



Why Ophthalmology Science?

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Welcome to the inaugural issue of *Ophthalmology Science*, which follows the highly successful launch of both *Ophthalmology Retina* and, more recently, *Ophthalmology Glaucoma*. I am honored and privileged to serve as the inaugural editor-in-chief of this latest addition to the American Academy of Ophthalmology's journals that includes its flagship member, *Ophthalmology*.

Why *Ophthalmology Science*? Although the 3 established Academy journals are focused on studies that provide data to guide the clinical management of ocular diseases, *Ophthalmology Science* features studies that are preclinically focused, including translational research, basic science, early-phase clinical trial reports, and especially the growing field of bioinformatics and artificial intelligence applications in ophthalmology. This inaugural issue presents a snapshot of the broad scope of research topics and diverse scientific approaches that we look forward to presenting to our readership.

The issue includes bioinformatics and telehealth: during this era of the severe acute respiratory syndrome coronavirus 2 pandemic, it is timely to evaluate the validity of a standardized home visual acuity test for telehealth use.¹ The issue includes molecular genetics: another group of researchers independently confirmed and expanded genetic associations with *MMP9* locus and neovascular age-related macular degeneration found in a large international genome-wide association study of age-related macular degeneration.² The issue includes cellular biology: the *ex vivo* experiments of immortalized corneal endothelial cells in Fuchs endothelial corneal dystrophy demonstrated heightened migration speed of cells as an initial step in evaluating the pathogenesis of this condition.³ The issue includes artificial intelligence and machine learning: the use of a deep learning algorithm on retinal fundus photographs provided a novel index of systemic hypertension-related vascular changes that may find important areas of application in the future.⁴

Another important distinguishing feature of *Ophthalmology Science* is that it is the only Academy journal to be an online fully open-access journal. All legitimate scientific journals have costs such as quality control, layout and design, proofreading and copy editing, website development and maintenance, and so forth. To cover these costs, the pre-existing Academy journals rely on a hybrid of the reader-supported subscription model mixed with the author-supported open-access offerings. In an open-access platform, it is authors (or their research-funding agencies) who fund the publication costs by paying an article publication

charge, or APC, that allows the published report to be free to readers immediately. An advantage is that the publication will be available immediately to the entire clinical and basic science research community and, in fact, to the entire world. A global trend toward open access of scientific publications prevails today, including strong encouragement for the development and support of high-quality journals that are fully open access as opposed to hybrid. It is beyond the scope of this editorial to discuss fully the advantages and disadvantages of the open-access platform, but the *Ophthalmology* family of journals considered it important to provide the option of a fully open-access journal to our authors and our readers.

The success of *Ophthalmology Science* depends on the following: dedicated investigators; conscientious, knowledgeable, and fair editorial board members and reviewers; and efficient infrastructure support of the journal so that we can be responsive to authors, reviewers, and readers. We are fortunate to have an abundance of outstanding investigators who produce quality research in ophthalmology. The review process is central to the conduct of science, and the peer-review process of the journal relies on the dedication and talents of volunteers. I am very excited to work with a stellar editorial board of international colleagues across all subspecialties of ophthalmology and disciplines in vision science. Although a number of them currently serve on the editorial boards of the other Academy journals, we have many new members, each of whom brings a unique perspective. I am very grateful for the reviewers—past, present, and future—for their thoughtful and articulate reviews. Finally, we have amazing editorial office members who indeed are the backbone of the journals. May Piotrowski, Greg Pelkofski, Meredith Jones, and Jeanine Beisel will provide the members of the editorial board, the reviewers, and the authors indefatigable support for an efficient operation with rapid turnaround time. Having been an editorial board member of both *Ophthalmology* and *Ophthalmology Retina*, I am grateful to the editors-in-chief, Drs. Andrew Schachat, Stephen McLeod, and Henry Jampel, and *Ophthalmology* editor-in-chief emeritus and distinguished senior editor Dr. George Bartley for providing helpful guidance and thoughtful insight.

Ophthalmology Science initially will be published quarterly, and publication frequency will increase gradually. Our flagship journal *Ophthalmology* receives many more high-quality manuscripts in various areas of ophthalmology than it can possibly accept. Some of the rejected articles may

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present high-quality science, but be somewhat removed from immediate clinical application, rendering them more appropriate for *Ophthalmology Science*. We invite you to submit manuscripts directly, but papers also will be received through any of the pre-existing Academy journals; that is, if an article is judged to be more appropriate for *Ophthalmology Science*, a transfer feature inviting the authors to

consider our new journal is available. Our goal is to provide immediate and universal access to your latest research that may indeed transform the future of ophthalmology. This inaugural issue presents a snapshot of the broad scope of research topics and diverse scientific approaches that we look forward to presenting to our readership.

Footnotes and Disclosures

Disclosure(s):

The author has completed and submitted the ICMJE disclosures form.

The author has no proprietary or commercial interest in any materials discussed in this article.

Dr. Chew is the Editor-in-Chief of *Ophthalmology Science*.

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References

1. Siktberg J, Hamdan S, Liu Y, et al. Validation of a standardized home visual acuity test for teleophthalmology. *Ophthalmology Science*. 2021;1:100007.
2. Sohn EH, Han IC, Roos BR, et al. Genetic association between MMP9 and choroidal neovascularization in age-related macular degeneration. *Ophthalmology Science*. 2021;1:100002.
3. Tone SO, Wylegala A, Böhm M, et al. Increased corneal endothelial cell migration in Fuchs endothelial corneal dystrophy: a live cell imaging study. *Ophthalmology Science*. 2021;1:100006.
4. Fukutsu K, Saito M, Noda K, et al. A deep learning architecture for vascular area measurement in fundus images. *Ophthalmology Science*. 2021;1:100004.