

## **Cost-benefit Assessment of Congresses, Meetings or Symposia, and Selection Criteria to Determine if They are Predatory**

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### **Abstract**

Not a single day goes by in which academics receive one or more emails inviting them to attend a congress, meeting or symposium (CMS). Increasingly, most of these invitations are for attending CMSs that lie beyond the scope of their fields of research, and are usually characterized by images of grandeur and finesse, enticing the invitee with claims of international status, the pompous nature of the steering committee, or the meeting's sheer size and dimension, including a list of famed participants. In other cases, emphasis is placed instead on the exotic nature of the location, and the invitation often sounds more like a travel brochure than an invitation to join a professional CMS. In several cases, a promise to publish the CMS proceedings in an indexed database is made. It is difficult to judge the veracity and significance of such meetings at a distance, even more so through an email. However, when the balance sheet is drawn up, and the costs are assessed, including of travel, accommodation and meals, it is clear to see that most CMSs are simply traps to make money, and that true academic discovery is a secondary, or more distant, objective. This article draws readers' attention to the need for making a cost-benefit analysis based on the criteria that we present before deciding on whether to attend a CMS, or not.

**Keywords:** Congress, meeting or symposium (CMS), costs, predatory, scrutiny

### **The broader academic context of congresses, meetings and symposia**

Most scientists appreciate recognition for their efforts. However, in the modern era of science, with so many distorted and non-academic publishing incentives, including the gaming of the Thomson Reuters journal impact factor and now the Elsevier/Scopus CiteScore [1], it is rare to find scientists who publish or research altruistically, and who think only of the pure nature of science, or of science discovery. This is because such scientists, especially those with noble objectives, would not be able to attract funding to make their objectives a reality. The sad reality of science is the intricate link between well-funded science and the success of science publishing, and *vice versa*. Those who do not publish, or demonstrably show their productivity, primarily through published papers, will receive little or no funding, and may become redundant scientists [2]. Such scientists will thus not survive, i.e., they will become victims to science's classic "publish or perish" mantra. The phenomenon of publication phishing, using email phishing, in which unethical publishers take advantage of those who are seeking a home to share, present or publish their research and studies [3], is a potential business for the organizers of a predatory congress, meeting or symposium (CMS).

Many universities, striving to improve their visibility [4], still recognize a proceedings paper that results from a CMS as being a valid scientific publication with academic merit. However, academic trust

in some knowledge-sharing and publication platforms, among them CMSs, is being eroded [5]. In most cases, the universities' assumption of academic validity is based on the notion that a CMS is created by experts, who have an international and renowned background, and properly vetted through peer review, leading to the publication of a proceedings paper. Some CMS-derived proceedings papers are used as selection criteria for obtaining a masters or PhD degree, or even research grants, and thus the academic validity of a CMS must be fully vetted, verified and validated before a scientist becomes an attendee. Any scientist who has attended a truly scholarly meeting organized exclusively by peers or an academic society can confess to a productive and stimulating encounter, in which ideas are shared face to face, exchanged, enhanced and enriched. However, a sector of academics believes that the trustworthiness of all CMSs is harmed by some predatory or unprofessional CMSs. Very sadly, there is a sector of the fake or dishonest economy that has seen this weakness in science and is preying upon the desperate need by scientists and their institutes to publish in order to be perceived as being productive, or important, for example, the "honor" of being an "invited speaker" [6].

The authors are aware of CMS articles and proceedings that most probably never went through a proper scientific peer review before presentation and/or publication. Be that as it may, this predatory behavior has led to the mushrooming of an entire industry of CMSs that are attempting to lure scientists, and their - or their institute's - money, through participation as speakers and who are later charged fees to make a profit for the organizers [7]. One such experience was recently reported by a SpringerNature Editor-in-Chief, Roger W. Byard, who had been invited to participate in a conference on "coastal zones" because of his apparent academic standing in a field he had never written about [8]. On a daily basis - and the numbers will undoubtedly be higher for those who publish more extensively because their emails will be trawled by bots more frequently - scientists are receiving emails inviting them to CMSs, usually with enticing, but in many cases non-academic, benefits. *A priori*, it is evident that a scientist will not attend a meeting that proves to be boring or bland, so there is always an element of luster, even in valid academic congresses. By virtue of the very fact that travel has become a luxury only for those with economic prowess, and that scientists' travel might be limited to one or few CMSs a year - usually funded by travel or research grants paid for by universities - scientists also want to ensure that such a trip is not only academically fulfilling, but also a travel experience with "an all-expenses-paid trip to a vacation destination" [9]. In the latter, it is implied that culinary, cultural or theatrical aspects of the social program of a CMS also serve to boost the ambiance with which academic information is shared among participants. A fun, or diverse CMS can stimulate greater discussion since participants are motivated. However, if the balance of academic content and fun is distorted, and weigh more heavily towards the latter, then the true objectives of a CMS become clouded and its academic objectives become diluted.

### **The emergence and growth of academically questionable congresses, meetings and symposia**

We now focus on a few recent events that have cast doubt on the academic nature of CMSs. The first pertains to costs. No matter how productive a meeting is, one (including the institute where the traveling scientists are based) has the responsibility of calculating the cost of participation, i.e., the cost per poster or per oral presentation. A rough estimate of hundreds or thousands of US\$, depending on several factors, for a single poster or oral presentation, is a sign that CMSs are excessive, and pompous, i.e., still a privilege for the elite academic minority [10]. These issues and concerns become even more pertinent when tax-payers' money (i.e., public funding) is involved. Evidently, when scientists have to fork out large amounts of money for their own CMS, they will no doubt reflect extremely carefully on the cost-benefit ratio of their investment that will come out of their own pockets. Most likely, self-funded scientists will rarely attend CMSs. So, when funding is provided by their research institute or donors, and even more so when such funding is derived from tax-payers' money, then there needs to be very careful reflection. When funds are squandered using someone else's budget, there tends to be a frivolous or nonchalant attitude. And here, it is the responsibility of research institutes to instill strict and careful control over the selection of CMSs that are attended by their faculty and staff. Scientists and research institutes must do a cost-benefit analysis to ascertain whether using hundreds or thousands of US\$ per scientist per meeting is worthwhile for one or two posters or oral presentations, especially given the fact

that open access publishing, social media and online CMSs can achieve the same - or a greater - publicity effect, at a fraction of the cost. Scientists and institutes that have bad management skills are as much of a problem - or are a source of the problem - as the fake or predatory CMSs that try to lure their money. As a result, a scientist and their institute's reputation may be negatively affected [6].

Such fake or predatory CMSs, which Sorooshian aptly described as “conference wolves in sheep's clothing” that “transformed their event into moneymaking machines to collect substantial registration fees from authors in an unethical manner” [11], form part of a wider budding scholarly black market [5]. In June 2016, James McCrostie published a provisional list of criteria on the Beall blog to characterize such predatory CMSs, but the Beall blog has since been terminated on January 15, 2017, so we discuss these criteria in detail in the last section of this paper. This was preceded, just a few months earlier, by a white paper [12] representing a cooperative effort by the ASCE (American Society of Civil Engineers), Elsevier, the IEEE (Institute of Electrical and Electronics Engineers) and the IET (Institution of Engineering and Technology) to hammer out criteria to boost the academic robustness of CMSs. It is highly likely that this white-paper emerged in response to the IEEE and Springer scandals that involved the retraction of hundreds of poorly vetted and unscholarly papers [13], or thousands of IEEE meeting abstracts [14]. These abuses of the scholarly process, including fake peer reviews and abused submission systems [15] are rapidly corroding trust in the academic veracity of so-called peer reviewed journals, or proceedings derived from CMSs.

A new aspect of concern relates to the abuse of congresses as a possible depository for fake or fictional articles, as was recently revealed with the acceptance of a nonsense paper generated by iOS software into an international conference [16]. The additional problem with that particular case was the use of a fictitious email account by a professor to complete the submission, highlighting the risks of submission abuses by scientists, either as hoaxes, or for non-academic mischievous purposes [17,18].

#### **Possible ways to measure, or assess, the predatory nature of a CMS: Suggestions and limitations**

**Table 1** lists a revised set of criteria originally devised by James McCrostie based on colour coding, but expanded to include 3 colour codes, instead of two. Several of McCrostie's initial criteria were, according to McCrostie, based on a 2015 source: “Drawing partly on the document “Recommended Practices to Ensure Technical Conference Content Quality”, originally presented by Gordon MacPherson at the 4<sup>th</sup> World Conference on Research Integrity Rio De Janeiro, Brazil, June 2, 2015” [19]. The criteria indicated in **Table 1** are not formally established criteria, most likely would require additional input from a wider range of academics, and would eventually need to have the formal backing of official academic institutes across a range of countries to legitimize the criteria before they are used for official purposes.

#### **Conclusions**

Evidently, fake or predatory CMSs are eroding trust in scholarly communication, because they exist primarily to attract funding, and the focus on academics is a secondary objective, making it difficult for junior researchers to determine which conference is legitimate and which is predatory. The marketing ploys used, however, to attract participants, would lead an invitee to believe the opposite, i.e., that their participation would be a positive academic advancement. In addition, they impose a real financial burden on university administrators who are involved in making budgetary decisions. Therefore, all parties involved in budget planning and execution should pay close attention to the negative consequences of funding attendance of their academics in predatory CMSs, and implement policies to track and prevent such unnecessary expenses. The topic of predatory CMSs is still relatively young, and some crude criteria for determining the predatory nature of such meetings exist, as we have listed above and in **Table 1**, based primarily on McCrostie's lists. Joining such CMSs may constitute a risk to academia, and a waste of money. We caution readers, however, that only observation of the invitation email or web-site might not constitute sufficient proof of predatory CMS behavior, and that multiple factors should be taken into consideration when considering whether a CMS is predatory, or not, and thus worth the investment, both financially and in terms of dedicated time.

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## Conflicts of interest

The authors declare no conflicts of interest.

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**Table 1** Proposed criteria to identify predatory characteristics in a congress, meeting or symposium (CMS), or a CMS organizer.

Red level criteria
<p><b>1. The use of deceit</b></p> <p><b>1.1. Related to the CMS</b></p> <p>Claiming to be a non-profit organization when the organizer is a for-profit company. Hiding or obscuring relationships with for-profit partner companies. Falsely claiming universities or other organizations as partners or sponsors. Listing addresses or phone numbers that are nonexistent or false. Using organization names or addresses that imply they are based in one country or region when in fact they operate out of a different country or region. Lying to CMS participants about any aspect of that conference, or not correcting facts.</p> <p><b>1.2. Related to the CMS organizers or organizing committee</b></p> <p>Falsely claiming the involvement of people on advisory boards or organizing committees. Using fake names to hide the identity of organizers or their country of origin. Listing organizers or participants falsely (i.e., non-participants), or listing renowned individuals without their knowledge or permission. Failing to list the names, addresses and affiliations of individuals owning or controlling the organization. Organizers falsely claiming academic positions or academic qualifications.</p> <p><b>2. No, inadequate or poorly vetted peer review</b></p> <p>Machine-generated or other “sting” abstracts or papers get accepted. Organizers market CMS as being peer-reviewed when no peer-review occurs, where peers are not true peers, or where the qualifications of peers are not fully vetted. CMS is listed as peer-reviewed but peer review does take place or the conference organizing company uses employees to handle submissions and complete “reviews”. Peer reviewers read, judge and select proceedings papers based exclusively on abstracts, and with insufficient credentials or experience to do so, i.e., vetting is absent or inadequate. Accepting papers for the CMS proceedings that have not been presented at the CMS, either as a poster, or as an oral presentation.</p> <p><b>3. Issues with conference proceedings and publications</b></p> <p>The CMS organizer publishes a proceedings that consists of non-peer-reviewed papers. The organizer promises that papers will be published in an unnamed journal indexed in ISI, SCOPUS, or some other commonly-used whitelist.</p> <p><b>4. Links to other predatory CMSs, publishers or journals</b></p> <p>Conference papers get funneled to known or suspected predatory journals knowingly, or unknowingly.</p> <p><b>5. Virtual presentations</b></p> <p>Acceptance of virtual presentations that are not presented to an audience.</p> <p><b>6. Miscellaneous</b></p> <p>The conference organizer(s) and/or director(s) possess no or tangential expertise in the conference subject matter, or whose academic record cannot be verified due to the use of abbreviated names. Participants are charged additional fees (per author or per paper) when authoring or co-authoring more than one CMS paper. CMS organizers cancel the CMS or change the venue at short notice, or without notice.</p>

Orange level criteria
<p><b>1. CMS ID</b></p> <p>The name of the CMS matches or nearly matches the name of another established, respected CMS.</p> <p><b>2. CMS proceedings and journal duplication</b></p> <p>The CMS organizer allows CMS papers to be published twice (in the official CMS proceedings and a separate journal published by the CMS organizer without due cross-referencing and citation of the original).<sup>1</sup></p>

### Orange level criteria

#### 3. CMS leadership reputational history

CMS chairs, session chairs, keynote speakers, or CMS proceeding editors have connections to other predatory CMSs or journals.<sup>2</sup>

#### 4. Virtual presentations

Virtual presentation papers get published in CMS proceedings without being identified as such.

### Yellow level criteria

#### 1. Fees

The CMS fee is unjustifiably high.

Presenters pay more than attendees.

The CMS organizer focuses more on selling dinners and associated tours than on the CMS program.

#### 2. CMS scope

The CMS is overly broad in scope, or combines radically different fields, e.g., business and engineering.

A single organization holds conferences in very different fields.

The organizer simultaneously holds more than two conferences at the same time and place.

The same conference is held several times a year in different cities.

#### 3. Acceptance of CMS proceedings

Immediate or almost immediate acceptance of proceedings papers.

Regular extensions to the “call for papers” submission deadline or accepting papers after the deadline.

Accepting proceedings papers just a few days before the deadline.

Using undergraduate or master’s students as peer reviewers without oversight from university faculty.

#### 4. Miscellaneous

The CMS organizer regularly sends spam emails to people outside the CMS’s field of focus.

The name of the person or organization acting as the “registrant” for the CMS website or CMS organizer website is hidden on website registry documents.

The CMS is marketed as a holiday. CMS websites and emails resemble travel brochures rather than CMS notices.

Opening, officiating, closing, and keynote speeches (if any) are presented by relatively unknown (globally) scholars (except for where the CMS focuses explicitly on a local audience).

Overuse of the term “international” in the organization name or CMS title when the CMS organizer and/or attendees overwhelmingly come from a single country.

Awarding best paper prizes before the end of the CMS or awarding multiple “best paper” prizes.

When CMS proceedings are published only digitally, no attempt is made to electronically preserve them.

No attempts are made to distribute CMS proceedings beyond the CMS participants.

CMS organizers create a “society”, “association” or “institute” or some other organization and name it as the sponsor or organizer of the CMS.

No clear CMS chair or director is identified.

Insufficient contact details for the organizer or CMS, the organization headquarters location is obscured by using P.O. boxes or virtual offices, or the listed office is in reality a private home.

CMS schedule is overly vague, consisting of only times and the type of activity, e.g., 9:30-10:30 Paper Session 1. 10:30-10:45 Break. 10:45-11:45 Paper Session 2.

Including logos of data-bases or indexing agencies on CMS websites when no indexing will occur.

CMS websites and/or emails contain several spelling mistakes, grammar mistakes, or non-native English.

<sup>1</sup>This may depend on the copyright permission, CC-BY license, and other factors, including possible cronyism, links and inappropriate relationships (e.g., friendships) between CMS organizers and journal editors.

<sup>2</sup>If only an isolated case, then the link between any individual and an apparently predatory journal or publisher might not indicate anything at all about that individual. Instead, a consistent pattern of participation, or support, of academically suspect journals or publishers.

**Table 1** notes:

Criteria represent a modified version of a list of criteria provided, with permission, by James McCrostie. McCrostie's list will appear in a special issue of the Bulletin of Daito Bunka University, Vol. 56, 2017, entitled "Developing a Criteria for Identifying Predatory Conferences". Additional characteristics have also been added by the authors and several criteria provided by McCrostie have been omitted or modified for clarity, or to accommodate a 3-colored set of selection criteria. Red level criteria indicate serious predatory aspects or behavior. It is suggested that even just one of these behaviors merits the label of a "predatory" CMS. In contrast, yellow level criteria constitute predatory aspects that, in themselves, might not make the entire CMS predatory, but should raise concerns among academics that plan to attend them. Orange level criteria show predatory characteristics that are intermediate between red and yellow criteria, and may need a closer case-by-case analysis. Even though McCrostie suggested that 4 yellow level criteria would result in a CMS being considered as "predatory", we believe that a set number of criteria should not be used initially to make such an assessment, and that each institute establish a committee that is responsible for vetting and evaluating CMSs using an established level of red, orange and yellow criteria, beyond which an academic cannot attend that CMS. Similarly, a CMS that displays no red or orange level criteria, and only very few yellow criteria, could receive institution-based funding, as an incentive for academics to select carefully. If academic institutes implement such a rigorous and strict vetting process, the hope is that predatory CMSs will eventually disappear.