Annotated List of Summer Research Programs and Internships 2024

Many REU programs are for students in their junior year who have created at least one proof-intensive course or upper division course in algebra, analysis, or linear algebra. The annotated list emphasizes opportunities which do not have these requisites.

The full annotated list is hosted on a google spreadsheet.
(https://docs.google.com/spreadsheets/d/1VD4FrmZn2jG9KFzHrP3tbG-D278y1M7WdFrFbpOJjUg/edit?usp=sharing)

If you download a copy, you can sort according to any of the columns. The online spreadsheet may be updated throughout the spring as REUs update their websites and additional information becomes available.

On the following pages are specific REUs with unique prerequisites.

First, we list REUs with fewer math requirements (up to linear algebra or calculus 3) and which welcome younger students (up to sophomore year).

Then, we list REUs without citizenship requirements or which welcome graduating students, as well as REUs with different emphasis.

We also have a page of links to other sources of research opportunities (e.g. in different majors or not affiliated with NSF REU sites). Mathematics students with a background in programming or courses in another science (e.g. biology or chemistry) can be competitive for programs in these areas. We encourage students to apply broadly to interesting opportunities.

The final page of this document is a history of the annotated list.

Note: many REU sites do not list minimum prerequisites, or we may have missed some. Please look carefully at the full list of REU websites and contact program organizers with any questions.

			Location	Topic	Link	Other notes
Calculus required		(programs requiring beyond calculus are not listed)				
	none		American University	Applied Learning of Statistics	https://www.spatialreu.org/	Not updated for 2023 yet, but on NSF website
	none		North Carolina State University	Math & Stats	https://math.sciences.ncsu.edu/undergraduate/reu-at-nc-state	
	college math		Georgetown University	Statistics or Research/Learning	https://www.spatialreu.org/	
	calc + stats		Rice University	Statistics and Data Science	https://statistics.rice.edu/academics/undergraduate/research-experiences-undergraduates	
	Calc 2		Arizona State University	Quantitative Research in the Life and Social Sciences	https://qrlssp.asu.edu/	1 year of calculus
	Calc 2		Clarkson University	Mathematical Biology	https://www.clarkson.edu/mbiots-research-experience-undergraduates-reu	
	Calc 2		Florida International University	Applied Mathematics	https://go.fiu.edu/amrpu	
	Calc 2		St. Mary's College of Maryland	multiple projects	http://faculty.smcm.edu/sganzell/reu/	
	Calc 2		University of Central Florida	applied and computational math	https://sciences.ucf.edu/math/reu-in-applied-computational-mathematics/	
	Calc 2		Youngstown State University	multiple projects	https://ysu.edu/ysu-bump	
	Calc ?		Texas A&M University	Mathematical Sciences and their Applications	https://www.math.tamu.edu/undergraduate/research/REU/	only specifies calculus and elementary linear algebra
	freshman matl		Northwestern	Quantitative Biology	https://www.quantitativebiology.northwestern.edu/opportunities/undergraduate-summer-research/	
Academic year		(programs for juniors or higher are not listed)				
	1st year		Mathematical Staircase, Inc.	combinatorial representation theory	http://www.mathily.org/mathilyest/	mostly first year students
	after 1st		Northwestern	Quantitative Biology	https://www.quantitativebiology.northwestern.edu/opportunities/undergraduate-summer-research/	
	after 1st		Rice University	Statistics and Data Science	https://statistics.rice.edu/academics/undergraduate/research-experiences-undergraduates	
	1st-2nd		Michigan State University	Discrete and Applied Mathematics	http://lbc.msu.edu/about/suriem.html	1-2 year math encouraged
	1st-2nd		Virginia Commonwealth University	multiple projects	https://math.vcu.edu/reu/#eligibility	freshmen or sophomore encouraged
	1st-2nd		Youngstown State University	multiple projects	https://ysu.edu/ysu-bump	
	2nd		Arizona State University	Quantitative Research in the Life and Social Sciences	https://qrlssp.asu.edu/	
	2nd		Florida Institute of Technology	Statistical Models with Applications to Geoscience	https://research.fit.edu/smag-reu/	finishing sophomores preferred
	2nd		Georgetown University	Statistics or Research/Learning	https://www.spatialreu.org/	
	2nd		Florida International University	Applied Mathematics	https://go.fiu.edu/amrpu	completed sophomore
	2nd		Moravian University	Computational Methods in Discrete Mathematics	https://www.moravian.edu/mathematics/reu	prefer sophomore or junior
high school allowed			University of North Carolina Charlotte	multiple projects	https://pages.charlotte.edu/mathresearch/	Applicants should be a college-bound high school senior through rising college senior
high school allowed			University of Virginia	Number Theory, Representation Theory and Topology	https://uva.theopenscholar.com/reu/program	In the past, we have offered openings to high school students who are adequately prepared for the program

	Location	Topic	Link	Other notes
May support international students				
	CUNY Baruch College	Discrete Mathematics	https://geometrynyc.wixsite.com/home/combinatorics-reu	
	University of California at Los Angeles	Industrial Projects	http://ipam.ucla.edu/rips/	
	ISTA		https://phd.pages.ist.ac.at/isternship/	
	Brown University (ICERM)		https://icerm.brown.edu/summerug/	
	Cold Spring Harbor Laboratory	biology	https://www.cshl.edu/education/undergraduate-research-program/	
	Williams College	combinatorics and number theo	https://math.williams.edu/small-application-faq/	
	Georgia Institute of Technology	multiple projects	https://math.gatech.edu/undergraduate-research	
	Texas State University	Algebra, Combinatorics, and St	https://www.math.txstate.edu/research-conferences/summerreu.html	
	Iowa State University	multiple projects	https://www.mathreu.org/	
	University of Connecticut	multiple projects	http://www.mathreu.uconn.edu/apply/	
	University of Minnesota - Twin Cities	Combinatorics and Algebra	https://www-users.cse.umn.edu/~reiner/REU/REU.html	
	Cornell University	Dynamics, Probability, and Parti	https://math.cornell.edu/undergraduate-research	
	Polymath REU	multiple projects	https://geometrynyc.wixsite.com/polymathreu	
Open to graduating/graduate students				
	University of California at Los Angeles	Industrial Projects	http://ipam.ucla.edu/rips/	
	Park City Mathematics Institute	Quantum Computation	https://www.ias.edu/pcmi	
	Department of Energy		https://science.osti.gov/wdts/suli	
	Department of Homeland Security		https://orise.orau.gov/internships-fellowships/undergraduates.html	
	ISTA		https://phd.pages.ist.ac.at/isternship/	
	Polymath REU	multiple projects	https://geometrynyc.wixsite.com/polymathreu	
For underrepresented students		(many other programs strongly encourge minority and female students to apply)		
	Mathematical Association of America	---	https://www.maa.org/programs-and-communities/outreach-initiatives/n	must have a faculty mentor apply for this
	University of Washington Bothell	multiple projects	https://reuwb.wordpress.com	
	Big Ten Academic Alliance		https://www.btaa.org/resources-for/students/srop/overview	
	Pipelines in Quantitative Aging Research Summer Program		https://publichealth.nyu.edu/department/biostatistics/pipelines-quantitative-aging-research-summer-program	
Education or math education				
	North Dakota State University	discipline-based education rese	https://www.ndsu.edu/dber/reu_program/reu_application/	
	PROMYS	assist high school program	https://promys.org/home	
	Illinois State University	Pre-service and K12 teachers	https://about.illinoisstate.edu/reu/	
	California State University Chico	teachers	https://www.csuchico.edu/math/reu-ret.shtml	
	Also, please consult the NSF list of REUs in STEM eduation: https://www.nsf.gov/crssprgm/reu/list_result.jsp?unitid=10021			
Travel opportunities				
	Rutgers University (DIMACS)	Algorithms	http://dimacs.rutgers.edu/REU/	some in Prague
	University of California at Los Angeles	Industrial Projects	http://ipam.ucla.edu/rips/	Singapore
	ISTA		https://phd.pages.ist.ac.at/isternship/	Austria

Other research opportunities to explore		
Source	**Area**	**Link**
National Science Foundation	math	https://www.nsf.gov/crssprgm/reu/list_result.jsp?unitid=5044
National Science Foundation	computer science	https://www.nsf.gov/crssprgm/reu/list_result.jsp?unitid=5049
National Science Foundation	education	https://www.nsf.gov/crssprgm/reu/list_result.jsp?unitid=10021
Pathways to Science	multiple	https://pathwaystoscience.org/programs.aspx?adv=adv
American Mathematical Society	math	http://www.ams.org/opportunities
American Statistical Association	data science	https://stattrak.amstat.org/2021/12/01/2022-internships/
Institute for Advanced Study	math	https://www.ias.edu/pcmi
ICERM	Computational Combinatorics	https://icerm.brown.edu/summerug/
MSRI		https://www.msri.org/web/msri/education/for-undergraduates/
IPAM	industrial/applied math	http://www.ipam.ucla.edu/programs/student-research-programs/
DIMACE	discrete math / CS	http://dimacs.rutgers.edu/
Indiana University	math	https://mail.google.com/mail/u/0/?projector=1&messagePartId=0.2#inbox/FMfcgzGmtXFlCZgRsjcskDmGnHZgnvzk
Pomona College	math	https://pages.pomona.edu/~ehga2017/prime.html
USC Viterbi	math	http://gapp.usc.edu/sure
Air Force Research Laboratory Research Participation Program		https://orise.orau.gov/afrl/
Department of Energy		https://science.osti.gov/wdts/suli
Department of Energy	fossil fuels / carbon mgmt	https://www.zintellect.com/Opportunity/Details/DOE-STP-FECM-2022-01
Department of Energy	national storage	https://zintellect.com/Opportunity/Details/DOE-EERE-EnergyStorage-2022
Department of Energy	robotics	https://www.zintellect.com/Opportunity/Details/EERE-Robotics-2022
Department of Energy	high performance computing	https://www.zintellect.com/Opportunity/Details/DOE-EERE-HPC-2021
Lincoln Laboratory, MIT		https://www.ll.mit.edu/careers/student-opportunities/summer-research-program
NSF Science and Engineering Statistics Research Ambassadors		https://orise.orau.gov/ncses/
Department of Homeland Security		https://orise.orau.gov/internships-fellowships/undergraduates.html
National Institute of Health	heart, lung, blood institute	https://www.nhlbi.nih.gov/grants-and-training/summer-institute-biostatistics

History of the annotated list

Initiated by William Yslas Vélez (The University of Arizona)

Project Director:
Initial – 2022: William Yslas Vélez, The University of Arizona
2022 – Present: Amanda Laubmeier, Texas Tech University

When William Vélez was Director of the Math Center at The University of Arizona (UA) he wanted more mathematics majors to apply to summer research programs (REU) and internships. However, when one looks at the list of programs supported by the National Science Foundation (NSF), one sees that most require upper division mathematics courses and programming skills. Most do, but not all.

The importance of computing skills cannot be over-emphasized for undergraduates. Not only are these skills important in being competitive for summer programs, but they are also important locally. There are positions on campus where programming skills can provide not only an educational experience but also a source of income for students. Some firms actually hire undergraduates to perform programming work for them.

Vélez decided to go over the list of REU sites on the NSF website to look for unusual programs, programs where a talented first or second year student could apply. Initially, the Annotated List was directed towards UA students. At one of the national mathematics meetings, Frank Morgan asked Vélez to give this broader dissemination. To accomplish this meant giving the Annotated List more content and more information about internships. We hope that this list proves useful to the mathematical community.

Current contact for any questions or corrections

Amanda Laubmeier (amanda.laubmeier@ttu.edu)

COURSE REQUIREMENTS				OTHER REQUIREMENTS								
Calc 2	Calc 3	Linear Algebra	Other	Citizen/Resident	Undergraduate	Other	Institution		Site URL	Running 2024?	Not on NSF list?	
N	N	N	at least one math/stats course	Y	Y	enrolled in college	American Univer	Applied Learning	https://www.spatialreu.org/			
Y	N	-	(one year of calculus)	Y	Y	At least finished sophomore	Arizona State Un	Quantitative Resi	https://qrlssp.asu.edu/			
-	-	-		-	-		Auburn Universit	Algebra and disc	https://cws.auburn.edu/apspi/pm/mathreu			
-	-	-		Y	N (teachers)	teachers	California State U	multiple topics	https://www.csuchico.edu/math/reu-ret.shtml			
-	-	-	"mathematical maturity" (proof-bas	-	-		California State U	Geometry & Knol	https://sites.google.com/csusb.edu/reuatcsusb/home	No - but may return 2025		
Y	N	N		Y	Y		Clarkson Univers	Mathematical Bic	https://www.clarkson.edu/mbiots-research-experience-undergraduates-reu			
-	-	-		M - unclear $	-		Cornell Universit	Dynamics, Proba	https://math.cornell.edu/undergraduate-research	No - but may return 2025	Yes - unlisted	
-	-	-		N	Y		CUNY Baruch Co	Discrete Mathem	https://geometrynyc.wixsite.com/home/combinatorics-reu			
Y	Y	R	"sophomore-level or higher" mathe	Y	Y		Fairmont State U	Discrete and Cor	http://tomcuchta.com/DCAA/#:~:text=About%20the%20REU%20site,theory%20of%20time%20scales%20calculus.			
-	-	-		Y	-	18+, pref Sophomore	Florida Institute o	Statistical Models	https://research.fit.edu/smag-reu/			
Y	N	N		Y	-	completed sophomore, have healtl	Florida Internatio	Applied Mathema	https://go.fiu.edu/amrpu	"pending"		
N	N	N	college-level math	Y	Y	sophomores allowed	Georgetown Univ	Statistics or Rese	https://www.spatialreu.org/			
-	-	-		M	Y		Georgia Institute	multiple projects	https://math.gatech.edu/undergraduate-research			
-	-	-		-	N (teachers)	Pre-service and In-service Second	Illinois State Uni	Combinatorics, D	https://about.illinoisstate.edu/reu/			
Y	Y	Y	differential equations	-	-		Illinois Tech	Data science and	https://www.iit.edu/computing/research/student-research/SURE			
-	-	-		-	-		Indiana Universit	applied mathema	http://math.iupui.edu/reu			
-	-	-	mentions many students have take	Y	Y		Indiana Universit	multiple projects	https://math.indiana.edu/undergraduate/reu-summer	NO		
-	-	-		M - no $ support	Y	18+	Iowa State Unive	multiple projects	https://www.mathreu.org/			
Y	Y	Y	C3 may be replaced by ODE	-	-		Kansas State Un	multiple projects	https://www.math.ksu.edu/research/reu/			
-	-			Y	Y		Lafayette College	Mathematics, apj	https://math.lafayette.edu/opportunities/reu/			
							Mathematical Association of Ameri		https://www.maa.org/programs-and-communities/outreach-initiatives/nreup#Contact%20Us			
-	-	-		Y	Y	pref 1st year	Mathematical Sta	combinatorial rep	http://www.mathily.org/mathilyest/			
-	-	-		Y	Y	1-2 year math encouraged	Michigan State U	Discrete and App	http://lbc.msu.edu/about/suriem.html		Yes - unlisted	
-	-	-		Y	Y	pref soph or junior	Moravian Univers	Computational M	https://www.moravian.edu/mathematics/reu			
N	N	N	mentions early math studies okay	Y	Y		North Carolina St	Math & Stats	https://math.sciences.ncsu.edu/undergraduate/drums/			
N	N	N	math not listed in reqs but freshme	Y	Y	freshmen allowed	Northwestern	Quantitative Biol	https://www.quantitativebiology.northwestern.edu/opportunities/undergraduate-summer-research/			
M	N	N	statistics required, differential/integ	Y	Y	freshmen allowed	Rice University	Statistics and Da	https://statistics.rice.edu/academics/undergraduate/research-experiences-undergraduates			
-	-	-	proof-based class	Y	Y		Rochester Institu	Extremal Graph T	https://www.rit.edu/science/extremal-graph-reu			
-	-	-		Y (undergrads)	Grads eligible		San Diego State	multiple projects	http://www.sci.sdsu.edu/math-reu/index.html	No - but may return 2025	Yes - unlisted	
Y	N	N	**no** upper level courses	Y	Y		St. Mary's Colleg	multiple projects	http://faculty.smcm.edu/sganzell/reu/	NO		
Y		Y	"elementary" linear algebra	Y	Y		Texas A&M Unive	Mathematical Sci	https://www.math.tamu.edu/undergraduate/research/REU/			
-	-	-		Y	Y		Texas A&M Com	multiple projects	https://inside.tamuc.edu/academics/colleges/scienceEngineeringAgriculture/departments/mathematics/reu/default.aspx			
-	-	-		M - exceptional c	Y		Texas State Univ	Algebra, Combin	https://www.math.txstate.edu/research-conferences/summerreu.html			
-	-	-		Y	Y		Towson Universit	multiple projects	https://tigerweb.towson.edu/ccornwell/REU/			
-	-	-		Y	Y		Tufts University	multiple projects	https://sites.tufts.edu/verseimreu/			
-	-	-		N	Graduating senic	18+	University of Cali	Industrial Project	http://ipam.ucla.edu/rips/			
Y	N	N		Y	Y		University of Cen	applied and com	https://sciences.ucf.edu/math/reu-in-applied-computational-mathematics/			
-	-	-		M - no $ support	Y		University of Con	multiple projects	http://www.mathreu.uconn.edu/apply/			
-	-	-		Y	Y		University of Mar	multiple projects	https://www-math.umd.edu/outreach/summer-reu.html			
-	-	-		Y	Y		University of Mic	Mathematical Ani	https://sites.google.com/a/umich.edu/math-reu/			
-	-	-		M - no $ support	Y		University of Min	Combinatorics ar	https://www-users.cse.umn.edu/~reiner/REU/REU.html			
-	-	-	GPA 3.00	Y	HS eligible		University of Nor	multiple projects	https://pages.charlotte.edu/mathresearch/			
-	-	-		Y	Y		University of Sou	cryptography and	https://www.usf-crypto.org/reu-program/			
-	-	-		Y	Y		University of Texa	Algebra, graphs,	https://www.uttyler.edu/math/research-experience-for-undergraduates/			
-	-	-		Y	Y		University of Texa	Applied Mathema	https://www.utrgv.edu/smss-nsf-reu/index.htm			
-	-	-		Y	Y		University of Texa	Applied Mathema	https://www.utrgv.edu/smss-nsf-reu/			
Y	Y	Y	proof based math	Y	Y		University of Virg	Geometry and To	https://sites.google.com/view/2024-uva-topology-reu			
-	-	-		Y	HS eligible		University of Virg	Number Theory,	https://uva.theopenscholar.com/reu/program			
-	-	-		Y	Y	freshmen or sophomore encourage	Virginia Common	multiple projects	https://math.vcu.edu/reu/#eligibility			
-	-	-		-	-		University of Was	multiple projects	https://reuwb.wordpress.com			
							West Virginia Uni	applied analysis	https://mathanddata.wvu.edu/students/undergraduate/applied-analysis-reu		On list but website has not updated	
-	-	-		N	Y	F1 visa	Williams College	combinatorics an	https://math.williams.edu/small-application-faq/			
Y	Y	Y	proof based math	N	graduating students		Polymath REU	multiple projects	https://geometrynyc.wixsite.com/polymathreu			
-	-	-		Y	-		Yale University	multiple projects	http://sumry.yale.edu			
Y	N	N		Y	Y	freshmen or sophomore	Youngstown Stat	multiple projects	https://ysu.edu/ysu-bump			
-	-	-		N	Y		Institute for Com	Interdisciplinary	https://icerm.brown.edu/summerug/		Not NSF	
-	-	-		N	Y		Cold Spring Harb	Biology	https://www.cshl.edu/education/undergraduate-research-program/		Not NSF	
-	-	-		N	Grads eligible		Institute of Scien	Mathematics	https://phd.pages.ist.ac.at/isternship/		Not NSF	
-	-	-		Y	Grads eligible		Institute for Adva	Quantum Compu	https://www.ias.edu/pcmi		Not NSF	

Removed from current annotated list																		
These REU websites were not updated at time of updating the annotated list																		
However, their information from most recent year is available (in case they update later)																		
Removed in 2024																		
Y	Y	Y	*reqs differ for MCC students		Y	Y			Arizona State Un	Applied Mathema	https://math.asu.edu/AM2REU							
Y	N	N	GPA 3.00		Y	-	"little to no experience with researc		CUNY York Colle	Discrete Mathem	https://www.york.cuny.edu/mathematics-and-computer-science/qed							
Y	N	N			Y	HS eligible			Elon University /	Mathematical Bic	elon.edu/u/academics/arts-and-sciences/mathematics-statistics/reu-ncatsu-and-elon/							
R	R	-	statistics, coding, "good academic		Y	Y			Embry-Riddle Ae	Industrial Mathen	http://reudeim.com/							
-	N	N	preference to those with C3/LA		Y	Y			Ithaca College	Dynamical Syste	https://www.ithaca.edu/academics/school-humanities-and-sciences/mathematics/nsf-reu-dynamical-systems-ic							
-	-	-			Y	Y			James Madison U	multiple projects	http://www.jmu.edu/mathstat/reu/							
-	-	-			Y	Y	DACA supported		Mathematical Sci	Solving Systems	https://www.msri.org/web/msri/education/for-undergraduates/msri-up							
N	N	N	college algebra, programming		Y	Y	freshmen or sophomore		Prairie View A&M	Mathematical Mo	https://www.pvamu.edu/bcas/reu/							
-	-	-			Y	Y			Southern Method	Modeling and Co	https://www.smu.edu/dedman/academics/departments/math/research/smu-rtg							
Y	Y	-			Y	Y			Texas Tech Unive	Problems in the U	https://www.math.ttu.edu/undergraduate/reu2022/							
-	-	-			-	-			University of Cali	multiple projects	http://reu.math.ucdavis.edu/							
-	-	-			Y	Y			Ursinus College	multiple projects	https://www.ursinus.edu/academics/mathematics-computer-science-and-statistics/research-experience-for-undergraduates-reu/							
-	-	-	proof-based class		Y	Y			Wayne State Uni	Electronic Compu	https://s.wayne.edu/echt/reu-2023/							
Removed in 2023																		
-	-	-			Y	-			Clemson Univers	Coding Theory, C	https://www.math.clemson.edu/ccnt/							
-	-	-			Y	Y	PR	PR	East Tennessee S	Combinatorics ar	http://www.etsu.edu/cas/math/activities/reu.php							
-	-	-	mentions lower-level classes are o		Y	Y			Rose-Hulman Ins	multiple projects	http://www.rose-hulman.edu/mathREU/REUhome.php							
-	-	-	upper-division classes		Y	Y			University of California Santa Barb		http://www.math.ucsb.edu/REU							
N	-	-	programming, stats		Y	-			University of Nor	Complex Data Ar	https://mathstats.uncg.edu/statistics-reu/reu-2022/							
Y	Y	Y	2 upper-division classes		-	Y	pref rising senior		University of Ten	Mathematical Ana	https://www.utc.edu/mathematics/reu2019.php							
									East Tennessee S	Combinatorics ar	http://www.etsu.edu/cas/math/activities/reu.php				Travel opportunity: Puerto Rico			