 2-time Math Prize for Girls invitee
- Mathworks HSMC alumna
- MathPath alumna



The Future



- **Attending MIT in the fall!**
- Double majoring:
 - Applied Math
 - Computer Science & Molecular Biology
- Paid Regeneron summer internship
- RSI Last Week TA
- Industry? Academia? Medical school?



USABO

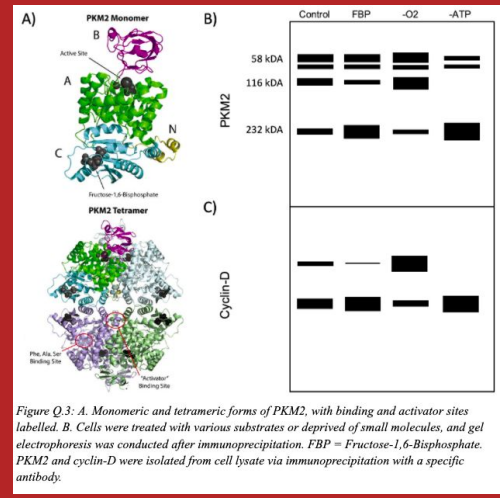
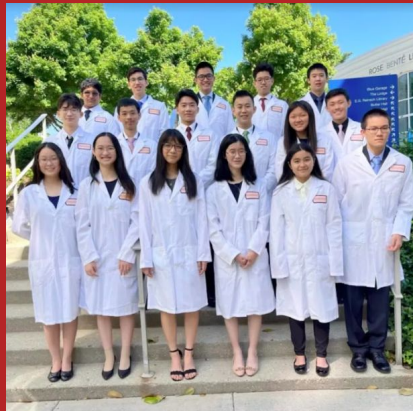


Figure Q3: A. Monomeric and tetrameric forms of PKM2, with binding and activator sites labelled. B. Cells were treated with various substrates or deprived of small molecules, and gel electrophoresis was conducted after immunoprecipitation. FBP = Fructose-1,6-Bisphosphate. PKM2 and cyclin-D were isolated from cell lysate via immunoprecipitation with a specific antibody.



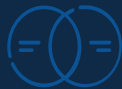
| Calendar | Day | Month | Year | | | | |
|------------|----------------------------------|--------------------------------------|----------------------------------|--------------------------------|-------------------------------|----------------------|---|
| March 2021 | Mon 8 | Tue 9 | Wed 10 | Thu 11 | Fri 12 | Sat 13 | Sun 14 |
| | | | 1:30 PM A&B | | | | Overnight training (2 hrs) Overnight testing (2 hrs) |
| 7:00 AM | | | | | | | |
| 8:00 AM | 7:00 AM Military | 7:00 AM reproduction PKM2 team | | 7:00 AM endocrine | 8:00 AM cardio | 9:00 AM cardio 2 | 9:00 AM Math Tutoring PKM2/STAT3/Calcium |
| 9:00 AM | | 7:00 AM reproduction | | 8:00 AM receptor 2 chapters | | | |
| 10:00 AM | 8:00 AM receptor 1 chapter | 8:00 AM receptor 2 chapters | 8:00 AM reproduction | | 9:00 PM receptor 1 chapter | | |
| 11:00 AM | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 PM receptor 1 chapter | 10:00 PM genetics | 10:00 PM genetics | 10:00 PM genetics |
| 12:00 PM | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 PM receptor 1 chapter | 10:00 PM genetics | 10:00 PM genetics | 10:00 PM genetics |
| 1:00 PM | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 PM receptor 1 chapter | 10:00 PM genetics | 10:00 PM genetics | 10:00 PM genetics |
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| 4:00 PM | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 PM receptor 1 chapter | 10:00 PM genetics | 10:00 PM genetics | 10:00 PM genetics |
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| 12:00 AM | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 AM genetics and cell bio | 9:00 PM receptor 1 chapter | 10:00 PM genetics | 10:00 PM genetics | 10:00 PM genetics |

Types of Fractures - Avulsion

Information

- Muscle or tendon pulls away a piece of bone
- Putting too much stress on bones during sports or exercise
- Bone is moving one way and tendon pulls in the opposite way - piece of bone pulled away





USABO OVERVIEW

Research is fundamentally different from Olympiads in countless ways. Is research for you?



BENEFITS OF DOING USABO

The “Olympics” of research! What can you win with the research you conduct?



USABO MYTHS

Can you do research without a mentor? Does being in a big lab help?



THREE PILLARS OF USABO

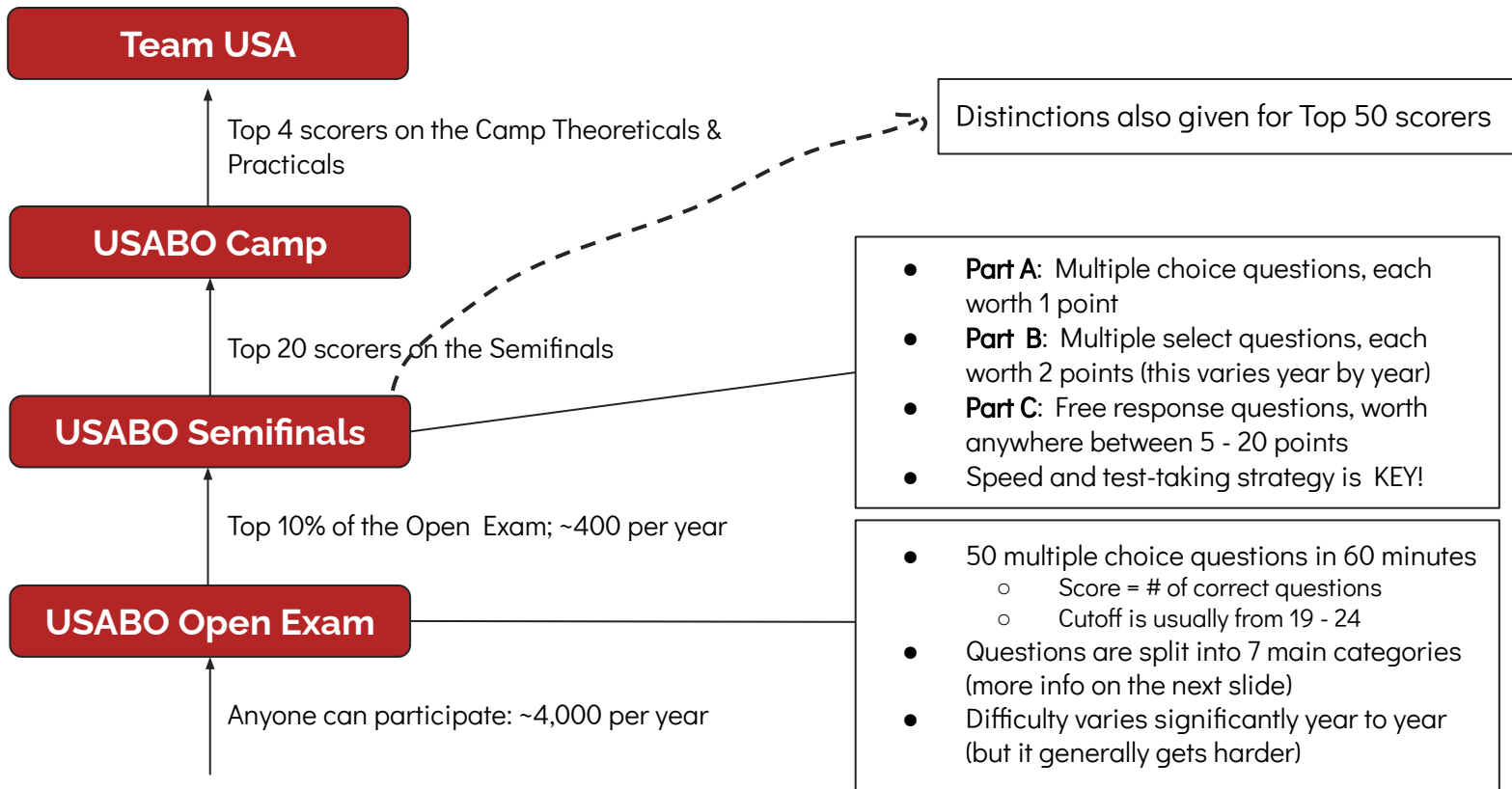
The highest barrier to entry



PRACTICE TESTS & RESOURCES

The most rigorous, rewarding, and fun way to start research

USA BIOlympiad



USABO Topics

- Animal Anatomy & Physiology (25%)
 - High point yield!
- Biosystematics (5%)
 - Just skip :/
- Cell Biology (20%)
 - Do it last; hardest section by far
- Ecology (10%)
 - HIGH POINT YIELD! Low effort too :D
- Ethology (5%)
 - Similar to ecology: high point yield and low-effort
- Genetics (20%)
 - Math and intuition; do this section second so your brain is sharp
 - Separates finalists from semifinalists
- Plant Anatomy & Physiology (15%)

Preface: USABO Myths

The USA Biology Olympiad (USABO) is one of the more memorization-heavy olympiads, and much of it, especially in early rounds, involves recalling the text of *Campbell Biology* in a timed fashion.

of it, especially in early rounds, involves recalling the text of *Campbell Biology* in a timed fashion.

11 Apr 2017 — If you can stone-cold memorize problems, you have a good at

65% of last year's USABO Finalists were also AIME qualifiers

to plenty of past USABO practice

"It's just a lot of studying,"
few textbooks that the test is based on
to do well, you basically memorize everything
that's in those textbooks. [You also need to
do] a lot of practice tests, because although
there is a lot of memorization involved, you
can't get by with only memorization."

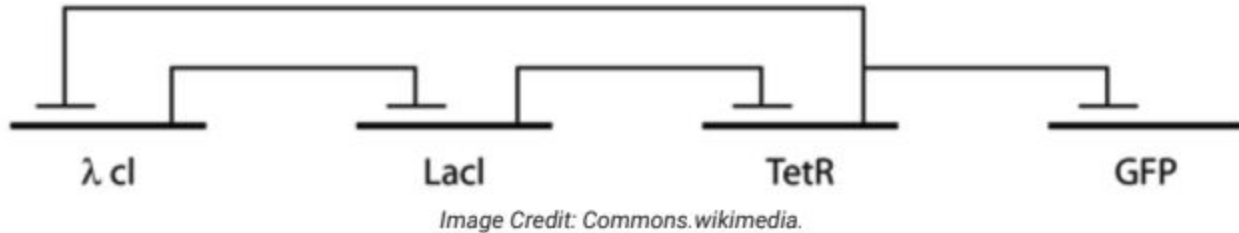
When I was competing, I had Campbell practically **memorized**.

You are studying a set of mutant cell cultures displaying loss-of-function mutations in ferritin (f^+ for wild-type, f^- for mutant) and/or transferrin receptor (t^+ for wild-type, t^- for mutant) genes caused by a single nucleic acid substitution in the coding regions of each. Ferritin is an intracellular protein that stores iron, while the transferrin receptor is a carrier protein that imports iron into the cell. Assume these cells express negligible amounts of other iron-binding proteins. Which of the following combinations of cells, culture conditions, and mRNA translation levels is correct? SELECT ONE ANSWER. (2 points)



The "repressilator" is a simple artificial genetic circuit. Each protein inhibits translation of the next in a cycle of 3. The TetR product also inhibits production of green fluorescent protein (GFP), providing a visual indicator of which stage the cycle is in. The cycle should go through three different phases: high λ cl, high LacI, and high TetR. Based on this model, which of the following qualities are important for proper function of a repressilator in a cell-free system? SELECT ALL THAT APPLY. (2 points)

In the fictitious two genes work. Act, the product present, it binds



ucts of the y protein min F is ram below.

Based on the ac UNACCEPTABLE

- A. Cooperative repression (efficacy increases rapidly near some threshold).
- B. Leaky repressor binding.
- C. Strong promoters.
- D. Odd number of repressors in cycle.

(") or

The mutant $P_{act}^+ O^+ ac$

- A. f^+t^+ , low iron, high ferritin and low transferrin receptor mRNA translation.
- B. f^+t^- , high iron, low ferritin and high transferrin receptor mRNA translation.
- C. f^-t^+ , low iron, low ferritin and low transferrin receptor mRNA translation.
- D. f^-t^- , high iron, high ferritin and low transferrin receptor mRNA translation.
- E. f^+t^- , low iron, low ferritin and low transferrin receptor mRNA translation.

| F. (1 point)

The Three Pillars of USABO



1. USABO Textbooks

The foundation of your knowledge and intuition!

Campbell: General Biology

- The ultimate USABO textbook

Vanders/Fox/Sherwood: Human Anatomy & Physiology

Ravens: Plant Anatomy & Physiology

Brookers/Griffith: Genetics

Alberts: Cell Biology

Lehninger: Biochemistry

!!! Read smart, AND hard.



2. Practice Tests & Resources

Past Opens/Semis: Found on the USABO website up to 2019. The BODS Discord server has 2020, 2021, and 2022 tests.

Genetics Practice: MIT OCW Genetics Exams + Griffiths end-of-chapter problems

General Practice for Camp: IBO exams

- IBO exams are high-quality, medium difficulty, and extremely fun with detailed solutions manuals!! <3



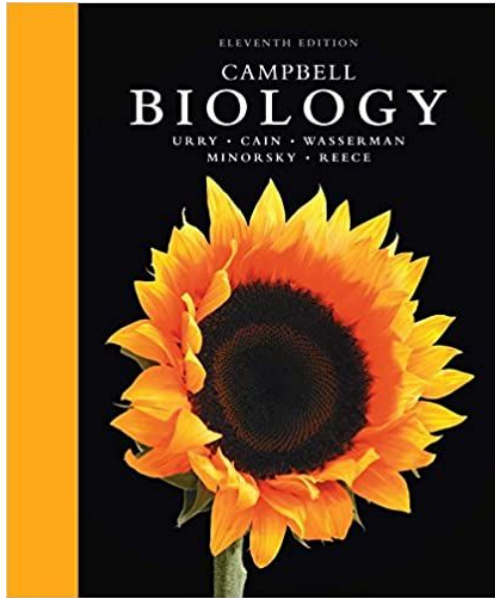
3. Communities

Join the Biology Olympiads Discord Server!

<https://discord.gg/quZS7fDd8B>

- Free mock biology competitions twice a year
- A community of friends and National Finalists to help you out and study with you
- Resources page and tons of alumni knowledge
- Problems of the Day & Histology of the Day

Campbell Biology is your best friend... but not your only friend



The first textbook most people read:

- Covers ALL topics at an introductory level

Medium-yield units:

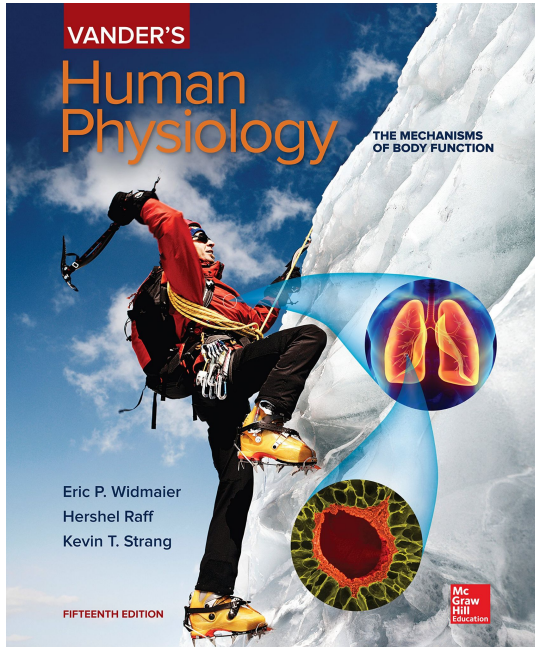
- Unit 2: The Cell (6 - 12)
 - 9 + 10
- Unit 3: Genetics (13 - 18 + 20-21)
 - Good introduction; Brookers is better for Camp and IBO prep
- Unit 4: Mechanisms of Evolution (22 - 25)
 - 23-24
- Unit 5: Biological Diversity (26, 29, 30, 32)

High-yield units:

- Unit 6: Plant Form and Function
- Unit 7: Animal Form and Function
 - Necessary but not sufficient: Vanders for Camp prep
- Unit 8: Ecology

Vanders Human Physiology is key to developing Anatomy & Physiology intuition

I read *every* chapter from 6-19 except 8 at least five times! That's how important this book is...



Pros:

- Beautiful schematics and flowcharts → easy to comprehend
- Clinical case studies and critical questions
- Accessible for intermediate-level anatomy & physiology students

Cons:

- Dense and intimidatingly long
- Easy end-of-chapter problems

Medium-yield:

- Muscle, Control of Body Movement, Immune System, Repro

High-yield:

- Everything else!
- Endocrine, Cardio, Kidneys, Digestion, Organic Metabolism

Vanders is a road trip to all the most beautiful places... so sightsee!

How to Read:

- 20 pages per day; attempt ALL end-of-chapter questions
- STOP and APPRECIATE the terrain! Diagrams are there for a reason. Do NOT rush.

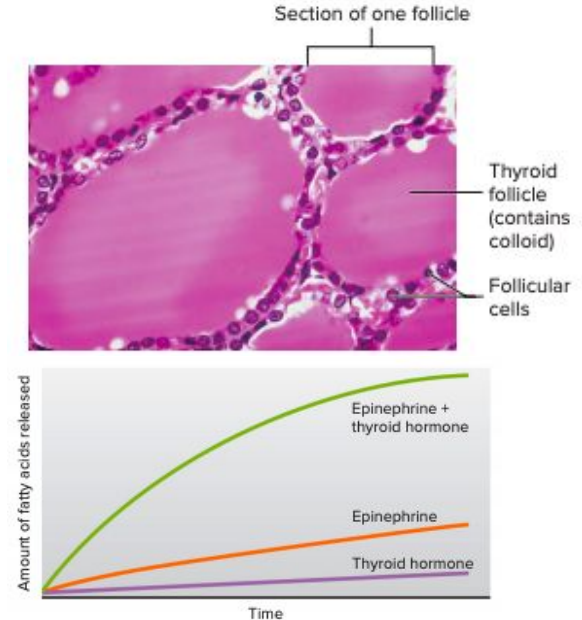
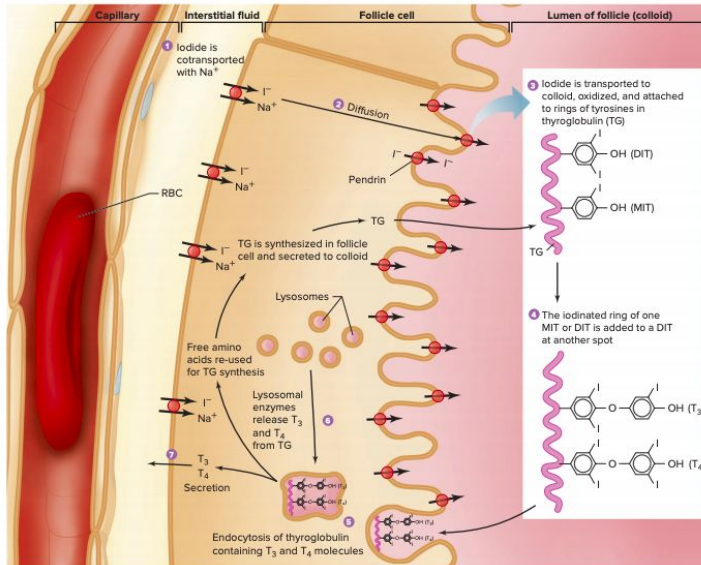
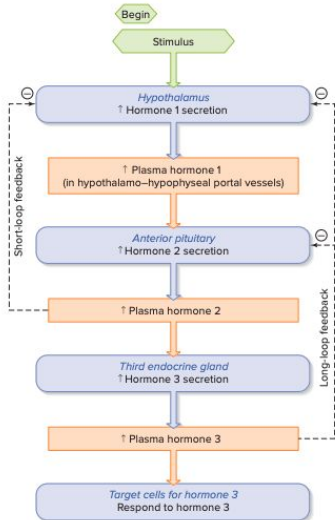
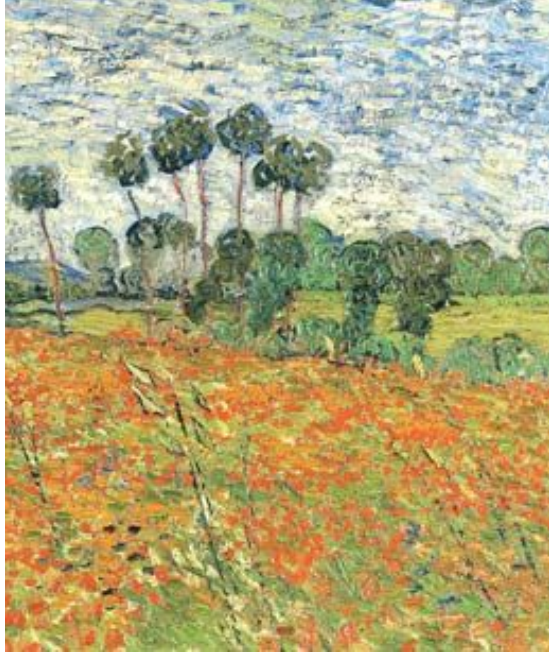


Figure 11.20 Short-loop and long-loop feedbacks. Long-loop feedback is exerted on the hypothalamus and/or anterior pituitary gland by the third hormone in the sequence. Short-loop feedback is exerted by the anterior pituitary gland hormone on the hypothalamus.

Ravens for plant intuition; especially plant histology and anatomy!



Pros:

- Beautiful typewriting and very satisfying to read
- Digestible
- DEEP dive into everything you need to know about plants

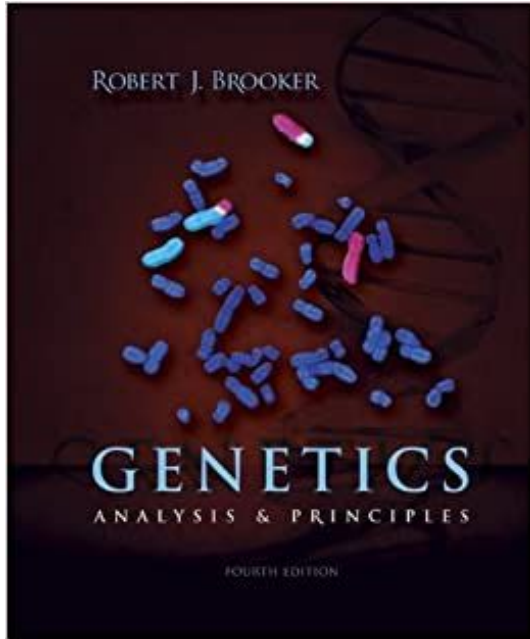
Cons:

- Not all chapters are applicable to USABO
- End-of-chapter questions don't exist :/

High-yield:

- Section 5 and Section 6
 - It's literally only 200 pages but it's so worth it like i read it 5x so read it read it read it read it

Brookers: My secret weapon



Pros:

- Excellent end-of-chapter problems (Griffiths is good too)
- Amazing development of intuition; beautiful diagrams
- Challenging yet crucial concepts that Campbells doesn't cover in just a few (~180) pages :D

Cons:

- Not all chapters are high-yield; read carefully!

Medium-yield:

- Genetic Technologies
- Quantitative genetics
- Population & evolutionary genetics

High-yield:

- Patterns of Inheritance (2 - 7)

BROOKERS = PRACTICE PRACTICE PRACTICE

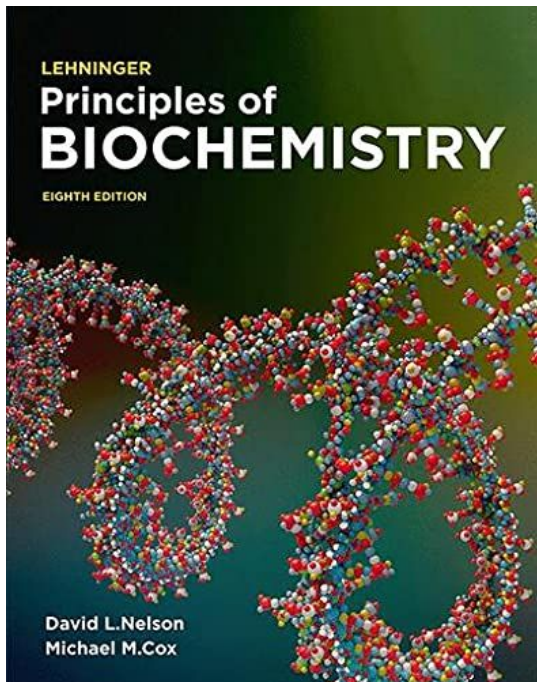
How to ~~Read~~ Practice:

- Genetics is about developing intuition
- **If you don't do the practice problems, you can't develop intuition**
- Don't skip the experimental sections! They are the most important parts
- Don't take notes; do write down and think through every single Experimental Question

Conclusion: Do ALL the Experimental Questions and Solved Questions

Conclusion 2: The effort you put into this textbook = how much you get out

Lehninger for fun, difficult biochemistry



Pros:

- Beautiful writing and so so so fascinating
- High-level topics; very in depth
- Excellent end-of-chapter problems

Cons:

- Super dense and jargon-y
- Most chapters are too in-depth and not applicable to USABO
- VERY difficult to understand without background knowledge

Medium-yield:

- DNA Technologies
- Proteins & enzymes (could be high-yield)

 USABO Secrets 

That means I will be helping to write next year's exams :)

 All exams are written by graduated National Finalists 

This is why the cell biology, genetics, and animal anatomy & physiology sections are always so difficult!

You can find all the test writers on Discord. Get to know them and find out what kinds of questions they like to write!

Do your best subjects first

Part C is ALWAYS worth it!

Guess on everything you don't know



EMPLOY TEST TAKING STRATEGIES ON THE
SEMIS!!!



Skip questions with long problem
statements if they are not worth much

USE YOUR DISCRETION!

You could be Rank 51! Write this on your college app

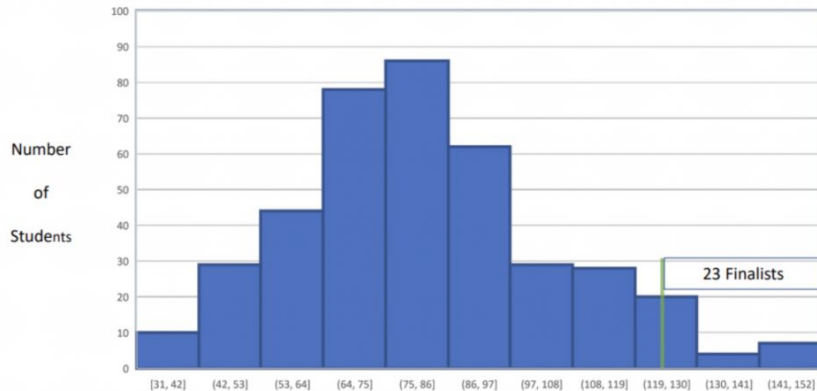
See how you improve year-to-year



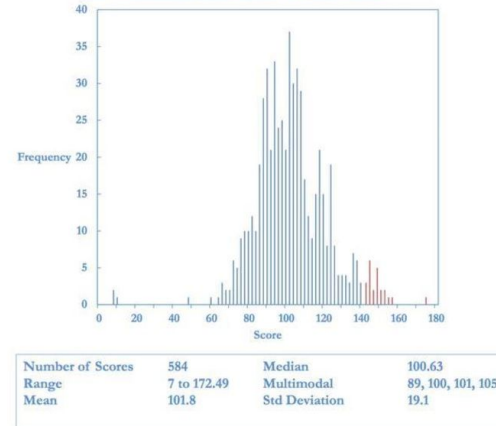
USE YEARLY HISTOGRAMS TO ESTIMATE YOUR RANK



2022 USABO Semifinal Exam Score Distribution



2015 Semifinal Exam Score Distribution



Research



RESEARCH VS. OLYMPIADS

Research is fundamentally different from Olympiads in countless ways. Is research for you?



RESEARCH COMPETITIONS

The "Olympics" of research! What can you win with the research you conduct?



RESEARCH MYTHS

Can you do research without a mentor? Does being in a big lab help?



FINDING A MENTOR

The highest barrier to entry



SUMMER PROGRAMS

The most rigorous, rewarding, and fun way to start research



RESEARCH MYTHS

Can you do research without a mentor? Does being in a big lab help?

Computational Epidemiology

Bioinformatics



Alumni network



Presented at a consortium

Learned R

my own research journey 🙄

Published a first-authored preprint

Recommendation letter

Essay inspiration <3



Wrote a full-length paper

Accepted to a conference

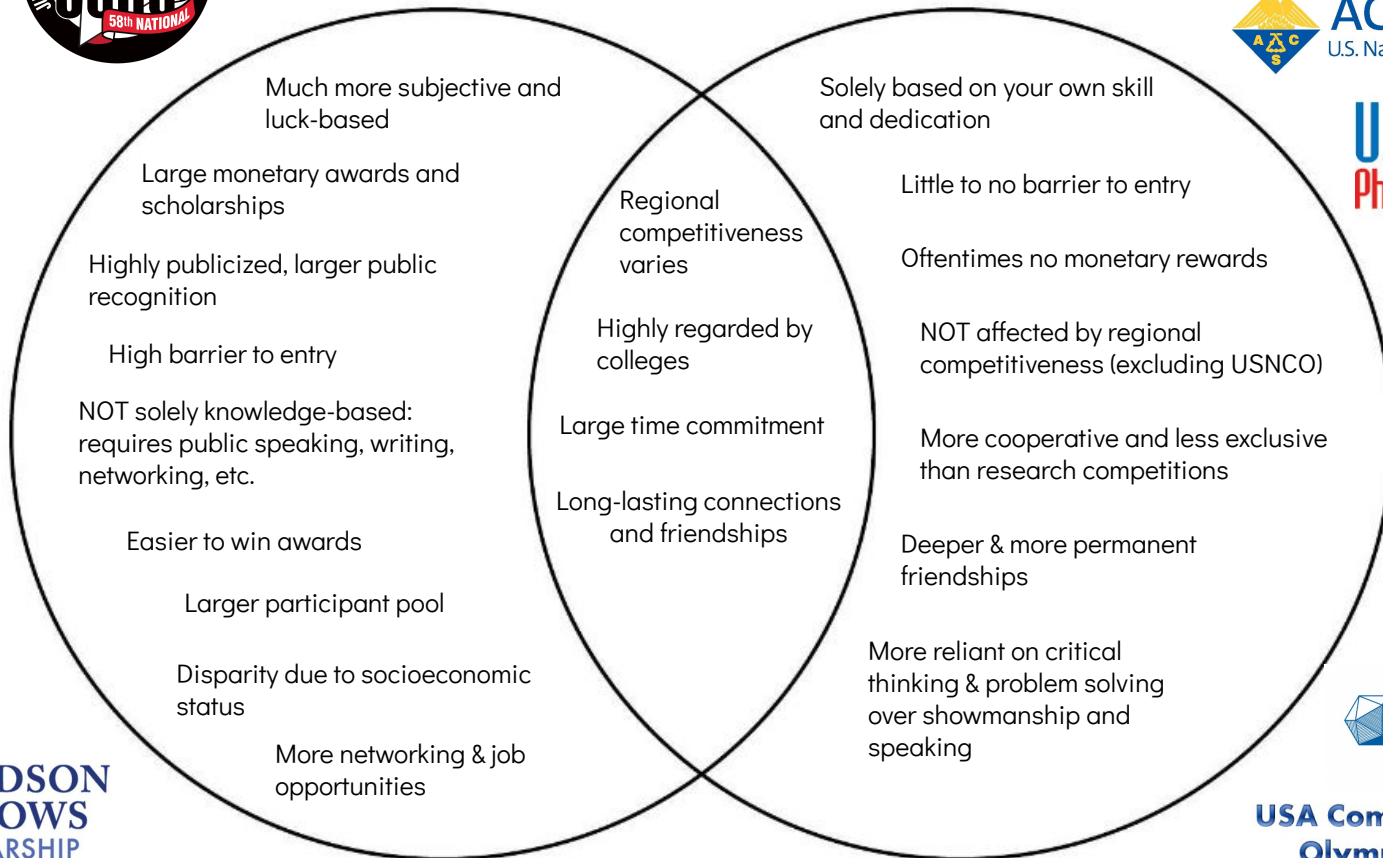


Stony Brook University

Quantitative & Synthetic Biology

Computational Biology

Research vs. Olympiads



What Can I Do With My Research?



RiboBayes: A Wavelet Transform-Based
Workflow to Assess Ribosome Pauses
Profiling

**DON'T BE AFRAID TO ASK
YOUR MENTOR ABOUT
OPPORTUNITIES!!!**

1. Submit to Research Fairs

The biggest way to share your research as a high schooler!

Competitions: Regeneron STS, Regeneron ISEF, J. Paulson, MIT THINK, BioGENEius, ExploraVision

Scholarships: Davidson Fellows, Emmy Noether Awards, Shing Tung Yau High School Science Award

Many camps require end-of-camp papers and most mentors will allow you to publish these.

If publishing doesn't work... preprint it!



3. Attend conferences

Some conferences only require an abstract or poster submission! There are many conferences specifically for high school students (Harvard Research Conference, etc.).

You can also present at lab meetings.

Top Science Fairs + Selection Processes



Regeneron ISEF

- Hybrid video and in-person judging panel process
 - Regional fairs select the highest-scoring projects in each category to send to the international fair
 - ~1400 ISEF Finalists each year
 - Travel as a "delegation" representing your state
 - No monetary prizes for ISEF finalists;** only for Grand Prize winners
- Video, abstract, and paper submission

ISEF

Regional Fair Round 2

Regional Fair Round 1



Regeneron STS

- HOLISTIC evaluation process: **not** entire research
 - 300 STS Scholars** receive \$2000
 - 40 STS Finalists** receive \$25,000 - \$250,000
 - Finalists attend a 10-day long retreat in D.C. to select the top 10 winners
 - Top 10 winners receive monetary prizes
- Written application involves not only research but also panel interviews (unique to STS)

Winner Selection

Finalist & Scholar Selection

Written application



JSHS

NJSHS

- Hybrid video and in-person judging panel process
 - Similar to Regeneron ISEF with regional fairs feeding into the international fair (NJSHS)
 - Not as well-run as ISEF but similarly competitive
 - Larger monetary prizes than ISEF
 - Quality of judging varies greatly** from year to year
 - Generally not as well-run as ISEF
- Video, abstract, and paper submission

State Fair

Regional Fair Round 2

Regional Fair Round 1

Two Strategies to Find a Mentor

Cold-emailing

Finding professors to email:

- Look at professors and labs at nearby universities with research that interests **you** (department websites)
- Consider looking up mentors who have previously mentored Regeneron STS winners, ISEF finalists, etc.
 - **They are both more experienced at mentoring and more likely to take you on!**

Tips:

- **!!! USE ALL YOUR CONNECTIONS !!!**
- Discuss the professor's research and tell them **WHY** you want to work with them in your email!
 - The more specific and enthusiastic, the better!
- Summarize your achievements, previous experience, and qualifications in your email
- **Attach a resume and high school transcript**
- If the professor says no, it doesn't hurt to ask if they know anyone in their department who may take you on!
- Mass-send emails. It may take up to 40 emails before you get a response!
- Email professors who are currently looking for grad students

Summer programs

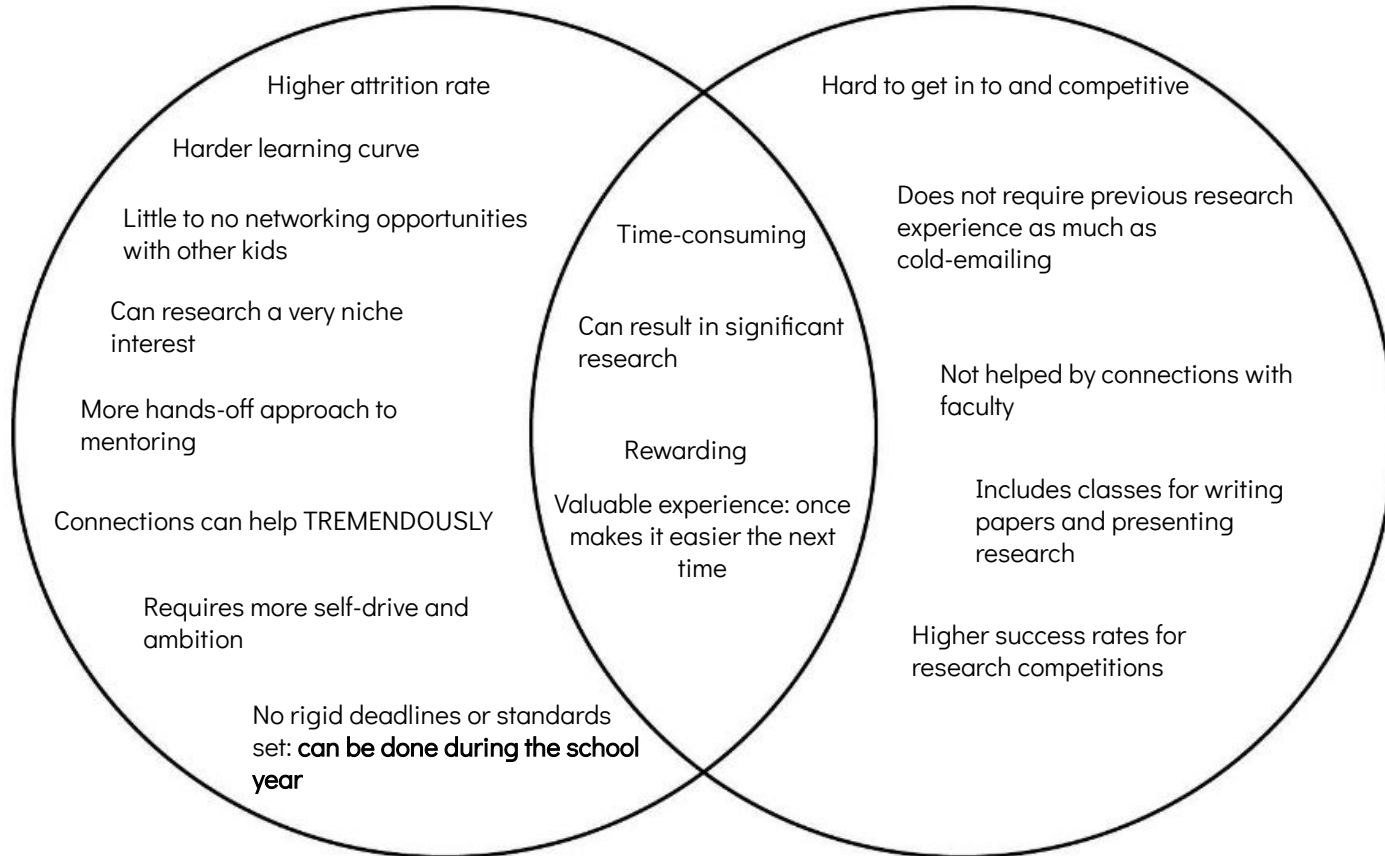
Looking for programs:

- A list of programs is provided later in these slides

Tips:

- Start your applications early!
 - Both early within the year and early in your life
- Create a spreadsheet with deadlines for summer camps
- Join Discord servers for applicants to summer research programs!! Many excellent resources are shared
 - RSI:
 - SSP:
- Connect with alumni and ask them for advice!
- List your achievements in a specific and organized manner! Define all important achievements
- Message me on Discord (Silverleaf1#5370) for RSI application tips

Cold-emailing vs. Summer Programs



Summer Stem Institute (SSI)

Research Focus/Description

- environmental, biomedical, computer science, math, physics, and chemistry are some choices for research
- Introductory version of RSI (run by RSI alum)
- Learn presentation/writing skills
- Bootcamp (listen to lecturers)
- Learn to code in Python

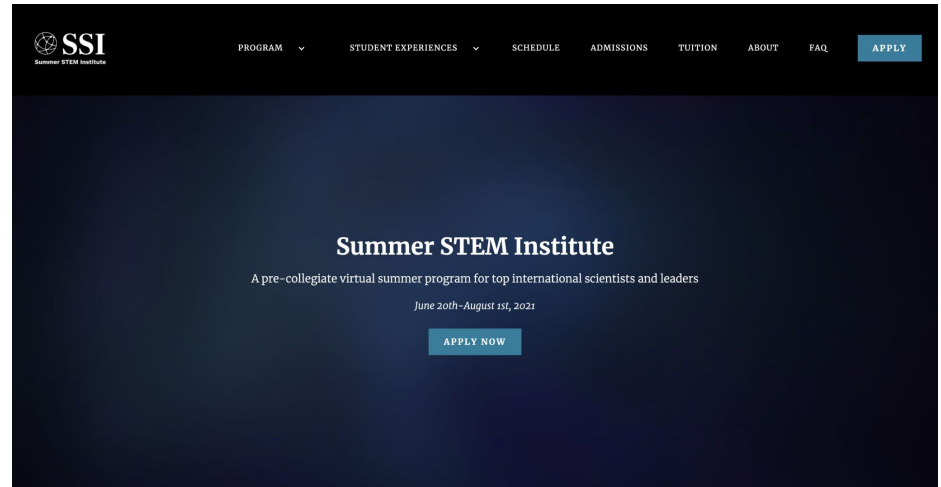
Cost: ~\$2000

Location: Virtual

Length: Six weeks (June 19-August 1st)

Application Requirements:

- High School and Late Middle
- 4 short essays
- Awards/Activities
- Transcript/Test Scores
- School/Your Information



miRcore Summer Camps

Research Focus/Description

- Computational biology
- R programming
- Linux/Unix
- Gateway to MVP program

Location: Michigan

Length: One week (random throughout June-August)

Cost: \$100

Application Requirements:

- High School and Late Middle
- Short essays
- Awards/Activities
- Transcript/Test Scores
- School/Your Information



M I R C O R E

Mathworks Junior Summer Math Camp (JSMC)

Research Focus:

- None (not a research camp, but see below)

Description:

- Doorway to HSMC (Honors Summer Math Camp) where you can do research
- Great community
- Learn Mathematica, competition math, critical thinking, honors seminar

Location: Texas State University

Cost: \$1400

Length: 2 weeks (June 5-17)

Application Requirements:

- Grades 6-8
- 1 essay
- 1 recommendation letter
- Transcript



FiGuRe 111: Cool people doing cool things at a cool camp

Mathworks Honors Summer Math Camp (HSMC)

Research Focus:

- Pure mathematics
- Epidemiology
- Computational biology
- Cryptography
- Data science

Description:

- Take classes on number theory, combinatorics, and **conduct an original group research project with a mentor**
- Study group <3 with the most brilliant mathematicians
- Craft a wholesome community and go on wacky field trips
- Group projects are usually published in journals and work continues with mentors past camp :)

Location: Texas State University

Cost: \$4000 + **huge** financial aid

Length: 6 weeks (June 19-July 30)

Application Requirements:

- Grades 9-12
- 1 essay
- 1 recommendation letter
- Transcript



UCSB (UC Santa Barbara) Mentorship Program

Research Focus:

- Literally everything

Description:

- Earn university credits by taking two interdisciplinary research courses
 - Exploratory Course - Presentation Techniques
 - Lecture Course - Introduction to Research
- 1-1 original research project with a mentor
- End of camp symposium!
- Projects can be published and submitted to competitions

Location: UC Santa Barbara (California)

Length: 6 weeks (June 19-July 29)

Cost: \$4500

Application Requirements:

- Grades 9-12
- Test scores (AP, SAT, ACT)
- 1 essay
- 1 supplemental writing piece
- Many supplemental responses
- 1 recommendation letter from science teacher

| | | | |
|-------------------|----------------------|--------------------|--------------|
| Anthropology | Earth Science | Geography | Music |
| Biochemistry | Ecology | Global Studies | Neuroscience |
| Biology | Economics | History | Physics |
| Chemistry | Education | Marine Biology | Psychology |
| Chicana/o Studies | Engineering | Mathematics | Sociology |
| Computer Science | Environmental Policy | Media, Arts & Tech | Statistics |

Stony Brook University - Garcia Summer Scholars

Research Focus/Description

- Garcia faculty staff mentor students
- Research is focused on polymers/engineering
- Group projects -- many projects go to ISEF

Location: Stony Brook University

Cost: \$2500

Length: Six weeks (June 28 - August 13)

Application Requirements:

- Rising senior (16 yrs) although rising juniors can apply
- Biology, Chem, Physics, Math, English (honors or AP)
- 60th% SAT
- 3 LORs
- Essays



Research Scholars Program 2007

This Program is sponsored in part
by the National Science Foundation.



Stanford Institutes of Medicine Summer Research Program (SIMR)

Research Focus:

- Immunology
- Neurobiology
- Stem cell and developmental biology
- Cancer Biology
- Bioengineering
- Cardiovascular
- Bioinformatics
- Genetics and genomics

Application Requirements:

- Rising juniors or seniors
- ????? probably really rigorous??

Description:

- 1-1 original wet-lab research project with a mentor
- Choose from eight areas of research!
- Projects can be published and submitted to competitions

Location: Stanford University

Length: 8 weeks (June 13-August 4)

Cost: Stipend?



Stanford
MEDICINE

Stanford Institutes of Medicine Summer Research Program

SIMR

BU RISE

Research Focus/Description

- Internship: Work one-on-one with professor under professor 40 hour/week (focus biology)
- Practicum: Group research on a biology related topic
- Presentation/writing skills

Location: Boston University

Cost: \$4650

Length: Six weeks (July 3-August 15)

Application Requirements:

- 3 essays (1 additional essay for internship)
- 2 recommendations
- Transcript and Standardized Test Scores
- Background Information



Summer Science Program (SSP)

Research Focus/Description

- Astrophysics: Teams research on asteroids. Topics covered include astronomy, physics, mathematics, and Python
- Biochemistry: Investigate enzymes in crops using biochemistry, molecular modeling, biostatistics, and bioinformatics

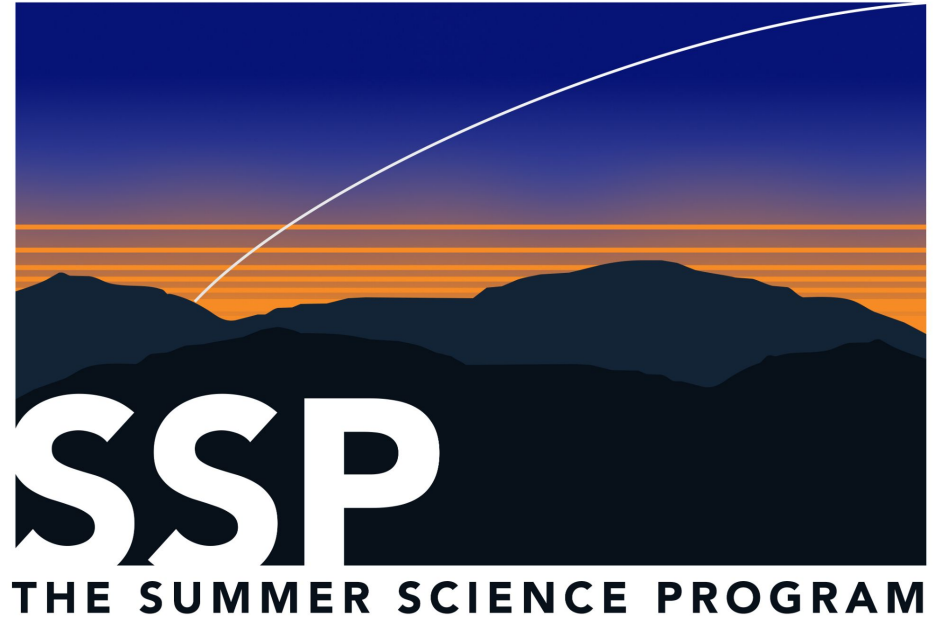
Location: Purdue University

Cost: \$3950 or \$6950

Length: Six weeks (mid June - end July)

Application Requirements:

- 4-5 essays
- 3 recommendations
- Transcript and Standardized Test Scores
- Background Information



Stony Brook University - Simons Summer Research Program

Research Focus:

- Literally anything!

Description:

- 1-1 original research project with a mentor
- End of camp symposium!
- Projects can be published and submitted to competitions
- Stipend!

Location: Stony Brook University (NY) (June 28-August 9)

Length: 6 weeks

Cost: FREE + stipend of \$800

Application Requirements:

- Grade 11
- Test scores (AP, SAT, ACT)
- Many short essays (<90 words)
- 2 recommendation letters from STEM teachers
- **School nomination**
- Test scores and transcript



Simons Summer Research Program

Research Science Institute (RSI)

Research Focus/Description

- Conduct original 1-1 project with professor (usually MIT/Harvard professor) on any topic
- Hear from distinguished speakers almost every night
 - Nobel prize winners <3
- Bed checks, TARP, and other fun things
- Learn presentation/writing skills/LaTeX
- Attend classes first week (for way too many hours a day)

Location: MIT

Cost: Free

Length: Six weeks (June 27th - August 7rd)

Application Requirements:

- 4-5 really LONG essays... YES..(awards)
- 3 recommendations
- Transcript and Standardized Test Scores
- Research paper you wrote (optional)

RESEARCH
SCIENCE
INSTITUTE



There are **81 scholars** among us

 Life tips



!!! Use a calendar !!!

Attend summer camps!

Volunteer!

Chase your passions... ESPECIALLY during the summers

Study for Olympiads!

Intern at a lab!

Questions? <3

Momentum Learning Wechat Group



All seminar recordings and slides can be found at: <https://www.momentumlearning.org/open-house>

Join Momentum Learning Wechat groups



MOMENTUM LEARNING

www.momentumlearning.org
 info@momentumlearning.org



- ◆ **Best** contest math and coding competition (USACO) preparation classes
- ◆ **Structured curriculum** from the elementary level to the highest Olympiad Math (IMO/USAMO)
- ◆ We use **Zoom** to live-stream classes. **Recordings** are available
- ◆ Over **200** students receive **Distinguished Honor Roll** (top 1%) and **Honor Roll** (top 5%) on AMC8, including **15-20 perfect scores** each year
- ◆ **MATHCOUNTS National** individual round **winner, runner-up**, and multiple students who made **count down** (top12). Team round **National Champion** 3 years in a row
- ◆ Each year, over **260** students qualify for **AIME**, over **60** qualify for **USAMO & USAJMO**, and **4-8** qualify for MOP
- ◆ Team Sweepstake Winner for **CMIMC, HMMT, and PUMaC**
- ◆ Over **50** students qualified for USACO **Gold/Platinum** in last 2-3 years
- ◆ Trained the **2nd place** team in **National Science Bowl** and students who made **USABO Finalists** (Top 20 in the country)

MOMENTUM LEARNING

www.momentumlearning.org
 info@momentumlearning.org



Scan me to register

Senior Seminars

Register here:
<https://www.momentumlearning.org/open-house>



Jarvis Xie
 Yale '26

June 17 (Friday) 7-8PM CT
 How to become a top debater

Peak at Rank #1 among all LD debaters on multiple national metrics
 USAMO Qualifier
 USACO Platinum Qualifier



Daniel Guan
 MIT '26

June 18 (Saturday) 7-8PM CT
 USACO Practice and Strategy

2-time USACO Finalist
 USAMO Qualifier
 Competitive Programming Initiative Founder



Rowechen Zhong
 MIT '26

June 19 (Sunday) 7-8PM CT
 Learning to Learn: How to Master three Arts

US Physics Team '22
 Blue MOP '21
 USAMO HM '21
 USACO Platinum



Stephanie Wang
 Harvard '26

June 24 (Friday) 7-8PM CT
 Science Olympiad and Social Impact

RSI Scholar
 Coea-Cola Scholar
 3-time Science Olympiad National Champion
 3-time USABO Semifinalist



Russell Li
 Harvard '26

June 25 (Saturday) 7-8PM CT
 Crafting a Productive & Enjoyable HS Career

RSI Scholar
 5-time Scholastic National Gold/Silver Medalist
 Editor-In-Chief of School Newspaper
 Captain of Varsity Cross Country & Tennis Teams

July 2 (Saturday) 7-8PM CT
 ASK ME ANYTHING!

3-time IMO Gold Medalist
 USA IOL Team Member
 Regeneron Science Talent Search 10th Place
 2-time MATHCOUNTS champ



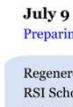
Luke Robitaille
 MIT '26



Isabella Quan
 MIT '26

July 3 (Sunday) 7-8PM CT
 Girls in Contest Math

RSI Scholar and Rickoid of the Year
 MOP Qualifier
 8-time AIME Qualifier/7-time MPFG Qualifier
 IEEE CCCW Best Paper Awardee



Amber Luo
 MIT '26

July 9 (Saturday) 7-8PM CT
 Preparing for USABO and Regeneron

Regeneron STS 3rd Place Winner
 RSI Scholar, Top 5 Paper & Presentation
 2-time USABO National Finalist
 ISEF Grand Prize Winner



Nicholas Wei
 MIT '26

July 15 (Friday) 7-8PM CT
 My Science Research Journey

ISEF Grand Prize Winner
 CSEF Project of Year
 USABO Finalist
 Paid Research Intern at Stanford

August 13 (Saturday) 7-8PM CT
 Balancing Academics and Athletics

4-time AIME/MPFG Qualifier
 Maryam Mirzakhani AMC10 Winner
 Speedo Sectionals Qualifier
 UIL Swimming District Champion



Christine Huang
 MIT '26

2442 Settlers Way Blvd
 Sugar Land, TX 77479

281-277-9075

Thank You!