doi:10.36849/JDD.9011

National Institutes of Health Funding for Vitiligo Research: Trends from 1985 to 2024

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ABSTRACT

Background: The National Institutes of Health (NIH) funds a multitude of dermatology research. This study examines NIH funding for vitiligo studies and highlights key trends.

Methods: The NIH Research Portfolio Online Reporting Tool database was used to identify vitiligo research projects funded between 1985 and 2024, with results limited to project titles containing "vitiligo."

Results/Discussion: The NIH awarded 166 grants for vitiligo research between 1985 and 2024. This study analyzed 144 of these awards, totaling $22,343,119. The greatest increase occurred between 1998 and 1999, with the average funding per grant rising by $124,316, leading to a total funding increase from $269,102 to $1,149,554. The most common funding mechanism was Non-Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) was the leading administering institute. Medical schools were the most awarded organization type. The most common grant types were R01 (n=59, 41%) and M01 (n=21, 15%). Among the 144 funded projects, 48 were unique, with most focusing on pathophysiology (n=36) and treatment (n=8).

Limitations: Study limitations include incomplete data on NIH research funding, with 22 awards missing total cost information and 25 awards calculated using subproject sums.

Conclusion: From 1985 to 2024, NIH funding for vitiligo research fluctuated with an upward trend in recent years. The most common funding mechanism was Non-SBIR/STTR. Among organization types, medical schools received the most awards. Most vitiligo research projects have been completed and have focused on understanding the pathophysiology and treatment of vitiligo.

J Drugs Dermatol. 2025;24(12):1260-1263. doi:10.36849/JDD.9011

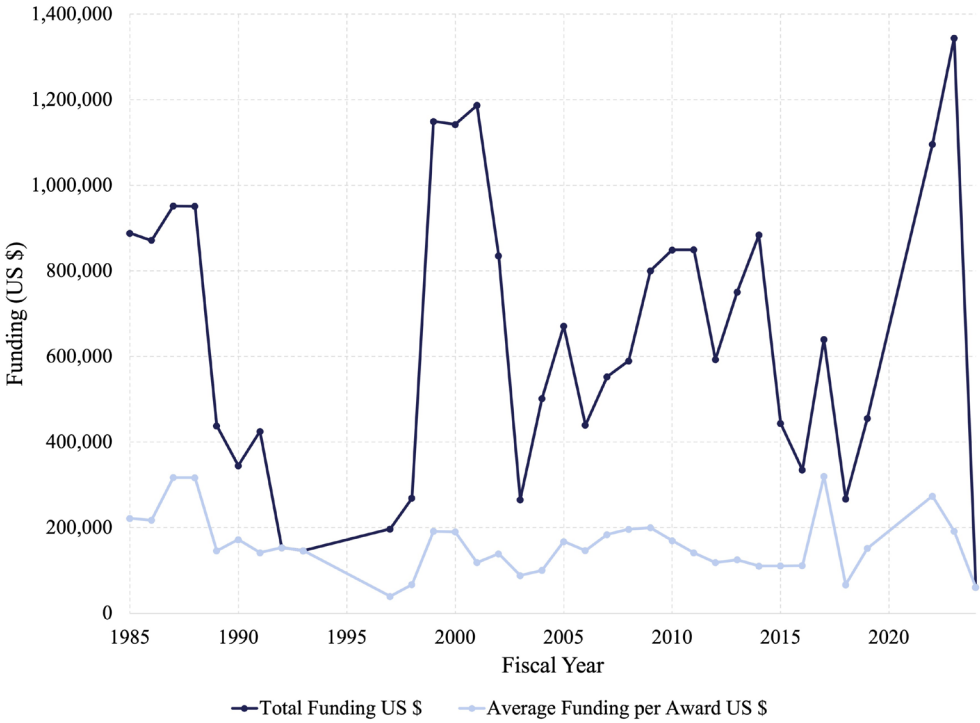
INTRODUCTION

Vitiligo research has seen a gradual increase in publications and citations from 1980 to 2000, with a significant rise after 2005.[1] Vitiligo research peaked in 2016 with 528 published articles and in 2017 with 10,390 citations. The most cited works are original articles from the United States, focusing on melanoma, autoimmunity, and immunotherapy.[1] To guide future research and funding opportunities, this study evaluated trends in National Institutes of Health (NIH) funding of vitiligo research.

The NIH Research Portfolio Online Reporting Tool database was used in July 2024, to identify projects funded between fiscal years 1985 and 2024, limiting the search to project titles containing "vitiligo".[2] Information was collected on the project title, project number, administering institutes or centers (ICs), department, organization name, organization city, organization state, organization type, organization country, grant type, project start and end dates, funding mechanism, fiscal year, total cost, total cost (sub projects), funding IC(s), direct cost IC, indirect cost IC, and total cost IC. NIH funding amounts have been adjusted to 1985 US dollars to account for inflation using Consumer Price Index data from the Bureau of Labor Statistics.[3]

The NIH awarded 166 vitiligo research awards between 1985 and 2024. This study analyzed 144 of these awards, totaling $22,343,119. Vitiligo research funding has fluctuated over the years, but in recent years shows an upward trend. The greatest increase occurred between 1998 and 1999, with the average funding per grant increasing by $124,316, leading to a total funding increase from $269,102 to $1,149,554 (Figure 1).[2]

FIGURE 1. Trends of total funding and average funding per award for vitiligo by fiscal year.*



*Includes data on 144 NIH awards from 1985 to 2024 with available funding information. A total of 22 awards were excluded due to missing data. Data for the years 1994-1996 and 2020-2021 are not included due to incomplete or missing entries in the NIH database.

Among the 144 NIH research awards for vitiligo projects, 125 have been completed, 10 are ongoing, and 9 are missing both start and end dates. These projects were supported by 21 different grant types, with R01 (n=59, 41%) and M01 (n=21, 15%) being the most common.

Several NIH-funded vitiligo projects received multiple awards. Among the 144 funded projects, 48 were unique, with 38 receiving awards more than once. Most of these unique projects focused on the pathophysiology of vitiligo (n=36), treatment of vitiligo (n=8), and one project focused on both pathophysiology and treatment of vitiligo. The project "Mapping of Vitiligo Susceptibility Genes", conducted at the University of Colorado Denver, received the most awards (n=13) and aimed to identify genetic risk factors for vitiligo using genome-wide analyses. This project advanced the understanding of vitiligo genetics, with one of its key findings being the identification of AIS1 on chromosome 1p31 as a major susceptibility locus for vitiligo.[4]

Non-Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) was the most common funding mechanism with 69 awards and total funding of $11,947,869, with an average of $173,158 per award (Table 1).[2] The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) was the most awarded administering ICs with 107 awards, with a total funding of $18,232,371, followed by the National Center for Research Resources (NCRR) with 21 awards, with a total funding of $1,527,286. Together, NIAMS and NCRR accounted for 89% of all awards.[2]

Medical schools were the most awarded organization type with 106 awards and a total funding of $18,357,554, followed by domestic higher education with 24 awards totaling $2,303,214 of funding. These two organization types accounted for 90% of all awards.[2] The University of Colorado Denver was the most awarded organization with 37 awards, with total funding of $6,928,873, followed by the University of Massachusetts Medical School, Worcester, with 15 awards, with a total funding of $2,812,380.[2]

Study limitations include incomplete data on NIH research funding, with 22 awards missing total cost information and 25 awards calculated using subproject sums. Additionally, nine vitiligo research projects are missing both start and end dates.

NIH funding trends illustrate a growing scientific interest in vitiligo. At the time of this study, the NIH ClinicalTrials.gov database shows 100 completed clinical trials and 58 active studies.[5] The use of Janus kinase (JAK) inhibitors represents a significant milestone for vitiligo treatment, with ruxolitinib

TABLE 1.

NIH Funding Distribution for Vitiligo Research by Funding Mechanism, Administering IC, Organization Type, and Name*

Funding Mechanism	Total Funding US $	Average Funding per Award US $	Total Number of Awards
Non-SBIR/STTR	11,947,869	173,158	69
Unknown	5,463,505	182,117	30
Research Centers	3,220,667	153,365	21
SBIR/STTR	856,384	214,096	4
Other Research-Related	666,500	41,656	16
R and D Contracts	121,901	121,901	1
Training, Individual	66,293	22,098	3
Administering IC			
NIAMS	18,223,271	170,311	107
NCRR	1,527,286	72,728	21
NIAID	1,279,737	182,820	7
NIADDK	879,631	293,210	3
NCI	390,586	97,646	4
NIEHS	42,610	21,305	2
Organization Type			
Medical Schools	18,357,554	173,184	106
Domestic Higher Education	2,303,214	95,967	24
Domestic For-Profits	856,384	214,096	4
Research Institutes	278,874	69,718	4
Earth Sciences/Resources	277,981	92,660	3
Schools Of Arts and Sciences	147,212	73,606	2
Other Domestic Non-Profits	121,901	121,901	1
Top 10 Organization Name			
University Of Colorado Denver	6,928,873	187,267	37
Yale University	3,398,430	308,948	11
University of Massachusetts Medical School, Worcester	2,812,380	187,492	15
Loyola University Chicago	2,071,843	147,989	14
New York University	1,329,780	189,969	7
University of Virginia	1,303,420	162,927	8
University of Cincinnati	791,326	87,925	9
Radikal Therapeutics, Inc.	751,920	250,640	3
UT Southwestern Medical Center	619,593	123,919	5
Howard University	578,927	144,732	4

*Includes data on 144 NIH awards from 1985 to 2024 with available funding information. A total of 22 awards were excluded due to missing data. Funding mechanisms included 30 awards from unknown organizations not listed in the database.

Abbreviations: NIH: National Institutes of Health; ICs: Institutes or centers; non-SBIR/STTR: non-Small Business Innovation Research/Small Business Technology Transfer; R and D Contracts: Research and Development Contracts; NIAMS: National Institute of Arthritis and Musculoskeletal and Skin Diseases; NCRR: National Center for Research Resources; NIAID: National Institute of Allergy and Infectious Diseases; NIADDK: National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases; NCI: National Cancer Institute; NIEHS: National Institute of Environmental Health Sciences

being the first FDA-approved treatment for repigmentation.[6] Multiple oral JAK inhibitors are now undergoing phase 3 studies in addition to the study of other systemic and procedural therapies showing additional promise for new future treatment options for vitiligo.[7]

DISCLOSURES

Dr Elbuluk has served as a consultant, advisory board member, and/or speaker for Avita, Incyte, VisualDx, Beiersdorf, Unilever, Eli Lilly, Galderma, Pfizer, La Roche Posay, L'Oreal, McGraw-Hill, Dior, Medscape, AbbVie, Takeda, Sanofi, and Janssen. She has received royalties from McGraw-Hill. She has stock options in VisualDx. The remaining authors have no disclosures to report

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