REU-CAAR: You’re Done!

William Gasarch-U of MD
Thanks to All Involved:

Clyde: He helped your talks be awesome!
Jodie: She got you paid.
John Dickerson: He was my co-PI.
Sharron: She manages the budget.

Mentors who guided your brilliance with their expertise:
NSF, Zhu/Google, Iribe/Ocular, Winkler Foundation

ALL OF YOU!

Without you there wouldn't be a program!
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ALL OF YOU! Without you there wouldn't be a program!
Your Advice on How to Make the Program Better

1. The Hat Problem: Students should have to wear hats.
   Bill's Response
   How about Virtual Hats?

2. The Egg Problem: Students should get real eggs.
   Bill's Response
   Okay, but if you drop them, you clean it up.

3. The Forehead Problem: Students should have bits written on their foreheads.
   Bill's Response
   Could be messy!

4. The Muffin Problem: Students should get to eat real muffins.
   Bill's Response
   Next summer: $61$ muffins for $19$ people, cut so that everyone gets $\frac{61}{19}$ and the smallest piece is $\frac{313}{684}$.
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Next summer: \( \frac{61}{19} \) muffins for 19 people, cut so that everyone gets \( \frac{61}{19} \) and the smallest piece is \( \frac{313}{684} \).
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Case 1a: If Program is in Person: Things I can Control

1. Students should be on email lists to find out about other talks in the dept.
2. Stop calling Math Problems A Fun Activity.
3.1 Early on Have a basic talk on ML.
3.2 Early on Have a talk on how to do research.
3.3 Later on Have a talk on how to give a good talk.
4. Check in with the groups more often. Make it more clear that students can contact me at any time with issues.
5. The REU-CAAR and REU-EXERCISE talks: to many in a row.
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2. Students should have well defined projects from the very beginning.

3. The mentor should not split up the team.
Case 2: If Program is Virtual

1. Have students assigned to read a light book or watch a Ted Talk and get together and talk about that, for more sociability. Might even do if in person.

2. Need better tech to simulate a blackboard.

3. If program is virtual warn the students that she should be in the Continental USA. Apologies to Alaska and Hawaii.

4. Smaller breakout rooms for HHH Fun activities.

5. If REU2022 is virtual (e.g., the DeSantos Variant spreads) then civilization will be close to the end, hence improving how REU-CAAR operates will be the least of our concerns.
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THOUGHT QUESTION

We had:

- Talks by the mentors (in the first two weeks)
- REU activity once a week (usually Monday)
- Talks once a week (usually Wed)
- Two game nights
- Two Speed-Meetings nights
- Fairwell Talk (now!)
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Does this interfere with research?
Should there be less non-research stuff?
Next Summer’s Projects

▶ John D and Tom G’s Project (This Summer: Facial Recog and Bias)
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Next Summer’s Projects (cont)

A New Project:

Funded by The Winkler Foundation

Computing Fast Fourier Transforms:

Mentored by Furong 'Vin Diesel' Huang
Next Summer’s Projects (cont)

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**Computing Fast Fourier Transforms:**

Mentored by Furong ‘Vin Diesel’ Huang
I asked the groups for favorite and least favorite talks and activities.

- Favorite was a tie:
  - John Dickerson on Kidney Exchange. Quote: Applying real math to a real problem!
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- Least Favorite was a tie:
  - Jim Purtilo on Software Eng. Quote: I already knew I didn't want to do SE. This just confirms it.
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- Most REU programs have around 80 applying
- Most REU programs take 10 students
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- We have 210 applying.
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Do I really want 24 students in Summer 2022?
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Do I really want 24 students in Summer 2022?
If they are like you then **YES**
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We have 210 applying.
We take 24 students.

Do I really want 24 students in Summer 2022?
If they are like you then YES
AWWWWWWWWWWW
REU programs: Ours and Others

red is what we do.
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▶ Topic Applying Theory to Practice, allegedly
REU programs: Ours and Others

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- Projects picked ahead of time or once you are there
Should the NSF Renew the Grant?

Your thoughts

PRO
- We bring in extra money for around 10 more students.
- Nine years. Experience and proven record.
- Very few REUs offers a quantum computing project.

CON
- Scattered: Quantum! Crypto! ML! Graph Theory!
- Might prefer to fund new programs.

PRO but not distinctive
- Around half of the students are Female.
- Around 5% are African-American or Hispanic (this was our best year for that).
- Many of our students go to grad school.
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One More Slide
Lets Wrap this Up

1. Positive thoughts or stories about the program.
2. Tell me something interesting.