



# Temperature

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## Papers published by the journal *Temperature* are cited more often than those published by more prestigious journals

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FRONT MATTER: EDITORIAL

## Papers published by the journal *Temperature* are cited more often than those published by more prestigious journals

In 2013, I approached Landes Bioscience, a small academic publisher based in Austin, Texas, with the initiative of starting *Temperature*, a journal dedicated to the interactions between temperature and life with emphasis on body temperature regulation. The journal was created; I became the Editor-in-Chief; and the first issue was published in the summer of 2014, almost 8 years ago. The purpose of this editorial is to reflect on the performance of *Temperature* over these first years.

### ***Temperature* has strived to establish itself as a thermoregulation journal-club**

I wanted to start *Temperature*, because I felt that the good ol' journals did not provide a full range of services needed by the thermoregulation community. There was no high-quality, full-service, dedicated thermoregulation journal to function as a thermoregulation journal-club, discussion forum, intellectual magnet, feedback provider, tutoring center, science newsroom, and more. Some of the existing journals simply processed manuscripts, sometimes representing research from many unrelated scientific fields, for “fat” fees: processed – charged – next. The inaugural editorial in *Temperature* [1] explained my vision for this journal. However, before the first issue was released, *Temperature* was acquired by Taylor & Francis, the academic publishing branch of the British group Informa. One by one, my idealistic, perhaps Pollyannaish, views were smashed by the reality of modern mainstream academic publishing, as *Temperature* was conforming into a rather typical journal, one of 2,700 academic journals owned by Taylor & Francis. As any typical Editor-in-Chief, I am contracted to select the content for the journal and direct the peer-review process, but I have little say in any business-related matters. Still, the publisher allows *Temperature* to have at least a certain number of front-matter articles and gives them Free Access (which is greatly appreciated), and *Temperature* has been able to perform some of the originally envisioned journal-club functions.

The journal has enjoyed very strong support from the thermoregulation research community. The very first two issues of *Temperature* (2014) were associated with the 5<sup>th</sup> International Symposium on the Physiology and Pharmacology of Temperature Regulation (PPTR), the most significant, bi-annual meeting in the thermoregulation field; that year it was organized by Andrea Fuller and her team at the University of the Witwatersrand in Johannesburg (South Africa) and took place in Kruger National Park. Jumping 8 years forward, the very latest two issues of *Temperature* (the current and the next one) are associated with the 8<sup>th</sup> (1<sup>st</sup> virtual) PPTR meeting organized by Matthew White and his small but dedicated team at Simon Fraser University in Burnaby, British Columbia (Canada). Together with Matthew White, these two issues were edited by Nisha Charkoudian and Boris Kingma; watch for their editorial in the next issue. Over its 8 years, *Temperature* has published 12 special issues on a wide range of topics led by multiple experts from all over the world. *Temperature* is also proud to have introduced the European Union’s Heat-Shield program promoting international and inter-sectoral collaboration to tackle issues related to workplace heat [2]; several papers from this program have been published in *Temperature* (e.g., [3]).

Not only has *Temperature* enjoyed the support of the thermoregulation community, but it has also kept a finger on the pulse of this community. *Temperature* commissioned Diana Bautista to interview her mentor, David Julius, and published this interview in 2015 [4] – six years before David was awarded

a Nobel Prize in Physiology or Medicine for his work on the temperature-sensitive transient receptor potential channels. The issue that contained David's interview with Diana also featured David's photo on the cover, and the *About the Cover* section referred to the Nobel Prize prediction.

Even more importantly, *Temperature* has been a socially responsible journal – actively facing a variety of globally important issues; see, e.g., the practical recommendations by a panel of international thermoregulation experts led by Hein Daanen on how to deal with temperature-related aspects of the COVID-19 pandemic [5]. I am also proud of the fact that the journal has consistently promoted discussion and has not been shy of contentious scientific issues. It has repeatedly given its pages to the authors expressing original, unconventional views; examples include the editorial by Valentina Zharkova on the modern Grand Solar Minimum [6]. *Temperature* has often initiated critical exchanges; examples include the review by Natalia Machado and Clifford Saper on the preoptic neurons involved in thermoregulation [7] and the related comments in the present issue. While *Temperature* has not achieved all the goals I dreamed about [1], it is still safe to say that the journal has firmly established itself as a unique landmark of the international thermoregulation landscape.

*Temperature* has its roots in the thermoregulation community, and any achievements it has made are due to the support by its authors, reviewers, readers, Board members, and editors. On behalf of the journal, I would like to sincerely thank everyone who has, in any role, supported this journal. I can make a very, very long list of wonderful people to thank, but if I have to name one person, I must thank Toby Mündel from Massey University in Palmerston North (New Zealand). Toby currently serves *Temperature* as an Associate Editor, but he also served as a Discovery Editor (nominated papers to be highlighted by *Temperature*) and as a Guest Editor on four special issues. He has published 10 articles (various paper types) in *Temperature* and served as a reviewer on 37(!) submissions. And no, he does not take just whatever the journal sends his way – on one occasion Toby was sick and declined to review a manuscript. It is the hard work, dedication, and enthusiasm of Toby and many other colleagues that make *Temperature ... Temperature*.

### **Articles published in *Temperature* have been heavily rewarded with citations**

The most important function of a journal is to ensure that the articles it publishes are widely used by researchers. To achieve this goal, editors strive to select the very best content from the most reputable scientists, and publishers try to make this content readily available to researchers. Publishers make sure the content is well-packaged, widely indexed by the best services, and sold to as many research organizations and libraries worldwide as possible. Publishers also make provisions for free or open access to the content (for which authors often pay). At the end of the day, if an article is widely used by researchers in their work, it is expected to become well-cited. From this point of view, the number of citations received by articles published in a certain journal can be viewed as a quality measure of the services provided by this journal to its authors and readers – at least to some extent. Indeed, an article published in *Science* is expected to be heavily cited; the exact same article published in an obscure, unknown, and unavailable journal – not so much. Are *Temperature* papers cited more or less than papers published by its peer journals?

First, let us identify a group of journals that can be considered *Temperature's* peers. Based on my personal preferences, I would like to include the following five journals in this group: *American Journal of Physiology – Regulatory, Integrative and Comparative Physiology* (32), *Journal of Applied Physiology* (5), *Journal of Physiology* (3), *Acta Physiologica* (3), and *Pflüger's Archiv – European Journal of Physiology* (0); the numbers in parenthesis indicate how many articles (of all types, including editorials and letters) I have published in the corresponding journal as an author. These numbers should convince the reader that I am reasonably familiar with and supportive of this group of journals as a whole. In fact, I consider these journals to be top physiological journals publishing on thermoregulation.

I would like to add to this group four more journals, those that are shown by SCImago (an openly accessible portal of Elsevier that ranks journals using the Scopus database) as the most similar to *Temperature* but are not included in the group of five journals listed above. These four additional journals are: *Applied Physiology, Nutrition and Metabolism* (58% of publications referenced in *Temperature* are also referenced in this journal), *European Journal of Applied Physiology* (54%), *Physiological Reports* (52%), and *Experimental Physiology* (51%) (data retrieved from SCImago on December 9, 2021). I would also like to add to this group of peers *PLoS One*, the most prolific academic journal of all time, which publishes on all topics.

There are many indices to compare journal performance (for review, see [8]), but the best known is the impact factor (IF), which “reflects the yearly mean number of citations of articles published in the last two years in a given journal, as indexed by Clarivate’s Web of Science” (for the sake of simplicity, I do not list the exact definition here, but rather describe the meaning of the IF, as summarized by Wikipedia). Unfortunately, the journal *Temperature* still does not have an IF. I am frequently asked by *Temperature*’s authors, reviewers, Board members, and other thermoregulation scientists about the reason for this, but – being under contract obligations with Taylor & Francis – I cannot share any business information I might have. What we do know from published sources (see [8]) is that many Taylor & Francis journals have no IF. A study by Elsevier (conducted in 2017) identified 216 journals from 70 different publishers that were in the top 10% in their subject category (as determined by CiteScore; see below) but still did not have an IF [8]. Among these 216 journals, 49 belonged to Taylor & Francis – by far the highest number among all publishers analyzed. The reader can only guess whether Taylor & Francis does not want its journals to have an IF, whether its applications to Clarivate frequently fail for some reason, or whether this is just a low-priority issue for this publisher. Whatever the explanation is, the fact that the journal *Temperature*, in its 9<sup>th</sup> year, is not tracked by Web of Science severely undermines all the hard work by the authors, reviewers, and editors. Just for comparison, the journal *Cell Cycle*, which was founded by Landes Bioscience a few years before *Temperature*, received an IF during its first year!

As a consolation prize, we can reassure ourselves with the thought that the popularity of the IF will not last for many more years to come. There is simply no reason for anyone to use subscription-based access to obtain an IF for any particular journal – when many similar or better scientometric indices computed by reputable databases (primarily Elsevier’s; see [8]) are now available from websites with free, unrestricted access. Hence, the performance of the vast majority, if not all, scientifically significant journals can now be readily accessed and compared with the use of freely available journal-level citation indices.

The following three tables compare *Temperature* to its selected peers by using the following citation indices: CiteScore (Table 1), Impact Score (Table 2), and Source-Normalized Impact per Paper (SNIP) (Table 3). CiteScore (tracked by Scopus) and Impact Score (tracked by SCImago under the name of “Cites per Document, 2 years”) are the average numbers of citations received by articles in the journal over a 4- or 2-year period, respectively. SNIP, according to the Elsevier website, is a more “sophisticated metric that intrinsically accounts for field-specific differences in citation practices. It does so by comparing each journal’s citations per publication with the citation potential of its field, defined as the set of publications citing that journal. SNIP, therefore, measures contextual citation impact and enables direct comparison of journals in different subject fields, since the value of a single citation is greater for journals in fields where citations are less likely, and *vice versa*”.

Tables 1 and 2 clearly demonstrate two points. First, without any adjustments for the fact that the journals listed in these tables cover somewhat different areas of research, *Temperature*’s articles fare very well: in 2020–21, *Temperature* was ranked 4<sup>th</sup> or 3<sup>rd</sup> among all selected journals, losing the competition only to *Acta Physiologica* and sometimes to the *Journal of Physiology*, *American Journal of Physiology – Regulatory, Integrative and Comparative Physiology*, and *Pflüger’s Archiv*. Second, over the last two years, the journal citations metrics and corresponding rankings have been increasing rather rapidly: the CiteScore rose by 42%, and Impact Score by 46%. An even better picture is revealed by Table 3: when the SNIP was used (thus adjusting the number of citations received by articles published in a journal to

**Table 1.** Performance of the journal *Temperature* and its peers: CiteScore\*.

Journal	2019		2020		Current <sup>#</sup>	
	CiteScore	Rank	CiteScore	Rank	CiteScore	Rank
<i>Temperature</i>	5.5	<b>5–6</b>	6.2	<b>4</b>	7.8	<b>3</b>
<i>Acta Physiologica</i>	8.5	<b>1</b>	10.3	<b>1</b>	10.1	<b>1</b>
<i>Journal of Physiology</i>	8.3	<b>2</b>	8.2	<b>2</b>	8.5	<b>2</b>
<i>Pflüger's Archiv – European Journal of Physiology</i>	6.3	<b>3</b>	6.5	<b>3</b>	6.2	<b>4</b>
<i>American Journal of Physiology – Regulatory ...</i>	5.8	<b>4</b>	5.5	<b>6</b>	5.8	<b>5</b>
<i>Journal of Applied Physiology</i>	5.2	<b>7–8</b>	5.6	<b>5</b>	5.6	<b>6</b>
<i>PLoS One</i>	5.2	<b>7–8</b>	5.3	<b>7</b>	5.3	<b>7</b>
<i>European Journal of Applied Physiology</i>	4.9	<b>9</b>	4.8	<b>8</b>	4.8	<b>8</b>
<i>Applied Physiology, Nutrition and Metabolism</i>	5.5	<b>5–6</b>	4.3	<b>9</b>	4.3	<b>9</b>
<i>Experimental Physiology</i>	4.2	<b>10</b>	3.9	<b>10–11</b>	4.1	<b>10</b>
<i>Physiological Reports</i>	3.6	<b>11</b>	3.9	<b>10–11</b>	3.7	<b>11</b>

\*All data used in this table (except for the current CiteScore values) and in [Tables 3 and 4](#), were retrieved from the Scopus website on December 9, 2021.

<sup>#</sup>The trailing 2021 CiteScore values, as updated by Scopus on November 4, 2021, were used as the current values; they were retrieved from the Scopus website on December 13, 2021. Please note that the data that are now displayed by Scopus and the final 2021 data, when they become available, may differ from the current 2021 values listed in this table.

**Table 2.** Performance of the journal *Temperature* and its peers: Impact Score\*.

Journal	2019		2020	
	Impact Score	Rank	Impact Score	Rank
<i>Temperature</i>	2.16	<b>9</b>	3.15	<b>3</b>
<i>Acta Physiologica</i>	3.28	<b>1</b>	3.45	<b>1</b>
<i>American Journal of Physiology – Regulatory ...</i>	2.85	<b>5</b>	3.17	<b>2</b>
<i>Journal of Physiology</i>	3.01	<b>3</b>	3.12	<b>4</b>
<i>Pflüger's Archiv – European Journal of Physiology</i>	3.02	<b>2</b>	3.09	<b>5</b>
<i>PLoS One</i>	2.86	<b>4</b>	3.04	<b>6</b>
<i>Journal of Applied Physiology</i>	2.42	<b>7</b>	2.72	<b>7</b>
<i>European Journal of Applied Physiology</i>	2.51	<b>6</b>	2.62	<b>8</b>
<i>Experimental Physiology</i>	2.07	<b>10</b>	2.27	<b>9</b>
<i>Physiological Reports</i>	2.05	<b>11</b>	2.26	<b>10</b>
<i>Applied Physiology, Nutrition and Metabolism</i>	2.35	<b>8</b>	2.23	<b>11</b>

\*All data used in this table were retrieved from the SCImago website on December 9, 2021.

**Table 3.** Performance of the journal *Temperature* and its peers: Source-Normalized Impact per Paper (SNIP).

Journal	2019		2020	
	SNIP	Rank	SNIP	Rank
<i>Temperature</i>	1.419	<b>1</b>	1.447	<b>2</b>
<i>Acta Physiologica</i>	1.263	<b>5</b>	1.463	<b>1</b>
<i>PLoS One</i>	1.190	<b>6</b>	1.349	<b>3</b>
<i>Journal of Physiology</i>	1.264	<b>4</b>	1.334	<b>4</b>
<i>Journal of Applied Physiology</i>	1.132	<b>7</b>	1.280	<b>5</b>
<i>European Journal of Applied Physiology</i>	1.329	<b>2</b>	1.188	<b>6</b>
<i>American Journal of Physiology – Regulatory ...</i>	1.005	<b>8</b>	1.168	<b>7</b>
<i>Pflüger's Archiv – European Journal of Physiology</i>	0.895	<b>9</b>	1.143	<b>8</b>
<i>Applied Physiology, Nutrition and Metabolism</i>	1.275	<b>3</b>	0.922	<b>9</b>
<i>Experimental Physiology</i>	0.887	<b>10</b>	0.904	<b>10</b>
<i>Physiological Reports</i>	0.769	<b>11</b>	0.779	<b>11</b>

the citation potential of the research field represented by this journal), *Temperature* outperformed all its peers in 2019 and all its peers but one (*Acta Physiologica*) in 2020. (When I refer to a certain year in this paragraph and in [Tables 1–4](#), I mean a period covered by the corresponding index assigned to this year. For example, a 2020 CiteScore reflects the performance of a journal during the period 2017–2020.)

The high average citation scores shown ([Tables 1–3](#)) reflect the fact that many papers published by *Temperature* have great individual citation numbers. For example, the review by Lindsay Baker [9] on the physiology of sweat glands, which was published in 2019, has already been cited 111 times (based on

**Table 4.** Prestige of the journal *Temperature* and its peers: SCImago Journal Rank (SJR).

Journal	2019		2020	
	SJR	Rank	SJR	Rank
<i>Temperature</i>	0.847	<b>11</b>	0.981	<b>8</b>
<i>Journal of Physiology</i>	1.871	<b>1</b>	1.802	<b>1</b>
<i>Acta Physiologica</i>	1.457	<b>2</b>	1.591	<b>2</b>
<i>Pflüger's Archiv – European Journal of Physiology</i>	1.451	<b>3</b>	1.428	<b>3</b>
<i>American Journal of Physiology – Regulatory ...</i>	1.272	<b>4</b>	1.266	<b>4</b>
<i>Journal of Applied Physiology</i>	1.096	<b>7</b>	1.253	<b>5</b>
<i>European Journal of Applied Physiology</i>	1.134	<b>6</b>	1.050	<b>6</b>
<i>PLoS One</i>	1.023	<b>8</b>	0.990	<b>7</b>
<i>Experimental Physiology</i>	0.927	<b>9</b>	0.925	<b>9</b>
<i>Physiological Reports</i>	0.909	<b>10</b>	0.918	<b>10</b>
<i>Applied Physiology, Nutrition and Metabolism</i>	1.222	<b>5</b>	0.789	<b>11</b>

Crossref). In 2020, *Temperature* published two special issues (edited by Toby Mündel and Jennifer Vanos) dedicated to the Tokyo Olympics. We are now in February of 2022, and one of those special issues has already received 23 citations (average) per scientific paper published (a review or research article).

Many *Temperature* papers are also read very heavily. For example, the abovementioned editorial by Valentina Zharkova [6] is truly popular: it has been read 125,633 times. Two other *Temperature* papers, including the practical recommendations for COVID-19 [4], have been read > 33,000 times each. (All “reading” numbers represent the cumulative totals of PDF downloads and full-text HTML views.) Many *Temperature* papers have been extensively discussed on social media, with several having an Altmetric score (a weighted count of mentions in news, social networks, blogs and others online sources) of several hundreds, and a couple having of an Altmetric score of > 1,000. For example, the paper by Jennifer Vanos and colleagues [10] on the impact of solar radiation on a small child left in a parked car became “viral” and has an Altmetric score of 1,204. Even among well-established and prestigious physiological journals, not every journal has papers that produce such a strong impact. (All Crossref citation numbers, view numbers, and Altmetric scores were taken from the *Temperature* website on February 24, 2022.)

To provide a more complete picture, I have also compared the selected journals using the SCImago Journal Rank (SJR) (Table 4), a measure of journal “prestige” – whereas the metrics presented above in Tables 1–3 are those of journal performance. According to the Elsevier website, SJR “is based on the concept of a transfer of prestige between journals *via* their citation links. Drawing on a similar approach to the Google PageRank algorithm – which assumes that important websites are linked-to from other important websites – SJR weighs each incoming citation to a journal by the SJR of the citing journal, with a citation from a high-SJR source counting for more than a citation from a low-SJR source”. Being a young journal, *Temperature* is expected to carry no clout and have little prestige. Indeed, Table 4 shows that the journal was ranked the very last in the group of selected peers in 2019. However, prestige follows performance. Being a performance leader in its group (Tables 1–3), *Temperature* should gain prestige rather rapidly. Indeed, while *Temperature* was less “prestigious” than all (100%) of its selected peers in 2019, the very next year *Temperature* already became more prestigious than 33% of journals in the same group (Table 4).

To help the reader better understand the phenomenon of *Temperature* – a high-performance, low-prestige journal – let me draw a parallel to the stock market. Many great companies started as unknown entities and were undersold (low prestige) for a long time. But as they continued to deliver high revenues and profits (high performance), they became irresistible to investors, and the stock price skyrocketed. In fact, an undersold, over-performing stock is probably the best place to invest: it allows an investor to acquire more money-making performance at a lower price. Translating this example back to the world of scientific publishing, authors always want their article to be published in a journal that assures that the article will be well-cited. However, most best-cited journals are “crowded” (prestigious), and the authors have to deal with a very high rejection rate to get published in such journals. Furthermore, the most

prestigious journals tend to be broader in focus, and the manuscripts are more likely to be evaluated by editors and reviewers who are not experts in the manuscript topics. The editors of prestigious journals (often publishing professionals – not active research scientists) also tend to treat manuscripts as a commodity – there are plenty of other fish in the sea; they routinely reject manuscripts without any deep analysis. In the rare event of an article being accepted by a highly prestigious journal, the authors are often asked to pay a very high publication fee – prestige does not come for free. And after an article is accepted, it is not very likely to be featured on the cover or receive an editorial comment – prestigious journals simply receive too many submissions, and – statistically – each manuscript has a very low chance of being promoted with a cover image, editorial comment, press release, or even just a tweet by the publisher, let alone simply being accepted. While *Temperature's* acceptance rate is already not very high (currently around 50%), the journal is still “small”, and it promotes, in various ways, a high percentage of articles it publishes. For example, the present issue, in addition to highlighting the abovementioned thought-provoking review by Machado and Saper [7] with a comment and a reply to the comment, also features the comprehensive, beautifully illustrated review by Leonidas Ioannou and colleagues [11]. Their review received the cover – with a historical illustration (an 1885 engraving based on sketches by Frederic Villiers) further artistically enhanced by the authors.

## Conclusion

When you prepare your next good paper for publication, think about which journal brings the highest number of citations to the work it publishes – the highest number of citations signifies that the work is heavily used by other researchers. By using multiple citation indices, the present analysis shows that a paper published by the young journal *Temperature* brings on average more citations than a paper published by most well-established, prestigious physiological journals. Some indices used (SNIP 2019) show that *Temperature* articles receive more citations than articles in any other journal from the group of analyzed journals, which includes the titans of physiological publishing, *viz.*, the *Journal of Physiology*, *Acta Physiologica*, *American Journal of Physiology – Regulatory, Integrative and Comparative Physiology*, and *Pflüger's Archiv*. *Temperature's* inaugural (2014) editorial was entitled: “New research journals are needed and can compete with titans” [1]. Now, in 2022, we ask, can they? Citation numbers computed by Scopus show that, yes, they can!

## References

- [1] Romanovsky AA. New research journals are needed and can compete with titans. *Temperature*. 2014;1(1):1–5. doi:10.4161/temp.27666.
- [2] Nybo L, Kjellstrom T, Kajfež Bogataj L, et al. Global heating: attention is not enough; We need acute and appropriate actions. *Temperature*. 2017;4(3):199–201. doi:10.1080/23328940.2017.1338930.
- [3] Morris NB, Levi M, Morabito M, et al. Health vs. wealth: Employer, employee and policy-maker perspectives on occupational heat stress across multiple European industries. *Temperature*. 2021;8(3):284–301. doi:10.1080/23328940.2020.1852049.
- [4] Bautista DM. Spicy science: David Julius and the discovery of temperature-sensitive TRP channels. *Temperature*. 2015;2(2):135–141. doi:10.1080/23328940.2015.1047077.
- [5] Daanen H, Bose-O'Reilly S, Brearley M, et al. COVID-19 and thermoregulation-related problems: Practical recommendations. *Temperature*. 2021;8(1):1–11. doi:10.1080/23328940.2020.1790971.
- [6] Zharkova V. Modern Grand Solar Minimum will lead to terrestrial cooling. *Temperature*. 2020;7(3):217–222. doi:10.1080/23328940.2020.1796243.
- [7] Machado NLS, Saper SB. Genetic identification of preoptic neurons that regulate body temperature in mice. *Temperature*. 2022;9(1):23–45. doi:10.1016/j.neuron.2019.04.035.
- [8] James C, Colledge L, Meester W, et al. CiteScore metrics: Creating journal metrics from the Scopus citation index. *Learned Publ*. 2019; 32: 367–374. doi:10.1002/leap.1246.

- [9] Baker LB. Physiology of sweat gland function: The roles of sweating and sweat composition in human health. *Temperature*. 2019;6(3):211–259. doi:[10.1080/23328940.2019.1632145](https://doi.org/10.1080/23328940.2019.1632145).
- [10] Vanos JK, Middel A, Poletti MN, et al. Evaluating the impact of solar radiation on pediatric heat balance within enclosed, hot vehicles. *Temperature*. 2018;5(3):276–292. doi:[10.1080/23328940.2018.1468205](https://doi.org/10.1080/23328940.2018.1468205).
- [11] Ioannou LG, Foster J, Morris NB, et al. Occupational heat strain in outdoor workers: A comprehensive review and meta-analysis. *Temperature*. 2022;9(1):67–102. doi:[10.1016/S2542-5196\(18\)30237-7](https://doi.org/10.1016/S2542-5196(18)30237-7).

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