

REU Info Session 2019

Kenneth DeMason

University of Florida

kdemason@ufl.edu

November 3, 2019

Outline

- 1 Info
- 2 Applying
- 3 Advice

Outline

- 1 Info
 - What is an REU?
 - REU Advantages
 - REU Disadvantages
 - Types of REUs
- 2 Applying
- 3 Advice

What is an REU?

- Eight week long research programs at another university
- Several different types. Can be large (~ 50 participants), small (~ 9 participants), project based, etc.
- Usually done during summers after Freshman, Sophomore, and Junior years.

What is an REU?

- Eight week long research programs at another university
- Several different types. Can be large (~ 50 participants), small (~ 9 participants), project based, etc.
- Usually done during summers after Freshman, Sophomore, and Junior years.

What is an REU?

- Eight week long research programs at another university
- Several different types. Can be large (~ 50 participants), small (~ 9 participants), project based, etc.
- Usually done during summers after Freshman, Sophomore, and Junior years.

REU Advantages

- Be exposed to different areas of math
- Develop a feel for mathematical research
- Gain experience giving and attending talks
- Great resume builder
- Get a paid! ~\$3000
- *MAKE CONNECTIONS*

REU Advantages

- Be exposed to different areas of math
- **Develop a feel for mathematical research**
- Gain experience giving and attending talks
- Great resume builder
- Get a paid! ~\$3000
- *MAKE CONNECTIONS*

REU Advantages

- Be exposed to different areas of math
- Develop a feel for mathematical research
- Gain experience giving and attending talks
- Great resume builder
- Get a paid! ~\$3000
- *MAKE CONNECTIONS*

REU Advantages

- Be exposed to different areas of math
- Develop a feel for mathematical research
- Gain experience giving and attending talks
- **Great resume builder**
- Get a paid! ~\$3000
- *MAKE CONNECTIONS*

REU Advantages

- Be exposed to different areas of math
- Develop a feel for mathematical research
- Gain experience giving and attending talks
- Great resume builder
- **Get a paid! ~\$3000**
- *MAKE CONNECTIONS*

REU Advantages

- Be exposed to different areas of math
- Develop a feel for mathematical research
- Gain experience giving and attending talks
- Great resume builder
- Get a paid! ~\$3000
- ***MAKE CONNECTIONS***

EVERYONE here should apply!

REU Advantages

- Applications are FREE! Apply to as many as you want.
- If you are accepted, great! We've discussed the advantages.
- Even if you are not accepted, applying will help develop your writing ability. Reuse and refine your applications!

REU Advantages

- Applications are FREE! Apply to as many as you want.
- If you are accepted, great! We've discussed the advantages.
- Even if you are not accepted, applying will help develop your writing ability. Reuse and refine your applications!

REU Advantages

- Applications are FREE! Apply to as many as you want.
- If you are accepted, great! We've discussed the advantages.
- Even if you are not accepted, applying will help develop your writing ability. Reuse and refine your applications!

Sample Writing

Sample 1, Jan 2019

This past August, I began my first mathematics research project on Minimal surfaces, of which I have some minor results relating to the catenoid and, independently, variations in surface area under general vector fields. I have since transitioned to investigating Delaunay surfaces under the Ricci Flow. To prepare myself for these projects, I started reading from do Carmo and Montiel & Ros, am completing the graduate analysis sequence, and am taking a course in Curves and Surfaces.

Sample Writing

Sample 2, Nov 2019

In Fall 2018, I began my first math research project on minimal surfaces. I investigated the catenoid, the only minimal surface of revolution. After finding a simple proof of this property, I discovered another property unique to the catenoid not found in the literature. Then, I extended a formula from normal vector fields to general smooth ones. I enjoyed these topics because they were questions I proposed and was later able to solve, and they provided an important foundation for working with surfaces. These projects motivated me to complete the graduate analysis sequence, take a special topics course in curves and surfaces, and study from texts by do Carmo and Montiel & Ros on my own.

REU Disadvantages

~_(\ツ)_/~

Types of REUs

Centralized vs. Decentralized

- Centralized: Focus on a particular project. When applying, you'll be applying to work on this specific project. Most centralized REUs offer multiply projects (2-4).
- Decentralized: Work with a professor/graduate student on a personalized project. More broad, but rarer.

Types of REUs

Centralized vs. Decentralized

- Centralized: Focus on a particular project. When applying, you'll be applying to work on this specific project. Most centralized REUs offer multiply projects (2-4).
- Decentralized: Work with a professor/graduate student on a personalized project. More broad, but rarer.

Outline

1 Info

2 Applying

- Overview
- The Parts of an Application
- Timeline
- Choosing REUs
- Decisions

3 Advice

Your New Best Friend

<https://www.mathprograms.org/db>

What is mathprograms.org?

- Where you'll apply to *most* REUs, upload documentation, manage letter writers,...
- Find information about available REUs

What is mathprograms.org?

- Where you'll apply to *most* REUs, upload documentation, manage letter writers,...
- Find information about available REUs

What is mathprograms.org?

Let's take a look at it!

Some REUs have you apply by other means

- <https://www.nsfreu.org/>
- Via email

Some REUs have you apply by other means

- <https://www.nsfreu.org/>
- Via email

The Parts of an Application

Main components:

- Coversheet
- Cover Letter
- CV
- Transcript
- Letters of Recommendation
- Some may require additional info

The Parts of an Application

Main components:

- Coversheet
- Cover Letter
- CV
- Transcript
- Letters of Recommendation
- Some may require additional info

The Parts of an Application

Main components:

- Coversheet
- Cover Letter
- CV
- Transcript
- Letters of Recommendation
- Some may require additional info

The Parts of an Application

Main components:

- Coversheet
- Cover Letter
- CV
- Transcript
- Letters of Recommendation
- Some may require additional info

The Parts of an Application

Main components:

- Coversheet
- Cover Letter
- CV
- Transcript
- Letters of Recommendation
- Some may require additional info

The Parts of an Application

Main components:

- Coversheet
- Cover Letter
- CV
- Transcript
- Letters of Recommendation
- Some may require additional info

The Parts of an Application

Coversheet (personal info)

- Name, address
- Current institution
- Manage references

The Parts of an Application

Coversheet (personal info)

- Name, address
- Current institution
- Manage references

The Parts of an Application

Coversheet (personal info)

- Name, address
- Current institution
- Manage references

The Parts of an Application

Cover Letter

- Not to be confused with the coversheet!
- Sometimes referred to as a personal statement, research statement...
- Your intellectual autobiography: What are you interested in, why, how did you get there, where do you plan to go from here?
- How will this REU help advance your career?
- One of two places to sell yourself! Make the most of it!

The Parts of an Application

Cover Letter

- Not to be confused with the coversheet!
- Sometimes referred to as a personal statement, research statement...
- Your intellectual autobiography: What are you interested in, why, how did you get there, where do you plan to go from here?
- How will this REU help advance your career?
- One of two places to sell yourself! Make the most of it!

The Parts of an Application

Cover Letter

- Not to be confused with the coversheet!
- Sometimes referred to as a personal statement, research statement...
- Your intellectual autobiography: What are you interested in, why, how did you get there, where do you plan to go from here?
- How will this REU help advance your career?
- One of two places to sell yourself! Make the most of it!

The Parts of an Application

Cover Letter

- Not to be confused with the coversheet!
- Sometimes referred to as a personal statement, research statement...
- Your intellectual autobiography: What are you interested in, why, how did you get there, where do you plan to go from here?
- How will this REU help advance your career?
- One of two places to sell yourself! Make the most of it!

The Parts of an Application

Cover Letter

- Not to be confused with the coversheet!
- Sometimes referred to as a personal statement, research statement...
- Your intellectual autobiography: What are you interested in, why, how did you get there, where do you plan to go from here?
- How will this REU help advance your career?
- One of two places to sell yourself! Make the most of it!

The Parts of an Application

CV

- Usually optional, but best to put it anyways; it's the second place to sell yourself
- Research/Research interests
- Extracurricular (Mathematical outreach, teaching, etc.)
- Coursework overview (BRIEF descriptions, date taken, grade received, book used)
- Let's look at a sample

The Parts of an Application

CV

- Usually optional, but best to put it anyways; it's the second place to sell yourself
- Research/Research interests
- Extracurricular (Mathematical outreach, teaching, etc.)
- Coursework overview (BRIEF descriptions, date taken, grade received, book used)
- Let's look at a sample

The Parts of an Application

CV

- Usually optional, but best to put it anyways; it's the second place to sell yourself
- Research/Research interests
- Extracurricular (Mathematical outreach, teaching, etc.)
- Coursework overview (BRIEF descriptions, date taken, grade received, book used)
- Let's look at a sample

The Parts of an Application

CV

- Usually optional, but best to put it anyways; it's the second place to sell yourself
- Research/Research interests
- Extracurricular (Mathematical outreach, teaching, etc.)
- Coursework overview (BRIEF descriptions, date taken, grade received, book used)
- Let's look at a sample

The Parts of an Application

CV

- Usually optional, but best to put it anyways; it's the second place to sell yourself
- Research/Research interests
- Extracurricular (Mathematical outreach, teaching, etc.)
- Coursework overview (BRIEF descriptions, date taken, grade received, book used)
- Let's look at a sample

The Parts of an Application

Transcript

- Unofficial transcripts are ok
- With that said, UF's is...less than ideal
- I would suggest purchasing an official transcript (\$6), scanning it, and uploading that

The Parts of an Application

Transcript

- Unofficial transcripts are ok
- With that said, UF's is...less than ideal
- I would suggest purchasing an official transcript (\$6), scanning it, and uploading that

The Parts of an Application

Transcript

- Unofficial transcripts are ok
- With that said, UF's is...less than ideal
- I would suggest purchasing an official transcript (\$6), scanning it, and uploading that

The Parts of an Application

Letters of Recommendation

- Usually need two
- Start cultivating relationships with your professors NOW
- Go to office hours, ask questions (even if you know the answer!), talk to them about their research, etc.
- Try to get one academic letter (a professor who has taught you several times) and one research letter (an advisor you have worked with)

The Parts of an Application

Letters of Recommendation

- Usually need two
- Start cultivating relationships with your professors **NOW**
- Go to office hours, ask questions (even if you know the answer!), talk to them about their research, etc.
- Try to get one academic letter (a professor who has taught you several times) and one research letter (an advisor you have worked with)

The Parts of an Application

Letters of Recommendation

- Usually need two
- Start cultivating relationships with your professors **NOW**
- Go to office hours, ask questions (even if you know the answer!), talk to them about their research, etc.
- Try to get one academic letter (a professor who has taught you several times) and one research letter (an advisor you have worked with)

The Parts of an Application

Letters of Recommendation

- Usually need two
- Start cultivating relationships with your professors NOW
- Go to office hours, ask questions (even if you know the answer!), talk to them about their research, etc.
- Try to get one academic letter (a professor who has taught you several times) and one research letter (an advisor you have worked with)

Timeline

- Generally choose REUs (Nov.- Early Dec.)
- Specifically choose REUs (Dec. - Early Jan.)
- Draft applications; go through several iterations (Mid-late Jan.)
- Final drafts complete (Early Feb.)
- Deadlines (Early Feb. - mid Feb.)
- Decisions (Early March - mid April)

Timeline

- Generally choose REUs (Nov.- Early Dec.)
- Specifically choose REUs (Dec. - Early Jan.)
- Draft applications; go through several iterations (Mid-late Jan.)
- Final drafts complete (Early Feb.)
- Deadlines (Early Feb. - mid Feb.)
- Decisions (Early March - mid April)

Timeline

- Generally choose REUs (Nov.- Early Dec.)
- Specifically choose REUs (Dec. - Early Jan.)
- **Draft applications; go through several iterations (Mid-late Jan.)**
- Final drafts complete (Early Feb.)
- Deadlines (Early Feb. - mid Feb.)
- Decisions (Early March - mid April)

Timeline

- Generally choose REUs (Nov.- Early Dec.)
- Specifically choose REUs (Dec. - Early Jan.)
- Draft applications; go through several iterations (Mid-late Jan.)
- **Final drafts complete (Early Feb.)**
- Deadlines (Early Feb. - mid Feb.)
- Decisions (Early March - mid April)

Timeline

- Generally choose REUs (Nov.- Early Dec.)
- Specifically choose REUs (Dec. - Early Jan.)
- Draft applications; go through several iterations (Mid-late Jan.)
- Final drafts complete (Early Feb.)
- **Deadlines (Early Feb. - mid Feb.)**
- Decisions (Early March - mid April)

Timeline

- Generally choose REUs (Nov.- Early Dec.)
- Specifically choose REUs (Dec. - Early Jan.)
- Draft applications; go through several iterations (Mid-late Jan.)
- Final drafts complete (Early Feb.)
- Deadlines (Early Feb. - mid Feb.)
- Decisions (Early March - mid April)

Choosing REUs

- (Generally) Determine what size you want, what kind you want, etc.
- (Specifically) Then, browse mathprograms.org and other sites to try and find REUs.

Choosing REUs

- (Generally) Determine what size you want, what kind you want, etc.
- (Specifically) Then, browse mathprograms.org and other sites to try and find REUs.

Sample REU List

REU	Type	Area
SMALL	C	Number Theory
UMich	D	N/A
UCSB	C	Linear Algebra
Duluth	C	Combinatorics
CUNY	C	Combinatorics
Emory	C	Number Theory
KSU	C	Knot Theory
Princeton	C	Geometric Analysis
Chicago	D	N/A
Indiana	C	Geometry
UT Tyler	C	Algebra
Texas St	C	Algebra

Table: C = Centralized, D = Decentralized

Sample REU List

REU	Type	Area	Admitted?
SMALL	C	Number Theory	No
UMich	D	N/A	No
UCSB	C	Linear Algebra	No
Duluth	C	Combinatorics	No
CUNY	C	Combinatorics	No
Emory	C	Number Theory	No
KSU	C	Knot Theory	No
Princeton	C	Geometric Analysis	Yes
Chicago	D	N/A	Yes
Indiana	C	Geometry	No
UT Tyler	C	Algebra	No
Texas St	C	Algebra	Yes

Table: C = Centralized, D = Decentralized

Decisions

- The unofficial deadline for committing to an REU is March 8th or so; you'll know more or less all the REUs you've been accepted to by then.
- If you have not heard back, don't hesitate to send an email to the REU coordinator!
- If by late March you haven't heard back, you probably were not accepted
- There are still some REUs I haven't heard back from...

Decisions

- The unofficial deadline for committing to an REU is March 8th or so; you'll know more or less all the REUs you've been accepted to by then.
- If you have not heard back, don't hesitate to send an email to the REU coordinator!
- If by late March you haven't heard back, you probably were not accepted
- There are still some REUs I haven't heard back from...

Decisions

- The unofficial deadline for committing to an REU is March 8th or so; you'll know more or less all the REUs you've been accepted to by then.
- If you have not heard back, don't hesitate to send an email to the REU coordinator!
- If by late March you haven't heard back, you probably were not accepted
- There are still some REUs I haven't heard back from...

Decisions

- The unofficial deadline for committing to an REU is March 8th or so; you'll know more or less all the REUs you've been accepted to by then.
- If you have not heard back, don't hesitate to send an email to the REU coordinator!
- If by late March you haven't heard back, you probably were not accepted
- There are still some REUs I haven't heard back from...

Decisions

- Acceptances are rare. Apply to as many as you can!
- Hundreds of applicants for maybe 15 spots.
- Apply to REUs even if they do not line up with your field of interest. You might get in!

Decisions

- Acceptances are rare. Apply to as many as you can!
- Hundreds of applicants for maybe 15 spots.
- Apply to REUs even if they do not line up with your field of interest. You might get in!

Decisions

- Acceptances are rare. Apply to as many as you can!
- Hundreds of applicants for maybe 15 spots.
- Apply to REUs even if they do not line up with your field of interest. You might get in!

Outline

1 Info

2 Applying

3 Advice

- Choosing an REU
- Applications
- Decisions
- Attending
- Resources

Choosing an REU:

- Work your way up to top REUs
- Freshman, Sophomores, apply to some of the “low level” REUs (you’ll be able to tell based on the university, kinds of research projects, etc.).
- Some will outright say that they want freshman! E.g., UChicago’s apprentice program
- Put these REUs in your resume; will help for applying to top REUs as a junior

Choosing an REU:

- Work your way up to top REUs
- Freshman, Sophomores, apply to some of the “low level” REUs (you’ll be able to tell based on the university, kinds of research projects, etc.).
- Some will outright say that they want freshman! E.g., UChicago’s apprentice program
- Put these REUs in your resume; will help for applying to top REUs as a junior

Choosing an REU:

- Work your way up to top REUs
- Freshman, Sophomores, apply to some of the “low level” REUs (you’ll be able to tell based on the university, kinds of research projects, etc.).
- Some will outright say that they want freshman! E.g., UChicago’s apprentice program
- Put these REUs in your resume; will help for applying to top REUs as a junior

Choosing an REU:

- Work your way up to top REUs
- Freshman, Sophomores, apply to some of the “low level” REUs (you’ll be able to tell based on the university, kinds of research projects, etc.).
- Some will outright say that they want freshman! E.g., UChicago’s apprentice program
- Put these REUs in your resume; will help for applying to top REUs as a junior

Applications:

- Writing applications takes WAY longer than you think! Don't underestimate it.
- Took me about a month to complete 15 (while reusing many)
- Don't be afraid to ask for help (peers, advisors, etc.)
- Have a friend who's good at English/grammar? Get them to read over your app!
- Make a table. List your REUs, how many LoR you need, if you need a CV, how long the personal statement is, deadline, etc.

Applications:

- Writing applications takes WAY longer than you think! Don't underestimate it.
- Took me about a month to complete 15 (while reusing many)
- Don't be afraid to ask for help (peers, advisors, etc.)
- Have a friend who's good at English/grammar? Get them to read over your app!
- Make a table. List your REUs, how many LoR you need, if you need a CV, how long the personal statement is, deadline, etc.

Applications:

- Writing applications takes WAY longer than you think! Don't underestimate it.
- Took me about a month to complete 15 (while reusing many)
- Don't be afraid to ask for help (peers, advisors, etc.)
- Have a friend who's good at English/grammar? Get them to read over your app!
- Make a table. List your REUs, how many LoR you need, if you need a CV, how long the personal statement is, deadline, etc.

Applications:

- Writing applications takes WAY longer than you think! Don't underestimate it.
- Took me about a month to complete 15 (while reusing many)
- Don't be afraid to ask for help (peers, advisors, etc.)
- Have a friend who's good at English/grammar? Get them to read over your app!
- Make a table. List your REUs, how many LoR you need, if you need a CV, how long the personal statement is, deadline, etc.

Applications:

- Writing applications takes WAY longer than you think! Don't underestimate it.
- Took me about a month to complete 15 (while reusing many)
- Don't be afraid to ask for help (peers, advisors, etc.)
- Have a friend who's good at English/grammar? Get them to read over your app!
- Make a table. List your REUs, how many LoR you need, if you need a CV, how long the personal statement is, deadline, etc.

Decisions:

- Don't take rejections to heart. REUs are highly competitive and very hit or miss.
- A lot of luck is involved

Decisions:

- Don't take rejections to heart. REUs are highly competitive and very hit or miss.
- A lot of luck is involved

Attending:

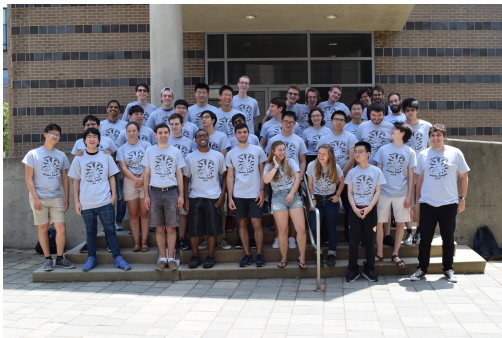
- There will be rough times. Research is hard. Don't be afraid to ask for help.

Attending:

- There will be rough times. Research is hard. Don't be afraid to ask for help.
- Have fun! You're spending your summer at another university. Explore, be adventurous!

Attending:

- There will be rough times. Research is hard. Don't be afraid to ask for help.
- Have fun! You're spending your summer at another university. Explore, be adventurous!



Resources

<https://www.mathprograms.org/db?joblist>

https://www.nsf.gov/crssprgm/reu/list_result.jsp?unitid=5044

<http://www.ams.org/programs/students/emp-reu>

<https://sites.google.com/view/mathreu>

<https://web.math.princeton.edu/~lji/reus/>

<https://web.math.princeton.edu/~lji/reus/ColinREUApplicationAdvice.pdf>

Questions?