Impact factor of major dermatology journals and the increasing influence of dermatology in the house of medicine

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Abstract

Background: Journal impact factor (JIF) is a bibliometric proxy of relative journal importance. Mean dermatology JIF has nearly doubled since 1997. The reasons behind the increase have not been previously explored.

Objective: To assess factors contributing to rising dermatology JIF.

Methods: This bibliometric study utilized publicly available citation and JIF data from the Thomson-Reuters InCites Journal Citation Reports "Dermatology and Venereology" category, from 1997-2017.

Results: From 1997-2017, aggregate dermatology JIF increased by 70%, associated with a 64% increase in JIF numerator (total journal citations) and a 3% decrease in JIF denominator (total journal articles and reviews). In the four highest-JIF journals (*JAAD*, *JAMA Dermatology/Archives of Dermatology*, *JID*, and *BJD*), there was an increase in citations coming from non-dermatology specialty journals, including oncology, rheumatology, and multidisciplinary sciences. Journal impact factor was positively correlated with five JIF alternatives. Immediacy Index, a reflection of how fast dermatology journals are cited, increased four-fold (P<0.001).

Limitations: Impact factor numerator/denominator data were not available before 1999.

Conclusions: The nearly two-fold rise in dermatology JIF from 1997-2017 was associated with increased citations, an increasing proportion of which came from non-dermatology journals. This may reflect growing influence of dermatology research within both dermatology and other fields of medicine.

Keywords: general dermatology, bibliometrics, journalology, impact factor, clinical research

Introduction

Recent years have brought substantial changes to the specialty of dermatology. The advent of biologics, immunotherapies, and gene therapy has revolutionized treatment of complex medical-dermatological disease [1-3]. Electronic medical record systems have allowed for systematization of "big data" collection. The internet has enabled journals to disseminate research by publishing online, highlighting selected articles via social media [4]. Meanwhile, dermatology journal impact factor (JIF) has steadily increased, with several dermatology JIFs nearly doubling over the last three years. We hypothesized that JIF evaluation may reveal important trends regarding research dissemination and viewership, which are otherwise difficult to assess. Therefore, we aimed to evaluate dermatology JIF trends compared to other fields of medicine.

Journal impact factor: history and definitions

Although JIF has been accepted as a primary metric to judge journal impact, its use remains controversial [5-10]. Journal impact factor theoretically levels the playing field between large and small (but highly impactful) journals.[11]. Rather than ranking journals by the absolute number of citations their articles receive, JIF normalizes total citations by total articles published by the journal in a given year. It is calculated as a fraction to account for publications in

the previous two years. For example, a journal's 2018 JIF is calculated as below:

$$JIF = \frac{Numerator}{Denominator} = \frac{2018\ citations\ to\ any\ articles\ published\ in\ 2016\ and\ 2017}{Number\ of\ "citable\ items"\ published\ in\ 2016\ and\ 2017}$$

"Citable items" refers to research articles and reviews, indexed in the Institute for Scientific Information (ISI), which are deemed substantive and citable by ISI. Generally, original research and review articles are classified by ISI as citable items. Other publications such as abstracts, editorials, and news items are "non-citable documents," but may still receive citations (increasing JIF numerator) while leaving the denominator unchanged. As a result, non-citable documents are sometimes considered to be "free" [12-14]; any citations received will only increase JIF because they do not add to the "citable items" in the denominator [15, 16]. Several alternative proposed metrics have been developed, including the 5-year JIF [11], Eigenfactor [17], Article Influence Score, SCImago Journal Rank (SJR), [18], H-Index [19], Immediacy Index [20], and JIF Percentile.

Methods

This study was deemed exempt by the University of Pennsylvania institutional review board. Citation and impact factor data from journals categorized under the Thomson-Reuters InCites JCR "Dermatology and Venereology" category (from 1997-2017) and Thomson-Reuters Web of Science data (from 1995-2017) were collected. Available yearly data pertained to both the dermatology category and individual dermatology journals and included the following: median JIF, aggregate JIF, JIF (with and without journal self-citations), 5-year JIF, total journal citations, total journal articles, total citable items, proportion of articles citable, Immediacy Index, aggregate Immediacy Index, Article Influence Score, average JIF Percentile, and Eigenfactor score. Dermatology journal H-Indices and SJR values were obtained from the Scopus SCImago Journal and Country Rank website (www.scimagojr.com). To evaluate changes in JIF over time and to explore the potential factors that may be driving these changes, JIF was broken down into aggregate numerators (total citations) and aggregate denominators (citable items), which were normalized with respect to total number of journals. For example, 2017 aggregate JIF is calculated below:

$$Aggregate\ normalized\ numerator = \frac{Sum\ total\ of\ all\ 2017\ journal\ numerators}{Total\ number\ of\ journals\ in\ 2017}$$

$$Aggregate\ normalized\ denominator = \frac{Sum\ total\ of\ all\ 2017\ journal\ denominators}{Total\ number\ of\ journals\ in\ 2017}$$

$$Aggregate\ JIF = \frac{Aggregate\ normalized\ numerator}{Aggregate\ normalized\ denominator}$$

To analyze what kinds of journals are responsible for citations to dermatology journals, we extracted Web of Science subject categories (e.g., dermatology, rheumatology) for each citing article. Analysis was limited to the four-highest JIF dermatology journals which have been published consecutively between 1995 and 2015: *JAAD*, *British Journal of Dermatology* (*BJD*), *JAMA Dermatology/Archives of Dermatology*, and *JID*. Values for *JAMA Dermatology*, which was first indexed in 2013, and *Archives of Dermatology*, which was last indexed in 2014, were counted together.

To assess upward mobility of dermatology JIF, we assigned journals published consecutively between 1997 and 2017 a JIF quartile based on JIF Percentile. We also compared quartile rankings to relative JIF numerator and denominator changes over the same time period.

For analysis, we used multivariate linear regression to evaluate for association between aggregate JIF and calendar year, number of journals indexed in ISI, total number of citations, total number of articles, proportion of citations attributable to non-citable documents, and percentage of JIF owing to self-citation. In addition, unpaired t-tests were used to evaluate for changes in measure of JIF over time. Statistical analyses were performed in Microsoft Excel Version 16.20 (Microsoft Corp, Redmond, Washington) and Stata 15 (StataCorp, College Station, Texas).

Results

From 1997 to 2017, mean dermatology JIF more than doubled (**Figure 1**) and aggregate dermatology JIF increased by 70%, based on a 64% increase in aggregate normalized JIF numerator and a 3% decrease in aggregate normalized JIF denominator

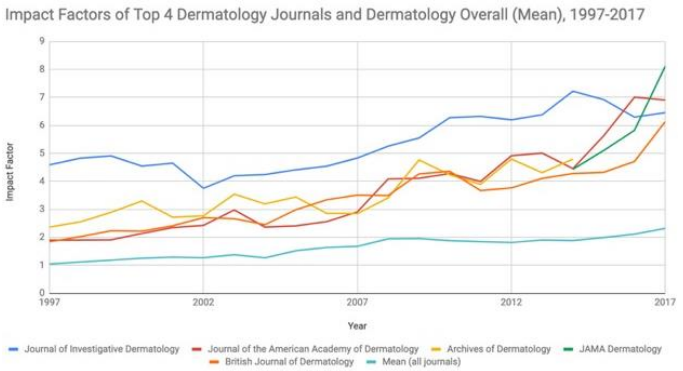

Figure 1. *Journal Impact Factor (JIF) of JAAD, BJD, JID, and JAMA Dermatology/Archives of Dermatology, as well as overall dermatology (mean) JIF, between the years of 1997 and 2017. Note: ISI published JIFs for both JAMA Dermatology and Archives of Dermatology in 2014. Source: Thomson-Reuters InCites JCR, Clarivate Analytics, 2018.*

(**Figure 2**). Although by definition JIF is greater than self-citation-corrected JIF, the difference between them was never significant (**Table 1**). Total dermatology journals indexed on ISI doubled from 32 to 64. Mean Immediacy Index (a reflection of how fast publications are cited) increased more than four-fold, from 0.15 to 0.62 (P<0.001). The mean proportion of non-citable items within dermatology journals steadily increased from 4.47% to 13.35% (P<0.001).

In our multivariate linear regression model, each additional journal indexed in ISI was associated with a 0.051 decrease in JIF (95% CI 0.003 to 0.098). Each 1,000 additional total citations and articles were associated with a 0.003 increase in JIF (95% CI -0.005 to 0.011) and each 1,000 additional total articles were associated with a 0.384 increase in JIF (95% CI -0.176 to 0.943), respectively, although these did not reach statistical significance. Each additional percentage of citations which came from non-citable documents was associated with a 0.086 increase in JIF (95% CI 0.002 to 0.170). There was no statistically significant association of JIF with calendar year or percentage of JIF related to self-citation.

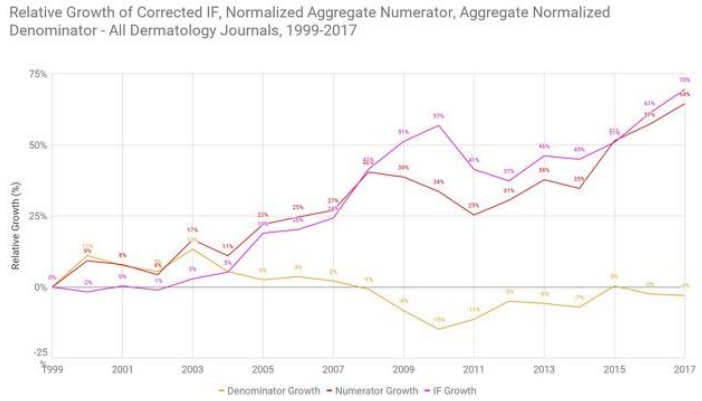

Figure 2. *Relative change in aggregate dermatology JIF, aggregate normalized JIF numerator (total citations), and aggregate normalized JIF denominator (citable items) between the years of 1999 and 2017. Source: Thomson-Reuters InCites JCR, Clarivate Analytics, 2018.*

From 1995 to 2015 (**Table 2**), proportional decreases were seen in relative citations from dermatology journals (36.5% versus 32.0%) and pathology journals (3.4% versus 2.2%), whereas increases were seen in relative citations from rheumatology journals (0.8% versus 1.4%), pharmacy journals (3.0% versus 3.9%), multidisciplinary sciences journals (0.6% versus 2.5%), and oncology journals (4.5% versus 6.9%), among others (**Table 2**).

Nearly half of journals (43%, N=12) remained in the same JIF quartile in which they started. Journals which increased quartile rank had significantly higher relative numerator increases than journals which decreased their quartile rank (P=0.03), but relative denominator changes were not significantly different (P=0.60).

Finally, JIF was correlated with five alternatives to JIF. Mean dermatology JIF values from 2017 were positively correlated with five JIF alternatives (**Figure 3**), including 5-year JIF (R^2=0.962), Eigenfactor (R^2=0.673), mean Article Influence Score (R^2=0.928), SJR (R^2=0.860), and H-Index (R^2=0.727).

Discussion

Rising JIF in dermatology appears to be correlated with a genuine increase in citations, an increasing proportion of which is from outside the field. Specifically, our results demonstrate that an increasing JIF numerator has played a much larger role in the rising JIF than a decreasing denominator, bolstering the legitimacy of JIF in our field and the quality of the research it reflects. Indeed, in our multivariate regression model, aggregate JIF trended toward a positive correlation with total citations and articles. Interestingly, an increasing proportion of the rising number of dermatology

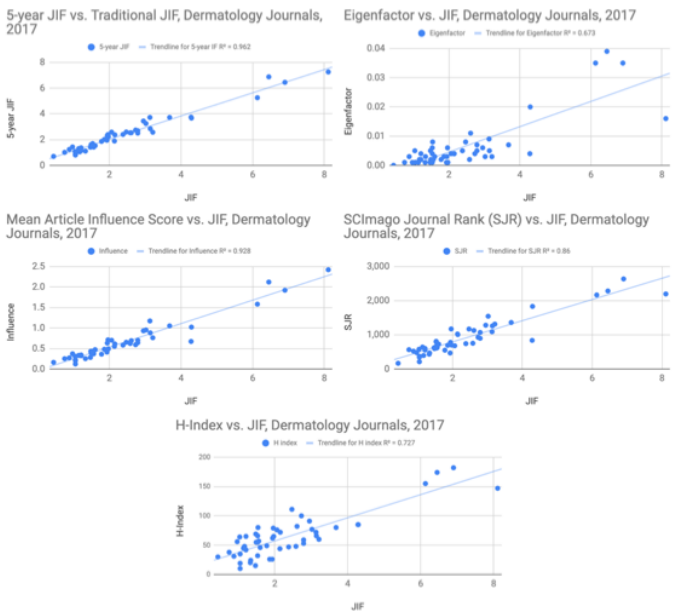

Figure 3. *JIF correlations with alternatives to JIF. Source: Thomson-Reuters InCites JCR, Clarivate Analytics, 2018.*

citations now come from non-dermatology journals, such as oncology, rheumatology, and multi-disciplinary science journals. This is a small but notable trend, which suggests that dermatology research increasingly plays a larger role in other fields of biomedical science. Although some have postulated that journal self-citation contributes to rising JIF, it was not correlated with JIF in our regression model.

Chew et al. [21] found the same trend — rising JIF resulting primarily from increasing numerator, rather than decreasing denominator — within general medical journals (e.g., *Journal of the American Medical Association* and *New England Journal of Medicine*). When surveyed about these trends, the journal editors-in-chief cited several factors, including active recruitment of high-impact articles, careful article selection, publication of fewer citable articles (sometimes deliberately), genuinely increasing total article citations, increasing total medical journals, and "going online." Our data address these factors in dermatology.

Publication of fewer citable articles. In an analysis of five dermatology journals, Rodriguez-Lago et al. postulated that deliberate editorial selection of articles (e.g., publication of articles without abstracts as non-citable "notes," changing article type distribution) may result in certain article types (non-citable documents) counting for the numerator but not the denominator, raising the JIF [22]. Although our data do not directly reflect editorial preferences, they confirm that non-citable documents have grown as a share of dermatology publications. The same trend has been observed in general/internal medicine [23]. As citations to these articles count for the JIF numerator, but not the denominator, it is not surprising that they are positively correlated with aggregate JIF.

Genuinely increasing total article citations. Journals which were able to improve their JIF quartile rank had significantly greater relative increases in JIF numerator than did journals which decreased in JIF quartile. There was no difference in relative denominator changes between these groups. Furthermore, our multivariate regression model demonstrates that JIF was positively correlated with total article citations. These findings support the conclusion that genuinely increasing total article citations plays a significant role in rising dermatology JIF. Furthermore, analysis of general/internal medicine journals confirm that the large majority (>95%) of total citations come from citable items, rather than citations to non-citable items [9].

Increasing total medical journals. Although the total number of medical specialty journals (including dermatology) was positively correlated with overall maximum and mean specialty journal JIF when studied two decades ago [24], our regression model demonstrates the opposite. In our multivariate regression model, each additional dermatology journal indexed in ISI was associated with a 0.051 decrease in JIF. This negative correlation between JIF with total dermatology journals may seem counterintuitive in light of the trends toward positive correlation with total articles and total citations. However, although additional dermatology journals have generated additional articles and citations, these new journals may be of lower quality than older and more established journals. The same effect was noted in a 2015 analysis of rising JIF among radiology journals, which determined that newer radiology journals were generally of lesser quality than older, more established journals [25]. The

positive effect of additional dermatology articles and citations on dermatology JIF is stronger than the negative effect of additional dermatology journals on JIF.

Internet influence. Immediacy Index grew more than four-fold over the last two decades (twice as much as overall JIF), pointing to the speed of citation of dermatology articles. This may reflect the growing influence of the internet, indexing websites (e.g., PubMed, Medline), and social media on citation behavior [26]. A recent analysis of pediatric urology JIF determined that the presence of a Twitter feed for a journal was a significant positive predictor of rise in JIF over a four-year time period [27]. As several prominent dermatology journals have made dissemination of articles via social media and the internet a priority [28-32], we postulate that new publications will continue to be disseminated and cited more rapidly, which will be reflected with a growing mean Immediacy Index.

Which journals most often cite dermatology articles? We found that citations to the top four-highest JIF dermatology journals increasingly came from journals of other disciplines, such as oncology, rheumatology, and multidisciplinary sciences (**Table 2**). This notable finding may reflect the impact of novel classes of drugs (e.g., biologics, immunotherapy), which have extended dermatology's field of influence within rheumatology, oncology, and internal medicine. The 2015 analysis of rising radiology JIF determined that journals most likely to experience growth in JIF published research of interest between specialties (e.g., cardiac imaging journals are of interest to cardiologists as well as radiologists). It may also reflect the growing body of high-quality research in dermatoepidemiology, health care services, and population health [33, 34]. Clinically-oriented journals which publish frequently on such topics would benefit from these effects more than basic science-oriented journals. This may explain why *JAMA Dermatology* and *JAAD* (more clinically-oriented) have recently outpaced *JID* (more basic science-oriented) in terms of JIF.

Although a journal's citation of its own articles is somewhat expected, some have argued that self-citation rate (SCR) is occasionally artificial [35, 36]. For example, a journal editor may preferentially accept articles with a high journal SCR, pressure authors to add references to articles in the editor's journal or affiliate journals [37], or publish summaries of articles published in the journal (e.g., "year in review" editorials). Although this phenomenon has been encountered in top journals in several other fields of medicine, such as plastic surgery [7, 38-40], in general dermatology journals, SCR was found to be inversely correlated with JIF [41]. Our data provide corroborating evidence that dermatology JIFs do not benefit significantly from self-citation.

How do bibliometric trends in dermatology compare to other fields of medicine? At baseline, the top JIFs in dermatology have not been as high as the top JIFs in other, comparably-sized specialties, such as gastroenterology or neurology (each of which have similar numbers of practicing physicians as dermatologists), [42]. Since the authors also found a positive correlation between total number of academic physicians in a field and impact factor, they hypothesized that the relative outpatient focus of dermatologists — and subsequent lack of academic and fellowship-trained dermatologists — may underlie dermatology's relative bibliometric weaknesses. Although rising JIF has been observed in several fields of medicine, the reasons behind dermatology's increase seem to be unique. For example, although increasing total journals and artificial self-citation are large factors for fields such as plastic surgery [40] and ophthalmology [43], neither played a large role in dermatology. Instead, increasing dermatology JIF appears to be associated with citations by other medical specialty journals, a trend which has recently been observed in radiology [25]. This makes sense given the recent growth in radiology's scope, from interventional radiology to advanced cardiac and oncologic imaging. From these observations, one might postulate that medical fields whose greater scope within medicine has recently increased will experience similarly increased research dissemination and concordant rise in JIF.

Finally, although many have voiced frustration with JIF and outlined potential ways it might be abused

[10, 11, 35-37], we found dermatology JIFs to be strongly correlated with prominent alternatives to JIF (**Figure 3**), including 5-year JIF, H-Index, Eigenfactor, mean Article Influence Score, and SJR, and moderately correlated with Eigenfactor. This suggests that, in contrast to other fields of medicine, in which JIF may not necessarily correlate with all alternative metrics [44], in the field of dermatology JIF is a reliable bibliometric measure.

Conclusion

As Mark Udey, the editor of *JID*, wrote: "All agree that the IF is, at best, an imperfect measure of a journal's quality, but everyone follows it and many worry about it nonetheless" [45]. From the implementation of EMR systems and online publication to the discovery of revolutionary new classes of drugs, clinical and research dermatology has changed considerably over the last two decades, making JIF a helpful constant for the measurement of research progress and journal influence. Although JIF may be an imperfect metric, we found that in the field of dermatology, JIF is correlated with other JIF alternatives and does not appear significantly impacted by self-citation. We also demonstrated that dermatology publications are cited more rapidly in 2017 than in 1997, a possible consequence of article dissemination via online databases and social media. Finally, we show that the rising dermatology JIF is associated with genuinely increased total citations, an increasing proportion of which come from non-dermatology journals. This finding may reflect the remarkable changes that new treatment modalities have made for cutaneous complications of rheumatologic and oncologic disease and a potential growing role for dermatology in the house of medicine.

Potential conflicts of interest

The authors declare no conflicts of interests.

Acknowledgements

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Table 1. *Bibliometric profile of dermatology journals between 1997 and 2017. Note: Some data between 1997 and 2002 was unavailable from JCR. Source: Thomson-Reuters InCites JCR, Clarivate Analytics, 2018.*

Year	Total Journals	Total Articles	Total Citations	(Citations/ Article)/ Journal	Aggregate Immediacy Index	Mean Immediacy Index	Median JIF	Aggregate JIF	Mean JIF (st. dev.)	Self-Citation-Corrected JIF (st. dev.)	Mean IF vs. Self-Citation-Corrected JIF (P-Value)
1997	32	–	–		–	0.144	–	–	1.04 (0.84)	0.88 (0.75)	0.42
1998	35	–	–		–	0.139	–	–	1.11 (0.88)	0.86 (0.76)	0.22
1999	36	–	–		–	0.177	–	–	1.18 (0.93)	0.99 (0.81)	0.37
2000	36	–	–		–	0.144	–	–	1.25 (0.95)	1.07 (0.84)	0.40
2001	38	–	–		–	0.153	–	–	1.29 (0.92)	1.11 (0.82)	0.37
2002	40	–	–		–	0.150	–	–	1.27 (0.79)	1.09 (0.72)	0.31
2003	38	4,421	99,651	0.59317	0.222	0.183	1.16	1.673	1.37 (0.88)	1.21 (0.80)	0.40
2004	38	4,260	97,174	0.60028	0.269	0.186	1.075	1.634	1.26 (0.82)	1.09 (0.74)	0.35
2005	39	4,539	106,930	0.60405	0.283	0.209	1.312	1.875	1.51 (0.89)	1.32 (0.79)	0.30
2006	39	4,513	112,479	0.63906	0.327	0.258	1.418	1.921	1.63 (0.90)	1.42 (0.80)	0.29
2007	41	4,750	120,579	0.61915	0.371	0.282	1.402	1.956	1.67 (1.01)	1.43 (0.88)	0.26
2008	43	4,942	139,465	0.65629	0.423	0.344	1.605	2.233	1.94 (1.11)	1.71 (0.98)	0.31
2009	48	5,555	145,689	0.54639	0.399	0.323	1.587	2.281	1.95 (1.27)	1.72 (1.12)	0.35
2010	55	6,037	167,034	0.50306	0.362	0.281	1.667	2.253	1.87 (1.37)	1.65 (1.22)	0.37
2011	58	6,192	167,276	0.46577	0.393	0.322	1.482	2.09	1.84 (1.29)	1.61 (1.17)	0.31
2012	59	6,291	178,221	0.48016	0.456	0.338	1.5	2.126	1.81 (1.33)	1.60 (1.20)	0.37
2013	61	6,677	188,984	0.46400	0.494	0.367	1.536	2.273	1.90 (1.33)	1.65 (1.22)	0.29
2014	63	6,552	194,724	0.47174	0.505	0.384	1.446	2.241	1.88 (1.34)	1.65 (1.23)	0.32
2015	61	6,695	196,885	0.48209	0.557	0.438	1.568	2.367	1.98 (1.37)	1.75 (1.23)	0.32
2016	63	6,859	228,113	0.52790	0.581	0.488	1.683	2.498	2.11 (1.41)	1.86 (1.31)	0.31
2017	64	6,839	245,390	0.56064	0.794	0.621	1.893	2.657	2.31 (1.62)	2.06 (1.51)	0.37

Table 2. *Web of Science subject categories of journals which cite articles published in JAAD, BJD, JID, and JAMA Dermatology/Archives of Dermatology between 1995 and 2015. Note: Numbers depict n (%). Source: Thomson-Reuters Web of Science, Clarivate Analytics, 2018.*

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change (2015vs 1995)
Dermatology	2074 (36.5%)	2219 (37.5%)	2268 (38.3%)	2384 (40.2%)	2342 (36.0%)	2394 (36.0%)	2367 (34.3%)	2384 (33.9%)	2480 (32.5%)	2437 (31.6%)	2485 (31.0%)	2657 (31.3%)	3020 (31.9%)	3271 (33.3%)	3058 (33.3%)	2998 (32.8%)	2933 (33.2%)	3218 (32.8%)	3278 (31.3%)	3562 (31.4%)	3609 (32.0%)	**+1535 (-4.4%)**
Biochemistry Molecular Biology	318 (5.6%)	305 (5.2%)	290 (4.9%)	349 (5.9%)	373 (5.7%)	354 (5.3%)	409 (5.9%)	390 (5.6%)	410 (5.4%)	468 (6.1%)	431 (5.4%)	357 (4.2%)	405 (4.3%)	458 (4.7%)	418 (4.5%)	375 (4.1%)	380 (4.3%)	386 (3.9%)	401 (3.8%)	399 (3.5%)	377 (3.3%)	**+59 (-2.2%)**
Pathology	193 (3.4%)	179 (3.0%)	188 (3.2%)	167 (2.8%)	167 (2.6%)	194 (2.9%)	169 (2.4%)	181 (2.6%)	171 (2.2%)	183 (2.4%)	204 (2.5%)	185 (2.2%)	235 (2.5%)	228 (2.3%)	226 (2.5%)	219 (2.4%)	204 (2.3%)	227 (2.3%)	220 (2.1%)	233 (2.1%)	247 (2.2%)	**+54 (-1.2%)**
Biophysics	108 (1.9%)	85 (1.4%)	94 (1.6%)	92 (1.5%)	92 (1.4%)	115 (1.7%)	92 (1.3%)	81 (1.2%)	105 (1.4%)	129 (1.7%)	107 (1.3%)	89 (1.1%)	91 (1.0%)	95 (1.0%)	99 (1.1%)	113 (1.2%)	104 (1.2%)	118 (1.2%)	94 (0.9%)	99 (0.9%)	93 (0.8%)	**-15 (-1.1%)**
Pediatrics	62 (1.1%)	73 (1.2%)	92 (1.6%)	96 (1.6%)	82 (1.3%)	103 (1.5%)	89 (1.3%)	81 (1.2%)	86 (1.1%)	91 (1.2%)	104 (1.3%)	119 (1.4%)	130 (1.4%)	144 (1.5%)	120 (1.3%)	152 (1.7%)	156 (1.8%)	148 (1.5%)	183 (1.7%)	232 (2.0%)	186 (1.7%)	**+124 (+0.6%)**
Rheumatology	48 (0.8%)	55 (0.9%)	58 (1.0%)	58 (1.0%)	55 (0.8%)	74 (1.1%)	98 (1.4%)	93 (1.3%)	99 (1.3%)	110 (1.4%)	141 (1.8%)	136 (1.6%)	123 (1.3%)	154 (1.6%)	149 (1.6%)	170 (1.9%)	152 (1.7%)	174 (1.8%)	167 (1.6%)	149 (1.3%)	159 (1.4%)	**+111 (+0.6%)**
Health Care Sciences Services	9 (0.2%)	19 (0.3%)	38 (0.6%)	30 (0.5%)	22 (0.3%)	10 (0.2%)	20 (0.3%)	16 (0.2%)	23 (0.3%)	25 (0.3%)	20 (0.2%)	26 (0.3%)	21 (0.2%)	22 (0.2%)	41 (0.4%)	25 (0.3%)	35 (0.4%)	43 (0.4%)	65 (0.6%)	68 (0.6%)	92 (0.8%)	**+83 (+0.7%)**
Chemistry (Multidisciplinary)	15 (0.3%)	10 (0.2%)	13 (0.2%)	26 (0.4%)	22 (0.3%)	14 (0.2%)	17 (0.2%)	15 (0.2%)	31 (0.4%)	28 (0.4%)	18 (0.2%)	23 (0.3%)	57 (0.6%)	47 (0.5%)	42 (0.5%)	39 (0.4%)	34 (0.4%)	67 (0.7%)	64 (0.6%)	97 (0.9%)	107 (1.0%)	**+92 (+0.7%)**
Pharmacology/ Pharmacy	173 (3.0%)	179 (3.0%)	128 (2.2%)	174 (2.9%)	179 (2.8%)	228 (3.4%)	240 (3.5%)	254 (3.6%)	318 (4.2%)	311 (4.0%)	278 (3.5%)	391 (4.6%)	394 (4.2%)	395 (4.0%)	302 (3.3%)	292 (3.2%)	263 (3.0%)	356 (3.6%)	404 (3.9%)	411 (3.6%)	441 (3.9%)	**+268 (+0.9%)**
Multidisciplinary Sciences	35 (0.6%)	30 (0.5%)	40 (0.7%)	48 (0.8%)	32 (0.5%)	26 (0.4%)	28 (0.4%)	24 (0.3%)	37 (0.5%)	42 (0.5%)	46 (0.6%)	55 (0.6%)	73 (0.8%)	91 (0.9%)	137 (1.5%)	194 (2.1%)	235 (2.7%)	261 (2.7%)	268 (2.6%)	301 (2.7%)	285 (2.5%)	**+250 (+1.9%)**
Oncology	256 (4.5%)	254 (4.3%)	266 (4.5%)	295 (5.0%)	284 (4.4%)	323 (4.9%)	351 (5.1%)	361 (5.1%)	408 (5.3%)	430 (5.6%)	453 (5.7%)	462 (5.5%)	461 (4.9%)	486 (4.9%)	502 (5.5%)	502 (5.5%)	479 (5.4%)	532 (5.4%)	674 (6.4%)	715 (6.3%)	777 (6.9%)	**+521 (+2.4%)**
Allergy	130 (2.3%)	131 (2.2%)	85 (1.4%)	159 (2.7%)	121 (1.9%)	159 (2.4%)	178 (2.6%)	166 (2.4%)	147 (1.9%)	152 (2.0%)	191 (2.4%)	239 (2.8%)	189 (2.0%)	240 (2.4%)	249 (2.7%)	198 (2.2%)	185 (2.1%)	170 (1.7%)	214 (2.0%)	286 (2.5%)	275 (2.4%)	**+145 (+0.2%)**
Pathology	193 (3.4%)	179 (3.0%)	188 (3.2%)	167 (2.8%)	167 (2.6%)	194 (2.9%)	169 (2.4%)	181 (2.6%)	171 (2.2%)	183 (2.4%)	204 (2.5%)	185 (2.2%)	235 (2.5%)	228 (2.3%)	226 (2.5%)	219 (2.4%)	204 (2.3%)	227 (2.3%)	220 (2.1%)	233 (2.1%)	247 (2.2%)	**+54 (-1.2%)**
Surgery	187 (3.3%)	242 (4.1%)	209 (3.5%)	265 (4.5%)	282 (4.3%)	258 (3.9%)	233 (3.4%)	278 (4.0%)	315 (4.1%)	303 (3.9%)	305 (3.8%)	315 (3.7%)	358 (3.8%)	329 (3.3%)	290 (3.2%)	399 (4.4%)	340 (3.9%)	301 (3.1%)	313 (3.0%)	356 (3.1%)	356 (3.2%)	**+169 (-0.1%)**
Immunology	288 (5.1%)	257 (4.3%)	252 (4.3%)	358 (6.0%)	336 (5.2%)	379 (5.7%)	340 (4.9%)	400 (5.7%)	372 (4.9%)	408 (5.3%)	454 (5.7%)	453 (5.3%)	401 (4.2%)	506 (5.1%)	522 (5.7%)	481 (5.3%)	446 (5.1%)	508 (5.2%)	547 (5.2%)	650 (5.7%)	572 (5.1%)	**+284 (0.0%)**
Cell Biology	265 (4.7%)	251 (4.2%)	242 (4.1%)	297 (5.0%)	299 (4.6%)	300 (4.5%)	330 (4.8%)	323 (4.6%)	382 (5.0%)	349 (4.5%)	360 (4.5%)	341 (4.0%)	367 (3.9%)	407 (4.1%)	353 (3.8%)	342 (3.7%)	331 (3.8%)	400 (4.1%)	437 (4.2%)	462 (4.1%)	449 (4.0%)	**+184 (-0.7%)**
Medicine (General Internal)	183 (3.2%)	233 (3.9%)	225 (3.8%)	244 (4.1%)	213 (3.3%)	159 (2.4%)	160 (2.3%)	175 (2.5%)	184 (2.4%)	187 (2.4%)	205 (2.6%)	223 (2.6%)	259 (2.7%)	240 (2.4%)	227 (2.5%)	194 (2.1%)	220 (2.5%)	206 (2.1%)	286 (2.7%)	326 (2.9%)	327 (2.9%)	**+144 (-0.3%)**
Medicine (Research Experimental)	133 (2.3%)	128 (2.2%)	149 (2.5%)	175 (2.9%)	152 (2.3%)	154 (2.3%)	154 (2.2%)	172 (2.4%)	176 (2.3%)	159 (2.1%)	188 (2.3%)	221 (2.6%)	214 (2.3%)	237 (2.4%)	203 (2.2%)	224 (2.5%)	232 (2.6%)	276 (2.8%)	337 (3.2%)	366 (3.2%)	320 (2.8%)	**+187 (+0.5%)**
Multidisciplinary Sciences	35 (0.6%)	30 (0.5%)	40 (0.7%)	48 (0.8%)	32 (0.5%)	26 (0.4%)	28 (0.4%)	24 (0.3%)	37 (0.5%)	42 (0.5%)	46 (0.6%)	55 (0.6%)	73 (0.8%)	91 (0.9%)	137 (1.5%)	194 (2.1%)	235 (2.7%)	261 (2.7%)	268 (2.6%)	301 (2.7%)	285 (2.5%)	**+250 (+1.9%)**
Genetics/ Heredity	93 (1.6%)	138 (2.3%)	111 (1.9%)	143 (2.4%)	141 (2.2%)	107 (1.6%)	147 (2.1%)	152 (2.2%)	151 (2.0%)	165 (2.1%)	156 (1.9%)	153 (1.8%)	182 (1.9%)	180 (1.8%)	157 (1.7%)	152 (1.7%)	136 (1.5%)	176 (1.8%)	174 (1.7%)	163 (1.4%)	165 (1.5%)	**+72 (-0.2%)**
Other	888 (15.6%)	917 (15.5%)	938 (15.9%)	361 (6.1%)	1107 (17.0%)	1086 (16.3%)	1288 (18.6%)	1276 (18.2%)	1525 (20.0%)	1512 (19.6%)	1616 (20.2%)	1791 (21.1%)	2169 (22.9%)	1981 (20.2%)	1736 (18.9%)	1659 (18.1%)	1520 (17.2%)	1751 (17.9%)	1861 (17.8%)	1937 (17.1%)	1894 (16.8%)	**+1006 (+1.2%)**
Total	5686 (100%)	5914 (100%)	5914 (100%)	5936 (100%)	6500 (100%)	6657 (100%)	6907 (100%)	7027 (100%)	7628 (100%)	7714 (100%)	8012 (100%)	8476 (100%)	9457 (100%)	9830 (100%)	9194 (100%)	9141 (100%)	8824 (100%)	9806 (100%)	10475 (100%)	11346 (100%)	11263 (100%)	