Conflict of Interest: an analysis of the efficacy of financial disclosure policies in orthopedic surgery and professional schools

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Conflict Of Interest: an Analysis Of The Efficacy Of Financial Disclosure Policies In Orthopedic Surgery And Professional Schools

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Conflict of Interest:
An analysis of the efficacy of Financial Disclosure Policies in Orthopedic Surgery and Professional Schools

A Thesis Submitted to the Yale University School of Medicine in Partial Fulfillment of the Requirements for the Degrees of Doctor of Medicine and Master in Health Sciences

By

Kolawole Anthony Jegede
**Table of Contents**

Introduction .................................................. 2

CHAPTER 1  Quantifying the variability of financial disclosure information reported by authors presenting research at multiple sports medicine conferences ........................................ 10

CHAPTER 2  Variability of Financial disclosure information reported by authors presenting at annual spine conferences .......................................................... 18

CHAPTER 3  Significant Variation Seen in the Interpretation of Financial Disclosure Policies for Orthopedic Meetings .......................................................... 28

CHAPTER 4  Disclosure Policies of Professional Schools Regarding Student Education and Faculty-Industry Relationships .......................................................... 33

Summary Conclusions ........................................... 40

Appendix ............................................................. 43

References ............................................................ 46
**Introduction**

*Physician-Industry Relationship*

Over the past few decades, industry relationships with researchers have received increasing attention as they have steadily expanded their role in scientific research. These interactions can take many forms, including research grants, consulting, board positions, royalties, and stock options. Such associations have important potential implications. Nonetheless, the clarity of disclosure policies and accuracy of reporting such relationships have not been well studied.

Industrial research grants provide opportunities for physicians/scientists to explore areas that are of mutual interest with industry. This is of importance, especially as traditional funding sources such as the NIH have had declining rates of grant support. However, conflicts of interest have the potential to create situations where the integrity of research can be compromised, whether at the level of study design\(^1\) or even the reporting of results\(^2,3\). These conflicts are gradually being explored\(^4-8\).

Consulting and board positions allow industry to seek advice from those most knowledgeable with the application of their products or services. This may be indispensable to companies that need advice to best direct their activities, and they reciprocate by compensating physicians/scientists for time out of practice. Yet one possible consequence of such relationships includes creating situations in which the professional judgment concerning one interest (clinical judgment) could be unduly influenced by another interest (keeping an esteemed consulting or board position). While
there may not be immediate financial gain, bias can certainly be introduced in the clinical practice, study parameters, or interpretation of results.

While physician-industry affiliations may give rise to novel drugs or devices that are beneficial to patients, there are concerns that these ties may unduly influence the judgment of clinicians. Because these commercial entities presumably have a vested interest in the findings of these investigations, their involvement has the potential to compromise the integrity of research at many different levels including the project design\(^1\) and the reporting of results.\(^2\,3\) The term “conflict of interest” (COI) refers to any type of relationship between physicians and industry that may engender bias, either deliberate or unintentional. Not surprisingly, the medical community as well as popular media has scrutinized the ramifications of financial COI on scientific studies more closely.

Royalties and stock allow companies to reward physicians/scientists who help them generate products that are directly associated with industrial revenue. Such productivity can be related to financial return for individuals involved in their development and introduces a compelling influence favoring the application of corporate products in the clinical setting.
Industrial support for research has been on the rise in all areas of medicine. Over one fourth of biomedical researchers at academic institutions have received funding from industry. Although these relationships increase the performance of research, many question the integrity of the results produced.

An abundance of literature exists which demonstrates that studies with industry funding are more likely to report positive results. An excellent example of this phenomenon is demonstrated in smoking literature. In a 1998 JAMA article, 37% of 106 articles reviewed reported that passive smoking is not harmful. Among the authors who came to this conclusion, 74% of them had affiliations with the tobacco industry. After statistical analysis was performed it was shown that the only factor connected with reporting passive smoking is not harmful was whether an author had affiliations with the tobacco industry.

Similar trends have also been noted in pharmaceutical research. Friedberg et al examined the relationship between industrial funding and publishing positive results in oncologic drug research. The studies funded by non-pharmaceutical companies were 8 times more likely to reach negative results than those funded by industry. Furthermore, research that was funded by industry was 1.4 times more likely to publish positive results than studies funded by non-profit agencies.

Shah et al also examined this issue in the field of orthopedic spine surgery. His group reviewed articles from the journal Spine from January 2002 to July 2003 and evaluated the articles for the topic, funding source and conclusion reached. Similar to the abovementioned studies, they reported that studies with industry funding were 1.6 times more likely to report positive results than studies without.
The field of orthopedic surgery differs from other areas of medicine in respect to industry involvement. In other areas of medicine, industry involvement is mostly limited to drug effectiveness in randomized clinical control trials (RTCs) whereas in orthopedics industrial sponsorship can occur in many different study types\textsuperscript{17}. Shah et al also found while reviewing 1143 articles published in \textit{Spine} that industry funding was responsible for 47\% of biomechanics papers, 31\% of technique publications, 23\% of RTCs, and 18\% of basic science publications. The strong presence of industrial support throughout orthopedic research makes awareness of funding sources even more relevant when interpreting data.

Several reasons have been postulated to explain why industry funding for research have been associated with increased positive results in all areas of medicine. Most of these explanations deal with conflict of interest in the design, performance, and interpretation of the studies. In order for a valid study to be performed an unanswered and relevant question must be asked and not one that is just likely to produce favorable results. The interpretation of the results should also be a true representation of the findings of the study.

Undoubtedly, there are important consequences to financial rapport between physicians/scientists and the private sector. Although the implications of these relationships may be debatable, transparent disclosure of relationships has been a well agreed-upon initial step in addressing these issues\textsuperscript{9}. Some supporters claim that the goal of disclosure is not necessarily to make researchers less biased, but to inform the readership of potential biases and allow them to draw their own conclusions\textsuperscript{27}. Others
argue that bias arising from financial incentives is only a small constituent of the many factors that influence investigators, and should not be singled out\textsuperscript{37}. Regardless, the scientific community has widely encouraged disclosure as a strategy for protecting the integrity of research, and scientific journals and conferences now generally have some form of financial disclosure policy\textsuperscript{28}.

There are two main types of disclosure policies commonly used. The first asks authors to disclose all of their financial dealings with industry regardless of what relationships may be directly related to the research presented\textsuperscript{29,30}. The second requires disclosure only for those relationships that are directly related to the research at hand\textsuperscript{31}. While these two policies share the goal of creating transparency and differ only in the extent to which they require disclosure, a universal policy for how to uniformly address these issues is still missing. The existence of two such disparate systems may give rise to a great deal of confusion among authors about what constitutes a COI and which industry ties should be acknowledged. While the issue of author disclosures has gained significant notoriety in recent years, there continues to be a paucity of studies examining the efficacy of these policies and the accuracy of the information provided by physicians. Furthermore, the language used in such policies can often be unclear to those filling out disclosure forms.

The utilization of disclosure policies has continued to evolve as more attention is focused on the potential dangers associated with COI\textsuperscript{32-34}. A study conducted in 1997 looking at 1396 journals found that only 16\% had disclosure policies compared to a
similar study conducted in 2008 where 89% of the sampled journals had some form of a disclosure policy. 

Although most groups agree that there is a need for disclosure policies, the efficacy of these statements is still unknown. The lack of a uniform disclosure policy has the ability to create confusion about what needs to be disclosed and when it should be disclosed. There are no studies assessing how accurately clinician scientists are able to interpret the disclosure policy statements of journals and medical societies. Misinterpretation of financial disclosure statements has the potential to be a discrepancy in financial conflict of interest reporting and could have serious consequences.

*Professional School-Industry Relationship*

Relationships between medical schools and commercial entities have been similarly scrutinized in recent years. This partnership offers similar benefits seen in physician-industry interactions and is often vital to ensure continuing progress in biomedical research and patient care. The primary concern with such relationships is their potential to influence medical education.

The Association of American Medical Colleges (AAMC) and the Accreditation Council for Continuing Medical Education (ACCME) have published guidelines to ensure the continued integrity of medical education and biomedical research and to assist members in managing industry collaborations in accord with higher standards of medical professionalism. Aside from focusing on many aspects of the interactions that exist between industry and individuals in academia, these recommendations also underscore the importance of this issue. 

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34

35,36
The influence of commercial entities on the field of medicine may affect physicians at every level of training. In particular, the degree of interaction industry has had with medical professionals throughout all of the stages in their education raises questions about the overt or subtle effects of this presence in academic settings, including the classroom or laboratory. For example, a recent New York Times article describes a pharmacology professor at Harvard Medical School who touted the benefits of cholesterol-lowering drugs and inappropriately minimized their side-effects without acknowledging to his students that he was a consultant to several pharmaceutical companies that market these types of medications. These and other similar incidents illustrate how industry affiliations may sway both practicing physicians and the next generation of healthcare providers.

One method that has been proposed for enhancing the transparency of individuals who educate medical students is the mandatory disclosure of their industry relationships to their students. This approach has been widely adopted by medical journals and professional societies, which have proven this strategy to be reasonably effective for regulating these collaborations. Similar policies requiring medical school faculty to disclose their COIs may be equally as beneficial for maintaining their transparency. This information may allow students to form their own judgments about the merits of lectures given by individuals with industry connections. By emphasizing the necessity of divulging these relationships, these protocols may also compel physicians-in-training to
be cognizant of the impact of commercial ties and hopefully serve as a framework to
guide them during their subsequent interactions with corporate interests in the future.

While faculty disclosure has taken on increasing significance among medical
practitioners, it is unclear how prevalent these policies are in other professions such as
the legal community. COIs inevitably arise between lawyers and third parties but the
American Bar Association (ABA), which provides accreditation of law schools and is the
legal analog to the AAMC, does not mandate disclosure at its educational programs or
insist that its institutions address attorney-industry relationships in a certain fashion.\textsuperscript{38}
Thus, the manner in which this issue is discussed is solely determined by each individual
law school.

This work will be presented in five chapters, each of which examines a specific
hypothesis. First, we quantified the variability in self-reported financial disclosures of
orthopedic surgeons who presented at multiple conferences during the same calendar
year (\textit{Chapter 1 and 2}). Second, we evaluated how well orthopedic surgeons and
trainees were able to interpret disclosure policy statements in regards to global and
project specific instructions (\textit{Chapter 3}). We then quantified the number of medical
schools with disclosure policies, paying specific attention to the policies on educational
activities and the acceptance of gifts from industry (\textit{Chapter 4}). Law school policies
were also analyzed in an identical fashion for comparison. Lastly, we reanalyzed medical
school disclosure polices one year later to see if any significant change had been made
during this time period.
Chapter 1
CHAPTER 1 - Quantifying the variability of financial disclosure information reported by authors presenting research at multiple sports medicine conferences

Objectives

The purpose of this investigation was to compare the self-reported industry relationships of individuals attending three major orthopaedic sports medicine conferences during the same calendar year in order to calculate the variability between their disclosure information over time.

Materials and Methods

We performed a retrospective review of the self-reported disclosures of the authors presenting at any of three major orthopaedic conferences focusing on sports medicine topics (2009 annual meetings of the American Academy of Orthopedic Surgeons (AAOS), Arthroscopy Association of North American (AANA), and American Orthopaedic Society of Sports Medicine (AOSSM)) which were printed in the final programs distributed by these societies. Individuals were asked to provide their information at the time they submitted their abstracts which were due in June, August, and September of 2008 for the AAOS, AAOSM, and AANA meetings, respectively. While it is possible that physicians may have gained or lost industry affiliations during the short period of time between these deadlines, we assumed that such changes would be relatively rare. It is also possible that some of the companies may have consolidated in this time period, which would change their industry affiliations.
The disclosure policies for these conferences were obtained from the AAOS, AAOSM, and AANA websites and corroborated with the guidelines published in corresponding final programs; these protocols were also verbally confirmed by the administrative staff of each society. At that time, the AAOS and AANA only requested industry ties that were directly relevant to the study of interest whereas the AOSSM solicited the disclosure of all financial relationships even if they were not pertinent to the presentation.

It would be anticipated that all of the project-specific associations listed by an author attending either the AAOS or the AANA conferences should also be evident as a subset of the global disclosures captured by the AOSSM. A discrepancy was identified if financial relationships were listed at the project specific conferences (AAOS and AANA) and not included in the global conference (AOSSM). If all of the financial COI declared at AAOS or AANA were also registered with the AOSSM, the author was noted to have “no discrepancies”; conversely, any industry relationship that was reported to the AAOS or AANA but not to the AOSSM was classified as a discrepancy. However, investigators who had no disclosures at either the AAOS or AANA meetings but were observed to have financial ties at the AOSSM were not considered to have any discrepancies because in these instances it is conceivable that they may have not had any project-specific COI to convey to the AAOS or AANA but could still have received support for other research that would have had to be acknowledged under the global disclosure policy of the AOSSM. Thus, two separate cohorts were included in this analysis – individuals who had attended the AAOS and AOSSM conferences as well as those with studies that had been accepted by the AANA and the AOSSM. Given that the AAOS and AANA both
Number of authors at annual 2009 sports medicine meetings

Total # different authors: 5,045
Total overlap: 148

AOSSM
Instructions- Global Disclosure
Total: 239

AAOS
Instructions- Project Specific Disclosure
Total: 4,652

AANA
Instructions- Project Specific Disclosure
Total: 154

Figure 1
required only project-specific COI, the information released by these two societies was
not compared since there was no reliable method of verifying that authors were actually
presenting the same research at these two conventions.

For each pair of meetings (i.e. AAOS/AOSSM and AANA/AOSSM), we identified
the authors who had consistent disclosures and those with irregularities. In addition to
recording the number of financial COI divulged by individuals who exhibited no
variability, we also calculated the number of discrepancies exhibited by researchers with
changes in their disclosure status; in particular, we focused on those who acknowledged
no industry relationships to the AOSSM with its global policy but listed at least one
commercial entity to either the AAOS or AOSSM which had only sought out project-
specific affiliations for their conferences.

Results

Disclosure information was available for a total of 5045 authors (4,652 authors
for AAOS, 154 for AANA, and 239 for AOSSM)(Figure 1). Of the individuals who
presented at the AAOS or AANA meetings which only listed project-specific industry
affiliations, 116 and 32, respectively, also had research accepted by the AOSSM which
employed a global disclosure policy. Thus, these comparisons gave rise to two discrete
data sets (AOSSM/AAOS and AOSSM/AANA). The mean (± standard deviation) and
median number of COI reported by these 148 authors were 2.1 (± 2.76) and 1,
respectively.
Discrepancies in disclosure reporting for authors who attended both AOSSM and AAOS

No Discrepancy
$n = 68$

Discrepancy Present
$n = 48$

- 0 disclosures: 57%
- 1 disclosure: 28%
- 2+ disclosures: 15%

- No discrepancy: 59%
- Discrepancy present: 41%

- 1 discrepancy: 35%
- 2+ discrepancies: 40%

Figure 2a
Percentage of common AAOS/AOSSM authors who disclosed something at AAOS vs. nothing at AOSSM

- No Discrepancy: 59% (n = 68)
- Discrepancy Present: 41% (n = 48)

Type of discrepancy:
- 1+ disclosure at both conferences: 92%
- 0 AOSSM disclosure vs. 1+ AAOS disclosure: 18%

Figure 2b
AOSSM and AAOS

The industry relationships of 116 researchers were published for both the AOSSM and AAOS conferences. 41% of this cohort were found to have variations in their disclosures of which 40% exhibited three or more discrepancies, 25% possessed two, and 35% had only one (Figure 2a). Moreover, 18% of the authors with irregularities designated “nothing to disclose” as their response to the global protocol of the AOSSM while acknowledging at least one project-specific financial COI to AAOS (Figure 2b).

The remaining 59% of authors in the AOSSM/AANA group were consistent in their reporting. The majority (57%) of these individuals had no industry ties whereas 28% and 15% identified one versus two or more commercial entities, respectively (Figure 2a).

AOSSM and AANA

Of the thirty-two authors who presented studies at both the AOSSM and AANA conventions, 34% were noted to have contradictory disclosure information. Among the researchers with disparities, 55% demonstrated two or more discrepancies and 45% had only one (Figure 3a). Compared to the AOSSM/AAOS cohort, an even greater proportion (36%) of these deviations involved individuals indicating that they had “nothing to disclose” to the AOSSM which requested that all industry associations be divulged while revealing at least one financial relationship to the AANA (Figure 3b).
Discrepancies in disclosure reporting for authors who attended both AOSSM and AANA

- # of reported disclosures
  - 0 disclosures: 52%
  - 1 disclosure: 24%
  - 2+ disclosures: 24%
- No Discrepancy: 66% (n = 21)
- Discrepancy Present: 34% (n = 11)

- # of discrepancies
  - 1 discrepancy: 45%
  - 2+ discrepancies: 55%
The other 66% of the AOSSM/AANA group submitted uniform disclosure data to the two meetings. Although most (52%) of these authors had no COI, 24% listed one source of industry support and another 24% recorded two or more COI (Figure 3a).

Discussion

The increasing prevalence of physician-industry collaborations and their potential deleterious effects on scientific endeavors has led many specialty societies and publications to adopt formal disclosure policies to promote transparency and preserve the integrity of these investigations. Despite the widespread integration of such guidelines, there continues to be a paucity of data addressing the efficacy of these protocols and the consistency of the information provided by authors performing research in the field of sports medicine. The objective of this study was to identify and characterize discrepancies in the self-reported disclosures of authors who presented at more than one orthopaedic sports medicine conference during the same calendar year.

As part of this analysis, we examined the project-specific industry relationships that were required by the AAOS and AANA as subsets of the global disclosures stipulated by the AOSSM. However, we did not compare the so-called “relevant” financial relationships solicited by the AAOS and AANA because of difficulties associated with verifying that an author was presenting the same project at both conferences.

The results of this review demonstrate that a significant percentage of individuals attending these meetings were found to have inconsistencies in the disclosure information that they had submitted to the different meetings (41% and 34% for the AOSSM/AAOS
Percentage of common AANA/AOSSM authors who disclosed something at AANA vs. nothing at AOSSM

Figure 3b
and AOSSM/AANA cohorts, respectively). Furthermore, in both groups the majority of the authors with irregularities exhibited more than one discrepancy (65% for AOSSM/AAOS and 55% for AOSSM/AANA). While it is certainly conceivable that researchers may have gained or lost financial COI between the deadlines for these conferences (June, August, and September 2008 for the AAOS, AOSSM, and AANA conventions, respectively), we maintain that it would be unlikely for so many authors to experience such dramatic changes in the number and type of their industry affiliations during a brief period of a few months. However, it is also possible that some of the companies may have consolidated in this time period, which would change their industry affiliations.

In addition, a substantial proportion of the individuals with incongruent data had affirmed that they had “nothing to disclose” to the AOSSM which utilized a global disclosure policy but had listed at least one commercial entity with the AAOS or AANA which at the time had only requested the acknowledgement of financial ties that were germane to the investigation of interest (18% for AOSSM/AAOS and 36% for AOSSM/AANA). One plausible explanation for this finding is that researchers may have failed to differentiate between the various sets of guidelines established by these societies and incorrectly assumed that they only needed to list COI that were directly pertinent to their work. Another possibility is that these authors may have unintentionally excluded certain industry relationships that should have otherwise been reported. Nevertheless, these disparities serve to underscore the inherent deficiencies of the current systems for generating accurate and consistent disclosure data.
Not surprisingly, more than half of the individuals in the AOSSM/AAOS and AOSSM/AANA cohorts without any discrepancies in their disclosure records did not list any COI (57% and 52%, respectively). Authors with no financial ties would presumably be less prone to provide incorrect information because they would be able to simply declare “nothing to disclose” for every meeting regardless of its policy.

This study is not without its limitations. As mentioned previously, the deadline for the disclosure of industry relationships was different for each of these conferences but since they were all within a few months of each other we are confident that very few actual changes in the disclosure status of these authors would have occurred during such a short period of time. We also recognize that these two cohorts represent only a small fraction of the total number of presenters at these meetings (116 for AOSSM/AAOS and 32 for AOSSM/AANA; however, both sets of analyses gave rise to similar results which collectively serve to support our conclusions.

This review highlights the considerable variability that existed in the self-reported disclosure information published for three recent orthopaedic conferences focusing on sports medicine research. We believe that the vast majority of the observed discrepancies were not due to intentional deception on the part of the authors but rather arose because of ongoing confusion regarding which industry relationships should be acknowledged depending upon the specific guidelines in effect for a particular meeting. In the absence of a uniform disclosure policy that is widely adopted by many specialty societies, these findings suggest that the disclosure process will continue to be plagued by the inconsistent reporting of financial COI. Further comparative studies must be performed in order to determine which system for identifying sources of industry support (i.e. global
vs. project specific) is most effective for creating full transparency and minimizing the influence of these commercial entities on scientific research.
CHAPTER 2- Variability of Financial disclosure information reported by authors presenting at annual spine conferences

Objectives

The goal of the current study was to compare the self-reported disclosures of authors attending spine conferences from the same year and to quantify the variability between their disclosures at each conference. The conferences that were analyzed include the 2008 North American Spine Society (NASS), Cervical Spine Research Society (CSRS), and Scoliosis Research Society (SRS).

Materials and Methods

We performed a retrospective review of disclosure listings from three annual spine conferences which occurred in 2008. We examined the disclosure information for all of the authors at the North American Spine Society (NASS), Cervical Spine Research Society (CSRS), and Scoliosis Research Society (SRS) conferences. Disclosure listings for authors who attended each conference were obtained from the final programs published by each society (publically available information).

The abstract submission deadline when authors were required to submit their disclosures was in February 2008 for NASS and SRS, and June 2008 for CSRS. Although small changes in disclosures may have occurred during the time interval between these deadlines, we made the assumption that such changes would be negligible.
The official disclosure policy for each meeting was obtained from the societies’ websites and cross-checked with the disclosure policies stated in the final programs. NASS and CSRS required global disclosure of any and all financial relationships, regardless of relevance to the presentation. SRS requested only project-specific disclosures relevant to the research being presented.

Based on these policies, we were able to directly compare disclosures of authors who attended both NASS and CSRS, understanding that author disclosures should be identical at each conference because of the similar disclosure policies for each conference. For example, if an author reported three distinct entities to NASS and reported those same three entities to CSRS, that author would be counted as having “no discrepancies”. If another author reported three different entities to NASS and only two of those entities to CSRS, that author would be counted as having “one discrepancy”.

Due to the project-specific disclosures required by SRS, we used a different strategy to compare the author disclosures at SRS to those at NASS and CSRS. Since NASS and CSRS requested global disclosure, any author presenting at SRS and NASS or CSRS should have reported all of their project specific disclosures (from SRS) to NASS or CSRS. In other words, whatever an author disclosed at SRS should be present as a subset of the global disclosures reported at NASS or CSRS. For example, if all of the project-specific disclosures an author declared at SRS were present within the larger set of disclosures reported at NASS or CSRS, we counted this author as having “no discrepancies”; however, this is not to say that the author’s disclosures must be exactly
identical because the author may have reported more financial relationships under the
global disclosure policy. Similarly, if a disclosure was reported at SRS but not at NASS
or CSRS, this was counted as “one discrepancy”. If an author disclosed nothing at SRS
but something at NASS or CSRS, this was still counted as “no discrepancy” because the
author may not have had any project-specific disclosures to report at SRS, yet still have
financial support for other projects that must be reported under the global disclosure
policy of NASS and CSRS.

We compared the disclosures of authors who attended any two of the three
conferences, giving us three sets of comparisons: disclosures of authors who attended
NASS/CSRS, disclosures of authors who attended SRS/NASS, and disclosures of authors
who attended SRS/CSRS. For each pair of conferences, we analyzed the number of
common authors who had completely consistent disclosures and those with discrepancies
in their disclosures between the two conferences. For those authors with discrepancies,
we further examined the number of discrepancies they had and the number of authors
who disclosed nothing at one conference yet declared one or more financial relationships
at the other. For those authors whose disclosures completely matched at both
conferences, we determined the number of different industrial relationships they reported.
Results

Disclosure information was listed for 1,231 authors at NASS, 550 at CSRS, and 642 at SRS; of these individuals, 278 (NASS), 129 (CSRS), and 181 (SRS) presented at one of the other conferences. Forty authors presented at all three conferences. Of the three sets of comparison we analyzed in this study, 153 authors presented at both NASS and CSRS, 205 authors presented at both SRS and NASS, and 56 authors presented at both SRS and CSRS. These three-comparison sets sum to 334 distinct authors out of a grand total of 2049 different authors from all three conferences (Figure 1).

According to their policies, NASS and CSRS required disclosure of all financial relationships, while SRS only requested disclosures pertinent to the paper being presented. The mean (± standard deviation) and median number of disclosures for the 334 authors making up our three comparison sets was 1.8 (± 3.5) and 1, respectively.

NASS and CSRS

153 authors presented at both NASS and CSRS. 51% had discrepancies in their disclosure information. Of these authors with discrepancies, 32% had one discrepancy, 24% had two discrepancies, and 44% had three or more discrepancies in their disclosures. Also, for the authors with discrepancies, 45% reported “nothing to disclose” at one meeting yet declared at least one financial relationship to the other society (Figure 2a, 2b).
Number of authors at annual 2008 spine meetings

- **NASS**: Instructions - Disclose everything
  - Total: 1231
  - Total # different authors: 2049
  - Total overlap: 334

- **CSRS**: Instructions - Disclose everything
  - Total: 550
  - 113 authors have overlapping presentations

- **SRS**: Instructions - Disclose relevant to presentation
  - Total: 642
  - 40 authors have overlapping presentations

Figure 1
Discrepancies in disclosure reporting for authors who attended both NASS and CSRS

Figure 2a
Percentage of common NASS/CSRS authors who disclosed nothing at one conference vs. something at the other

- No Discrepancy: 49% (n = 75)
- Discrepancy Present: 51% (n = 78)

Type of discrepancy:
- 0 disclosure vs. 1+ disclosure: 45%
- 1+ disclosure at both conferences: 55%
Discrepancies in disclosure reporting for authors who attended both SRS and NASS

- **No Discrepancy**
  - 0 disclosures: 74%
  - 1 disclosure: 13%
  - 2+ disclosures: 13%
  - Total: 91%

- **Discrepancy Present**
  - Total: 9%

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<tr>
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</tr>
</tbody>
</table>

- 1 discrepancy: 95%
- 2+ discrepancies: 5%

Figure 3a
Percentage of common SRS/NASS authors who disclosed something at SRS vs. nothing at NASS

- No Discrepancy: 91% (n = 186)
- Discrepancy Present: 9% (n = 19)

Type of discrepancy:
- 0 NASS disclosure vs. 1+ SRS disclosure: 42%
- 1+ disclosure at both conferences: 58%
Discrepancies in disclosure reporting for authors who attended both SRS and CSRS

Figure 4a
The other 49% of authors who attended both NASS and CSRS were completely consistent in their reporting of disclosures between conferences. The majority (67%) of authors in this group reported no disclosures, while 20% reported one disclosure, and 13% reported two or more disclosures (Figure 2a). This trend of authors who were consistent in reporting disclosures having mostly zero disclosures (and decreasingly 1 or 2+ disclosures) was seen across the three sets of comparisons for different pairs of meetings (Figure 2a, 3a, 4a).

Seeing that about half the authors who attended NASS and CSRS had discrepancies in their global disclosures, we then compared project-specific SRS disclosures to the global disclosures requested at NASS and CSRS separately.

**SRS and NASS**

205 authors presented at both SRS and NASS. Only 9% had inconsistencies in their reported disclosures. Of these authors with inconsistencies, 95% had one discrepancy and 5% had two or more discrepancies. Also, for the authors with inconsistencies, 42% declared “nothing to disclose” in the global disclosures at NASS while disclosing at least one financial relationship to SRS (Figure 3a, 3b).

The other 91% of authors who attended both SRS and NASS were completely consistent in their reporting of disclosures between conferences. The majority (74%) of authors in
this group reported no disclosures, while 13% reported one disclosure, and 13% reported two or more disclosures (Figure 3a).

**SRS and CSRS**

56 authors presented at both SRS and CSRS. Only 18% had discrepancies in their disclosure information. Of these authors with discrepancies, 60% had one discrepancy and 40% had two or more discrepancies. Also, for the authors with discrepancies, 50% reported “nothing to disclose” in the global disclosures at CSRS while disclosing at least one financial relationship to SRS (Figure 4a, 4b).

The other 82% of authors who attended both SRS and CSRS were completely consistent in their reporting of disclosures between conferences. The majority (76%) of authors in this group reported no disclosures, while 9% reported one disclosure, and 15% reported two or more disclosures (Figure 4a).
Percentage of common SRS/CSRS authors who disclosed something at SRS vs. nothing at CSRS

- **No Discrepancy**: 82% (n = 46)
- **Discrepancy Present**: 18% (n = 10)

**Type of Discrepancy**
- 0 CSRS disclosure vs. 1+ SRS disclosure: 50%
- 1+ disclosure at both conferences: 50%

Figure 4b
Discussion

The landscape of disclosures has changed significantly over the past few years, and most journals and societies now have some form of disclosure policy in order to keep pace with the ever-rising benchmark of integrity demanded of scientific research. Yet there is currently very little data addressing the consistency of disclosure reporting among authors in the orthopaedic field. The purpose of this study was to evaluate the variability in the self-reported disclosures of individual authors presenting at multiple spine conferences in a single year.

In this study we found a surprisingly large number of inconsistencies in reported disclosures. One of every two authors (51%) presenting at NASS and CSRS had discrepancies in their self-reported disclosures, despite the two conferences’ similar disclosure policies (global disclosure). Furthermore, not only did these authors with discrepancies have just one or two discrepancies, but almost half of them (44%) had three or more discrepancies between what they disclosed at NASS and what they disclosed at CSRS. While it is possible that researchers lost or gained financial relationships during the four month period between the abstract submission deadline for NASS (February 2008) and CSRS (June 2008), we would not expect such a large percentage to change by three or more associations during this short period. Additionally, for the authors with inconsistencies, 45% disclosed nothing at one conference yet at least one relationship at the other. For such a large proportion of authors to choose to disclose financial support at one conference and then fail to disclose anything at the other hints at a larger problem with our current system of disclosure.
A possible explanation for these inconsistencies is that, while authors were instructed to provide global disclosure information to both NASS and CSRS, they may have misinterpreted the instructions and only provided project-specific disclosures since those relationships were the ones most pertinent to their presentation. Alternatively, authors could simply be having trouble keeping track of all their various financial relationships. In either case, there was a significant degree of variability in the self-reported global disclosures of authors attending NASS and CSRS.

Looking at the other half of the authors who attended NASS and CSRS and were consistent in their disclosures offers an interesting picture as well. The majority (67%) of authors in this group were those who had nothing to disclose. This observation was similar for the other two sets of comparisons as well (i.e.- authors who presented at SRS and NASS, authors who presented at SRS and CSRS). Understandably, it is easier to remain consistent if one does not have any industrial ties and can therefore declare “no disclosures” across the board.

Due to the high frequency of discrepancies found in author disclosures at NASS and CSRS, we evaluated the project-specific disclosures required by SRS as a subset of what should have been disclosed at the other conferences with global disclosure policies. In comparing author disclosures for those who attended SRS and NASS, we found that only 9% of the authors had discrepancies. Of these authors, the vast majority (95%) differed by only one disclosure between the two conferences. 42% of the authors with
inconsistencies disclosed financial relationships at SRS but nothing at NASS. The finding that 91% of authors were consistent in their disclosures when comparing project-specific disclosures at SRS to global disclosures at NASS lends further support to the idea that authors may be more consistently disclosing financial relationships that are directly pertinent to their presentation. In other words, when authors were prompted only for project-specific disclosures (SRS) there was less confusion and potentially greater accuracy.

In the final set of comparisons made in this study, 82% of the authors who attended SRS and CSRS had consistent disclosures. And for those authors with discrepancies, 50% disclosed financial relationships at SRS but nothing at CSRS. This data mirrors that of the SRS/NASS comparison supporting that project-specific disclosure is likely more accurate; however, this set of comparisons is limited by the smaller number of presenting authors common to these two conferences.

This study emphasizes the variability in the self-reported disclosure information at three major spine conferences within the past year. Rather than attributing these results to intentional duplicity, we believe that these discrepancies are most likely due to confusion regarding what relationships should be disclosed in different circumstances and the lack of uniform disclosure policies among these various associations. Our findings suggest that perhaps authors are more consistent at reporting project-specific relationships. Yet an inherent issue with project-specific disclosures is that it may often be difficult to discern what financial relationships are relevant to an author’s frame of mind and research.
endeavors. This is, in fact, the reason many forums have found global disclosure to be the most transparent policy.

Many organizations, such as NASS, CSRS, and SRS, have recognized that there are growing complexities and nuances involved in the reporting of financial relationships and are currently updating their disclosure policies to more accurately reflect how modern medical research interacts with the private sector. This is an important step in the development of an effective system of disclosure to help authors consistently declare financial relationships. Based on the notable inconsistencies in the disclosure information provided by spine surgeons at the meetings evaluated, we believe that more explicit and standardized guidelines need to be established in order to facilitate the accurate disclosure of financial relationships and to characterize their potential effects on scientific investigations.
Chapter 3
CHAPTER 3 – Significant Variation Seen in the Interpretation of Financial Disclosure Policies for Orthopedic Meetings

Objective

The purpose of our study was to evaluate how well orthopaedic surgeons are able to interpret and understand financial disclosure policy statements.

Materials and Methods

A questionnaire survey was generated from disclosure policy statements of ten orthopaedics societies and journals. The disclosure policy statements of the ten most frequently attended conferences with the highest abstract submission by the orthopaedic staff and trainees at Yale Orthopaedic Department were chosen. Excerpts that contained the most relevant information regarding the desired method of financial disclosure were taken from each policy statement to form the final survey.

The subjects were asked to read each statement in its entirety and identify the statement as either project-specific disclosure or global disclosure. Project-specific was selected if the reader felt that the statement required financial disclosure only for the project being presented. Global disclosure was selected if the reader interpreted the statement as requiring all financial relationships were to be disclosed. The disclosure policies for these groups were obtained from their websites and were verbally confirmed by the administrative staff of each society.

Out of the ten policy statements used in the survey, 7 required project specific disclosing and the remaining 3 were global policies. The seven project specific statements were from the American Association of Orthopaedic Surgery (AAOS),
American Association of Hip and Knee Surgeons (AAHKS), American Society for Surgery of the Hand (ASSH), Scoliosis Research Society (SRS), Arthroscopy Association of North America (AANA), American Spinal Injury Association (ASIA), and the Orthopaedic Trauma Association (OTA). American Orthopedic Society of Sports Medicine (AOSSM), Cervical Spine Research Society (CSRS), and North American Spine Society (NASS) were the three global policy statements used in the survey.

The survey had a 100% return rate among all staff and trainees in the department of orthopedics at Yale New Haven Hospital. A total of sixty-seven people completed the survey, which includes 17 attending orthopedic surgeons, 25 orthopaedic residents/fellows, and 25 medical students. The number of medical students who were selected to complete the survey was chosen to match the number of residents/fellows. The average number of incorrect responses was determined over all training levels. The average number of incorrect responses was also analyzed by training level. Attention was also paid to differences in the rate of incorrect responses of project specific policies versus global policies.

Results

The survey had a 100% return rate from all levels of training in the Department of Orthopedics at Yale School of Medicine. The average number of incorrect responses was 2.62 among the 67 subjects who completed the survey (Figure1a,b). Forty four percent of those who completed the survey had three or more incorrect responses. Two incorrect responses were seen in 31% of the subjects. Twenty percent of those completing the survey had three incorrect responses. Four and five incorrect responses were answered by
Figure 1a

The bar chart above illustrates the frequency of incorrect responses. The categories are:

- None: 10%
- One: 19%
- Two: 24%
- Three or More: 47%

These percentages represent the proportion of responses that were incorrect.
Figure 1b
14% and 10% respectively. Twelve percent of the subjects had no incorrect answers while 13% had only one.

There was no significant difference in responses with training level. Among attendings, 43% answered 3 or more questions incorrectly, 30% answered two questions incorrectly, 17% had one incorrect response, and 9% had no incorrect responses (Figure2a). Fourteen percent of the surgical residents identified no policies incorrectly; 14%, 32 % and 41% identified one, two, and three or more questions incorrectly respectively (Figure2b). Among students, 45% answered 3 or more questions incorrectly, 31% answered two questions incorrectly, 17% had one incorrect response, and 7% had no incorrect responses (Figure2c).

A chi square analysis was performed to determine if any difference in the probability of answering a global question incorrectly versus a project specific question incorrectly exists. The results showed that subjects were no more likely to answer a project specific question incorrectly than they were to answer a global question incorrectly.
Attending Incorrect Responses

<table>
<thead>
<tr>
<th>Number of Incorrect Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>12%</td>
</tr>
<tr>
<td>One</td>
<td>18%</td>
</tr>
<tr>
<td>Two</td>
<td>24%</td>
</tr>
<tr>
<td>Three or more</td>
<td>46%</td>
</tr>
</tbody>
</table>
Figure 2b

Resident Incorrect Responses

Number of Incorrect Responses

None: 16%
One: 12%
Two: 32%
Three or more: 40%
Student Incorrect Responses

- None: 4%
- One: 28%
- Two: 16%
- Three or More: 52%

Number of Incorrect Responses

Figure 2c
Discussion

Relationships between physicians and industry in scientific research have led many specialty societies and publications to formally adopt disclosure policies to promote transparency among authors. Although many entities have incorporated such policies into their practices, there is still a paucity of data on their efficacy. Currently, a lack of uniformity exists in the disclosure policy statements of various societies and publications. The heterogeneity of these policies can even be seen within specialties, which obligates the author to correctly interpret the policy statement to avoid any discrepancies in COI reporting. The purpose of our study was to evaluate how well orthopedic surgeons, a specialty that has especially been affected by discrepancies of reporting COI, were able to interpret and understand disclosure policy statements.

The data implies that there is a clear disconnect between what societies intend to communicate and what the readers understand. Almost half of those completing the survey incorrectly identified three or more policies. Each incorrect response can be seen as a potential discrepancy in conflict of interest disclosing and could have serious consequences. For example, if an author with multiple industry affiliations interprets a global disclosure policy as project specific this will lead to discrepancies in COI reporting.

Accurate interpretation of these policies is crucial to avoid unintentional errors in information that is disclosed by an author. The results show an average of almost 3 incorrectly indentified disclosure policies independent of training level. The rate of
incorrect responses gives support to the idea that authors may not fully understand what is required when reading disclosure policies.
Chapter 4
CHAPTER 4 - Disclosure Policies of Professional Schools Regarding Student Education and Faculty-Industry Relationships

Objectives

The purpose of this study was to quantify the number of medical schools with policies that specifically require faculty disclosure of financial relationships to their institutions and/or their students and to characterize their policies regarding the acceptance of gifts from industry. In addition, these guidelines were also compared with any analogous protocols implemented by law schools in an attempt to assess the relative importance of reporting COIs within each respective field.

Materials and Methods

Medical School Review

A list of the 131 medical schools accredited by the Association of American Medical Colleges (AAMC) was obtained from its official website (www.aamc.org). The disclosure policies and physician-industry interaction protocols for all of these institutions are publicly available and were acquired from each school’s website during the months of August 2009 and August 2010.
Disclosure policy to students

Each disclosure policy was analyzed using several criteria. First, we noted which medical schools had established formal guidelines requiring classroom lecturers to disclose their industry affiliations to their students. We subsequently determined whether the institution had similar policies dictating that faculty members divulge their commercial ties to students with whom they would be performing research. Finally, we calculated the proportion of medical schools that were also accredited by the Accreditation Council for Continuing Medical Education (ACCME).

The rationale for characterizing the proportion of ACCME-accredited medical schools was that this organization issues specific guidelines to its member institutions regarding disclosure of industry relationships. These ACCME directives apply to individuals who seek Continuing Medical Education (CME) credits or participate in these events. According to these regulations, lecturers at sanctioned speaking engagements must disclose any relevant commercial ties prior to the beginning of the educational activity. Even though the ACCME protocol is not necessarily part of medical schools’ formal policies, the adherence to these principles reflects an increasing awareness of the importance of acknowledging COIs to those in attendance and maintaining full transparency.
Physician-industry interaction policy

Each medical school’s policy regarding physician-industry interactions was also reviewed for statements that related to the acceptance of gifts by physicians or other academic faculty from commercial entities. We quantified the proportion of medical schools that explicitly prohibited the receipt of gifts and/or defined the types of items that were allowed.

Law School Review

A similar evaluation of law schools was performed for the purpose of comparison to the data collected for the medical schools. The 200 law schools accredited by the American Bar Association (ABA) were identified from its official website (www.aba.org). The disclosure guidelines and policies for attorney-industry interactions of these institutions are all publicly available and were recorded from each school’s website. All protocols were analyzed using the same methods that were described previously for the medical school policies during the month of September 2009.

While law schools are accredited by the American Bar Association, there is no national governing body equivalent to the ACCME that oversees legal education; in each state this responsibility is generally fulfilled by its supreme court or another designated committee.
The American Academy of Law Schools (AALS) is a close analog of the AAMC that supports legal education, but it is not involved in the accreditation of law schools.

Results

Medical School Policies

Disclosure policies

Of the 131 AAMC-accredited medical schools in 2009 and 2010, 98% had policies in place requiring faculty members to disclose their financial relationships to their institution, and the ACCME accredited 92% of the schools (Figure 1a,b).

However, in 2009 just 4% of the medical schools were found to have formal guidelines obliging lecturers to divulge their commercial interests to students prior to the beginning of an educational activity, and 5% of these institutions expected faculty to convey their industry affiliations to those engaging in joint research projects. Not much changed in 2010, with 5% of medical schools having lecture policies and 7% having polices that require faculty to disclose in research endeavors. Only 2% of all medical schools in 2009, and 5% in 2010 expected disclosure information to be reported to individuals in both of these situations (lecturing and research).

Physician-industry interaction policies

Although in 2009, 22% of medical schools prohibited the receipt of any item from an industry source regardless of its monetary value, more than half (60%) had no preemptive restrictions on the acceptance of gifts (Figure 2a,b). The remaining 18% of
Proportion of medical schools with disclosure policies

- Disclosure policy: 98%
- ACCME accredited: 92%
- Lecture policy: 4%
- Research policy: 5%
- Both: 2%

Figure 1a
Proportion of medical schools with disclosure policies

Figure 1b
Medical school policies on industry gifts

Percent of AAMC medical schools

- 22% cannot receive any form of gifts
- 15% only office supplies, honoraria, or travel allowed
- 3% total gifts <$300 annually
- 60% no gift restrictions

Figure 2a
Medical school policies on industry gifts

- Total gifts <$300 annually: 3% (2009), 5% (2010)
- Office supplies, honoraria and travel: 15% (2009), 20% (2010)
- Cannot receive any form of gifts: 22% (2009), 26% (2010)
- No gift restrictions: 60% (2009), 49% (2010)

Figure 2b
institutions set specific limits for these gifts; of this cohort of schools, 15% allowed the acceptance of nominal benefits related to “academic pursuits” (i.e. office supplies, honoraria, or travel reimbursements) and 3% capped the total value of gifts accepted to less than $300 annually. Physician-industry interaction policies in 2010 were very similar as shown in the figure.

Law School Policies

Of the 200 law schools accredited by the ABA, 18% had adopted policies requiring faculty to disclose their financial relationships to their institution (Figure 3). However, none of these institutions stipulated that lecturers acknowledge their industry relationships to students prior to the beginning of an educational activity or embarking on research endeavors. Only 1% of law schools regulated the gifts that professors were able to accept from commercial interests; moreover, the protocols that did exist were vague and did not include actual dollar amounts or values.
Proportion of medical/law schools with disclosure policies

Figure 3

- Disclosure policy: 98% (Medical school), 18% (Law school)
- Lecture policy: 4% (Medical school), 0% (Law school)
- Research policy: 5% (Medical school), 0% (Law school)
Discussion

The nature of physician-industry relationships and the ways in which the public views them has changed dramatically over the past decade. For this reason, the medical community has sought to develop specific policies to regulate these types of interactions. Disclosure policies have been enacted in part because of the potential adverse effects on patient care and the integrity of biomedical research. In an attempt to address these concerns and maintain the transparency of their faculty, many medical institutions are continuing to revise their guidelines; consequently, the types of protocols that are currently being employed have not been well elucidated. The purpose of this study was to quantify the number of medical schools that already have established disclosure policies and to evaluate the restrictions that they may have in place regarding the gifts that faculty may accept from commercial entities.

Based on our investigation, it is apparent that nearly all (98%) of the medical schools have some sort of policy requiring disclosure of industry ties to the institution itself. Furthermore, 92% of these institutions are also accredited by the ACCME and are therefore bound to their guidelines for CME activities. Conversely, a surprisingly small percentages of schools have formal policies insisting that faculty divulge their industry relationships to the students they teach or supervise in a laboratory setting (4% and 5%, respectively). The finding that only a small minority of medical schools mandate disclosure for student-directed activities may be indicative of the need for additional strategies to maximize transparency and further limit the influence of industry on academic pursuits. The concept of disclosure as a paradigm for managing possible COIs
has been widely utilized by medical journals and societies, and it may be a viable option for medical schools as well. Of note, we were surprised not to see significantly greater restriction imposed between 2009 and 2010, a time when this topic is of such widespread interest. We expect the prevalence of these institution-driven regulatory policies to increase substantially during the coming years.

Although the training programs for medicine and other professions are not entirely analogous, law schools were selected as a benchmark for comparison. Among the institutions accredited by the ABA, only 18% had published disclosure policies and none appeared to expect speakers to inform students of corporate support or other COIs in the classroom or any other situation. Although the Association of American Law Schools (AALS) has recognized the significance of disclosure-related issues, there are still no formal guidelines that have been mandated for the institutions under its auspices.

This analysis also confirms that less than half (40%) of the medical schools had definite policies limiting the acceptance of gifts from third parties. Only 22% of medical schools prohibited faculty from receiving any items from commercial sources, regardless of their monetary value. While 18% of medical schools allowed for the provision of certain gifts that were of benefit to “academic pursuits” such as office supplies, honoraria, and travel reimbursements; however these policies were often vague and subject to interpretation.

We recognize that there are several limitations to this study. First, these findings are derived from the guidelines posted on the official internet website of each school so
this review does not take into account internal documents that may exist regarding the management of industry relationships; because of delays in updating these websites, it is conceivable that these listings may not represent the most recent policies of these institutions. It is possible that a survey of these schools may have circumvented this problem but we elected not to send out questionnaires due to the potential for non-responder bias and an inability to monitor whether the individuals who furnished the requested information were fully familiar with their institutions’ complex disclosure protocols. As a result, we believe that the listings available on these schools’ websites are a relatively accurate reflection of their official policies.

Given that virtually all medical schools have introduced some form of disclosure policy, it is obvious that the issue of COIs and their deleterious effects on faculty as well as the education of the next generation of practitioners has taken on greater importance. The significantly lower number of institutions requiring the reporting of financial relationships to students during educational activities and the variability in the degree to which they restrict the acceptance of gifts from commercial entities indicates that additional work needs to be done to develop more coherent guidelines to regulate these types of interactions; however, even now these standards are considerably more stringent than those employed by the majority of law schools.
SUMMARY AND CONCLUSIONS

The increasing interactions between physicians and industry have led many entities to adopt financial disclosure policies including professional schools. However, the efficacy of the policies has not been properly investigated. The work presented here clearly demonstrates that additional emphasis needs to be placed on the formulation and implementation of financial disclosure policies.

In two separate studies evaluating self-reported financial disclosures of individual authors at three subspecialty meetings during the same calendar year, we found alarming rates of discrepancies. Although the disclosure information of individuals may change periodically, such marked differences would not be expected over such a short period of time. However, rather than attributing these results to intentional deception, we believe that these discrepancies are more likely due to confusion regarding what should be disclosed in different circumstances and the lack of uniform disclosure policies among these various associations.

Our hypothesis was further supported when we generated a questionnaire assessing how well orthopedic surgeons were able to interpret and understand disclosure policy statements. Almost half of those completing the survey had three or more incorrect responses. The results suggest that there is a clear disconnect between what the policies are intended to convey and what the readers interpret. Subjects were no more likely to answer a project-specific question incorrectly than they were to answer a global question incorrectly which is pertinent when considering a uniform policy.
The widespread implementation of disclosure guidelines in medical schools emphasizes the acknowledged need to regulate physician-industry relationships. The varied policies addressing faculty disclosures and the acceptance of gifts demonstrate that the regulation to these relationships remains inconsistent. Nonetheless, it appears that the academic medical arena is addressing these issues to a greater extent than their counterparts in law.

The collective findings described in these five studies supports adopting a universal disclosure policy with clear and concise language. Orthopedic societies and professional schools have taken an important first step by adopting disclosure policies to manage potential conflict of interests. However, the data presented seriously questions the efficacy of the policies that have been implemented. For these policies to serve their intended purposes a universal policy should be adopted to create full transparency.
Below are excerpts of financial disclosure policy statements from ten orthopedic societies. Please read each statement in its entirety.

Check **project-specific disclosure** if the statement requires financial disclosure only for the project being presented.

Check **global disclosure** if all financial relationships are required to be disclosed.

Please do not leave any items blank.

<table>
<thead>
<tr>
<th>Disclosure Policy Statements</th>
<th>Please Check One</th>
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<tbody>
<tr>
<td>1. Obligation to disclose all potentially conflicting interests. Each participant must disclose relevant activities or relationships through the AAOS mandatory disclosure program.</td>
<td>Project-Specific Disclosure</td>
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<tr>
<td>(AAOS)</td>
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<tr>
<td>2. Required to disclose if individual either has no relevant financial relationship or any financial relationship with the manufacturer(s) of any commercial product(s) and/or providers of commercial services discussed in CME activities.</td>
<td>Project-Specific Disclosure</td>
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<tr>
<td>(AOSSM)</td>
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<tr>
<td>3. Each participant has been asked to disclose if he or she has received something of value (any item, payment, or service valued in excess of $500) from a commercial company or institution, which relates directly or indirectly to the subject of their presentation.</td>
<td>Project-Specific Disclosure</td>
</tr>
<tr>
<td>(AAHKS- American Association of Hip And Knee Surgeons)</td>
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<td>Disclosure Policy Statements</td>
<td>Please Check One</td>
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<td>4. Instructions, planners, and managers who affect the content of a CME activity are required to disclose to the ASSH financial relationships or relationships to products or devices they have with commercial interest associated with this CME activity of any amount over the past 12 months ONLY.</td>
<td>Project-Specific Disclosure</td>
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<tr>
<td>(America Society for Surgery of the Hand)</td>
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<tr>
<td>5. The actions and expressions in providing education of the highest quality must be as free of outside influences as possible. Therefore, any relevant, potentially conflicting interests and all commercial relationships must be disclosed.</td>
<td>Project-Specific Disclosure</td>
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<td>(CSRS)</td>
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<td>6. All faculty will disclose to the audience any real or apparent conflict(s) of interest related to the content of their presentation(s). Faculty relationships with companies whose products and/or services may be mentioned in their presentations will be indicated in the program.</td>
<td>Project-Specific Disclosure</td>
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<tr>
<td>(SRS)</td>
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<td>Disclosure Policy Statements</td>
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<tr>
<td>7. The disclosure policy requires that faculty submit all financial relationships that create a potential conflict. Each participant in the Annual Meeting has been asked to disclose if he or she received something of value from a commercial company or institution, which relates directly or indirectly to the subject of their presentation (AANA)</td>
<td>Project-Specific Disclosure</td>
</tr>
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<td>8. I (or a member of my immediate family) have a financial interest or relationship with a commercial company related directly or indirectly to the subject of my presentation. (American Spinal Injury Association)</td>
<td>Project-Specific Disclosure</td>
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<tr>
<td>9. Members participating in an activity should disclose all financial relationships that have occurred during the prior calendar year with an estimated value of greater than one hundred dollars ($100), using the estimated dollar amount to the nearest one thousand dollars ($1,000). (NASS)</td>
<td>Project-Specific Disclosure</td>
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<tr>
<td>10. Paper authors whose presentations have a * by the title have indicated they or their co-authors (department) received something of value (in excess of $500) from a commercial company or institution which relates directly or indirectly to the subject of their presentation (OTA-Orthopedic Trauma Association)</td>
<td>Project-Specific Disclosure</td>
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References


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28. Harris, S., Conflicts of Interest Targeted in Research, Medical Education. 2007, AAMC: Chicago.


