Accessibility to and Quality of Human Eye Tissue for Research: A Cross-Sectional Survey of ARVO Members – EBAA Commentary

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Like researchers, eye bankers are committed to protecting, preserving, and restoring vision. Although much of the profession’s effort is dedicated to corneal transplantation, eye banking has a long history of supporting and sponsoring research into the causes of and therapies for ocular diseases. It is this shared mission that led to the collaboration between the Association for Research in Vision and Ophthalmology (ARVO) and the Eye Bank Association of America (EBAA) and has contributed to our successes thus far.

The provision of research tissue is a central tenet of the profession’s culture. In 2017, 93% of EBAA’s US-based eye banks provided tissue for research, and over the past decade, more than 166,000 corneas, plus whole globes and other ocular components, have been recovered and distributed to researchers.1 In a recent survey of eye bank chief executive officers, 80% of respondents feel that it is “Important” or “Very Important” for their eye bank to provide ocular tissue for research purposes (Fig. 1).

The accompanying article2 describing ARVO and EBAA’s collaboration to increase the availability of research tissue illustrates the research community’s experience and perceptions about obtaining tissue. Many of these findings are echoed in the results of a similar study of eye bankers. However, there is one element of the study which, while factually accurate, presents the data in a manner that could leave a false impression.

The article2 points to “a persistent downward trend in the proportion of donated tissue” provided for research. Although the data is accurate—the proportion of recovered tissue that is used for research has dropped—the number of corneas was consistent until a dip occurred in 2017. The drop in the proportion of tissue allocated for research is the result of a nearly 50% increase in the total number of corneas recovered during the period under review.

Similarly, although we have experienced a slight decline in the number of corneas provided for research from the highs of 2011 and 2012, this can be explained by the concurrent increase in tissue allocated to education and training purposes. Recall that this period coincides with the development of more technically challenging endothelial keratoplasty procedures.

**Figure 1.** The importance to eye bank chief executive officers of providing ocular tissue for research purposes.
These procedures require extensive training for both surgeons and eye bank technicians, resulting in the reallocation of tissue from research to education purposes (Fig. 2).

Although EBAA only requires its eye banks to report on the disposition of corneas recovered, anecdotal evidence suggests that the distribution of other ocular components, such as lenses and posterior poles, has increased significantly over the past decade in response to researchers’ requests (Fig. 3). Eye banks’ commitment to supporting research remains as strong as ever.

In the survey referenced above, eye bankers indicated that knowledge and communication issues were among the most significant barriers to the placement of more research tissue. Therefore, the resources to be jointly developed by ARVO and EBAA will be of great value to eye bankers and researchers alike. The online directory of eye banks that serve the research community will help to introduce new sources of tissue to researchers; the white papers on best practices will help both sides understand the other’s issues and concerns and create a shared agreement on appropriate practices and expectations.

As noted in the ARVO study, the majority of researchers already obtain human eye tissue from their local eye bank, and those eye banks have demonstrated that they would welcome the opportunity to increase the amount of research tissue they

**Figure 2.** Ocular recoveries and use, 2005–2017.

**Figure 3.** Ocular components provided by eye banks for research.
provide. The EBAA and ARVO collaboration will not only benefit our respective members but also will improve outcomes for the blind and vision-impaired people we mutually serve.

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References