(New) media is one of the new surgical skills. If you don’t exist on it then you don’t exist according to the public...It is important to get involved to dilute dodgy practices by non-plastic surgeons...and we’re the ones who should be doing that.

—Olivier Branford

INTRODUCTION: CHANGE, THE ONLY CONSTANT

The Diamond Sutra initiated mass communication as the first “printed” text and included the description “for universal free distribution.” This seems to have predicted the evolution of mass media itself by nearly 3 millennia. “New media,” or digital, online, and social media platforms, have democratized information access, exchange, and distribution more than any development since the launch of the World Wide Web in 1991. Electronic resources now have the capability to supplant their physical counterparts, which has impacted industries like newspapers, books, music records, travel planning, investment brokerage, banking, and big box retailers. The transformation of postal mail, compact disks, video cassettes, or satellite television dishes to their digital counterparts are but a few obvious examples. As a profession with a high public profile that relies on visual results appealing to surgeons, patients, and the lay public alike, plastic surgery has been significantly affected by the new media revolution.

The influence of new media on marketing in plastic surgery is well described. The debate continues about the superiority of Facebook, Twitter, Instagram, Snapchat, Pinterest, or YouTube, but the common use of one platform or another is the one constant. An estimated 70% of adults now use the Internet as their first source for health information, including approximately 90% of plastic surgery patients. Web-based virtual platforms...
can facilitate knowledge sharing for public education, inter specialty and intraspecialty communication, and execution of scholarly endeavors. As previously tangible materials convert into their virtual clones, new logistical, ethical, security, and quality concerns arise. Online tools can enhance efficiency and accessibility, but they also increase users’ vulnerability to exploitation given a lack of regulation, oversight, rating scales, authentication protocols, and enforceable accountability. An American Society of Plastic Surgeons survey reports that few plastic surgeons suspect a negative impact from new media platforms but also believe that greater oversight is necessary.¹⁵

The impact of new media on academic processes in plastic surgery is less appreciated. Transforming the way plastic surgeons store, exchange, publish, and analyze of scholarly biomedical information has profound implications for evidence-based patient care. New media has ushered in strictly Web-based academic activities (Table 1). Online journals may now publish ahead of or in lieu of print, otherwise known as “eprinting.” An article’s supplemental online multimedia content might accrue more views than its printed source content. Digitalized “big data,” automated data management, and electronic medical records have all but eliminated traditional pencil-and-paper scientific rigor. Open access journals, publication mega-indices, and consolidated article email alerts have changed the way we access scientific content. Altmetrics, online reviewer credentialing, and Web-based manuscript marketing services have transformed the profile of the academic plastic surgeon.

The cross talk between evidence-based medicine and new media is accelerating, raising the question whether the 2 are irrevocably conjoined. Oversight for new media academic processes lags behind the explosion of websites touting themselves as online knowledge depots. Fortunately, the most egregious faux pas in new media scholarship have occurred outside of the realm of plastic surgery, perhaps due to the shrewd stewardship of plastic surgery editors compared with other scientific fields overall. The field still remains susceptible, given that much of the plastic surgery literature is of relatively low level of evidence and possesses a popular appeal that may attract charlatans.⁸–¹³ As with any new tool, education is key and knowledge is power. This article outlines new media academic pitfalls to prepare plastic surgeons to best navigate these online scholarly processes. Through contrasting new media academic practices with their historic underpinnings, we see how far we have come and perhaps how far we still have to go.

THE RISE OF ALTMETRICS

Jorge Hirsch devised a method to quantify an individual academician’s impact on the greater scientific community called the “H-Index,” a standard metric for university promotion.¹⁴ Associate professors in plastic surgery have H-indices of approximately 9, professors about 15, and Nobel laureate typically over 70.¹⁵⁻¹⁶ Similar to an author’s H-Index, the “H-Score” quantifies a journal’s rating by the number of times its articles are cited by other publications, and many other scoring systems exist (Table 1). These are examples of traditional scientific impact metrics, which tabulate the frequency of citations of one publication by others.¹⁷

The current conundrum is what to make of new media-based rating systems, which are “mention,” “like,” or other “engagement”-based instead of citation-based (Table 2).¹⁸

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**Table 1. Academic Impact Scoring Systems**

| Score                      | Type               | Description                                                                 | Web Sites                                      |
|----------------------------|--------------------|-----------------------------------------------------------------------------|------------------------------------------------|
| Article Influence Score    | Traditional        | Measures the average Eigen Factor for papers published in a given journal    | EigenFactor.org                                 |
| CiteScore                  | Altmetric          | Elsevier’s compilation of SNIP and SJR rating systems of journals indexed on Scopus | Scopus.com/Sources                              |
| Eigen Factor               | Traditional        | Novel article impact factor claiming wider scope by Thomson-Reuters          | EigenFactor.org                                 |
| Faculty of 1000 (F1000)   | Altmetric          | Identifies and recommends “important” articles in biomedicine as selected by peer nomination | F1000.com/Prime                                 |
| G-Index                    | Traditional        | Researcher impact rating by totaling the largest number of articles with largest number of citations | Scholar.Google.com                              |
| H-Index                    | Traditional        | Researcher impact rating by number of citations of one’s publications, SJR and H5-Google forms | Scholar.Google.com/Intl/EN/Scholar/Metrics.html |
| H-Score                    | Traditional        | Journal rating by number of times its articles are cited by other publications | Scholar.Google.com/Intl/EN/Scholar/Metrics.html |
| i10-Index                  | Traditional        | Researcher impact rating by number of publications with at least 10 citations by Google Scholar | Scholar.Google.com                              |
| Impact Per Publication     | Altmetric          | Citations in articles, reviews, and conference papers over the total in 3 y, by Scopus | Scopus.com/Sources                              |
| Journal Impact Factor      | Traditional        | Measure of frequency with which an article in a journal is cited            | JIFactor.org                                    |
| Journal Usage Factor       | Altmetric          | Records the number of downloads of a particular article, produced by COUNTER organization | ProjectCounter.org                              |
| PageRank                   | Traditional        | Quantifies citation frequency with journals more often cited weighted over those less often cited | CheckPageRank.net                               |
| SNIP                       | Altmetric          | Elsevier’s Scopus journal ranking system by number of citations             | JournalIndicators.com                           |
| SJR                        | Altmetric          | Elsevier’s Scopus journal ranking system by journal prestige               | SCImagoJr.com                                   |

* The above list is not comprehensive. Neither the author nor this publication endorses or encourages the use of any product listed.

SJR, SCImago journal rank; SNIP, source normalized impact per paper.
Table 2. Academic New Media Terminology*

| Term             | Definition                                                                 |
|------------------|-----------------------------------------------------------------------------|
| Academic         | Relating to scholarship and education                                        |
| Altmetrics       | “Alternative” or “article-level” measurement of the impact of a publication |
| Article alerts   | Automated subscription-based, individually-tailored, publication update service |
| Article repository| Collection or database of articles independent of a specific journal, often not peer reviewed |
| APC              | Cost of publication traditionally paid by publisher that author pays in open access model |
| Artificial intelligence | The ability of machines to acquire and apply knowledge and skills |
| Big data         | Large datasets that may be analyzed digitally to detect patterns, trends, and associations |
| Content (on Internet) | Textual, visual, aural, or combination multimedia material posted on Web sites |
| Cloud           | Network of online of remote servers used to store, manage, and process data |
| Database of journals | Structured set of journals accessible from publisher in searchable and unrestricted formats |
| Digital         | A fundamental data mechanism of data based on binary 1’s and 0’s             |
| Information age | Also known as the Computer Age after the introduction of the personal computer in the 1970s |
| Electronic medical record | System of health recording in virtual space on computers |
| Engagement       | Amount of interaction a piece of content on social media receives            |
| ePrint           | Digital version of a research document that is accessible online             |
| eScholarship     | Electronic—as opposed to printed—scholarly publications, services, and tools |
| Evidence-based medicine | Approach to medical or surgical practice intended to optimize decision-making based on data |
| Gratis open access | Free of charge to access by users, usually due to author payment of article processing charge |
| Handle          | Personal identification on Twitter by placement of an “@” symbol before one’s username |
| Hashtag         | Metadata tag used on social networks and blog sites that makes content searchable |
| Index of journals | Searchable list of journals with usually restricted or limited article access from shared source |
| Interaction     | Active participation of a user with social media content via likes, shares, or comments |
| Internet age    | Following the proliferation of mass communications over the World Wide Web in the 1980s |
| Journal index   | List of individual journals with the means to reference full content through individual Web sites |
| Knowledge sharing | Phenomenon whereby information is exchanged among people or groups |
| Libre open access | Free of licensure restrictions to use content within fair use boundaries |
| Like            | Action to show approval, usually by single or double clicking, on Facebook and Instagram |
| Mega-index       | Massive searchable cache of information on a given topic |
| Mention         | Twitter term for instance in which a user refers to another user in a posting using @username |
| Multimedia      | Content that uses of combination text, audio, imagery, animation, video, and interactive material |
| New media       | Virtual forms of mass communication native to computers and Web-based platforms |
| Online          | Computer-based telecommunication avenue using the Internet |
| Online community | Virtual group of members that interact with each other over the Internet |
| Open access     | Data storage system free of access restrictions (such as fees, memberships, or subscriptions) |
| Peer review     | Publication evaluation process by members of similar or greater competency to ensure quality |
| Platform        | Service, Web site, service, or method that delivers media to an audience |
| Post            | Text, image, or other media uploaded to a Web site                           |
| #SoMe           | LinkedIn term for a written note from another member to reinforce credibility or expertise |
| Recommendation  | Posting of another user’s previously posted tweet to one’s own Twitter page |
| Reply           | Response to another user’s tweet leading with @username, causing it to appear in both timelines |
| Retweet         | Single posting on social media Web site Twitter                            |
| Tweet           | Or “Twittersphere,” nickname for community of users active on Twitter |
| TwitterVerse    | Virtual existing by means of computers or software without a physical form |
| Whitelist       | A catalogue of items viewed with approval due to commendation by a respected authority |
| World Wide Web  | Virtual space in which resources are interlinked by hypertext and searchable on the Internet |

Altmetrics, “article-level,” or “alternative” scientific impact scores quantify the number of new media hits generated by a publication. Depending on one’s perspective, they are either more or perhaps much less reflective of an article’s import to science and humanity. Citations and altmetric scores are not always correlated. Therefore, journals achieve a different impact factor or ranking based on which system is employed (Table 3).

With over 150,000 Twitter followers and countless invited presentations on the topic, Plastic and Reconstructive Surgery’s Social Media Editor, Olivier Branford, is a thought leader on new media in plastic surgery. His report on the use of “#PlasticSurgery” on Twitter demonstrated that over 70% of posts using this hashtag were made by members of the lay public rather than plastic surgeons. The paper itself has generated the journal’s fourth highest online traffic rate of all time (altmetric score: 563). Compare this to Barack Obama, the only sitting president to publish a peer-reviewed scientific article, an update on the status of the United States’ healthcare system in 2016, whose altmetric score continues to climb into the 8,000s. Lay public account for over 70% of such interactions with 17% and 7% attributed to scientists and healthcare professionals, respectively.

Contrasting altmetrics with the traditional citation recording system, we look at the most cited peer-reviewed publication in print, a 1,551 paper that describes a method for quantifying protein that has over 300,000 citations. National Academy of Sciences member Oliver H. Lowry’s report of “Protein Measurement with the Folin Phenol Reagent” has not been tweeted as often as Dr. Branford’s “Concepts in Aesthetic Breast Dimensions: Analysis of the Ideal Breast.” In fact, the eye-catching breast aesthetics paper has been engaged on new media over 5 times more often than in peer-reviewed publications. Although Dr. Lowry’s is the most cited paper of all time, it cannot be found on Altmetric.com.

The debate for traditional versus progressive academic ratings systems could go on ad infinitum. Plastic surgeons
need only realize that these rating systems have become popular adjunct metrics for academic significance. Given the field’s high public profile and apt fodder for new media content, the growth of altmetrics in academic plastic surgery has likely only begun (Table 4).

**OPEN ACCESS: PROS AND CONS**

Mahatma Gandhi’s *Indian Home Rule* is credited with precipitating the end of British imperialism in India. It was also one of the first open access publications, printed with the phrase “No Rights Reserved” on the cover, making it illegal to restrict access to its text (Fig. 1). The scholarly publication market, by contrast, has traditionally been limited to fee-based access with significant economic implications. A single international publisher can generate over $2 billion in revenue with a 30% profit margin. The explosion of the open access market, by contrast, has traditionally been limited to fee-based access with significant economic implications. A single international publisher can generate over $2 billion in revenue with a 30% profit margin. The access and distribution model is therefore of substantial consequence.

There have always been stakeholders and rightsholders, those with an economic investment in the production of scientific content and those entitled to distribute biomedical publications. Before the open access movement, toll access journals were both (Table 5). They took the financial risk and collected fees from readers to produce and distribute published works. Unlike musicians, for example, most scholarly authors readily consent to relinquish copyrights in exchange for publication and its associated prestige. Open access allows the author, who pays an article publishing charge (APC), to retain copyrights and provide their work free to the public in hopes of increasing its impact. Before online mass communication, scientific journal open access was not an option. Just as online banking provided an alternative to brick-and-mortar financial institutions, open access is viable because of low digital publication overhead. Never before has data been shared with so little physical infrastructure, making creative commercial practices possible. Some forward-thinking editors have embraced open access, epub ahead of print, eprint, and online postpublication review. Rod Rohrich, editor of *Plastic and Reconstructive Surgery*, introduced open access to plastic surgery in North America, calling it “a viable and accepted global distribution model for biomedical publication.” Its advantages include: faster publication speed, retained author copyrights, wider readership, and free access to publicly funded research. If peer review principles are upheld, most editors laud the open access model’s free dissemination of knowledge. The National Institutes of Health has even made policies to usher in more open access publications. However, the explosion of the open access journals has also borne witness to specious reviewer ethics, predatory journals, non–peer reviewed pseudoscientific platforms, and poorly reviewed publications. One notable example includes a journal *Ethology* article with a parenthetic quote “should we cite the crappy Gabor paper here?” that survived reportedly multiple levels of peer review and editing opportunities before being published on the article’s first page. The net effect has either been irreversibly compromised scientific integrity or positive information sharing.

Jeffrey Beall’s online directory of predatory journals illustrates some of the caveats of open access. Beall, a University of Colorado librarian, posted online over 10,000 open access journals that he regarded as sham, profit-seeking, pseudoscientific operations to shame unscrupulous journals and warn potential victims of exorbitant publication fees, or shoddy peer review processes. This controversial “blacklist” caused an uproar (Table 1). He was subsequently targeted with defamation accusations.

### Table 3. Prominent Journals’ Conventional and Altmetric Relative Rankings

| Rank | JIF | H-Index (SJR) | H5-Index (Google) | SNIP | SJR | Cite Score |
|------|-----|--------------|------------------|------|-----|------------|
| 1    | CA  | Nature       | Nature           | CA   | CA  | CA         |
| 2    | NEJM| Science      | NEJM             | NEJM | Nature| Science    |
| 3    | Nature| NEJM        | Science          | NEJM | Nature| NEJM       |
| 4    | Science | AnnSurg    | PLoS             | Science | NEJM   |
| 5    | AnnSurg| PLoS      | AnnSurg          | AnnSurg | AnnSurg |
| 6    | PRS | PRS          | PLoS             | PRS  | PLoS | PRS        |
| 7    | PLoS| CA           | CA               | ASJ  | ASJ  | ASJ        |
| 8    | ASJ | APS          | APS              | APS  | APS  | APS        |

### Table 4. Altmetrics and Publication Promotion Web Sites

| Organization | Service | Service Sites |
|--------------|---------|---------------|
| Academia     | Postpublication manuscript sharing and promotion Web site | Academia.edu |
| Altmetric    | Scholarly content tracking service that monitors publications’ online traffic | Altmetric.com |
| CiteULike    | Web-based scientific citation saving and sharing platform | CiteULike.org |
| ImpactStory  | Tracks online traffic of publications profiled to individual researchers | ImpactStory.com |
| Kudos        | Cloud-based scholarly content promotion service to broaden impact | GrowKudos.com |
| Mendeley     | Desktop and Web-based research management and sharing by Elsevier | Mendeley.com |
| PlumX        | Altmetrics site tracking usage, captures, mentions, new media, and citations | PlumAnalytics.com |
| Publons      | Tracking, verification, and showcasing of peer review and editorial work | Publons.com |
| ResearchGate | Academic social network facilitating researcher communication | ResearchGate.com |

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and took down his blacklist, but raised serious questions about dilettante, self-serving publications, which have subsequently led to greater open access oversight and scrutiny (Table 6). His example reminds us that the real value of publication lies in legitimate peer review.

THE DARK SIDE OF PEER REVIEW

Albert Einstein’s iconic place in history epitomizes genius. He also bristled to peer review. After a critical response from the Physical Review, the preeminent physics journal of the day, Dr. Einstein wrote to the editor that he saw “no reason to address the—in any case erroneous—comments of your anonymous expert.” The paper was later submitted and published elsewhere...interestingly with edits related to the very critiques Dr. Einstein refused to concede.

Peer review is the evaluation of intellectual content by one or more individuals of similar aptitude to the work’s authors. A well-defined, vetted, systematic analysis by qualified experts employing appropriate checks and balances seldom blunders. A rapid expansion of online publications has accompanied the proliferation of new media, sometimes overwhelming the peer review processes. Though plastic surgeons are not responsible for the most humiliating gaffes, notable new media peer review errors betray this strain.

One famous example of sham science was the publication of an article purporting to describe the “midichlorion,” the organelle of “the Force.” Echoing Luke Skywalker, made-up authors Drs Lucas McGeorge and Annette Kin convinced 7 journals to accept their paper—3 publishing it for free and 4 that requested over $350 each in APCs—despite the inclusion of the following text:

Did you ever hear the tragedy of Darth Plagueis the Wise? I thought not. It is not a story the Jedi would tell you. It was a Sith legend. Darth Plagueis was a Dark Lord of the Sith, so powerful and so wise he could use the Force to influence the midichlorions to create life.

Another ignominious example is a publication by Dr. Ocorrafoo Cobange describing an anticancer chemical isolated from a lichen at the Wassee Institute of Medicine, which turned out to be a complete fabrication; none of these entities exist. John Bohannon, an investigative journalist, received acceptance from half of the over 300 open access journals; he offered this intentionally fraudulent article, written to expose publishers scamming authors out of up to over $3,000 in APCs. Some journals had false physical addresses within the United States and collected fees via foreign bank accounts. One journal’s editor acknowledged their mistake but demanded payment of the APC anyway.

The above examples’ publication methods were located exclusively online. Such sobering cases illustrate a lack of regulation and accountability within virtual space. It is not that new media is inherently flawed, but the onus is on academicians to exercise vigilance.

INDICES: THE MORE META THE BETTA

Citation indexing dates to 12th-century Hebrew texts that were the first writings to employ this bibliographic
tic meanings independent of literal syntax. Another key generated based on key words, phrases, and even semantic indexing was not possible. Entire databases can now be proliferated, so indexing attempts to make order out of the chaos by consolidating users and subscribers. This has led to an arms race that equates the database size with quality. Multiple “mega-indexes” now boast tens-of-thousands of journal titles and hundreds-of-millions of documents under their auspices. Lower quality and predatory practices, however, have been correlated with increased numbers.

| Organization                                | Type                  | Service                                                                 | Web Sites                          |
|---------------------------------------------|-----------------------|------------------------------------------------------------------------|------------------------------------|
| Bealls’ list of predatory journals          | Publication database  | Catalogues thousands of journals labeled as predatory to researchers | BeallsList.Weebly.com              |
| CHORUS                                      | Scholarly services    | Integrates publication platforms for publicly funded research to increase access | ChorusAccess.org                   |
| Committee on Publication Ethics             | Research oversight    | Educational resources to foster ethical scientific publishing          | PublicationEthics.org              |
| CC                                          | Research oversight    | Nonprofit originator of CC licenses, enabling copyright sharing         | CreativeCommons.org                |
| Cross Mark                                  | Scholarly services    | Updated status of an article’s corrections or retractions by Cross Ref  | CrossRef.org/Services/ CrossMark   |
| Cross Ref                                   | Scholarly services    | An International DOI Foundation official object identifier by PILA      | CrossRef.org                       |
| Directory of Open Access Journals           | Publication database  | Community-curated online open access journals index                    | DOAJ.org                           |
| International Committee on Medical Journal Editors | Research oversight | Biomedical editors and society members for publication quality        | ICMJE.org                          |
| International Organization for Standardization | Research oversight | International standard-setting body composed of various national organizations | ISO.org                            |
| International DOI Registration Agency       | Research oversight    | Nonprofit organization that registers interoperable digital network identifiers | DOL.org                            |
| Journal Citations Reports                   | Publication database  | Publication of journals’ statistics, including impact factors by Clarivate Analytics | Clarivate.com/Products/ Journal-Citation-Reports/NCBI.NLM.NIH.gov |
| National Center for Biotechnology Information | Scientific database  | Branch of the National Library of Medicine, a part of the National Institute of Health | OpenArchives.org                    |
| OAI                                          | Research oversight    | Designs the PMH for metadata harvesting of open access indexes, effectively linking them | OpenArchives.org                    |
| Open Researcher and Contributor Identification | Research oversight   | Digital identifier distinguishing each researcher                      | ORCID.org                          |
| Portico                                     | Scholarly services    | Electronic resource preservation service that offer long-term digital data preservation | Portico.org                         |
| PILA                                        | Research oversight    | Private, for-profit company that administers Cross Ref                  | Guidestar.org/Profile/ 04-3502255   |
| PMH                                          | Research oversight    | Guidelines of the OAI, which effectively makes open access repositories interoperable | OpenArchives.org                    |
| Research Electronic Data Capture            | Data management       | Secure online application for research databases and surveys             | Project-RedCap.org                  |

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There is the age-old saying about databases that “you get out what you put in,” implying that if the input is of low quality then the product will be as well, regardless of its complexity.

**PREDATOR-IN-CHIEF**

Henry Oldenburg was a German theologian, the first secretary of the Royal Society of London, and the founding editor of *Philosophical Transactions*, the world’s first modern scientific journal. He initially published this ground-breaking periodical with personal funds in exchange for the rights to its profits, a venture that paid Oldenburg’s rent in Westminster. Although scientific publishing is not immune to economic interests, misrepresentation of scholarly intentions for financial gain is an alarming trend within the new media academic industry.

A compelling example of profit-seeking abuse is provided by Katarzyna Pisanski, a researcher in the School of Psychology at the University of Sussex. Dr. Pisanski’s article in the journal *Nature* describes editor applicant Anne O. Szust, who boasted a gamut of credentials created entirely online on platforms like Academia.edu (Table 4). Despite lacking a single peer-reviewed citation or editorial credentials of any kind, her application was accepted by 48
## Table 7. Online Biomedical Journal Databases, Indices, and Search Engines

| Organization | Service Description | Web Sites |
|--------------|---------------------|-----------|
| Bielefeld Academic Search Engine | Multidisciplinary search engine of scholarly content by Bielefeld University | BaseSearch.net |
| BioMed Central | Publisher of open access journals under Springer Nature | BioMedCentral.com |
| CAB Direct | Applied life sciences database produced by CAB International | CABDirect.org |
| Cambridge University Press: Open Access | Collection of open access journals published by Cambridge University Press | Cambridge.org/Core |
| Controlled Lots Of Copies | Nonprofit venture between libraries and publishers to increase access and longevity of online content | CLOCKSS.org/CLOCKSS/TriggedContent |
| DeGruyter Open | Publisher of open access journals across multiple disciplines | Degruyter.com/DG/Page/Open-AccessJournals |
| Directory of Open Access Journals | Community-curated online open access journals index | DOAJ.org |
| Elsevier Open Access | Publisher Elsevier’s catalogue of open access journals | Elsevier.com/About/Open-Science/OpenAccess |
| Embase | Index of biomedical open access journals by Elsevier | Embase.com |
| Entrez | Global query cross-database federated search system | NCBI.NLM.NIH.Gov/Class/MLA Course/Original8Hour/Entrez/F1000.com |
| Faculty of 1000 | Subscription-based biomedical sciences publication ratings service | En.IndexCernicus.com |
| FigShare | Data storage repository offering long-term online filing of datasets, figures, and video, partnered with PLoS | FigShare.com |
| Genamics Journal Seek | Large database of scholarly journals from all types of disciplines | JournalSeek.net |
| Google Scholar | Scholarly literature bibliographic database operated by Google | Scholar.Google.com |
| Hindawi | Large publisher of open access journals across various disciplines | Hindawi.com |
| Index Copernicus International | Scientific community of user-contributed materials | En.IndexCernicus.com |
| International Scientific Indexing | Indexes open access journals with intent to increase exposure to the scientific community | ISIndexing.com |
| Journal Citations Reports | Publication of journals’ statistics, including impact factors by Clarivate Analytics | Clarivate.com/Products/Journal-Citation-Reports/Karger.com/OpenAccess/MedCraveOnline.org |
| Karger Open Access Journals | Produces a range of open access biomedical journals | NCBL.NLM.NIH.Gov/PubMed |
| Medical Literature Analysis and Retrieval System | Collection of journals featuring from various scientific disciplines | NLMCC.gov/LiteratureSearch/Medline/
| Multidisciplinary Digital Publishing Institute | Bibliographic database of printed life sciences publications | MDPI.org |
| Open Access Digital Library | Publisher of multiple fee-based, open access journals | GRWeb.Coalliance.org/OADL/OADL.html |
| Open Access Journals Database | Collection of journals organized on a single site by Colorado Alliance of Research Libraries | OMISSonline.org |
| Oxford Academic Open Access | Open access publisher and international conference organizer | Academic.OUP.com/Journals |
| Oxford University Press | Online portal of services and journals published by Oxford University Press | Academic.OUP.com/Journals/Pages/OpenAccess |
| Oxford Open Journals | Open access journal index of Oxford University Press publications | Ovid.com |
| Ovid SP | Healthcare publication database of the Wolter Kluwer, who previously produced MEDLINE, and partners | PLoS.org |
| Public Library of Science | Nonprofit biomedical open access journal publisher | NCBL.NLM.NIH.Gov/PMC |
| PubMed Central | Bibliographic database of online life science publications | MJL.Clarivate.com/Scope/Scope_SCIE/ |
| Science Citation Index Expanded | Index of journals operated by Clarivate Analytics | Clarivate.com/Products/Journal-Citation-Reports/Karger.com/OpenAccess/MedCraveOnline.org |
| Science Direct Open Access | Collection of open access journals produced by Elsevier | ScienceDirect.com/Science/JnlAllBooks/All/OpenAccess |
| Scientific Electronic Library Online | Open access publications from developing countries | Scielo.org |
| Scientific and Academic Publishing | Publisher of open access journals and online platform for researchers | SAPub.org/Journal/Index.aspx |
| ScienceHub | Global science and technology publisher that provides barrier-free access to research from multiple locations | SciHub.org |
| Scilicet | Open access index of material from MDPI | MDPI.com |
| Scopus | Abstract and citation evaluation database produced by Elsevier | Elsevier.com/Solutions/Scopus |
| Semantic Scholar | "Smart" search engine designed to highlight important articles throughout artificial intelligence | SemanticScholar.org |
| Springer Open Journals | Collection of open access journals produced by Springer | SpringerOpen.com/Journals/TAndFOnline.com/OpenAccess/OpenJournals |
| Taylor and Francis Open Access | Publisher Taylor and Francis’s catalogue of open access journals | WebOfKnowledge.com |
| Web of Science | Subscription-based publication indexing by Clarivate Analytics | WileyOpenAccess.com/View/Journals.html |

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journals, including 8 from so-called whitelist journals and 4 that made her editor-in-chief. Her fictitious university affiliation was never vetted, and her cover letter stated that her motive to become editor was to obtain a degree that her fabricated curriculum vitae claimed she already had. Dr. Oszust, in fact, never existed. “Oszust” is the Polish word for “fraud.”

More comprehensive journal evaluation tools exist, but 3 questions efficiently discern the merit of scientific journals: (1) Is it indexed on PubMed? (2) What is its impact factor? (3) Is there a publication fee? “Yes,” “>1,” and “no” are reasonable answers, although exceptions certainly exist. Each new media academic participant can quickly develop screening criteria when interacting critically with online organizations. Rohrich highlights many red flags in “Top Ways to Spot a Predator.”

1. Payment is required at submission.
2. No reviews are offered and no revisions are requested.
3. All articles are accepted.
4. Does not explicitly follow a standard ethical policy.
5. Sends frequent emails soliciting articles for fast processing.
6. Offers editorial board membership with little criteria.
7. No physical address of phone number to editor or publisher’s office.
8. Grammatical or technical errors on website.
9. No valid International Standard Serial Number.
10. Additional fees requested for steps not previously disclosed (eg, withdrawing, edits, etc.).
11. Not listed on major journal database, such as Scopus, Directory of Open Access Journals, or Web of Science.
12. Solicits articles on topics outside of author’s area of expertise.
13. Difficult opt out of receiving emails after attempts to unsubscribe.
14. If it seems too good to be true, it just might be!

**NAVIGATING ACADEMIC NEW MEDIA**

Future new media academic processes promise more integration of cloud-based data, artificially intelligent searches, virtual scientific communities, online quality authorities, altmetrics, open access, mega-indices, and predatory publishing. New media will continue to develop as online platforms’ content, quality, services, and publication ethics evolve. Expect expanded online academia as younger generations advance and older generations learn new media. Whether these changes erode academic purity or not, the age of new media scholarship, or “escholarship,” is upon us. It is essential that plastic surgeons grasp its fundamentals to properly participate in online knowledge sharing. The field of plastic surgery has avoided the embarrassing examples above, but is susceptible to misrepresentation due to its high public profile and lay person appeal. Only through continued vigilance will the field remain unscathed.

Navigating the academic new media landscape requires evidence-based principles, critical thinking, and learning about digital trends. How plastic surgeons negotiate virtual scholarly environments will define the new media digital academic complex moving forward. But Heather Furnas cautions that “ultimately, we should be looking at how to expand, not limit, our audience reach.”

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