THE JOURNAL of the AMERICAN OSTEOPATHIC ASSOCIATION

The Journal of the American Osteopathic Association (*JAOA*) encourages osteopathic physicians, faculty members and students at colleges of osteopathic medicine, and others within the health care professions to submit comments related to articles published in the *JAOA* and the mission of the osteopathic medical profession. The *JAOA*'s editors are particularly interested in letters that discuss recently published original research.

Letters must be submitted online at http://www.osteopathic.org/JAOAsubmit. Letters to the editor are considered for publication in the *JAOA* with the understanding that they have not been published elsewhere and are not simultaneously under consideration by any other publication. All accepted letters to the editor are subject to editing and abridgment.

Although the *JAOA* welcomes letters to the editor, these contributions have a lower publication priority than other submissions. As a consequence, letters are published only when space allows.

Bibliometric Measures and National Institutes of Health Funding at COMs, 2006-2010

To the Editor:

The article by Suminski et al,[1] published in the November 2012 issue of *The Journal of the American Osteopathic Association*, represents a positive step in the right direction for better understanding the dynamics of research and funding conditions at colleges of osteopathic medicine (COMs). The study[1] presents solid, independent data from 28 COMs, citing their publication and citation records over several years and comparing them with funding from the National Institutes of Health (NIH) in 2010. However, the article contains at least some incorrect data.

For example, the article reports that the NIH awarded $0 to Touro University California, College of Osteopathic Medicine (TUCOM) in Vallejo in 2010. It is not clear from the text whether "2010" is taken as an academic year or a calendar year, or whether the dollar amounts reflect direct and indirect costs. This omission leads to misinterpretation of the information.

In fact, if one uses the same database employed by the authors (http://report.nih.gov/) (January 1 through December 31), it is clearly shown that TUCOM had 3 NIH grants in 2010, representing $1,328,449 (*Table*).

In addition, although the bibliometric measures and sources chosen by Suminski et al[1] are very useful, the authors may be underreporting publications by COM faculty. In the case of TUCOM, they cite 31 articles published between 2006 and 2010, whereas TUCOM has 75 published articles on record from the faculty. To be fair, this difference may be a result of research that was performed in collaboration (in many multicentric and collaborative studies, the primary author may not be a COM faculty member, and thus the articles may be more difficult to trace) or was published in journals not included in the Web of Science database.

If similar errors were committed in the case of the other COMs, then Table 5 and some of the authors' conclusions are flawed. In this regard, a study using data reported from the COMs (confirmed and double-checked as necessary) may show a more complete picture of the COMs' scholarly productivity.

In any case, Table 5 of Suminski et al[1] at least misrepresents the NIH funding to TUCOM in 2010, and this mistake should be amended. For this reason, we believe that Suminski et al should double-check the validity of the information with each school and corrections should be published after the data are thoroughly checked.

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Reference

1. Suminski RR, Hendrix D, May LE, Wasserman JA, Guillory VJ. Bibliometric measures and National Institutes of Health funding at colleges of osteopathic medicine, 2006-2010. *J Am Osteopath Assoc*. 2012;112(11):716-724.

Response

Dr Gugliucci's comments[1] regarding our November 2012 article[2] offer some important considerations for how funding to colleges of osteopathic medicine (COMs) is framed by the National Institutes of Health (NIH), and we encourage him to undertake a related study to supplement our study.

Table.
Touro University California Research Funded by the National Institutes of Health (NIH) in 2010

Project Number	Project	Administrative IC	Direct Cost	Indirect Cost	Funding
1R01DK089216-01	Metabolic impact of fructose restriction in obese children	NIDDK	$611,214	$130,565	$741,779
1R01GM087998-01A1	Structure-based discovery and development of HIV-1 gp41 fusion inhibitors	NIGMS	$207,649	$79,661	$287,310
5R01DK078133-04	De novo lipogenesis in the pathogenesis of non-alcoholic fatty liver disease	NIDDK	$235,837	$63,523	$299,360

Abbreviations: IC, NIH Institute or Center; NIDDK, National Institute of Diabetes and Digestive and Kidney Diseases; NIGMS, National Institute of General Medical Sciences.

Source: National Institutes of Health, http://report.nih.gov/.

Our investigation[2] specifically examined funding provided to COMs as indicated by the NIH. In the NIH funding database, we selected search criteria that limited funding for a particular year to COMs. On the NIH RePORTER search page (http://projectreporter.nih.gov/reporter.cfm), we selected "Schools of Osteopathy" under the category "Educational Institution Type." This search function provided us information on research grants awarded to COMs in fiscal year 2010, which was the exact intent of our study.

If one uses the search methods of Dr Gugliucci, one can retrieve grants awarded to specific universities such as Touro University California. The detailed information from the NIH about these particular grants, however, does not mention anything about the grant being awarded to a COM. Rather, the institution types for Touro University California are School of Medicine (3 instances) and School of Pharmacy (1 instance). Another example is Nova Southeastern University. In 2010, Nova Southeastern University received 16 NIH research awards, of which 4 were designated by the NIH as being made to the university's COM. The other 12 went to the School of Allied Health Professions, School of Dentistry/Oral Hygiene, School of Pharmacy, and "University-Wide." We included the 4 NIH research awards as per our methodological approach. Therefore, we stand behind our findings and do not believe it would have been appropriate to include all NIH awards made to a university that has a COM. We do believe the data brought to light by Dr Gugliucci are relevant and may indicate a potential limitation in the way the NIH categorizes funding opportunities or even blatant errors (either reporting to the NIH by the university or by the NIH itself) with the obvious downside being less favorable profiles of research activity at COMs. In addition, the data presented by Dr Gugliucci should be considered in discussions of funding to COMs. For instance, it would be interesting to explore how NIH funding to a COM relates to NIH funding provided to other schools at the same institute.

Similarly, the Web of Science database does not capture all bibliometric information and does have limitations, which we discussed in the article. In fact, there are several lines of thought about the overall utility of using bibliometric data. Nevertheless, the article does provide some data on bibliometrics at COMs and, more important, discusses whether bibliometric factors had any independent predictive value for NIH funding acquisition when holding prior NIH funding constant. More simply, we addressed the question about whether COMs without substantial levels of previous NIH funding could publish their way into NIH funding. The parameters we used for both funding and bibliometric data give effective scores for these measures, with a reasonable degree of validity, that highlight this central finding of the article. More importantly, that publications had some independent predictive value for funding is informative for COMs, particularly those without a significant funding history, as they strategically plan their investments in research.

While all studies have limitations, we believe our search parameters were appropriate, were systematic, and yielded measures that answered the core question set forth in our study[2] with sufficient validity. We believe, however, that Dr Gugliucci's findings could form the basis of an interesting extension of our study and improve our understanding of research funding and the ability to obtain research funding at COMs.

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Impact Indices Shed False Light

To the Editor:

The article on bibliometric measures published in the November 2012 issue of *The Journal of the American Osteopathic Association*[1] brings up a point beyond what has been known in the "publish or perish" academic world (ie, more publications can mean more funding from the National Institutes of Health). The point being, impact indices[2] (also known as *impact factors*) supposedly determine the quality of publications. A misconception exists that the higher the impact index is for a publication, the higher the perceived quality of that publication. Here is why.

Impact indices are like advertising awards. Advertising agencies find it difficult—if not impossible—to measure the effectiveness of their clients' advertising campaigns.[3] An easy method was developed to measure the perceived financial success of an advertising campaign; that method was advertising awards. The awards, however, are not the result of a measured financial success for the client, only a perceived success for agency boasting.[4] As one marketing director put it, "Ignorance is bliss in the big advertising agencies. Showing off is confused with selling. The golden price is an award, not a sale."[5] Advertising awards leave a glaring gap in advertising agencies' true financial impact for their clients. Like the advertising community, the medical community found it difficult—if not impossible—to measure the impact of a medical publication. To measure a publication's perceived impact, an algorithm was created to determine how many times an article was referenced—the impact index.

Medical literature should provide the intellectual discourse that advances medicine. Physicians who practice medicine full time most likely do not look at impact indices to alter their practice habits. If anything, I believe editorials and similar content[6,7] can provide more of an avenue for medical debates than can published articles.

Impact indices leave a glaring gap in measuring the true impact of a medical publication on the real world. Impact indices can lead to referencing articles for reasons beyond article relevancy—referred to here as *the referencing game*.

Several arguments can be made for why the referencing game is harmful for medicine. These arguments represent the human side of research that is never discussed. First, the referencing game creates an atmosphere in which researchers will never reference their key competitors' work in a publication. Second, a well-established researcher will never reference a novel article from a young researcher or one he or she perceives to be of no significance. No one will admit publicly to these actions, but these first and second reasons can be validated by tracking research on BioMedLib (http://bmlsearch.com). BioMedLib can be used to track research by means of specific topic algorithms (eg, techniques, procedures) of who published what first and who followed them. BioMedLib, however, has a flaw. If parallel publications exist (ie, same research by different groups where neither group referenced the other), BioMedLib's algorithm cannot determine who was first. From experience in the field, one should be able to discern the original research group from the copying group who did not properly reference the original group—similar to a physician's experience of when to use clinical judgment vs evidenced-based medicine (ie, the physician using evidence-based medicine is "following operating manuals containing preset guidelines, like factory blueprints…all necessarily reflect the values and preferences of the experts who write the recommendations"[8]) for a patient.

Third, in my experience articles often are referenced because of already estab-

lished connections (ie, personal, scientific, or political) or because a researcher wants to establish a connection. Unfortunately, impact indices and BioMedLib cannot detect these activities.

Fourth, this referencing practice leads to bandwagon referencing, in which referencing occurs because "everyone" is referencing the publication. Bandwagon referencing is nothing new. In a conversation I had with a prominent researcher many years ago, the researcher informed me that when he inquired about the specifics of a widely referenced biomedical study written in Russian, he could not find one researcher who could tell him what was in the article even though the researchers referenced the study in their articles. He eventually found a graduate student in Russian literature with a science background to translate it for him to ensure that what he would be referencing was accurate. This bad habit continues today; in highly referenced articles, problems are still overlooked by many (eg, conclusions that were not supported or that were directly contradicted by the data[9]).

Fifth, the referencing game contributes to the lack of innovation because it may be a distraction to innovation. In my experience, more researchers are focused on an agenda rather than on the medicine or science they are purportedly investigating.

Sixth, it creates a false reference library and contributes to medical noise. Medical noise is research that takes one into the wrong direction because one is following a group or funds. This false reference library is similar to studies showing authorship issues, where a substantial percentage of authors in a published article do not meet the journal's authorship guidelines.[10]

And seventh, the referencing game is especially hurtful to student-researchers and emerging physicians because it is not uncommon for student-researchers and emerging physician-researchers to reference articles they have never read or used in research. This practice is similar to "name dropping" to get a better table at a restaurant, except in this case the purpose of the practice is to "strengthen" the current research even though the researchers most likely never read the article.

These 7 arguments against use of the referencing game are similar to arguments that could be leveled at a website editor who creates fake incoming links for the sole purpose of acquiring a better page ranking in Google, or a writer, a writer's friends, or a business buying back their books to increase the sales of their books and thus get on the *New York Times* or other bestseller lists.[11,12]

Van Noorden[13] described 3 different tools used to measure the top 10 *Nature* articles, and each of those tools (one of which was the number of citations collected by Web of Science, which compiles impact factors) came up with a different set of top 10 articles in 2012. Thus, I believe impact indices should be used only for bragging rights, like showing off winning an advertising award, and not for determining future funding or the value of a publication. BioMedLib should be used to identify innovators vs imitators. Advertising awards may be useless to the clients of the advertising agencies, but impact indices are a bandwagon harmful to society.

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Osteopathic Training of MDs

To the Editor:

I read with interest the September 2012 discussion[1,2] in *The Journal of the American Osteopathic Association* about the Accreditation Council of Continuing Medical Education common program requirements, including opening osteopathic graduate medical education (GME) programs to allopathic physicians (ie, MDs). In their response to Dr Zeichner's letter,[1] Dr Buser and colleagues[2] correctly stated that "allowing MDs into DO training programs" is not a new initiative for the osteopathic medical profession. My recollection of prior actions related to osteopathic training of MDs is as follows.

In April 1993, the Council on Osteopathic Postdoctoral Training (COPT) of the American Osteopathic Association (AOA) adopted a resolution (Resolution 4—Acceptance of Allopathic Graduates Into Osteopathic Medical Education Programs) by a vote of 12-7 to enroll allopathic medical school graduates from Liaison Committee on Medical Education institutions into AOA-approved internship and residency programs. However, as documented in AOA records, after negative reaction on the part of some AOA practice affiliates, the COPT reversed its decision by a vote of 12-9 at its November 1993 meeting, thereby denying enrollment of MDs in AOA-approved GME programs. This COPT proposal dealt with the matter as it applied to all AOA-approved internships and residencies.

Also in the 1990s, the American Academy of Osteopathy (AAO) proposed changes in the basic standards for residency training in osteopathic manipulative medicine (OMM) that would permit MDs to enroll in those programs only. The AAO leadership was nearly successful in shepherding these changes through the various required levels of approval within the AOA.

A brief history of this AAO initiative follows:

- At the July 1993 AOA House of Delegates meeting, the assembly adopted Resolution 241 (Allopathic Postdoctoral Training in Osteopathic Manipulative Medicine), which directed the AAO's Postdoctoral Standards and Evaluation Committee to return in 1994 with a proposal that would accommodate enrollment of MDs in OMM residency programs.
- In March 1994, the AAO's Board of Governors approved a proposal from its Postdoctoral Standards and Evaluation Committee that would permit the enrollment of MDs in OMM residency programs.[3]
- The July 1994 AOA House of Delegates considered Resolution 200, which directed the AOA Bureau of Education and the COPT to revise the *Basic Standards for Residency Training in Osteopathic Manipulative Medicine* for enrollment of MDs. The House referred Resolution 200 to the Committee on Basic Documents of Affiliated Organizations and the Bureau of Professional Education.
- At its November 1995 meeting, the COPT approved amendments to the *Basic Standards for Residency Training in Osteopathic Manipulative Medicine* for enrollment of MDs.
- The AOA Board of Trustees subsequently approved the Bureau of Professional Education and COPT's recommendation (Resolution 18) to these changes to its *Basic Standards for Residency Training in Osteopathic Manipulative Medicine* for enrollment of MDs.
- The American Osteopathic Board of Special Proficiency in Osteopathic Manipulative Medicine (AOBSPOMM) then drafted changes in its bylaws to accommodate MDs who would complete OMM residencies, take examinations, and ultimately receive a credential in this discipline.
- In the 1997-1998 academic year, the AAO's and the AOBSPOMM's efforts to guide the issue of credentialing MDs in OMM became a growing controversy within the osteopathic medical profession. While the COPT had approved the revision to the basic standards for residency training, and while the AOBSPOMM revised its bylaws to provide for examination of MDs who completed residency training in OMM, several member boards of the AOA Bureau of Osteopathic Specialists strongly objected to the initiative out of fear that allopathic physicians would force

themselves into other AOA specialty disciplines.[4]

- At its February 1998 meeting, the AOA Board of Trustees created a special task force on OMM certification and credentials (Resolution 40—Osteopathic Manipulative Medicine Credentialing for Allopathic Physicians) to study the challenge by some in the profession that OMM was not a specialty, and therefore graduating residents were not eligible for certification in special proficiency in OMM. The AAO was able to persuade the task force and AOA leadership that OMM was indeed a specialty and that osteopathic physician (ie, DO) residents should continue to sit for examinations to earn a primary, general certification. However, the downside to this recognition was that the AOA suspended existing OMM residencies pending revision of the basic documents for residency training in the specialty. This action effectively ended the AAO's efforts to provide OMM training for MDs and recognize their expertise by means of a credential in OMM.
- Ultimately, the AOA Board of Trustees dissolved the AOBSPOMM and directed the creation of a new certifying board with a revised constitution and bylaws to reflect the changes in the basic standards for residency training in neuromusculoskeletal medicine and OMM. The new certifying board became the American Osteopathic Board of Neuromusculoskeletal Medicine (Resolution 70 [A/1998]—Proposed Amendments to the Constitution and Bylaws of the American Osteopathic Board of Neuromusculoskeletal Medicine and Osteopathic Manipulative Medicine).

Notwithstanding the facts above, the reality is that DOs and osteopathic medical institutions have for many decades provided instruction to MDs on osteopathic philosophy and OMM. In my humble opinion, our profession should not fear that opening osteopathic GME programs to MDs will have a deleterious effect on these programs. Rather, I believe it would strengthen the osteopathic medical profession as a whole and would benefit all patients being served by osteopathically trained physicians, be they DOs or MDs.

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3. *Osteopathic Graduate Medical Education (OGME) by Allopathic Physicians: A Position Paper of the American Academy of Osteopathy*. Indianapolis, IN: American Academy of Osteopathy; 1994.
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Corrections

The *JAOA* regrets 2 errors that appeared in the following article:

Baltazar GA, Betler MP, Akella K, Khatri R, Asaro R, Chendrakekhar A. Effect of osteopathic manipulative treatment on incidence of postoperative ileus and hospital length of stay in general surgical patients. *J Am Osteopath Assoc*. 2013;113(3):204-209.

In Table 1, the number of participants in each group was incorrectly reported. The number of participants should have read n=17 for the OMT (osteopathic manipulative treatment) group and n=38 for the non-OMT group.

In addition, in Table 2, the footnote for mean (SD [standard deviation]) preoperative comorbid conditions in the OMT group should have been (b) $P=.75$.

These corrections will be made to both the full text and PDF versions of the article online.

In addition, the Bureau on International Osteopathic Medical Education and Affairs regrets an error that appeared in the following abstract:

Koto K, Liao S, Lin YJ, Lui M, Wang I, Lin A. Exposure to DEHP and its implication in the pediatric population in Taiwan [abstract 837]. *J Am Osteopath Assoc*. 2012;112(1):53.

An author was omitted from the original publication. Bor-Han Chiu, OMS II (now OMS III), should have appeared as the fifth author.

These corrections will be made to both the full text and PDF versions of the article online.