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Introduction to EER Special Issue on Ocular Fibrosis

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Fibrosis is the formation of excess extracellular matrix connective tissue in tissues and organs, and pathological fibrosis can occur in multiple organs, including lung, liver, kidney, and heart, among others. Many ocular diseases also are associated with pathological fibrosis, which is the focus of this *Experimental Eye Research* Special Issue on Ocular Fibrosis. Fibrosis can occur in almost all tissues of the eye, adversely affecting visual function. Ocular fibrosis is involved in many of the leading causes of visual impairment and blindness, including cataracts, glaucoma, diabetic retinopathy, and age-related macular degeneration (AMD). We have invited experts throughout the world to share their insights and expertise in this Special Issue.

Myofibroblasts are major mediators of tissue fibrosis as reviewed by Boris Hinz (U. Toronto). We have organized the ocular fibrosis articles according to their anatomic location. Willem Dik (Erasmus Medical Centre) reviews the role of orbital fibroblasts in the pathogenesis of Grave's ophthalmopathy. Jae Chan Kim and colleagues (Chung-Ang University Hospital) describe the role of fibroblasts in pterygia. Steven Wilson et al. (Cleveland Clinic) present the fibrosis responses to corneal epithelial-stromal injury, while Shizuya Saika and colleagues (Wakaya Medical University) discuss non-TGF β Smad signaling in myofibroblasts during corneal stroma wound healing. The role of conjunctival fibrosis following glaucoma filtration surgery is covered by Gunther Schlunk et al. (Freiburg University Medical Center). Frank Lovicu and associates (University of Sydney) present the role of TGF β signaling in lens epithelial-mesenchymal transition (EMT)-induced cataracts. Michael Wormstone and Julie Elred (University of East Anglia) review experimental models of posterior capsule opacification, and Yi Liu and colleagues (Fudan University) describe the role of pro-inflammatory mediators in high myopic cataract eyes. The role of EMT in proliferative vitreoretinopathy is presented by Shigo Tamiya and Henry Kaplan (University of Louisville), and Sayon Roy and colleagues (University of Boston) discuss the role of fibrosis in diabetic retinopathy. David Hinton et al. (University of Southern California Keck School of Medicine) review the molecular mechanisms of subretinal fibrosis in AMD. Deborah Wallace (University College Dublin School of Medicine) and Rudolf Fuchshofer

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(University of Regensburg) and their colleagues discuss the roles of lamina cribrosa cells and optic nerve head (ONH) astrocytes in glaucomatous ONH fibrosis.

It is clear that ophthalmic researchers are gaining a better understanding of pathologic fibrosis in a number of ocular tissues and are starting to discover novel approaches for therapeutic intervention. We hope that this Special Issue will further inspire future work in this very important area of ophthalmic research.