

# A Paleontologist's Field Guide for Funding from the National Science Foundation

Zack J. Quirk and Peter Bellocq





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# Introduction

## Acknowledgements

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## Preface

This handbook documents National Science Foundation (NSF) funding opportunities as of Summer 2022 for the paleontological community regarding research, learning, and collaboration. While many members of the paleontology community have received support from NSF in the past, increased competition for grants and the need for more pertinent socioeconomic broader impacts are causing concerns about how competitive paleontology proposals are for NSF funding. Paleontology research has and will continue to be an important aspect of the geosciences, both in terms of the advances in the scientific field and with societal impacts ranging from understanding ecosystem responses to climate change to innovative ideas in biomechanics. To further strengthen and support the evolving science in paleontology, the community needs to be aware of the scope and alignment of research opportunities available to paleontology.

We have organized the NSF opportunities by academic hierarchy, specifically for undergraduate, graduate, postdoctoral, and faculty. Within these academic divisions, each listing has a description of the program, additional statistics regarding historical use within the paleontological community, and examples of successful applicants. While this handbook is geared towards the geological side of paleontology (i.e., GEO Directorate), there are many applicable NSF opportunities through the biological side; some of those programs like REUs and PurSUIt are discussed in their respective sections. NSF is a dynamic organization with ever-evolving solicitations, so there are likely additional NSF opportunities or ones that will be published soon. This handbook serves as a foundation for exploring new funding areas within NSF and other adjacent organizations.

# Contents

<b>Introduction</b>	<b>2</b>	<b>NSF Program Funding Opportunities for Paleontologists</b>	<b>19</b>
Acknowledgements	2	Preface	20
Preface	2	Sedimentary Geology and Paleobiology (SGP)	21
Contents	3	Geobiology and Low-Temperature Geochemistry	22
<b>NSF Opportunities</b>	<b>5</b>	Geoinformatics (GI)	23
NSF Opportunities at the Undergraduate Level	6	ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions	24
Research Experiences for Undergraduates (REUs)	6	Marine Geology and Geophysics (MG&G)	25
NSF Opportunities at the Graduate Level	8	Arctic Research Opportunities	26
Graduate Research Fellowship Program (GRFP)	8	Arctic Natural Sciences (ANS)	27
Non-Academic Research Internships for Graduate Students (INTERN)	10	Antarctic Research	28
NSF Opportunities for Postdoctoral Fellows	11	Facilitating Research at Primarily Undergraduate Institutions	29
Earth Sciences Postdoctoral Fellowships (EAR-PF)	11	Frontier Research in Earth Sciences (FRES)	30
NSF Opportunities for Academic Faculty	13	Paleoclimate	31
Faculty Early Career Development Program (CAREER)	13	NSF-NIST Interaction in Basic and Applied Scientific Research	32
Grant Opportunities for Academic Liaison with Industry (GOALI)	15	Arctic System Sciences (ARCSS)	33
Novel NSF Grant Proposal Solicitations	16	Findable Accessible Interoperable Reusable Open Science Research Coordination Networks (FAIROS RCN)	34
Poorly Sampled and Unknown Taxa (PurSUIt)	16	Navigating the New Arctic (NNA)	35
EARTHcube	16	Mid-Career Advancement (MCA)	36
		<b>Sources</b>	<b>37</b>





# NSF Opportunities



*Echinodermata Crinoidea*  
Smithsonian National Museum of Natural History



# NSF Opportunities at the Undergraduate Level

## Research Experiences for Undergraduates (REUs)

Research Experiences for Undergraduates, or REUs, are grants to institutions or researchers to support undergraduate students to gain intensive research experiences by working within a lab of the host institution. Each student in an REU grant receives a stipend, housing, and transportation support. The focus is to expose students to participating in scientific research. More detailed information can be found [here](#).

### Who is eligible:

- Undergraduate students supported by an REU award must be U.S. citizens or permanent residents, but the REU site can be within the country or abroad.

### Current landscape:

- There are only four paleontology-related REUs, three within the BIO Directorate (not shown) and only one within the GEO Directorate.
- Total award budget for all REU programs is \$84,140,00 for FY 2023 and has combined support for several Directorates including but not limited to the Directorate for Biological Sciences, Engineering, Geosciences, and Mathematical/Physical Sciences.

### Facts & figures:

- GEO paleontology REUs account for just 0.3% of current active geoscience REUs; there is only 1 GEO paleontology REU since 2016 (Figure 1).
- While we cannot separate the annual budget specifically for the geosciences, the opportunity for paleontology-related REUs is clear.
- Despite many institutions like the University of Michigan and University of Chicago being well-known for paleontology research, they do not have REU opportunities for the community.





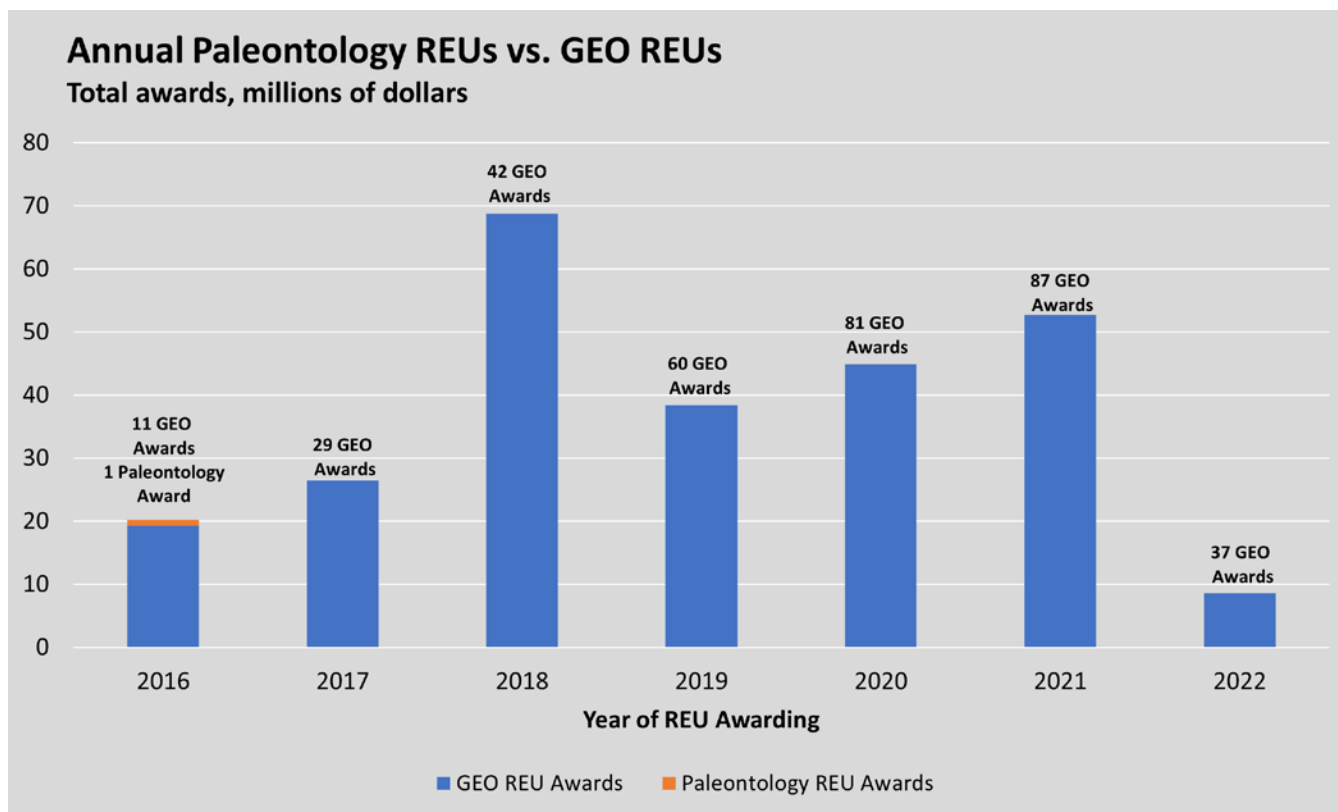


Figure 1. Annual total awards for Research Experiences for Undergraduates in GEO.

# NSF Opportunities at the Graduate Level

## Graduate Research Fellowship Program (GRFP)

The Graduate Research Fellowship Program (GRFP) supports graduate students to focus on high-level scientific research. The award provides a stipend of \$37,000 and \$12,000 tuition for the recipient's institution per year for three years across a five-year award period. This prestigious award can help recipients achieve successful graduate and post-graduate careers. More information on the program is available [here](#).

### Who is eligible:

- Students interested in applying for the GRFP program must be U.S. citizens or permanent residents.
- Undergraduate students in the application process, but not yet in a graduate program, are not restricted to the number of applications. Most undergraduates who apply for this award do so once in their last year of study.
- Graduate students may only apply once in the program, no later than the beginning of their second year of graduate study.
- Additional information about eligibility can be found through the most recent solicitation [here](#).

### Facts & figures:

- Over the last thirty years (1992–2022) paleontologists have received 130 GRFP awards, which is 10% of all geoscience GRFP awards during that same period (Figure 2).
- Both the total number of awards and number of other GEO awards have increased since 2009 because of stimulus funding during the 2008 financial crisis.
- The percentage of GEO GRFP awards to paleontologists has declined since the 1990s.
- Although the number of paleontology GEO awards has generally increased over time, NSF has also expanded the geoscience subcategories for the award.



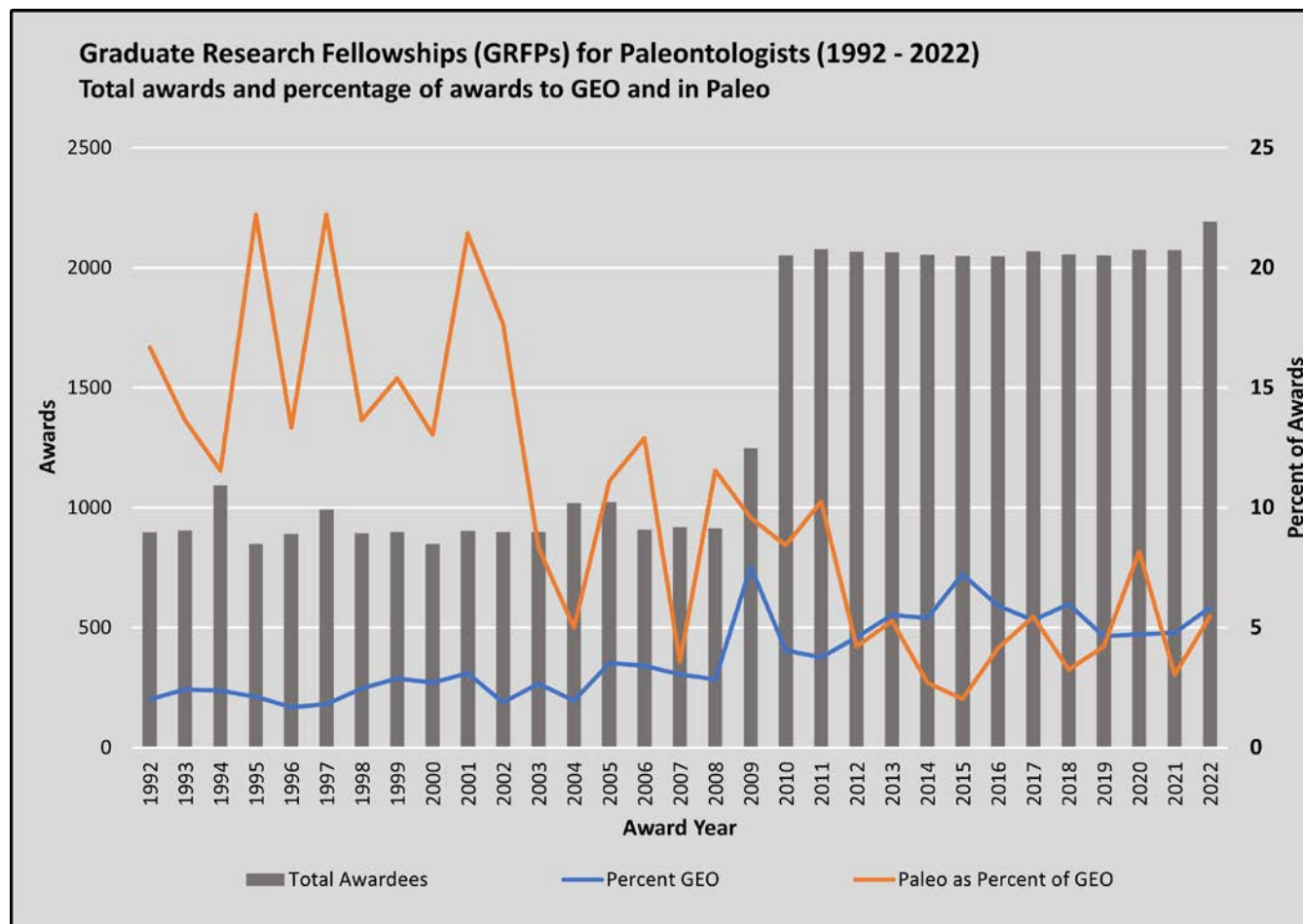


Figure 2. Graduate Research Fellowships (GRFP) awards from 1992–2022. The percentage of all GRFP awards in geoscience (blue) and the percentage of those geoscience awards that are in paleontology (orange) are noted.

## Non-Academic Research Internships for Graduate Students (INTERN)

The INTERN program provides graduate students the opportunity to pursue internships in non-academic fields during their graduate careers with areas including policy, non-profits, industry labs, museums, and governmental agencies. Eligible students have the chance to develop new learning methods and acquire professional knowledge for post-graduate careers. More information on the INTERN program can be found [here](#).

### Who is eligible:

- Graduate students are eligible for the INTERN program if they are either on a PI's active NSF grant or have a NSF Graduate Research Fellowship (GRFP).
- Students within other disciplines may need permission to enter the INTERN program while on a GRFP, but the GEO directorate does not have any special conditions.

### Current landscape:

- There is an anticipated number of 260 awards for the program annually.
- Each award can be no less than \$55,000 per award up to a period of six months. The annual budget for all awards is \$14.3 million.

### Case study:

INTERN participation is based on the individual contacting the hosting organization, with NSF only approving the supplemental funding agreement. Because NSF does not publicly track participants, it is difficult to determine the success rate for geoscience and paleontology graduate students from INTERN.

We do have a case study of a geology-adjacent graduate student's participation in the INTERN program, however. One graduate student participated in the INTERN program through a four-month internship with the American Museum of Natural History in New York City. Through this internship, the student transferred their scientific skillset to writing and communication for the museum's press releases. (Read more about their experiences [here](#).)



# NSF Opportunities for Postdoctoral Fellows

## Earth Sciences Postdoctoral Fellowships (EAR-PF)

The fellowship program allows recent doctorate recipients the opportunity to pursue independent geoscience research and to further their professional development. The fellowship lasts for two years, and the individual recipient can take the award to an institution of their choosing, including those abroad. More information on the Earth Sciences Postdoctoral Fellowship through the most recent solicitation can be found [here](#).

### Who is eligible:

- Applicants must either be graduate students (typically towards the end of their Ph.D. programs) or early-career scientists applying no later than 18 months after receiving their doctorate.
- Because the application process is at the individual and not the institutional level, applicants should connect early with their future collaborators.
- Conducting the fellowship at the applicant's doctorate institution is possible but requires additional justification.

### Current landscape:

- Ten to twelve \$90,000 per-year fellowships are awarded annually.
- The annual budget for the Earth Sciences Postdoctoral Fellowships program is \$1.08 million.

### Facts & figures:

- Paleontologists have received eight NSF EAR Postdoctoral Fellowships over the last four years (2019–2022; Figure 3).
- Paleontology has potential to increase its presence in the program, with 13% of all fellowships during this period supporting paleontological research.



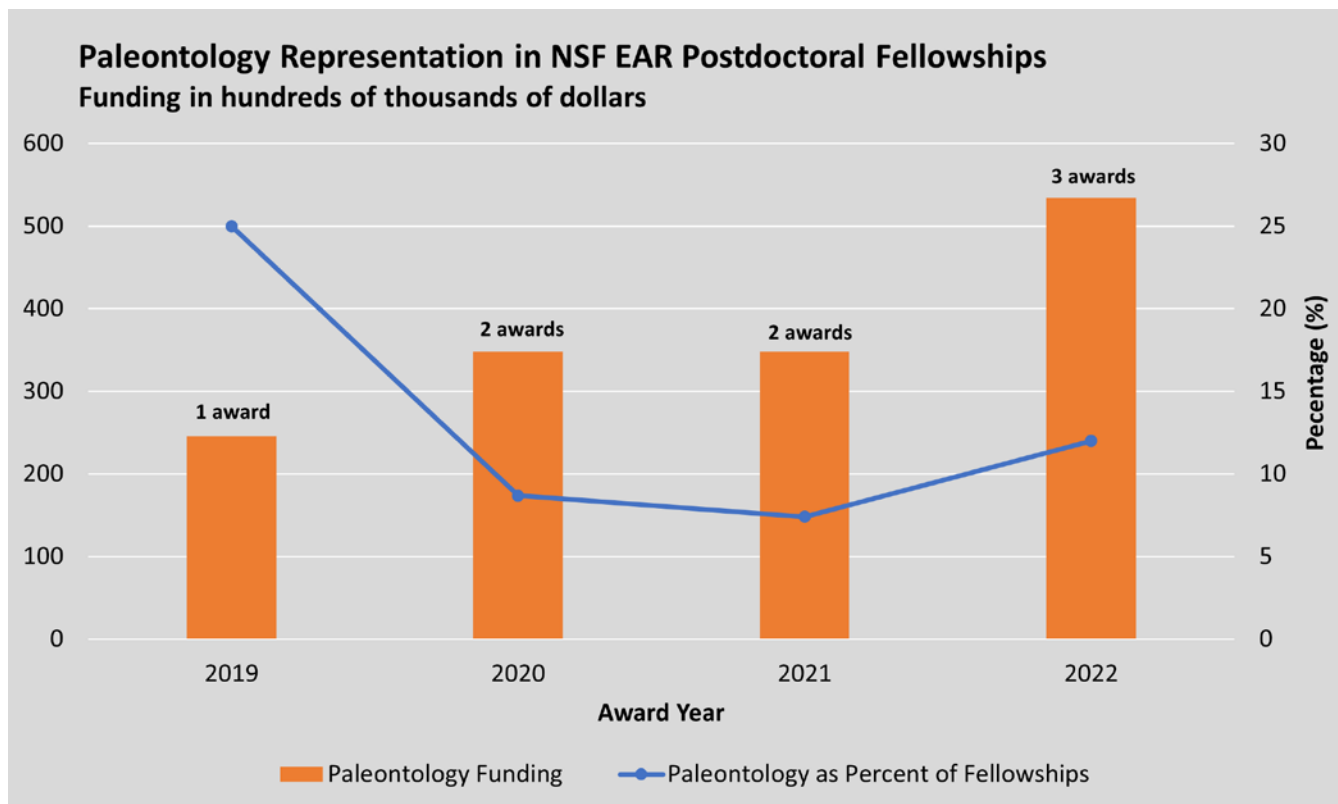


Figure 3. Paleontology-related NSF EAR Postdoctoral Fellowships from 2019–2022.

# NSF Opportunities for Academic Faculty

## Faculty Early Career Development Program (CAREER)

The Faculty Early Career Development Program, or CAREER, supports early-career faculty who are looking to serve as educational and research role-models for their institutions and fields. The award is for individuals to build a foundation for both education and research activities across their careers. More information on the CAREER program can be found [here](#).

### Who is eligible:

- Proposals can only be submitted by two- or four-year academic institutions, as well as non-profit organizations like museums.
- A single principal investigator may submit one application per cycle of the program.

### Current landscape:

- The estimated number of awards annually is 500, with an estimated budget size of \$250 million across all scientific directorates, including but not limited to Geosciences, Engineering, Biological Sciences, and Mathematical and Physical Sciences.

### Facts & figures:

- Paleontological research only accounts for 6.8% of all the active GEO CAREER grants and a combined funding of 5.8% for the entire budget of active GEO CAREER grants (Figure 4).
- Paleontology is underrepresented at these levels with paleontologists comprising 14% of all geoscience academics (based on the 2022 Directory of Geoscience Departments).
- CAREER is a great way to promote new teaching and research collaborators with rising faculty, and the expanded engagement would benefit the paleontological community.



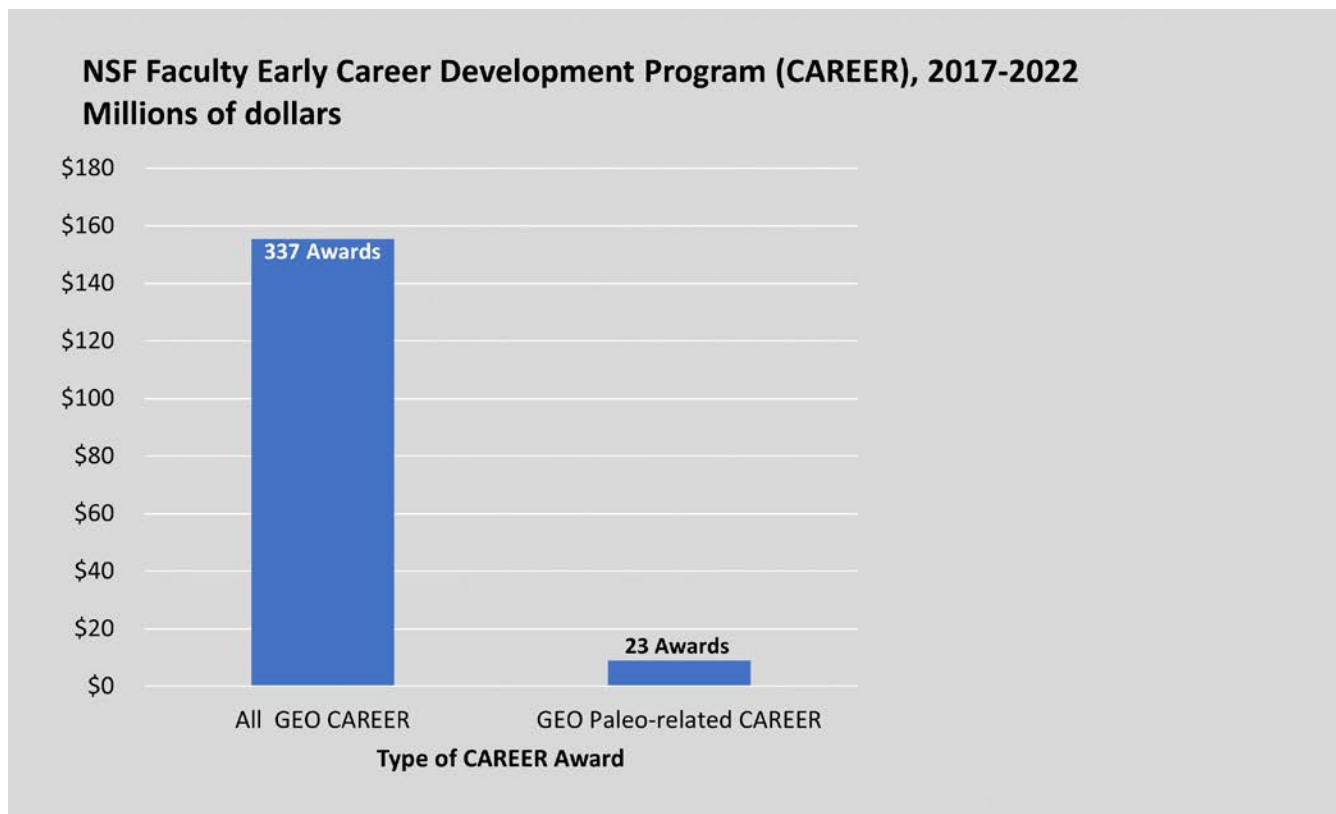


Figure 4. Comparison of CAREER awards with a paleontology-focus relative to the entire geosciences, 2017–2022.



### Grant Opportunities for Academic Liaison with Industry (GOALI)

The Grant Opportunities for Academic Liaison with Industry program, or GOALI, is an opportunity to create ongoing research collaboration between universities and industry. The program focuses on fellowships and project-funding opportunities for faculty and graduate students within an academic institution for the purpose of incentivizing the establishment of relationships with industry companies. Read more about the GOALI program [here](#).

#### Who is eligible:

- Eligible projects must have a lead principal investigator from an accredited four-year academic institution alongside a co-PI from industry.
- Recipients of fellowships/training from the grant must be U.S. citizens or permanent residents.
- While funding from the grant cannot be accessed by the industry partner, they are expected to work with the academics to commercialize the research project.

#### Current landscape:

- There are only two active GOALI grants within the GEO directorate; neither of them related to paleontology.
- Research techniques and technologies have engaged socio-economic realms like climate-change impacts and mechanics, so the ability for paleontologists to work on these collaboration efforts is tangible.



# Novel NSF Grant Proposal Solicitations

## Poorly Sampled and Unknown Taxa (PurSUiT)

The PurSUiT program is a solicitation through the BIO directorate for gathering knowledge around under-sampled or new species, both living and extinct. First created in 2020, the solicitation looks for research that exemplifies taxonomic and/or evolutionary history of an underrepresented organismal group. See [here](#) for more information regarding the solicitation.

### Project eligibility:

- Projects must incorporate biodiversity datasets in understudied groups or apply taxonomic or evolutionary analyses to be considered under the solicitation.
- Successful projects should discuss plans for specimen storage and accessibility, as well as data integration.

### Current landscape:

- Being a recent solicitation, there are only seven PurSUiT grants; however, none of them target fossil diversity (extinct).
- This solicitation could become a strong contender for paleontological funding since there is a need to study many organismal groups to aid our understanding of evolutionary and biodiversity processes.

## EARTHCUBE

EarthCube is a multi-directorate effort to create new geoscience research opportunities through the development of integrated data-management infrastructure across the community. The solicitation is primarily geared towards the improvement of data storage and utilization for research and educational purposes. Read more about the grant solicitation [here](#).

### Current landscape:

EarthCube has steadily received an increase in funding during the last six years (Figure 5). Despite this greater emphasis on geologic research collaborations through EarthCube, there is only a single active paleontological grant. The Paleobotany Database (PBOT), led by Ellen Currano (Assistant Professor, University of Wyoming), aims to integrate paleobotanical data for use by researchers and educators. As such, there is a significant need for additional interdisciplinary collaborations in order to provide further innovation for paleontological research.



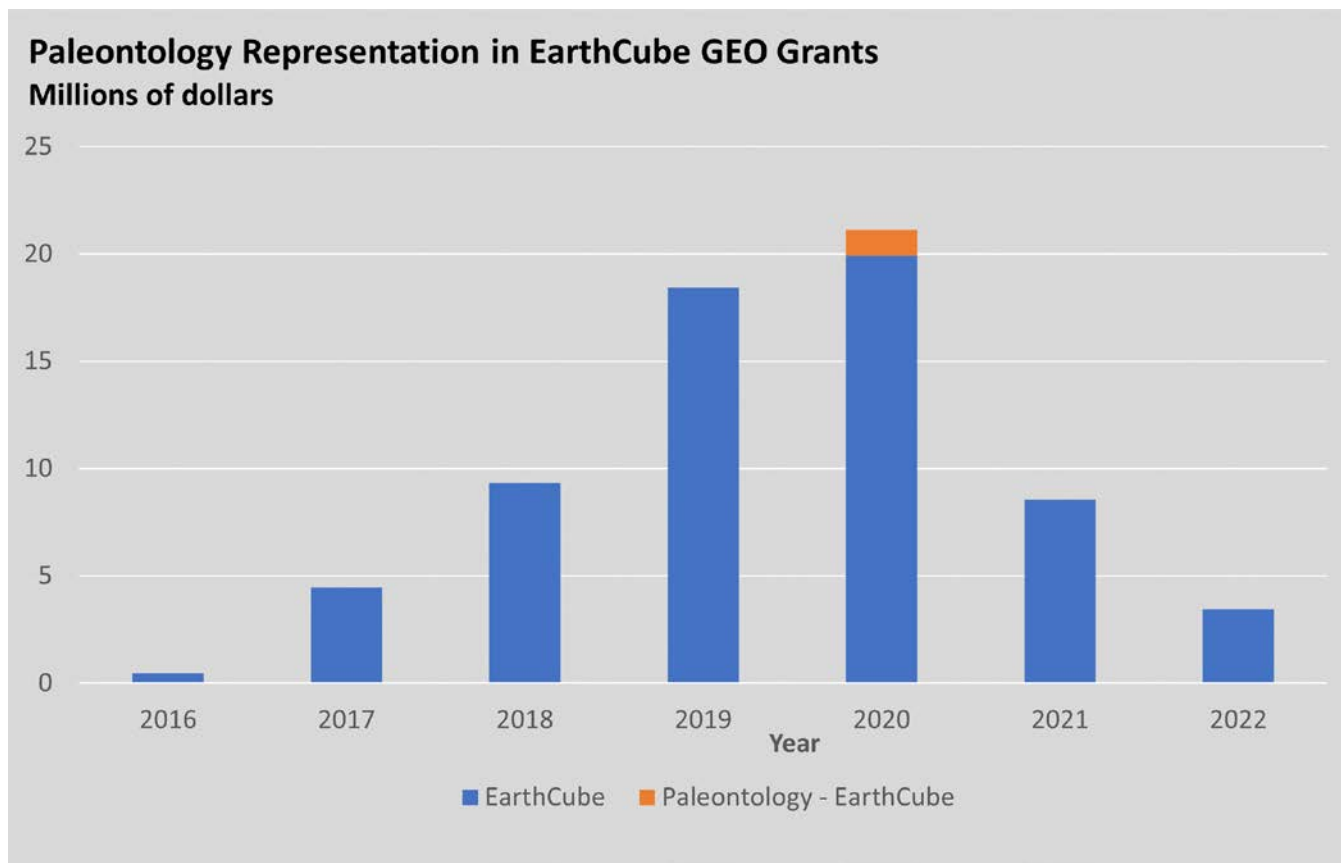


Figure 5. Paleontology activity levels relative to EarthCube Award levels, 2016–2022.



# NSF Program Funding Opportunities for Paleontologists



*Microbacia eribraria*  
Smithsonian National Museum of  
Natural History



## Preface

This section highlights NSF programs that provide project funding. These solicitations vary widely in terms of scope, specificity, and topic. To improve the visibility of funding opportunities to the paleontology community, these selected programs had at least one paleontology-related research project since 2013. These solicitations have been arranged in decreasing order on the number of awards with a paleontological focus. The information comes from NSF's Fastlane Grant Awards database and is based on information from 2013 to 2021.

Each listing provides solicitation or program title, the NSF directorates which are part of the solicitation, and a brief overview of the solicitation. In addition, as appropriate, metrics related to paleontology for that specific solicitation and examples of awarded projects are provided.

# Sedimentary Geology and Paleobiology (SGP)

## Directorate for Geosciences

### Division of Earth Sciences

Sedimentary Geology and Paleobiology is the largest funder of paleontological research at NSF. This program provides funding opportunities focused on research involving sedimentary processes and projects with a focus on ancient life, how sedimentary processes occur, and the furthering of geochronology.

### Quick Facts

- 66% of awards in this program are related to paleontology, the highest percentage of any NSF solicitation or unit.
- This funding opportunity has no limits on budget or number of successful applications you can submit.

### Award Examples

- [An Evolutionary Framework for the Molecular Fossil Record](#) (5 years, \$156,000 awarded).
- [Bringing fossil cephalopods back to life: virtual and physical assessment of hydrostatics, hydrodynamics, and functional morphology](#) (2 years, 174,000 awarded).
- [Calibrating the end-Ediacaran Extinction with U-Pb Geochronology & Chemostratigraphy at a New Precambrian-Cambrian Boundary Site in Namibia & South](#) (4 years, \$304,338 awarded).



# Geobiology and Low-Temperature Geochemistry

## Directorate for Geosciences

### Division of Earth Sciences

Geobiology and Low-Temperature Geochemistry focuses on the Earth's geochemical and biological processes. Paleontology research that intersects directly with chemistry is suitable for this solicitation.

### Quick Facts

- 17% of awards in this solicitation are paleontology related.
- This program makes 25–30 awards annually.

### Award Examples

- [Investigating Geobiological Feedbacks During the Evolution of Acidophilic Microorganisms](#) (4 years, \$371,714).
- [Toward an inorganic calcite reference frame for interpreting the stable isotope composition of biogenic carbonates](#) (5 years, \$557,500).
- [Intra-Clay Trapping of Organic Molecules – A Key Step in the Chemical Evolution of Life?](#) (2 years, \$138,121).





# Geoinformatics (GI)

## Directorate for Geosciences

### Division of Earth Sciences

Geoinformatics aims to link the geological sciences with technology to build Earth Science cyberinfrastructure. This solicitation mostly funds research that seeks to modernize and bring technological advancements into the geosciences.

### Quick Facts

- 25% of awards in this solicitation are paleontology related.
- This funding opportunity makes 5–10 awards a year. However, these awards are often given at variable award levels, depending on associated infrastructure costs.

### Award Examples

- Collaborative Research: Geoinformatics: Facility: Paleobiology Database: Preserving and Presenting Ancient Data for Future Research (3 years, \$428,774).
- Collaborative Research: Neotoma Paleoecology Database, Community-led Cyberinfrastructure for Global Change Research (7 years, \$305,320).
- Collaborative Research: PReSto: A Paleoclimate Reconstruction Storehouse to Broaden Access and Accelerate Scientific Inference (3 years, \$453,467).



# ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions

Directorate for Education and Human Resources

Division of Human Resource Development

Directorate for Biological Sciences

Directorate for Computer and Information Sciences and Engineering

Directorate for Engineering

Directorate for Geosciences

Directorate for Social, Behavioral and Economic Sciences

Directorate for Mathematical and Physical Sciences

This solicitation focuses on creating a more diverse and inclusive environment in the sciences to strengthen the nation's scientific workforce. This funding opportunity does not further an individual's science research but is aimed at efforts to change the climate within STEM.

## Quick Facts

- 4% of awards in this solicitation are paleontology related.
- This funding opportunity has an annual budget of around \$15 million and expects to fund 9–18 awards per year.
- Awarded amounts vary depending on the scope of the project.

## Award Examples

- Institutional Transformation Award: Earth Institute of Columbia University (7 years, \$3,499,899).
- Participant Support for the Annual Technical Conference of the National Association of Black Geologists and Geophysicists, September 9–12 2009 (2 years, \$41,345).
- Partnerships for Adaptation, Implementation and Dissemination Award: Building a Community of Women Geoscience Leaders (5 years, \$228,774).



# Marine Geology and Geophysics (MG&G)

## Directorate for Geosciences

### Division of Ocean Sciences

Marine Geology and Geophysics funds research that focuses on ocean basins, margins, and the Great Lakes.

### Quick Facts

- 3% of awards in this solicitation are paleontology related.
- There are no limits on individual award amounts, but they average around \$400,000.

### Award Examples

- Collaborative Research: [Was There a Shift Toward Small, Non-Fossilizing Plankton after the End of the Cretaceous Mass Extinction?](#) (2 years, \$398,892).
- Collaborative research: [Calibration of deep-sea coral paleoproxies for nutrients, carbonate ion, and temperature](#) (4 years, \$240,654).
- Experimental refinement of the boron isotope proxy in planktic foraminifera - temperature, asymbiotic sensitivity, and seawater elemental composition (3 years, \$741,830).



# Arctic Research Opportunities

## Directorate for Geosciences

### Office of Polar Programs

Arctic Research Opportunities funds research looking to increase understanding of the Arctic's processes through scientific projects or facilities development.

### Quick Facts

- 2% of awards in this solicitation are paleontology related.
- 75 awards are expected to be funded per year.

### Award Examples

- Collaborative Research: A fossil ecosystem under the ice: deciphering the glacial and vegetation history of northwest Greenland using long-lost Camp Century basal sediment (4 years, \$524,315).
- Collaborative Research: Ecosystem Response to a Warming Arctic: Deciphering the Past to Inform the Future. (5 years, \$1,835,485).
- Improving the suitability of the polar to subpolar planktic foraminifera *N. pachyderma* as a climate archive: Novel approaches to deduce 'near surface' temperatures (2 years, \$162,846).

# Arctic Natural Sciences (ANS)

## Directorate for Geosciences

Arctic Natural Sciences funds research to understand environmental processes occurring in the Arctic and how these processes are changing in the modern day. This solicitation can overlap participation with programs such as Paleo Perspectives on Climate Change, so applicants should reach out to program officers about how to adhere to both program guidelines.

## Quick Facts

- 5% of awards in this solicitation are paleontology related.
- There are no limits on proposal size and the funding opportunity has no yearly quotas.

## Award Examples

- [Submarine Basins, Steppe, and Sea Ice: Paleoclimate and Paleoecology of the Late Pleistocene and Holocene Bering Sea Shelf](#) (3 years, \$1,721,614).
- [Collaborative Research: The Lost Pastures of Alaska's Last Megafauna](#) (3 years, \$294,004).
- [EAGER: An Oasis for Surface Life on the Ocean of Snowball Earth](#) (2 years, \$225,000).

# Antarctic Research

## Directorate for Geosciences

### Office of Polar Programs

Antarctic Research funds projects to gain a deeper understanding of the Antarctic and its processes. This solicitation encourages proposals for Antarctic research that does not need new fieldwork and uses existing data but will fund projects that necessitate travel to the Antarctic.

### Quick Facts

- 3% of awards in this solicitation are paleontology related,
- Antarctic Research looks to fund 50 solicitations for a total of \$60 million per year.

### Award Examples

- [The Nitrogen Isotopic Composition of Diatom Resting Spores in Southern Ocean Sediments: A Source of Bias and/or Paleoenvironmental Information?](#) (5 years, \$438,235).
- [Collaborative Research: The Antarctic Scallop as Key to Paleoenvironments and Sea Ice Conditions: Understanding the Modern to Predict the Past](#) (4 years, \$112,275).
- [Collaborative Research: Unearthing Antarctica's role in the Late Cretaceous Evolution of Flowering Plants](#) (3 years, \$311,318).

# Facilitating Research at Primarily Undergraduate Institutions

Office of International Science and Engineering

Directorate for Biological Sciences

Directorate for Computer and Information Sciences and Engineering

Directorate for Education and Human Resources

Directorate for Engineering

Directorate for Geosciences

Directorate for Mathematical and Physical Sciences

Directorate for Social, Behavioral and Economic Sciences

Directorate for Technology, Innovation and Partnerships

Facilitating Research at Primarily Undergraduate Institutions supports researchers at largely undergraduate universities with the goal of integrating funded research into undergraduate education. These awards can be used to support a research project involving students at a university or as a request for shared research instruments.

## Quick Facts

- 1% of awards in this solicitation are paleontology related.
- Only researchers at primarily undergraduate institutions may apply to this funding opportunity.
- The annual budget of this solicitation is around \$53 million per year going towards around 245 awards.

## Award Examples

- RUI/Collaborative Research: *The Rise of C4 Grasses in South America: Linking Grassland Transitions to the South American Summer Monsoon* (4 years, \$243,067).
- RUI: *Investigating tardigrade development to unravel the evolution of animal body plans* (4 years, \$332,404).
- RUI: *Comparing Age Selectivity in Modern Extinctions and the Fossil Record* (5 years, \$54,059).



# Frontier Research in Earth Sciences (FRES)

## Directorate for Geosciences

### Division of Earth Sciences

FRES supports research in Earth Systems at all scales both spatially and temporally. Projects have a larger scientific scope and budget than normally considered by disciplinary programs or are interdisciplinary efforts that do not fit within EAR disciplinary programs.

### Quick Facts

- 36% of awards in this solicitation are paleontology related.
- NSF expects to fund 5–10 awards per year with the upper budget limit being \$3 million. This solicitation also stipulates that any research project seeking less than \$1 million should contact a program officer before applying.

### Award Examples

- Collaborative Research: Co-evolution of Earth and life across the Proterozoic-Phanerozoic transition: Integrated perspectives from outcrop and drill core (5 years, \$473,948).
- Collaborative Research: Time of Transformation: integrating the dynamic geologic, climatic, and biotic systems of North America during the Early to Late Cretaceous transition (5 years, \$587,991).
- Collaborative Research: The influence of climate and tectonics on Miocene ecosystems and faunal evolution in the East African Rift, Kenya (3 years, \$597,452).





# Paleoclimate

## Directorate for Geosciences

### Division of Atmospheric and Geospace Sciences

Paleoclimate focuses on uncovering the evolution of Earth's past climate to establish a baseline for future climate.

### Quick Facts

- 2% of awards in this solicitation are paleontology related.
- There are no limits on the annual budget or award numbers. Paleoclimate encourages applications at the beginning of the fiscal year but accepts them year-round.

### Award Examples

- Collaborative Research: [Did the Formation of the Great Unconformity Trigger Oxygenation and the Cambrian Explosion?](#) (5 years, \$229,950).
- P2C2: [New Analyses of Paleo-Seasonality and Climate Variability Using Fossil Wood](#) (4 years, \$292,358).
- Collaborative Research: [OpenDendro - Advanced Open-source Tools for Paleoenvironmental Reconstruction](#) (2 years, \$121,944).



# NSF-NIST Interaction in Basic and Applied Scientific Research

## All STEM Directorates

NSF-NIST Interaction in Basic and Applied Scientific Research is a funding opportunity exclusively for researchers who already have other NSF awards. This funding is for the express purpose of facilitating collaboration between the two organizations, The National Science Foundation and The National Institute of Standards and Technology. This solicitation can be used as a supplement to pay for travel expenses and costs associated with facility use and instrumentation.

## Quick Facts

- 0.5% of awards in this solicitation are paleontology related.
- This grant has no limits on total annual budget, budget per solicitation or total approved yearly solicitation.

## Award Examples

- Collaborative Research: Biogeochemical Fingerprinting of the Megatoothed ("Megalodon") Shark: A Dual Study in Thermophysiological Evolution and Seawater Chemistry (4 years, \$264,021).
- Collaborative Research: Trace Elements in Pyrite—Validation and Calibration of a Novel Paleoenvironmental Proxy (3 years, \$267,389).
- EAR-PF: Unraveling Fluvial Kinematics before the Rise of Land Plants: Bridging Laboratory and Geologic Scales (2 years, \$174,000).



# Arctic System Sciences (ARCSS)

## Directorate for Geosciences

### Office of Polar Programs

Arctic System Sciences looks to fund research that studies systems in the Arctic across different time periods, across broad landscapes, and how the Arctic's systems interact with other systems on Earth. This solicitation heavily encourages creative research projects.

### Quick Facts

- 0.7% of awards in this solicitation are paleontology related.
- This solicitation has no limits on yearly applications but leans towards research proposals that have budgets more than \$200,000, with many awards exceeding \$1 million.

### Award Examples

- [Collaborative Research: Ecosystem Response to a Warming Arctic: Deciphering the Past to Inform the Future.](#) (5 years, \$1,835,485).



# Findable Accessible Interoperable Reusable Open Science Research Coordination Networks (FAIROS RCN)

Directorate for Computer and Information Science and Engineering

Office of Advanced Cyberinfrastructure

Directorate for Geosciences

Directorate for Social, Behavioral and Economic Sciences

Directorate for Biological Sciences

Directorate for Mathematical and Physical Sciences

Directorate for Engineering

Directorate for Education and Human Resources

The FAIROS RCN looks to establish three-year Research Coordination Networks that facilitate improvements to scientific disciplines use of FAIR principles and open science best practices. These improvements can either be aimed at one specific field or be interdisciplinary.

## Quick Facts

- 3% of awards in this solicitation are paleontology related.
- FAIROS RCN expects to fund 6–7 awards, per year, at around \$500,000 each.

## Award Examples

- [Accelerating Open and FAIR Data Practices Across the Earth, Space, and Environmental Sciences: A Pilot with the NSF to Support Public Access to Research Data](#) (2 years, \$623,694).



# Navigating the New Arctic (NNA)

## Directorate for Geosciences

Navigating the New Arctic looks to fund research that can provide a deeper understanding of the ecological, hydrological, and environmental changes associated with climate change, currently occurring in the Arctic and how they will impact national security and economic development.

## Quick Facts

- 0.7% of awards in this solicitation are paleontology related.
- This solicitation offers three different tracks for funding. NNA Incubator Grants fund the development of a larger future research project. NNA Research Grants support research that furthers the goal of the solicitation. NNA Collaboratory Grants support research furthering the goals of the solicitation at a large scale and using collaborative teams.

## Award Examples

- [Collaborative Research: NNA Track1: Central North Atlantic Marine Historical Ecology Project \(2 years, \\$697,293\).](#)



## Mid-Career Advancement (MCA)

### All STEM Directorates

Mid-Career Advancement funds researchers who are at the associate professor rank, or equivalent. This solicitation aims to give researchers the opportunity to advance their research programs, especially through synergistic activities at other institutions.

### Quick Facts

- 2% of awards in this solicitation are paleontology related.
- This solicitation estimates 35–45 approved awards per year.

### Award Examples

- [MCA: Advances in Understanding the Biogeochemical Evolution of Serpentinites \(AUBES\)](#) (3 years, \$250,644).

# Sources

Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE):

<https://beta.nsf.gov/funding/opportunities/advance-organizational-change-gender-equity-stem-academic-professions-advance>

Antarctic Research:

<https://beta.nsf.gov/funding/opportunities/antarctic-research>

Arctic Natural Sciences (ANS):

<https://beta.nsf.gov/funding/opportunities/arctic-natural-sciences>

Arctic Research Opportunities:

<https://beta.nsf.gov/funding/opportunities/arctic-research-opportunities>

Arctic System Sciences:

<https://beta.nsf.gov/funding/opportunities/arctic-system-sciences>

Earth Sciences Postdoctoral Fellowships Program (EAR-PF):

<https://www.nsf.gov/pubs/2022/nsf22625/nsf22625.htm>

EARTHCUBE solicitation:

<https://www.earthcube.org/info>

Faculty Early Career Development Program (CAREER):

<https://www.nsf.gov/pubs/2022/nsf22586/nsf22586.htm>

Geobiology and Low-Temperature Geochemistry:

<https://beta.nsf.gov/funding/opportunities/geobiology-and-low-temperature-geochemistry>

Geoinformatics (GI):

<https://beta.nsf.gov/funding/opportunities/geoinformatics-gi>



Graduate Research Fellowship Program (GRFP):

<https://www.nsfgrfp.org/>

Most recent GRFP Solicitation:

<https://www.nsf.gov/pubs/2022/nsf22614/nsf22614.htm>

Non-Academic Research Internships for Graduate Students (INTERN):

<https://www.nsf.gov/pubs/2021/nsf21013/nsf21013.jsp>

Example case of INTERN:

<https://gradschool.duke.edu/professional-development/blog/exploring-potential-career-paths-through-nsf-intern-program>

Grant Opportunities for Academic Liaison with Industry (GOALI):

<https://www.nsf.gov/pubs/2016/nsf16099/nsf16099.jsp>

Facilitating Research at Primarily Undergraduate Institutions:

<https://beta.nsf.gov/funding/opportunities/facilitating-research-primarily-undergraduate-institutions>

Findable Accessible Interoperable Reusable Open Science Research Coordination Networks (FAIROS RCN):

<https://beta.nsf.gov/funding/opportunities/findable-accessible-interoperable-reusable-open-science-research-coordination>

Frontier Research in Earth Sciences (FRES):

<https://beta.nsf.gov/funding/opportunities/frontier-research-earth-sciences-fres>

Marine Geology and Geophysics (MG&G):

<https://beta.nsf.gov/funding/opportunities/marine-geology-and-geophysics-mgg>





Mid-Career Advancement:

<https://beta.nsf.gov/funding/opportunities/mid-career-advancement-mca>

Navigating the New Arctic (NNA):

<https://beta.nsf.gov/funding/opportunities/navigating-new-arctic-nna>

NSF-NIST Interaction in Basic and Applied Scientific Research:

<https://beta.nsf.gov/funding/opportunities/nsf-nist-interaction-basic-and-applied-scientific-research>

Paleoclimate:

<https://beta.nsf.gov/funding/opportunities/paleoclimate>

Poorly Sampled and Unknown Taxa (PurSUiT) solicitation:

<https://www.nsf.gov/pubs/2020/nsf20059/nsf20059.jsp>

Research Experiences for Undergraduates (REUs):

<https://beta.nsf.gov/funding/opportunities/research-experiences-undergraduates-reu>

Sedimentary Geology and Paleobiology (SGP):

<https://beta.nsf.gov/funding/opportunities/sedimentary-geology-and-paleobiology-sgp-0>





Stromatolitic limestone - glacially planed-off outcrop of Hoyt Limestone in the Cambrian of New York State, U.S.A.  
Photo by James St. John. CC 2.0, on wikimedia.org



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