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Editorial

The AALAS Journals: 2019 in Review

Linda A Toth, Susan R Compton, Ravi J Tolwani, Virginia K Dawson and John D Farrar

The November 2019 issue of the *Journal of the American Association for Laboratory Animal Science (JAALAS)* volume 58 and the December 2019 issue of *Comparative Medicine* (*CM*) volume 69 mark the end of another year for the AALAS journals. As always, we are incredibly fortunate to have a talented and conscientious support team — graphic artists Brenda Johnson, and Zara Garza, scientific editors Amy Frazier and Nick Van De Velde, and editorial production coordinator, Virginia Dawson. This team together continues to sustain a timely flow of well-edited and professionally presented information through the entire process from manuscript submission to publication. We also thank members of the Editorial Review Board (ERB) for

Table 1. Journal statistics

JAALAS	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total submissions	167	191	170	179	158	148	162	163	144	170
International	52	71	57	74	75	54	60	64	62	70
% international	31	37	34	41	59	36	37	39	43	41
Disposition of submissions										
Referred to *CM*	18	31	16	17	25	23	36	19	23	17
Withdrawn	8	5	5	3	4	4	0	3	1	2
Rejected	43	55	64	75	62	44	60	50	43	60
Accepted	91	90	75	80	91	62	75	77	84	91
Total reviewed	134	145	139	155	153	106	135	127	127	151
% accepted	68	62	54	52	59	58	56	61	66	60
Days from submission to										
first decision	28	28	28	28	32	34	36	35	34	29
final decision	62	62	50	56	75	60	66	68	64	55
Manuscripts printed	90	96	79	71	88	67	90	82	68	74
Manuscript pages printed	916	993	872	810	727	446	828	581	517	559
Average pages per article	5.8	6.4	6.8	11.4	8.3	6.7	9.2	7.1	7.6	7.0
2-year impact factor	0.805	0.708	1.145	*	1.118	0.906	1.195	1.218	1.017	NA
5-year impact factor	NA	NA	NA	NA	NA	NA	1.545	1.645	1.621	NA
Downloads (x 1000)										
PMC	55	97	179	272	313	379	427	473	553	810
Ingenta									32	32
Total									585	842
Total citations**	259	342	557	494	733	892	1132	1393	1436	NA
CM	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Total submissions	138	162	171	169	135	127	140	129	142	119
International	55	73	76	89	80	66	59	73	71	58
% international	40	45	44	53	59	52	42	57	50	49
Disposition of submissions										
Referred to *JAALAS*	36	31	29	23	12	9	12	15	14	9
Withdrawn	6	4	3	6	1	0	3	3	1	0
Rejected	35	54	75	69	75	54	54	62	65	61
Accepted	61	57	64	63	45	56	53	58	52	59
Total reviewed	96	111	139	132	120	110	107	120	117	120
% accepted	64	51	46	48	38	51	50	48	44	49
Days from submission to										
first decision	28	28	24	24	28	24	29	27	27	25
final decision	61	53	46	42	45	47	56	55	46	48
Manuscripts printed	55	60	68	60	58	59	62	60	57	54
Manuscript pages	520	576	568	547	436	401	502	477	435	521
Average pages per article	6.9	7.0	6.7	9.1	7.5	6.8	8.1	8.0	7.6	9.6
2-year impact factor	1.205	1.052	1.120	*	0.742	1.00	0.832	0.585	0.702	NA
5-year impact factor	NA	NA	NA	NA	NA	NA	1.175	0.884	1.053	NA
Downloads (x 1000)										
PMC	42	62	98	144	173	192	212	229	244	295
Ingenta	4	6	10	14	17	19	21	23	27	16
Total	46	68	108	158	190	211	233	252	271	311
Citations**	695	751	971	906	1103	1148	1241	1306	1326	NA

*, impact factors for 2013 were calculated based on 3 issues, rather than 6, for each journal and as a result were inaccurate.
** Citation numbers were obtained from InCite
NA, not yet available

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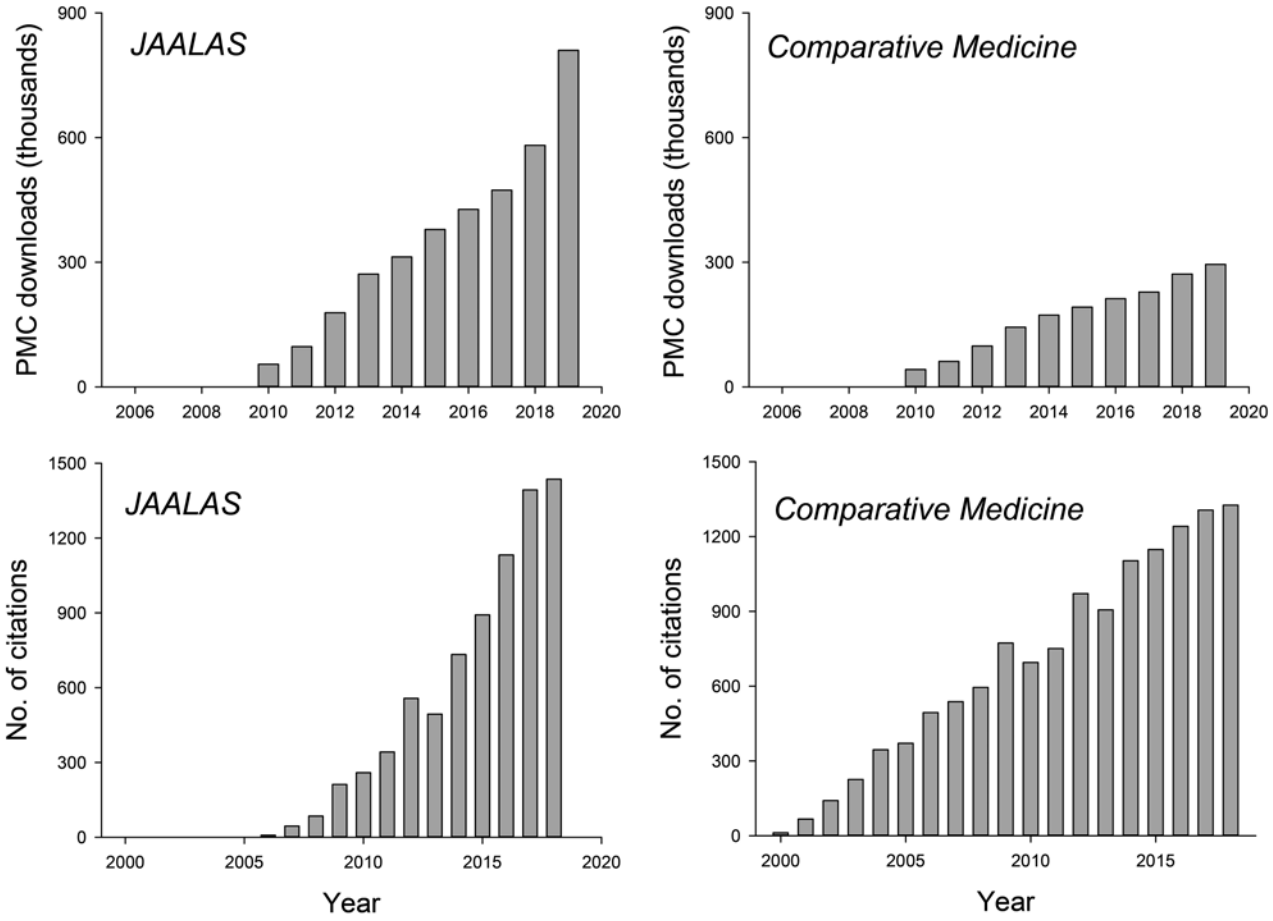

Figure 1. Number of citations and PMC downloads for *JAALAS* and *Comparative Medicine*.

their support in providing timely thorough reviews and solid feedback and suggestions for the improvement of the journals.

Publication statistics for the journals remain steady (Table 1). Acceptance rates were 60% for *JAALAS* and 49% for *CM* (Table 1). These percentages are consistent with previous years and allow us to obtain an adequate amount of high-quality content for each issue. The number of articles submitted has remained relatively constant over the years. The times from submission to first and final decisions on manuscripts are 29 and 55 days, respectively for *JAALAS* and 25 and 48 days, respectively, for *CM*.

A highlight of the year are the overview articles (Table 2), as these are valued highly by readers and often cited. Of particular note was the Special Topic Issue entitled Importance of Pain and Pain Management in Rodents. Guest editors Mark Suckow and Patricia Turner recruited authors and collectively gathered 12 articles highly relevant to the readership of *Comparative Medicine*. Articles focused on pain as an experimental variable, ethical considerations of pain management, assessment and clinical management of pain in rodents, strain and sex differences in response to pain and analgesia, and the effects of pain and analgesia on outcomes and data interpretation in various research models. Research areas of pain covered included cancer, immune system function and inflammation, stroke and brain injury, orthopedic and wound healing, sepsis, and sleep, among others. The AALAS office received numerous commendations and requests for extra copies of this issue from our comparative medicine community and beyond. To meet this demand, the issue is being sold with other AALAS educational materials. In addition, some AALAS training documents are being updated to incorporate information from the December issue. We thank the authors and guest editors for putting together this outstanding special topic issue.

The impact factor (IF) for *JAALAS* has remained stable over the years. However, the IF values for *CM* had shown a gradual decrease for several years. (Table 1) The IF is calculated by dividing the number of citations in *JAALAS* or *CM* during a given year by the total number of articles published during the preceding 2 in that journal. Last year we instituted 2 changes to try to improve the *CM* IF. First, we made the decision to no longer publish single-animal case reports, as these are rarely cited and contribute heavily to a downward trend in IF. Case studies investigating outbreaks or facility issues are still accepted for review. Second, standards for acceptance of all articles were raised. For example, manuscripts that contain relatively little data (only 1 table or figure) will be viewed as less desirable than articles that present a substantive and comprehensive investigation of a research question. These changes are to recent to have significant impact, given the formula used to calculate IF, but we hope to see a trend toward improvement over the next several years.

The high number of downloaded articles for the 2 journals truly underscores the value of the AALAS publications (Figure

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Table 2. *JAALAS* - Top 10 Downloaded Articles from PubMed Central in 2019

Article	Live in PMC	Total downloads			
		2016	2017	2018	2019
Gao P, Dang CV, Watson J. 2008. Unexpected antitumorigenic effect of fenbendazole when combined with supplementary vitamins. **47:**37–40.	6/12/2009	**	**	7666	137397
Turner PV, Brabb T, Pekow C, Vasbinder MA. 2011. Administration of substances to laboratory animals: routes of administration and factors to consider. **50:**600–613	3/1/2012	40670	48836	45195	43891
Luo HQ, Gu WW, Huang LW, Wu LH, Tian YG, Zheng CH, Yue M. 2018. Effect of prepregnancy obesity on litter size in primiparous minipigs. **57:**115–123	9/1/2018	**	**	**	24218
Nashat MA, Ricart Arbona RJ, Lepherd ML, Santagostino SF, Livingston RS, Riedel ER, Lipman NS. 2018. Ivermectin-compounded feed compared with topical moxidectinImidacloprid for eradication of *Demodex musculi* in laboratory mice. **57:**483–497	3/1/2019	**	**	**	19095
Martin-Flores M, Singh B, Walsh CA, Brooks EP, Taylor LC, Mitchell LM. 2017. Effects of buprenorphine, methylnaltrexone, and their combination on gastrointestinal transit in healthy New Zealand white rabbits. **56:**155–159	9/1/2017	**	**	**	13125
Turner PV, Pekow C, Vasbinder MA, Brabb T. 2011. Administration of substances to laboratory animals: equipment considerations, vehicle selection, and solute preparation. **50:**614–627	3/1/2012	13610	13568	8685	8721
Duran-Struuck R, Dysko RC. 2009. Principles of bone marrow transplantation (BMT): providing optimal veterinary and husbandry care to irradiated mice in BMT studies. **48:**11–22.	7/1/2009	10792	10265	8758	7655
Honeycutt JA, Nguyen JQT, Kentner AC, Brenhouse HC. 2017. Effects of water bottle materials and filtration on bisphenol A content in laboratory animal drinking water. **56:**269–272	11/1/2017	**	**	**	5804
Redelsperger IM, Taldone T, Riedel ER, Lepherd ML, Lipman NS, Wolf FR. 2016. Stability of doxycycline in feed and water and minimal effective doses in tetracycline-inducible systems. **55:**467–474.	1/1/2017	**	**	5004	5685
Videan EN, Lammey ML, Lee DR. 2011. Diagnosis and treatment of degenerative joint disease in a captive male chimpanzee (*Pan troglodytes*). **50:**263–266	9/1/2011	**	**	**	5657

** Not on top ten downloaded list for indicated year

Table 3. *Comparative Medicine* - Top 10 Downloaded Articles from PubMed Central in 2019

Article	Live in PMC	Total downloads			
		2016	2017	2018	2019
O'Connell KE, Mikkola AM, Stepanek AM, Vernet A, Hall CD, Sun CC, Yildirim W, Staropoli JF, Lee JT, Brown DE. 2015. Practical murine hematopathology: a comparative review and implications for research. **65:**96–113**.**	10/1/2015	**	**	8472	13109
Graham ML, Janecek JL, Kittredge JA, Hering BJ, Schuurman HJ. 2011. The streptozotocin-induced diabetic nude mouse model: differences between animals from different sources. **61:**356–360.	2/1/2012	9735	10205	10941	11035
Novak MA, Meyer JS. 2009. Alopecia: possible causes and treatments, particularly in captive nonhuman primates. **59:**18–26.	8/1/2009	12492	8621	6724	10766
Lynch WJ, Nicholson KL, Dance ME, Morgan RW, Foley PL. 2010. Animal models of substance abuse and addiction: implications for science, animal welfare, and society. **60:**177–188.	12/1/2010	6504	9679	7544	8052
Wafer LN, Whitney JC, Jensen VB. 2015. Fish lice (*Argulus japonicus*) in goldfish (*Carassius auratus*) **65:**93–95	10/1/2015	**	**	5675	7444
Tartarov I, Panda A, Petkov D, Kolappaswamy K, Thompson K, Kavirayani A, Lipsky MM, Elson E, Davis,CC, Martin SS, DeTolla LJ. 2012. Effect of magnetic fields on tumor growth and viability. **61:**339–345	2/1/2012	3504	4459	5332	7410
Li G, Liu X, Zhu H, Huang L, Liu Y, Ma C, Qin C. 2009. Insulin resistance in insulin-resistant and diabetic hamsters (*Mesocricetus auratus*) is associated with abnormal hepatic expression of genes involved in lipid and glucose metabolism. **59:**449–458	4/1/2010	**	**	**	5418
Cray C, Zaias J, Altman NH. 2009. Acute phase response in animals: a review. **59:**517–526	6/1/2010	5378	4656	4808	5418
Toth LA, Bhargava P. 2013. Animal models of sleep disorders. **63:**91–104.	10/1/2013	3161	4126	3939	4336
Ericsson AC, Hagan CE, Davis DJ, Franklin CL. 2014. Segmented filamentous bacteria: Commensal microbes with potential effects on research. **64:**90–98	10/1/2014	3700	5119	4096	4076

** Not on top ten downloaded list for indicated year

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Table 4. *JAALAS* - Top 10 cited articles*

Article	Publication year	Total number of citations as of March, 2017	February, 2018	March, 2019	January, 2019
Portfors CV. Types and functions of ultrasonic vocalizations in laboratory rats and mice. **46:**28–34.	2007	191	219	260	311
Turner PV, Brabb T, Pekow C, Vasbinder MA. Administration of substances to laboratory animals: routes of administration and factors to consider. **50:**600–613.	2011	81	135	194	264
Wilson JM, Bunte RM, Carty AJ. Evaluation of rapid cooling and tricainemethanesulfonate (MS222) as methods of euthanasia in zebrafish (*Danio rerio*). **48:**785–789.	2009	63	89	113	135
Tannenbaum J, Bennett BT. Russell and Burch's 3Rs then and now: the need for clarity in definition and purpose. **54:**120–132.	2015	**	**	63	98
Matsumiya LC, Sorge RE, Sotocinal SG, Tabaka JM, Wieskopf JS, Zaloum A, King OD, Mogil JS. Using the mouse grimace scale to reevaluate the efficacy of postoperative analgesics in laboratory mice. **51:**42–49.	2012	56	68	86	96
Hess SE, Rohr S, Dufour BD, Gaskill BN, Pajor EA, Garner JP. Home improvement: C57BL/6J mice given more naturalistic nesting materials build better nests. **47:**25–31.	2008	52	61	72	88
Duran-Struuck R, Dysko RC. Principles of bone marrow transplantation (BMT): Providing optimal veterinary husbandry care to irradiated mice in BMT studies. **48:**11–22.	2009	44	56	72	85
Heffner HE, Heffner RS. Hearing ranges of laboratory animals. **46:**20–22.	2007	**	**	56	83
Fernandez I, Pena A, Del Teso N, Perez V, Rodriguez-Cuesta J. Clinical biochemistry parameters in C57BL/6J mice after blood collection from the submandibular vein and retroorbital plexus. **49:**202–206.	2010	**	49	59	67
Levolas PP, Kostomitsopoulos NG, Xanthos TT. A comparative anatomic and physiologic overview of the porcine heart. **53:**432–438.	2014	**	**	**	66

*Data collected from Web of Science
** Not on top ten downloaded list for indicated year

Table 5. *Comparative Medicine* - Top 10 cited articles*

Article	Publication year	Total number of citations as of March, 2017	February, 2018	March, 2019	January, 2019
Cray C, Zaias J, Altman NH. Acute phase response in animals: a review. **59:**517–526.	2009	223	287	348	401
Lelovas PP, Xanthos TT, Thoma SE, Lyritis GP, Dontas IA. The laboratory rat as an animal model for osteoporosis research. **58:**424–430.	2008	164	203	247	282
Mansfield K. Marmoset models commonly used in biomedical research. **53:**383–392.	2003	160	175	194	209
Abbott DH, Barnett DK, Colman RJ, Yamamoto ME, Schultz-Darken NJ. Aspects of common marmoset basic biology and life history important for biomedical research. **53:**339–350.	2003	121	139	149	166
Dyson MC, Alloosh M, Vuchetich JP, Mokelke EA, Sturek M. Components of metabolic syndrome and coronary artery disease in female Ossabaw swine fed excess atherogenic diet. **56:**35–45.	2006	113	124	137	139
Callicott RJ, Womack JE. Real-time PCR for measurement of mouse telomeres. **56:**17–22.	2006	97	110	122	131
Martini L, Fini M, Giavaresi G, Giardino R. Sheep model in orthopedic research: a literature review. **51:**292–299.	2001	80	92	109	123
Nemzek JA, Hugunin KM, Opp MR. Modeling sepsis in the laboratory: merging sound science with animal well-being. **58:**120–128.	2008	**	**	98	115
Arras M, Autenried P, Rettich A, Spaeni D, Rülicke T. Optimization of intraperitoneal injection anesthesia in mice: drugs, dosages, adverse effects, and anes-thesia depth. **51:**443–456.	2001	86	93	102	112
Garner JP, Weisker SM, Dufour B, Mench JA. Barbering (fur and whisker trimming) by laboratory mice as a model of human trichotillomania and obsessive-compulsive spectrum disorders. **54:**216–224.	2004	80	85	97	106

*Data collected from Web of Science
** Not on top ten downloaded list for indicated year

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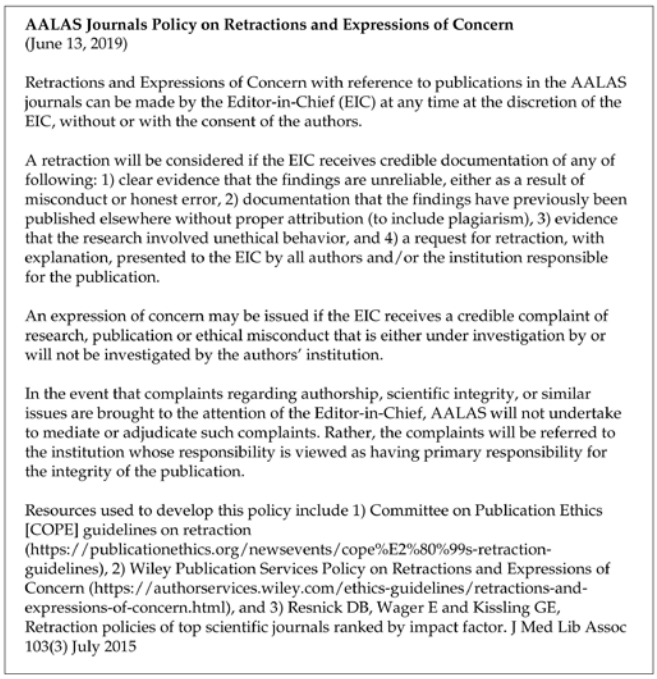
Table 6. Journals with the greatest number of citations in AALAS journals in 2019

Rank	Cited articles from *Comp Med*	Cited by *Comp Med* articles	Cited articles from *JAALAS*	Cited by *JAALAS* articles
1	*Comp Med (47) **	*Comp Med (47)*	*JAALAS (219)*	*JAALAS (219)*
2	*Sci-Rep-UK (47) **	*PLOS One (42)*	*PLOS One (64)*	*Lab Animal-UK (90)*
3	*JAALAS (43)*	*Antimicrob Agents (40)*	*Sci-Rep-UK (51)*	*PLOS One (48)*
4	*PLOS One (39)*	*Vet Pathol (33)*	*Comp Med (30)*	*Comp Med (43)*
5	*J Med Primatol (15) **	*JAALAS (30)*	*J Vis Exp (23)*	*CTLAS (39)*
6	*Method Mol Biol (15) **	*Nature (26)*	*J Med Primatol (21) **	*Appl Anim Behav Sci (35) **
7	*J Zoo Wildlife Med (12)*	*Lab Anim-UK (23) **	*Vet J (21) **	*Lab Anim Sci (35) **
8	*Am J Vet Res (11)*	*Science (23) **	*JOVE (16)*	*Guide Care Use LA (30)*
9	*Berl Munch Tierarztl (10) **	*Infect Immun (21)*	*Berl Munch Tierarztl (14) **	*Lab Anim (27)*
10	*Front Immunol (10) **	*J Med Primatol (20)*	*Am J Vet Res (14) **	*Am J Vet Res (22)*

*Tied rank

1, Tables 2 and 3). Articles from the 2 journals are downloaded hundreds of thousands of times each year, and many articles have been downloaded thousands of time a year for many years after the publication date. These data show that even though the journal impact factors are not high, the articles are used by the community we serve and are durable in terms of content.

The number of citations from both journals also continues to grow annually, with *JAALAS* citations increasing exponentially since the journal was re-named in 2005 (Figure 1). The list of top 10 cited articles has several new additions this year (Tables 4 and 5). Several articles made both the top ten cited and top ten downloaded lists. However, the predominant lack of overlap between the citation and download top ten lists suggests that different audiences are using the these publications, some with focus on publishing new research (the cited articles) and others



AALAS Journals Policy on Retractions and Expressions of Concern
(June 13, 2019)

Retractions and Expressions of Concern with reference to publications in the AALAS journals can be made by the Editor-in-Chief (EIC) at any time at the discretion of the EIC, without or with the consent of the authors.

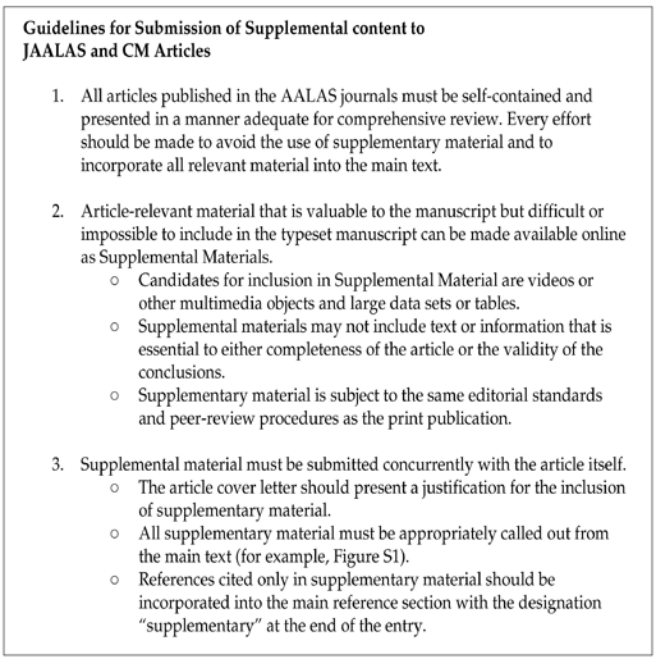
A retraction will be considered if the EIC receives credible documentation of any of following: 1) clear evidence that the findings are unreliable, either as a result of misconduct or honest error, 2) documentation that the findings have previously been published elsewhere without proper attribution (to include plagiarism), 3) evidence that the research involved unethical behavior, and 4) a request for retraction, with explanation, presented to the EIC by all authors and/or the institution responsible for the publication.

An expression of concern may be issued if the EIC receives a credible complaint of research, publication or ethical misconduct that is either under investigation by or will not be investigated by the authors' institution.

In the event that complaints regarding authorship, scientific integrity, or similar issues are brought to the attention of the Editor-in-Chief, AALAS will not undertake to mediate or adjudicate such complaints. Rather, the complaints will be referred to the institution whose responsibility is viewed as having primary responsibility for the integrity of the publication.

Resources used to develop this policy include 1) Committee on Publication Ethics [COPE] guidelines on retraction (https://publicationethics.org/newsevents/cope%E2%80%99s-retraction-guidelines), 2) Wiley Publication Services Policy on Retractions and Expressions of Concern (https://authorservices.wiley.com/ethics-guidelines/retractions-and-expressions-of-concern.html), and 3) Resnick DB, Wager E and Kissling GE, Retraction policies of top scientific journals ranked by impact factor. J Med Lib Assoc 103(3) July 2015

Figure 2. AALAS Journals Policy on Retractions and Expressions of Concern.



Guidelines for Submission of Supplemental content to JAALAS and CM Articles

1. All articles published in the AALAS journals must be self-contained and presented in a manner adequate for comprehensive review. Every effort should be made to avoid the use of supplementary material and to incorporate all relevant material into the main text.

2. Article-relevant material that is valuable to the manuscript but difficult or impossible to include in the typeset manuscript can be made available online as Supplemental Materials.
   - Candidates for inclusion in Supplemental Material are videos or other multimedia objects and large data sets or tables.
   - Supplemental materials may not include text or information that is essential to either completeness of the article or the validity of the conclusions.
   - Supplementary material is subject to the same editorial standards and peer-review procedures as the print publication.

3. Supplemental material must be submitted concurrently with the article itself.
   - The article cover letter should present a justification for the inclusion of supplementary material.
   - All supplementary material must be appropriately called out from the main text (for example, Figure S1).
   - References cited only in supplementary material should be incorporated into the main reference section with the designation "supplementary" at the end of the entry.

Figure 3. Guidelines for supplemental content.

on information (the downloaded articles). The list of journals most cited in AALAS journals and those that most frequently cite articles from the AALAS journals remains consistent with past years. Self-citations are common, which perhaps suggests that the AALAS journals are filling a niche in terms of the types of articles published.

Several topics of potential interest were discussed at the staff meeting the Editorial Review Board meetings at the annual AALAS meeting in November. First, an additional AALAS staff member, Nick Van De Velde, is now assisting with copyediting. This additional help should accelerate the time from article acceptance to online publication. Second, 2 set of guidelines have been developed—one for retractions (Figure 2) and one for submission of supplemental materials (Figure 3). Reviewers will be asked to comment on the latter when submitted. Authors wishing to publish supplemental material should familiarize themselves with these guidelines. Third, some discussion considered whether to develop author and reviewer checklists based on the ARRIVE Guidelines. The ERB and staff concluded that an ARRIVE requirement would be difficult to

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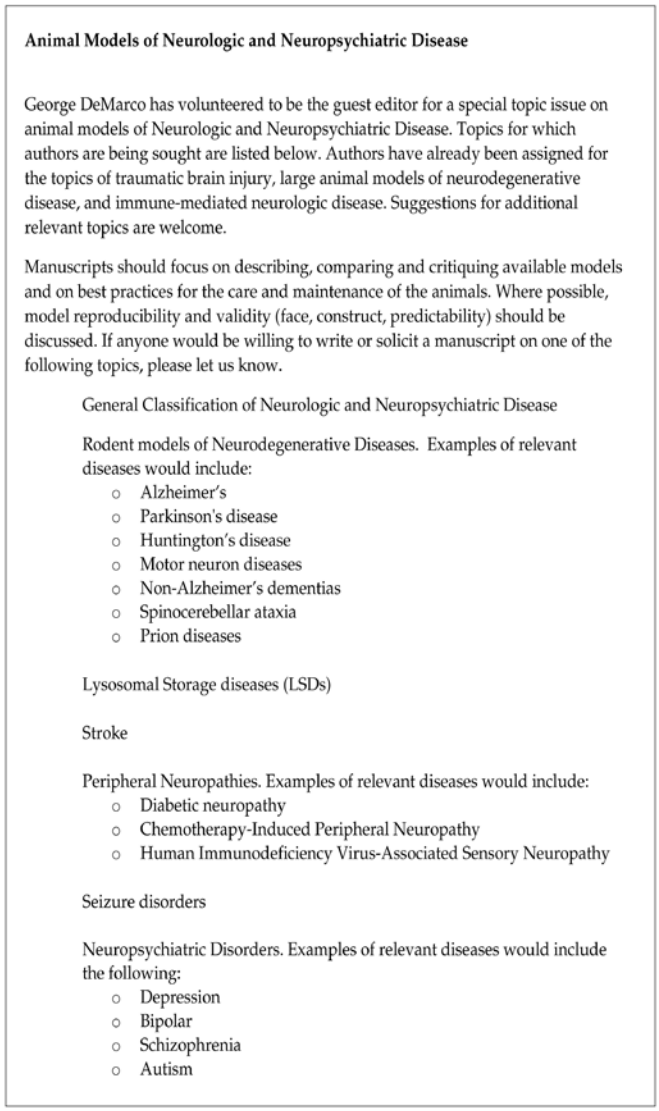

Animal Models of Neurologic and Neuropsychiatric Disease

George DeMarco has volunteered to be the guest editor for a special topic issue on animal models of Neurologic and Neuropsychiatric Disease. Topics for which authors are being sought are listed below. Authors have already been assigned for the topics of traumatic brain injury, large animal models of neurodegenerative disease, and immune-mediated neurologic disease. Suggestions for additional relevant topics are welcome.

Manuscripts should focus on describing, comparing and critiquing available models and on best practices for the care and maintenance of the animals. Where possible, model reproducibility and validity (face, construct, predictability) should be discussed. If anyone would be willing to write or solicit a manuscript on one of the following topics, please let us know.

General Classification of Neurologic and Neuropsychiatric Disease

Rodent models of Neurodegenerative Diseases. Examples of relevant diseases would include:

- Alzheimer's
- Parkinson's disease
- Huntington's disease
- Motor neuron diseases
- Non-Alzheimer's dementias
- Spinocerebellar ataxia
- Prion diseases

Lysosomal Storage diseases (LSDs)

Stroke

Peripheral Neuropathies. Examples of relevant diseases would include:

- Diabetic neuropathy
- Chemotherapy-Induced Peripheral Neuropathy
- Human Immunodeficiency Virus-Associated Sensory Neuropathy

Seizure disorders

Neuropsychiatric Disorders. Examples of relevant diseases would include the following:

- Depression
- Bipolar
- Schizophrenia
- Autism

Figure 4. Overview articles in need of authors for the future special topic issue tentatively titled Animal Models of Neurologic and Neuropsychiatric Disease.

enforce and costly to implement. Therefore, adherence to the ARRIVE Guidelines will continue to be strongly encouraged but not required. Reviewers can ask for missing ARRIVE information at their discretion.

Finally, ideas for overview articles and future special topic issues were gathered. Ideas included a review of fentanyl use, security, and associated husbandry issues, an issue on One Health related initiative, and an issue on animal models for addiction research, possibly including neurologic conditions and brain trauma. Since that discussion, George DeMarco has volunteered to guest-edit a special topic issue tentatively titled, Animal Models of Neurologic and Neuropsychiatric Disease.

Authors are now being sought for this issue. (Figure 4) We welcome inquiries from any others who would like to suggest or guest-edit a special topic issue.

In addition, the journals would welcome submission of Cochrane-type structured reviews of key areas of interest to our readers. Such topics could include, for example, bedding evaluation, treatment for mouse dermatitis, concentrations of CO_2 for euthanasia, trio and pair breeding success, and other similar topics.

As always, we welcome suggestions for improvements in the journals and encourage readers and authors to give us your opinions, perspective, concerns, and suggestions. You have our continued thanks for your support in the development and growth of the journals.

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