

The Impact of NIH Funding and Representation in Today's Osteopathic Landscape

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1/31/2020

POMA District 8 Winter Conference

Conflicts of Interest and Disclosures

- I have no conflicts of interest or disclosures

Outline

- How come this topic was investigated
- Brief History of the NIH
- Federal Advisory Committees
- Results of the Investigation of Public Records
- Updates since the report
- Next steps

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 - Goal of becoming indexed in Medline and PubMed
- Personal Experience right after receiving a research award at the American College of Allergy Asthma and Immunology

Brief History of the NIH

- Origins are reported to be traced back to 1887
 - Called the Laboratory of Hygiene
 - Contained within the Marines Hospital Service (MHS)
 - 1891 Named changed to Hygienic Laboratory
 - 1930 Officially became the National Institutes of Health (NIH)
 - Congressional Powers granted to the NIH are included in the Public Health Service Act

National Institutes of Health Structure

- Divided into:
 - Institutes
 - Centers
- Near every Institute and Center has funding for internal research (intramural grants) and external research (extramural grants)
 - If you do not work for the NIH then you would apply for the extramural grants
- Adjusted for interest the NIH has had over a trillion dollars of funding since 1938. Over half has been since 2000.

Federal Advisory Committees

- There are several levels of FAC's
 - National
 - Program
 - Board of Scientific Counselors
 - Special Emphasis Panel (SEP)
- Made up of experts in the specific fields of the Institute, center or topic(s)
 - You do not have to work for the NIH to be an advisor

Federal Advisory Committee Act (FACA)

- All the federal advisory committees at the NIH are subject to the Federal Advisory Committee Act (FACA) of 1972
 - which “requires that membership be fairly balanced in terms of points of view represented and the functions to be performed by the advisory committee. NIH ensures representation of women and minorities, diverse representation in member expertise...”

Osteopathic Representation on NIH FAC's

NIH Institute or Center	National Advisory Committee (NAC) 2018 ^a	Total Positions Filled	MD ^b	DO ^b	PhD	other ^d
25 Total	Total Positions Filled and Total per Degree ^c	462	213	1	244	53

a) The National Clinical Center (CC) and the Center for Scientific Review (CSR) do not list or have National Advisory Committees

b) In the United State Doctors of Allopathic Medicine (MD) and Doctors of Osteopathic Medicine (DO) are considered legally equal degrees

c) Total Positions Filled and Totals per Degree will not equal as individuals may hold more than one doctorate

d) Other includes: Doctors of: Science (DSc, ScD), Dental Surgery (DDS), Veterinary Medicine (DVM), Chiropractic (DC), Naturopathic (ND), Optometry (OD), Judisprudence (JD), and Master's degrees

Peppers B, Blumer J, Hostoffer R, Rowane MP, Thomas KA, Byrnes T. National Institutes of Health and osteopathic medicine: another call for action and equality in a legal struggle won long ago. AAO Journal. 2018;28:9-27.

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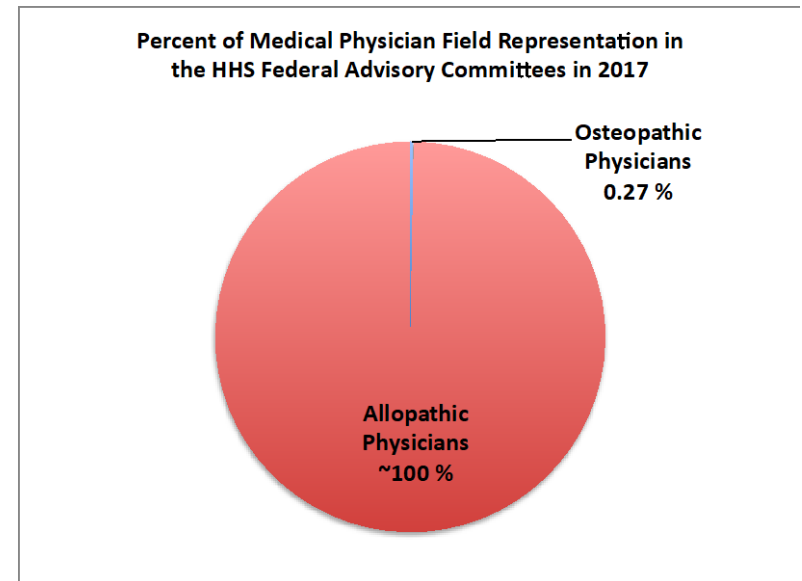
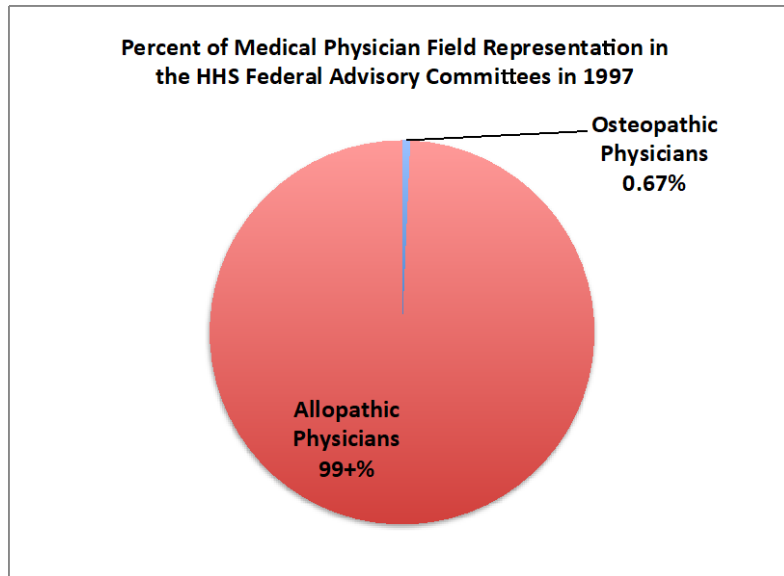
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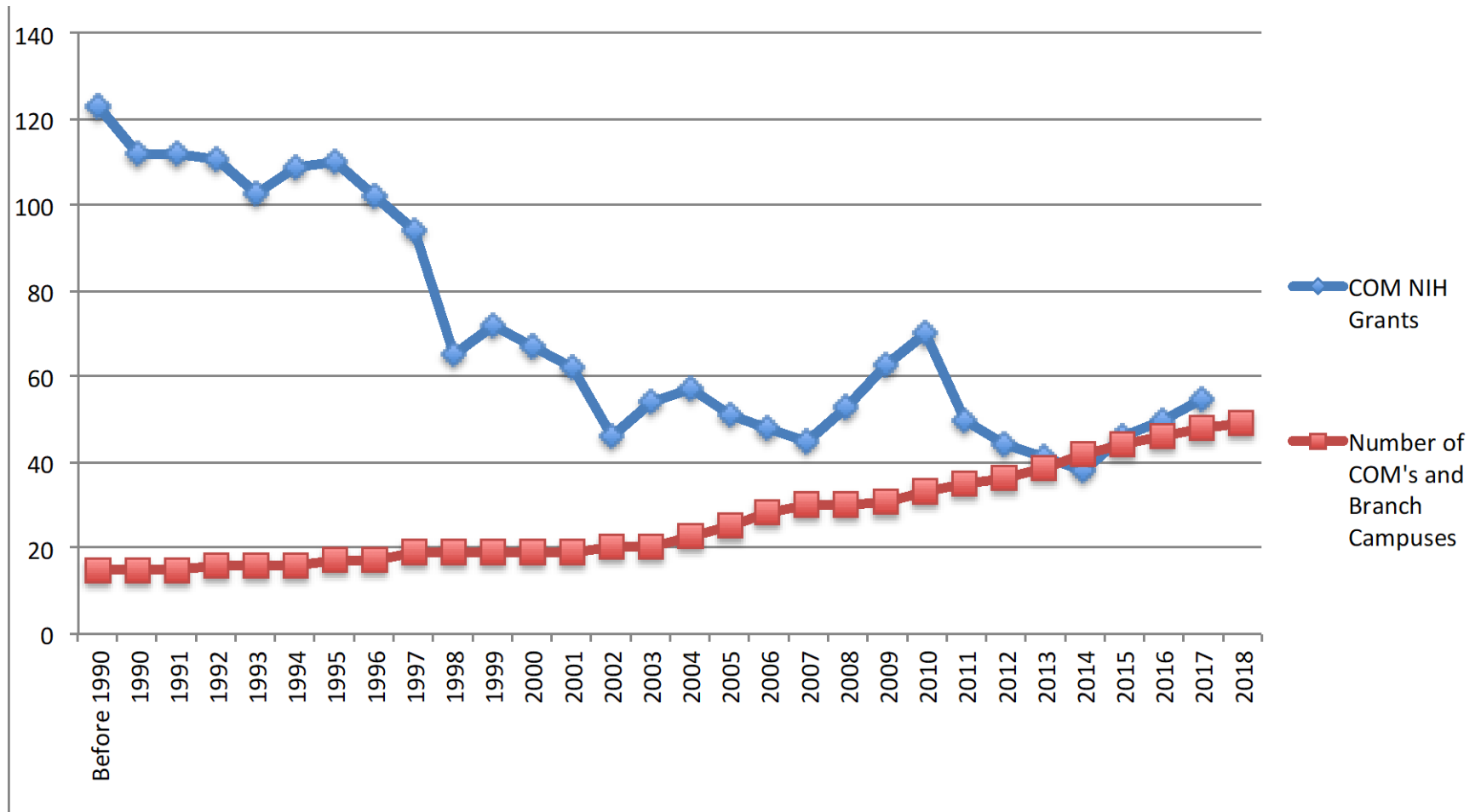
None of the PhD's Came from Colleges of Osteopathic Medicine

Osteopathic Representation Within all FAC's for the Human Health Services (HHS)



(Left). Federal Advisory Committee positions filled by osteopathic physicians in 1997. **(Right).** Federal Advisory Committee positions filled by osteopathic physicians in 2017

Number of NIH Grants Awarded to COM's



Number NIH grants awarded to COM's and Number of COM's and Branch Campuses

Bias in the FAC Member Selection Criteria

Entry	Specific Selection Factors	Concern for Bias
1	Personal knowledge of both the required discipline and the scientists who are making significant research contributions to the field.	Personal knowledge of the scientists themselves is an in-group bias.
2	Observance of investigators who serve as ad hoc consultants or temporary members at regular scientific and technical peer review committee meetings; participants on project site visit teams; or those who have provided written collateral opinions on request.	There are virtually no DO's or PhD's from Colleges of Osteopathic medicine on the NIH's FAC's to be observed.
3	Solicitation of names of outstanding investigators from former and current committee members and other leaders in the field.	There are virtually no DO's or PhD's from Colleges of Osteopathic medicine on the NIH's FAC's to be observed.
4	Consultation with scientific and professional staff of the various NIH institutes and centers as well as the Office of the Director offices.	There are virtually no DO's or PhD's from Colleges of Osteopathic medicine serving in leadership roles in the NIH Institutes or in the Office of the Directors.
5	Review of NIH's enterprise-wide database system and other databases for potential nominees with specific expertise.	Chronic lack of inclusion, there are very few DO's or PhD's from Colleges of Osteopathic medicine in this database.
6	Review of NIH applicant and grantee files as well as curriculum vitae and publications of investigators.	Chronic lack of inclusion, there are very few DO's that understand the application process for grants at the NIH. We need NIH workshops marketed to DO societies and colleges. With the NLM exclusion of the osteopathic terminology and denial of journals this leaves osteopathic venues at a disadvantage as PubMed publications are important for grant applications. There is also a paucity of DO's as editors and reviewers in almost all PubMed journals.
7	Review of membership rosters of pertinent professional societies.	There are many medical societies that have refused memberships to DO's and those trained by AOA residency and fellowship programs.
8	Review of major scientific journals and publications in the field.	NLM has excluded DO's and Osteopathic terminology for nearly 100 years. This is a chronic problem, and major journals do not have DO representation as editors or on their editorial advisory boards.
9	Attendance at relevant professional meetings. These meetings provide a valuable method of keeping informed of significant new studies in the field and of identifying the investigators who are doing the type of research needed; gaining knowledge of the interests and expertise of possible future members and consulting with eminent investigators who may be potential members.	There are many medical societies to this day that have refused memberships to those trained by AOA residency and fellowship programs. Further it is unlikely that attendance of enough MD's or PhD from allopathic medical schools at DO society meetings is high enough to negate this selection bias.
10	Solicitation of names in the Federal Register.	Chronic lack of inclusion, will lesson the numbers of DO's and PhD's from Colleges of Osteopathic Medicine to be solicited.
11	Observation of applications reviewed by other agencies, especially those having review panels in related disciplines.	The representation of DO's and PhD's from Osteopathic colleges in the entire HHS FAC's is <<0.5%, yet the field has grown by >200% in the last 20 years.
12	Self-nominations from qualified individuals.	This is the only option open to the Osteopathic community. The process of which is still much harder for the out-group than the in-group given the 11 factors listed above.

National Center for Complementary and Integrative Health (NCCIH)

- Formerly known as National Center for Complementary and Alternative Medicine (NCCAM)
- NIH Center where there is specific language for Osteopathic manipulations for the purpose of grants and contracts
- Formed 1999: over 2 billion dollars have been allocated to the NCCIH

NACCAM First Meeting of Public Record

There was also some interest in an initiative to evaluate Western-based whole systems, such as , naturopathy, and other practices.

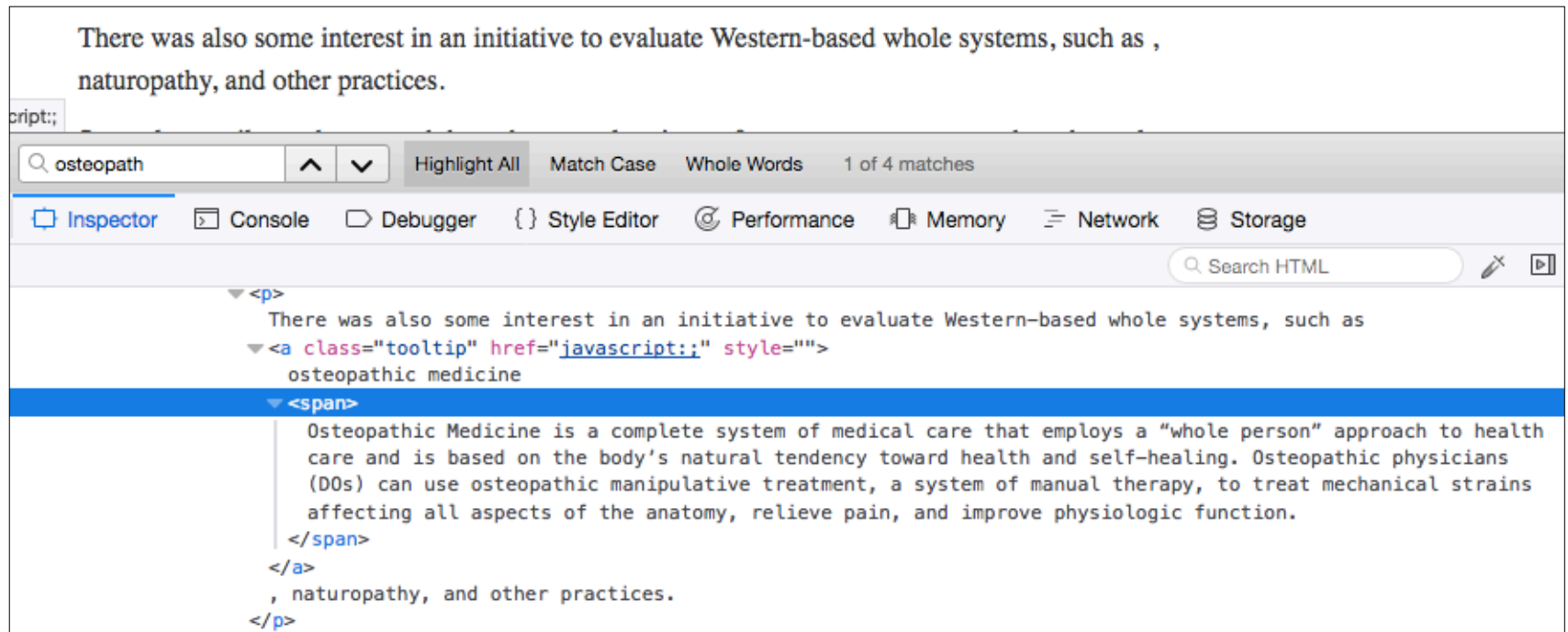
Several council members noted that when people migrate from one country to another, they take along only part of their system of medicine, or the system changes. For

Incidence of the word osteopath in the first meeting minutes of NCCAM/NCCIH in 1999 (<https://nccih.nih.gov/about/naccam/minutes/1999aug.htm>). Screen capture using Safari on January 9, 2018..

Peppers B, Blumer J, Hostoffer R, Rowane MP, Thomas KA, Byrnes T. National Institutes of Health and osteopathic medicine: another call for action and equality in a legal struggle won long ago. AAO Journal. 2018;28:9-27.

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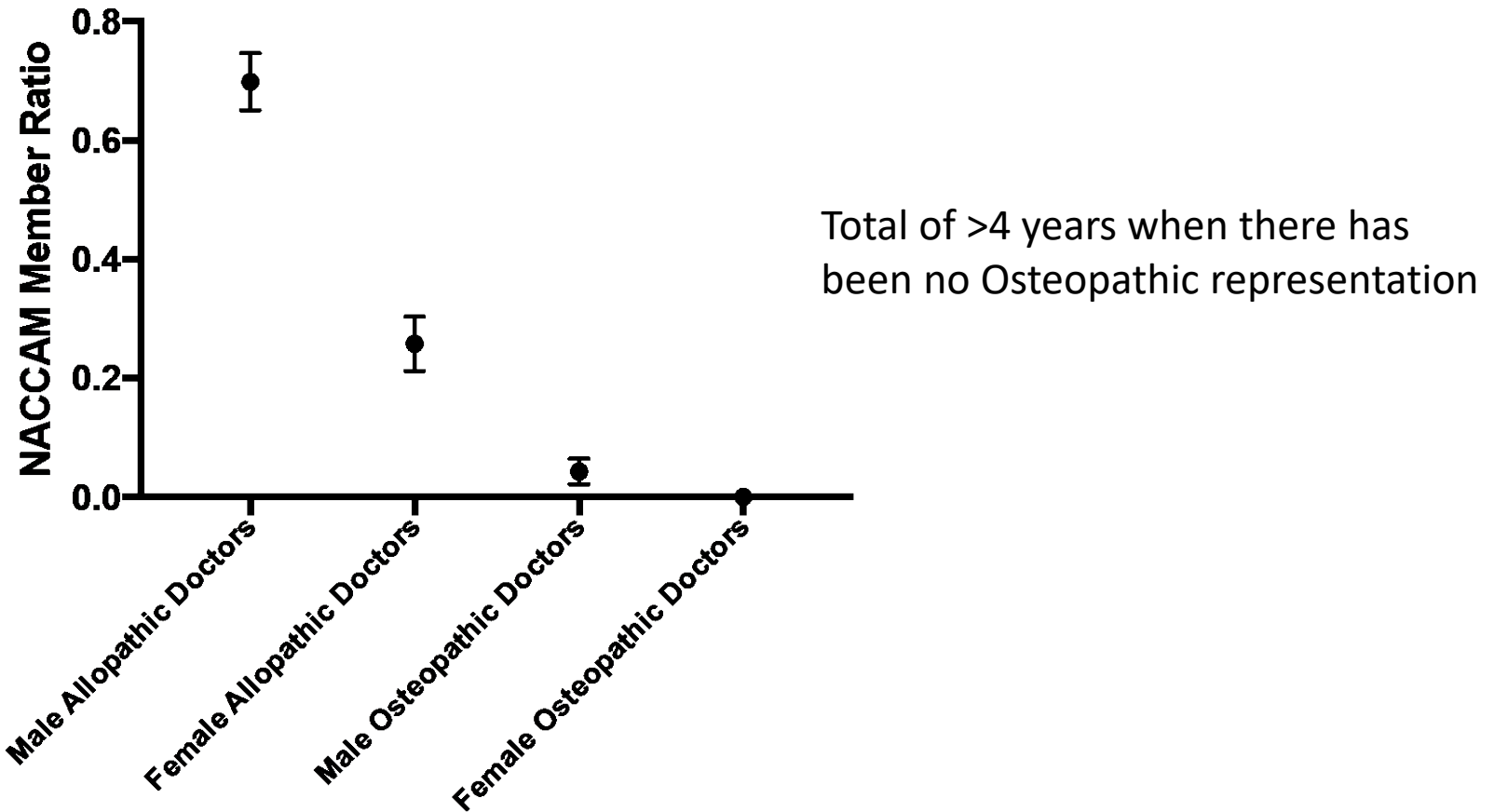


JavaScript investigation into invisible text at

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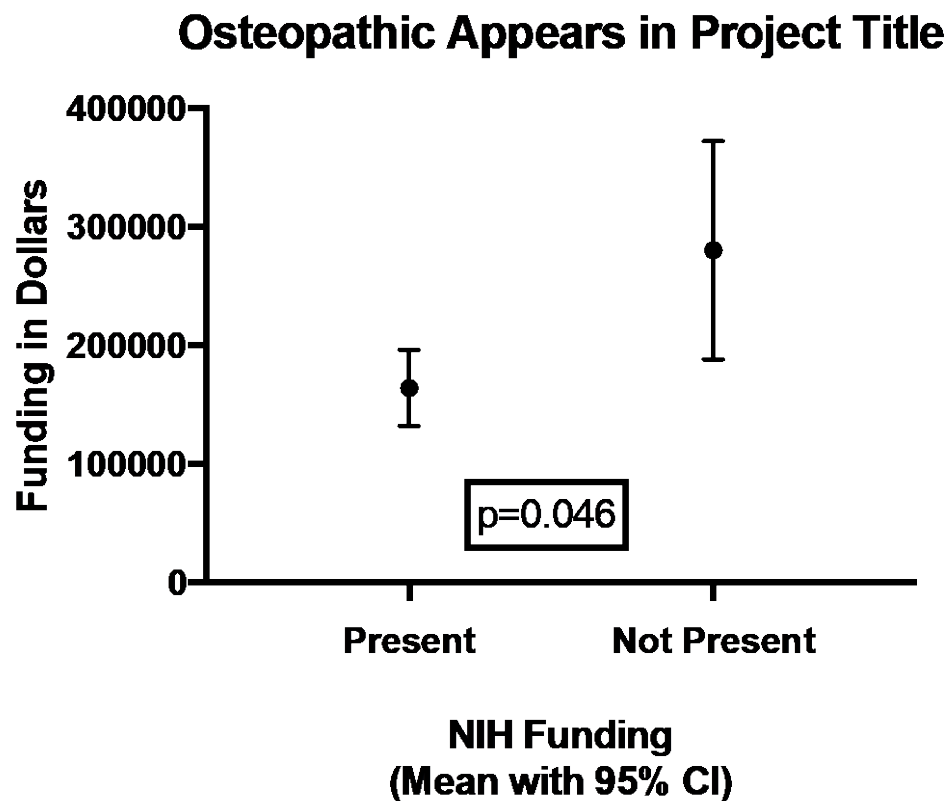
Screen capture using the Inspect Element function in Firefox on January 9, 2018.

NCCIH's advisory council (NACCIH)



NACCAM/NACCIH representation by profession and gender, 1999 to 2018.

P<0.0001 Kruskal-Wallis tests with 95% confidence



Unpublished Results, t-test, Data from the NIH E-Reporter, specifically from the NCCIH (formerly known as NCCAM)

<https://report.nih.gov> Accessed 9/5/2018

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Lower number of grants submitted and lower rate of funding

- Osteopathic Medical School
 - Make up only 0.4% of the grants submitted
 - However Allopathic Medical School grants were found have an award rate 21% greater than Osteopathic Medical School

Tooke-Rowlins D, Brolinson PG, Garner RH. Why do MDs get more research dollars than Doctors of Osteopathy? And what exactly is osteopathy, anyway? Sci Am [Internet]. November 2018. [cited 2019 November 16]; Available from: <https://blogs.scientificamerican.com/observations/why-do-mds-get-more-research-dollars-than-doctors-of-osteopathy/>

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 - It is the FAC's that review the grant applications

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K, R21 to R01 Grants

- K Grants: Training grants for new research faculty, normally needs 70% time dedication to research.
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- R01: 5 year grants, lower risk for poor results, greater amount of total possible funding than an R21

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- Not one DO has ever converted from a K or R21 to an R01 in the NCCIH/NCCAM's history

Got Mentor?

- This application is a new R01 proposal from an accomplished and productive scientist who qualifies as a new investigator based on limited experience with R-series funding at the NIH. The applicant is well trained and has significant contributions to science. Indeed, the scientific premise of the project is currently unavailable in preclinical research and its response to treatment which has limited translation of results to clinical care.

Got Mentor?

- The applicant would likely benefit from addition of collaborators, who are established and funded NIH investigators. Such individuals would strengthen the applicant team, provide stimulating collaborations for the new investigator and offer guidance and mentoring in the proposed setting as the new investigator transitions into seeking NIH funding.

Brief History of the National Library of Medicine (NLM)

- The National Library of Medicine (NLM), is one of the 27 organizations within the NIH.
- Its origins predate the NIH as it was started in 1836. Similar to the NIH, the NLM was initiated by the military.
- In 1871, the first librarian of what would become the NLM, John Shaw Billings, envisioned the library to be “as complete as possible in all publications relating to military organization, medicine, and the allied sciences,” and would be “an universal library of references.”

Congressional Powers

- PURPOSE, ESTABLISHMENT, AND FUNCTIONS OF THE NATIONAL LIBRARY OF MEDICINE
- SEC. 465. [286] (a) In order to assist the advancement of medical and related sciences and to aid the dissemination and exchange of scientific and other information important to the progress of medicine and to the public health, there is established the National Library of Medicine (hereafter in this part referred to as the “Library”).
- (b) The Secretary, through the Library and subject to subsection (d), shall— (1) acquire and preserve books, periodicals, prints, films, recordings, and other library materials pertinent to medicine; (2) organize the materials specified in paragraph (1) by appropriate cataloging, indexing, and bibliographical listings; (3) publish and disseminate the catalogs, indexes, and bibliographies referred to in paragraph (2)...

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- (B) The ex officio members are the Surgeons General of the Public Health Service, the Army, the Navy, and the Air Force, the Chief Medical Director of the Department of Veterans Affairs, the Dean of the Uniformed Services University of the Health Sciences, the Assistant Director for Biological, Behavioral, and Social Sciences of the National Science Foundation, the Director of the National Agricultural Library, and the Librarian of Congress (or their designees).
- (C) The appointed members shall be selected from among leaders in the various fields of the fundamental sciences, medicine, dentistry, public health, hospital administration, pharmacology, health communications technology, or scientific or medical library work, or in public affairs. *At least six* of the appointed members shall be selected from among leaders in the fields of *medical, dental, or public health research or education*. [emphasis added]

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- **Ronald R. Blanck, was the surgeon general of the Army and the only DO to have ever served on the BOR**

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 - **The CDM 2004 had all mention of Osteopathic terminology removed for the first time in history**

LSTRC 2001 Meeting

A discussion item that the Committee addressed at several intervals during the meeting **was the role of LSTRC in filtering journals**. Some members took a more libertarian approach than others in terms of letting users decide what is useful. Others feel this question gets to the heart of LSTRC's responsibility, i.e., that is determining outstanding quality of content, importance, and editorial processes. The bar must be kept high so users retrieve what is truly useful to them. The discussion then migrated to the importance of non-U.S. journals that report on local or regional public health issues. All agreed that some of these journals may not have all the attributes of Western Europe and North American journals, but are valuable additions to MEDLINE. The LSTRC Summary Form will be revised for the next meeting to give this attribute a numerical score. It is now a check-off box. The broad theme of this discussion will resume at the June meeting

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- **3 out of 3 applications for Osteopathic Journal inclusion in Medline has been denied since 2004**

Literature Selection Technical Review Committee (LSTRC)

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- 3 out of 3 applications for Osteopathic Journal inclusion in Medline has been denied since 2004
- **Journal of the American Osteopathic Association is the only journal that bears the name osteopathic (osteopathy) that is indexed in Medline and PubMed**

Results Since the Report

- Two weeks after the first public disclosure of the report at the AAO Convocation in 2018
 - Osteopathic terminology became visible within the NACCAM's first meeting in 1999
 - NLM added Osteopathic medicine to the CAM subject heading on their website of the CDM (but not the CDM itself)
- NACCIH
 - Now has 2 Osteopathic doctor representatives

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 - Now has 2 Osteopathic doctor representatives
 - Both are Female!

CDM 2019

- CDM now has a disclaimer:

The Library collects works on all aspects of biomedicine and health care, and many areas of the life sciences. These guidelines are not intended to be an exhaustive description of every subject collected, nor has there been any attempt to establish mutually exclusive subject categories.

- The CDM 2019 has Osteopathic manipulations listed under CAM. There is no specific section for osteopathic medicine.

VCOM's Initiative

- Edward Via College of Osteopathic Medicine has lobbied congress to recognize the problem and bring this concern to the NIH
 - Dixie Tooke-Rowlins, DO
 - Per Gunnar Brolinson, DO
 - Ronald H. Garner, PhD

Tooke-Rowlins D, Brolinson PG, Garner RH. Why do MDs get more research dollars than Doctors of Osteopathy? And what exactly is osteopathy, anyway? Sci Am [Internet]. November 2018. [cited 2019 November 16]; Available from: <https://blogs.scientificamerican.com/observations/why-do-mds-get-more-research-dollars-than-doctors-of-osteopathy/>

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Suggested Language Submitted to the Appropriations Committee

- The Committee is concerned there is a lack of access to research funding for osteopathic medical schools through the National Institutes of Health (NIH). The Committee is aware that the 173 NIH standing study sections established to provide grant review for calendar year 2018 are comprised of 3,233 grant reviewers, of which zero have doctors of osteopathic (DO) medicine credentials. This historical disparity results in DOs receiving only 0.1% of NIH grants although they make up 11% of the physician workforce and 26% of students entering medical school are osteopathic medical students. The Committee understands that osteopathic medicine is one of the fastest growing health care professions in the country, and realizes its vital role in treating our nation's rural, underserved, and socioeconomically challenged populations. In order to overcome the historical disparity and ensure fair representation and funding rates, the Committee directs the NIH across all institutes to: 1) establish its own research fund, expressly limited to participation from physicians and scientists with osteopathic credentials and affiliations, and said fund shall not be less than \$5 million annually at each grant awarding institute and national center; 2) include at least one physician or scientist with osteopathic credentials and/or affiliations as a reviewer on NIH study sections and National Advisory Councils.

NIH Appropriation's Bill Report

Osteopathic Medical Schools.—The Committee is concerned there is a lack of access to research funding for osteopathic medical schools through NIH. The Committee is aware that professionals with doctors of osteopathic [D.O.] medicine credentials represent a small fraction of all reviewers who serve in peer review (e.g. 29 reviewers with D.O. degrees served on Study Sections between October 2018 through August 2019). D.O.s receive only 0.1 percent of NIH grants although they make up 11 percent of the physician workforce and 26 percent of students entering medical school are osteopathic medical students. The Committee understands that osteopathic medicine is one of the fastest growing healthcare professions in the country, and realizes its vital role in treating our Nation's rural, underserved, and socioeconomically challenged populations.

<https://www.appropriations.senate.gov/news/fy2020-labor-hhs-and-education-appropriations-bill-released>

Accessed: 1/25/2020

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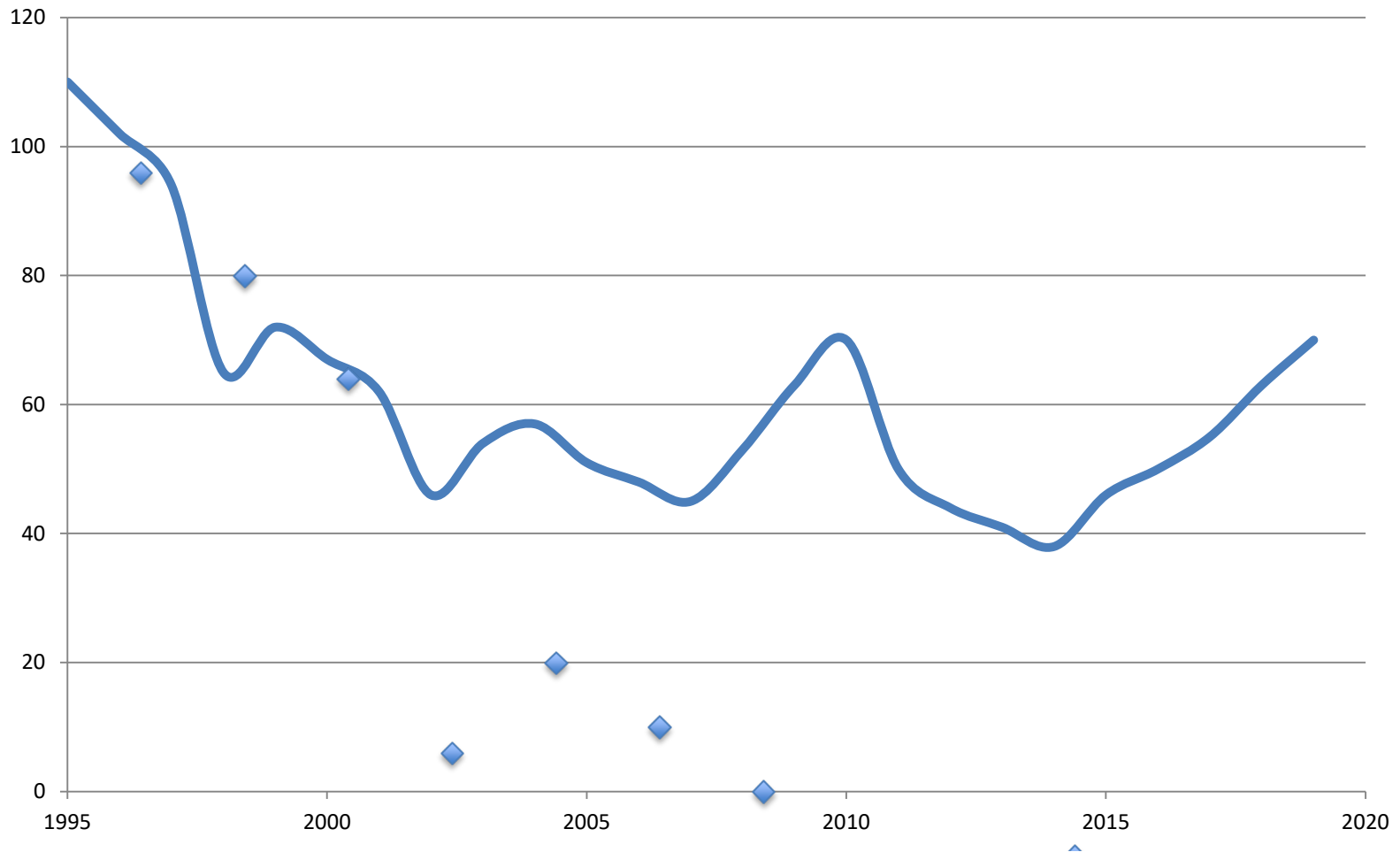
NIH Appropriation's Bill 2020

- No mention of Osteopathic concerns outlined in the report
- No mention of allocated funds to help COM's and DO's regardless of institution affiliations

<https://www.appropriations.senate.gov/news/fy2020-labor-hhs-and-education-appropriations-bill-released>

Accessed: 1/25/2020

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 - The maximum NIH funding per College/University is 50 million dollars/y

Summary

- Osteopathic medical community is largely underrepresented at the Federal advisory committee level.
- There have been years where there has been no Osteopathic representation on the National Institutes of Health (NIH) Federal advisory committees.
- Federal laws aimed at governing Federal advisory committees is designed to prevent this lack of representation.
- Over the past 20 years the level of representation has been decreasing.
- The problem is multifactorial and will need a unified movement to remedy.

Additional References

- <https://www.nih.gov>
- <https://report.nih.gov>
- <https://ofacp.od.nih.gov>
- https://ofacp.od.nih.gov/committees/selection_criteria.asp