

CURRICULUM VITAE

PERSONAL:

Name: Karl G. Csaky

Current Appointment: T. Boone Pickens Senior Scientist
Director, Harrington Macular Degeneration Laboratory
Anderson Vision Research Center
Retina Foundation of the Southwest

Marital Status: Married: Wife: Eva Son: Kristof Daughter: Katrina

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Medical Licensure: North Carolina License #: 2007-00542
District of Columbia License #: MD19163
Texas License #: N3584

Specialty Certification(s) and Dates: Board Certification – Ophthalmology - 1991

EDUCATION:

1974-1978: Vanderbilt University
Nashville, Tennessee
Cum Laude, B.A.

1978-1983: University of Louisville
School of Medicine
Louisville, Kentucky
M.D.

1978-1983: University of Louisville
Department of Pharmacology

Louisville, Kentucky
Ph.D. Dissertation:
“Fluorodeoxyuridine metabolism
by the isolated perfused rat liver”
Confirmed 1987

1983-1985: Internship/Residency in Medicine
Duke University Medical Center
Durham, North Carolina

1985-1986: Fulbright Scholar
Prof. Meyer-Schwickerath
University of Essen Eye Clinic
Essen, West Germany

1986-1987: Research Training Fellow
Estelle Doheny Eye Foundation
University of Southern California
Los Angeles, California

1987-1990: Ophthalmology Residency
Washington University
St. Louis, Missouri

1990-1991: Fellowship in Medical Retina
Wilmer Eye Institute
Johns Hopkins University
Baltimore, Maryland

1991-1993: Biotechnology Fellow - Molecular Biology
Stuart Aaronson, M.D.
National Cancer Institute
National Institutes of Health
Bethesda, Maryland

1993–1998: Medical Officer
National Eye Institute
National Institutes of Health
Bethesda, Maryland

1998–2004: Tenure-Track Investigator
National Eye Institute
National Institutes of Health
Bethesda, Maryland

2004–12/2006: Tenured Senior Investigator

National Eye Institute
National Institutes of Health
Bethesda, Maryland

1/2007 – 8/09: Tenured Associate Professor
Department of Ophthalmology
Duke University Medical Center
Durham, NC

HONORS AND SPECIAL ACHIEVEMENTS:

1. Member Curriculum Committee
University of Louisville School of Medicine
1978-1981
2. PMA Fellowship Award - 1981-82
3. Alpha Omega Alpha Medical Honor Society - 1983
4. Israel B. Muss Memorial Award Recipient - 1981
5. Fulbright Scholar - 1985-86
6. Rosenbaum Research Award
Washington University - 1990
7. Heed Fellow - 1990-91

PROFESSIONAL AFFILIATIONS:

1. Member of the Association for Research in Vision
and Ophthalmology
2. Fellow American Academy of Ophthalmology
3. Member Macula Society

CLINICAL TRIALS:

1. Principal Investigator: NEI/NIH Phase I Study of Investigation of Dermal Fibroblasts and Monocytes in Patients with Age-Related Macular Degeneration by Microarray Analysis
2. Principal Investigator: NEI/NIH Phase I Study on the Feasibility of Feeder Vessel Treatment for Choroidal Neovascularization in Age-related Macular Degeneration
3. Study Chair: NEI/Pharmacia – Multi-Center Clinical Trial for the Evaluation of Celecoxib in Patients with Choroidal Neovascularization in Age-related Macular Degeneration Undergoing Photodynamic Therapy
4. Study Chair: NEI/QLT - Multi-center, randomized, prospective phase II/III (registration / NDA) clinical trial to study the effects of preservative –free triamcinolone acetonide as an adjunct to photodynamic therapy in participants

with neovascular age-related macular degeneration with PDT in the treatment of neovascular AMD

5. Study Chair: NEI/Alcon – A Randomized, Masked, Multi-center, Phase II Study of the Effect of Posterior Juxtapapillary Delivery of Anecortave Acetate (PJD) on the Response to Intravitreal Bevacizumab (Avastin®) in Participants with Subfoveal Choroidal Neovascularization (CNV) Secondary to Age-Related Macular Degeneration (AMD)
6. Study Chair: Duke/iCo Therapeutics – Multi-center open label phase I Study on the Effects of a c-Raf Anti-Sense Oligonucleotide on Diabetic Macular Edema
7. Study Consultant: Duke/Schering Plough – Phase I/II Safety Study on the Ocular Toxicity of a Thrombin Receptor Antagonist in Patients with Atherosclerotic Disease

INVITED LECTURES:

1. Nordic HUGO Workshop on Gene Therapy. Aarhus, Denmark May 30 - June 1, 1997.
2. 2nd International EU Meeting on "New Therapeutic Approaches in Hereditary Eye Disease". Athens, Greece Sept. 26-29, 1997
3. Fifth Annual Indian Retina Vitreous Meeting Hyderabad, India September 5-6, 1998
4. Retina Society, Washington, D.C., September, 1998
5. Schepens International Society Annual Meeting. Jackson Hole, Wyoming June 9-12, 1999
6. Schepens Aging Retina Meeting. Boston, Massachusetts October 25 – 28, 2001.
7. Invited Professorship – University of Iowa – December 5, 2003.
8. Invited Speaker – Science of Eye Disease Series – University of Arizona – December 12, 2003
9. Invited Visiting Professor – Columbia University February 19, 2004
10. Invited Visiting Professor – University of Louisville March, 2005

INDUSTRY COOPERATIVE RESEARCH AGREEMENTS:

1. Entremed: Development of 2-methoxyestradiol for the treatment of choroidal neovascularization in age-related macular degeneration.
2. Valigen: Development of chimeraplasty for in-vivo gene correction in the retina .
3. Pharmacia: The role of anti-inflammatory agents in choroidal neovascularization.

4. Merck KgaA: Preclinical integrin antagonist implant development and efficacy assessment.

PUBLICATIONS:

1. Deak, S.T., Csaky, K.G., and Waddell, W.J.
Localization and histochemical correlation of ⁷³As by whole body autoradiography in mice. *Toxicology and Environmental Health*, 1: 981-984, (1976).
2. Csaky, K.G., LaCreta, F.P., Warren, B.S. and Williams, W.M.
5,-Fluoro-2,-deoxyuridine elimination by the isolated perfused rat liver. *Cancer Research* 48: 3561-3565, (1988).
3. Csaky, K.G. and Custer, P.L. Perineural metastasis by squamous cell carcinoma into the orbit. *Ophthalmic Surgery* 21(3): 218-219, (1990).
4. Csaky, K.G. and Olk. J. Retinal detachment and retinal holes in retinitis pigmentosa sine pigmento. *Europ J Ophthal.* 1: 151-153, (1991).
5. Panos, R.J., Rubin, J.S., Csaky, K.G., Aaronson, S.A. and Mason, R.J. Keratinocyte growth factor and hepatocyte growth factor/scatter factor are heparin -binding growth factors for alveolar type II cells in fibroblast-conditioned medium. *J Clin Invest.* 92: 969-977, (1993).
6. Chedid, M., Rubin, J., Csaky, K. and Aaronson, S.
Regulation of keratinocyte growth factor gene expression by interleukin 1. *J Biol Chem.* 269:10753-10758, (1993)
7. Koji, R., Chedid, M., Rubin, J.S., Slayden, O.D. Csaky, K.G., Aaronson, S.A. and Brenner, R.M. Progesterone dependent expression of keratinocyte growth factor (KGF) mRNA in stromal cells of the primate endometrium: KGF as a progestomedin. *J Cell Biology* 125:393-401, (1994).
8. Campochiaro, P.A., Hackett, S.F., Viores, S.A., Freud, J., Csaky, K., et al. Platelet -derived growth factor is an autocrine growth stimulator in retinal pigmented epithelial cells. *J. Cell Sci.* 107:2459-2469, (1994).
9. Kaiser-Kupfer M.I. Chan, CC., Markello, T.C., Crawford, M.A., Caruso, R. C., Csaky, K.G., Guo, J., and Gahl, W.A. Bietti's Crystalline Dystrophy: Natural history, biochemical and clinical

pathologic correlations. *Am J Ophthalmol.* 118: 569-582, (1994).

10. Viores, S.A., Henderer, J.D., Mahlow, J., Chiu, C., Derevjani, N.L., LaRochelle, W., Csaky, K. and P.A. Campochiaro. Isoforms of platelet-derived growth factor and its receptors in epiretinal membranes: immunolocalization to retinal pigmented epithelial cells. *Exp Eye Res.* 60: 607-619, (1995).

11. Marchese, C., Chedid, M., Dirsch, O.R., Csaky, K.G., Santanelli, F., Latini, C., LaRochelle, W.J., Torrisi, M.R. and Aaronson, S.A. Modulation of keratinocyte growth factor and its receptor in reepithelializing human skin. *J Exp Med.* 182: 1369-1376, (1995).

12. Sullivan, D., Anglade, E., Cheung, D., Nussenblatt, R. and Csaky, K.G. Adenovirus mediated gene transfer of ornithine aminotransferase in cultured human RPE. *Invest Ophthalmol Vis Sci.* 37: 766-774, (1996).

13. Chedid, M., Csaky, K.G. and Rubin, J.S. Glucocorticoids inhibit keratinocyte (KGF) production in primary dermal fibroblasts. *Endocrinology* 137:2232-7, (1996).

14. Whitcup, S.M., Csaky, K.G., Chew, E. and Nussenblatt, R. A randomized, masked, cross-over trial of acetazolamide for cystoid macular edema in patients with uveitis. *Ophthalmology* 103:1054-62, (1996).

15. Cioci, V, Csaky, K.G., Rubin, J.S., Bottaro, D. Aaronson, S.A. HGF/NK1, a naturally occurring antagonist to HGF/SF variant with partial agonist/antagonist activity. *J. Biol. Chem.* 271: 13110-5, (1996).

16. Anglade, E, Sullivan, D. and Csaky, K.G. Generation of recombinant interleukin-10 immunoadhesin by replication-defective adenovirus. *J Immunological Methods.* 202: 41-49, (1997).

17. Csaky, K.G. and Caruso, R. Gallium nitrate optic neuropathy. *Amer J Ophthalmol.* 124: 567-8, (1997).

18. Sullivan, D., Jensen, T., Taichman, L., Nussenblatt, R and Csaky, K.G. Correction of ornithine metabolism in gyrate atrophy keratinocytes: Towards development of an ornithine sink. *Gene Ther* 4: 1036-44, (1997).

19. Sime, P.J., Xing, Z., Graham, F.L., Csaky, K.G. and Gauldie, J. Adenovirus-mediated gene transfer of active TGF- β 1 induces prolonged aggressive fibrosis in rat lung. *J Clin Invest.* 100: 768-76, (1997).

20. Jensen, T.G., Sullivan, D.M., Morgan, R.A., Taichman, L.B., Nussenblatt, R.B., Blaese, R.M. and Csaky, K.G. Retroviral mediated gene transfer of ornithine-d-aminotransferase into keratinocytes from gyrate atrophy patients. *Hum Gene Ther.* 8: 2125-32, (1997).
21. Nussenblatt, R.B. and Csaky, K.G. Perspectives on gene therapy in the treatment of ocular inflammation. *Eye.* 11: 217-221, (1997).
22. Sullivan, D.M., Erb, L., Anglade, E., Weisman G.A., Turner, J.T. and Csaky, K.G. Identification and characterization of P2Y2 nucleotide receptors in human retinal pigment epithelial cells. *J Neurosci Res.* 49: 43-52, (1997).
23. Anglade, E and Csaky, K.G. Adenovirus mediated gene transfer into adult rat retina. *Curr Eye Res.* 17:316-321, (1998).
24. Flower, R.W., Csaky, K.G. and Murphy, R.P. Disparity between fundus camera and scanning laser ophthalmoscope indocyanine green imaging of retinal pigment epithelial detachments. *Retina* 18: 260-8. (1998).
25. Marmorstein, A.D., Gan, Y.C., Bonilha V.L., Finnemann, S.C., Csaky, K.G. and Rodriguez-Boulan, E. Apical polarity of N-CAM and EMMPRIN in retinal pigment epithelium resulting from suppression of basolateral signal recognition. *J Cell Biol.* 142: 697-710, (1998).
26. Chew E.Y., Benson, W.E., Remaley, N.A., Lindley, A.A., Burton, T.C., Csaky, K., Williams, G.A. and Ferris, F.L. Results after lens extraction in patients with diabetic retinopathy: early treatment diabetic retinopathy study report number 25. *Arch Ophthalmol.* 117: 1600-6, (1999).
27. Csaky, K. and Nussenblatt, R. Gene therapy in the treatment of ocular inflammation. *Springer Semin Immunopathol.* 21:191-7, (1999).
28. Tarttelin, E.E., Kirschner, L.S., Bellingham, J., Baffi, J., Taymans, S.E., Gregory-Evans, K., Csaky, K., Stratakis, C.A. and Gregory-Evans, C.Y. Cloning and characterization of a novel orphan G-protein-coupled receptor localized to human chromosome 2p16. *Biochem Biophys Res Commun.* 260:174-80, (1999).
29. Nussenblatt, R.B., Schiffman, R., Fortin, E., Robinson, M., Smith, J., Rizzo, L., Csaky, K., Gery, I., Waldmann, T. and Whitcup, S.M. Strategies for the treatment of intraocular inflammatory disease. *Transplant Proc.* 30:4124-5, (1998).
30. Marmorstein, A.D., Csaky, K.G., Baffi, J., Lam, L., Rahaal, F. and

Rodriguez-Boulan, E. Saturation of, and competition for entry into, the apical secretory pathway. *Proc Natl Acad Sci.* 97:3248-53, (2000).

31. Baffi, J., Byrnes, G., Chan, C.C. and Csaky, K.G. Choroidal Neovascularization in the Rat Induced by adenovirus mediated expression of vascular endothelial Growth Factor. *Invest Ophthal Vis Sci.* 41: 3582-9, (2000).

32. Robinson, M.R., Reed, G., Csaky, K.G., Polis, M.A. and Whitcup, S.M. Immune recovery uveitis in patients with cytomegalovirus retinitis taking highly active retroviral therapy. *Am J Ophthal.* 130: 49-56, (2000)

33. Caruso, R.C., Nussenblatt, R.B., Csaky, K.G., Valle, D. and Kaiser-Kupfer, M.I. Assessment of visual function in patients with gyrate atrophy who are considered candidates for gene replacement. *Arch Ophthalmol* 113: 667-69 (2001).

34. Strunnikova, N., Silk, W., Baffi, J. and Csaky, K.G. Heat shock protein 27 expression in human retinal pigment epithelial cells. *Invest Ophthal Vis Sci.* 42:2130-2138 (2001).

35. Fine, H.F., Akin, C., Hematti, P., Butman, J., Caruso, R.C., Csaky, K.G., Metcalkfe, K.K., Nussenblatt, R.B., Robinson, M.R., Presumed choroidal and orbital mastocytosis. *Arch Ophthalmol.* 119: 1716-1719 (2001).

36. Fine, H.F., Baffi, J., Reed, G.F., Csaky, K.G. and Nussenblatt, R.B. Intraocular and plasma vascular endothelial growth factor in uveitis-associated cystoid macular edema. *Am J Ophthal* 132: 794-6 (2001)

37. McAuliffe, M.J., Lalonde, F.M., McGarry, D., Gandler, W., Csaky, K., and Trus, B.L. Medical Image Process-ing, Analysis & Visualization in Clinical Research: Proceedings: Fourteenth IEEE Symposium on Computer-Based Medical Systems, IEEE Computer Society 26-27: 381-386 (2001).

38. Velez, G., Chan C,C. and Csaky, K.G. Fluorescein angiographic findings in primary intraocular lymphoma, *Retina* 22: 37-43 (2002).

39. Robinson, M.R., Baffi, J., Yuan, P., Sung, C., Byrnes, G., Cox, T.A. and Csaky, K.G. Safety, pharmacokinetics and pharmacodynamics of intravitreal 2-methoxyestradiol implants in normal rabbit and in a rat model of choroidal neovascularization. *Exp Eye Res.* 74:309-17(2002).

40. Espinosa-Heidmann, D., Suner, I., Hernandez, E., Frazier, W., Csaky, K.G. and Cousins, S.W. Age as an independent risk factor for severity of experimental choroidal neovascularization. *Invest Ophthalmol Vis Sci.* 43:1567-73 (2002).

41. Tsilou, E., Csaky, K. and Kaiser-Kupfer, M. Retinal visualization in an eye with corneal crystals using indocyanine green videoangiography. *Am J Ophthalmol.* 134:123-5 (2002).
42. Cousins, S.W., Espinosa-Heidmann, D.G., Alexandridou, A., Sall, J., Dubovy, S., and Csaky, K. The role of aging, high fat diet and blue light exposure in an experimental mouse model for basal laminar deposit formation. *Exp Eye Res.* 75:543-53 (2002).
43. Marin-Castanos, M.E., Elliot, S.J., Potier, M., Karl, M., Striker, L.J., Striker, G.E., Csaky, K.G., Cousins, S.W. Estrogens regulate estrogen receptor and MMP-2 expression in human retinal pigmented epithelium: implications for age-related macular degeneration. *Invest Ophthal Vis Sci.* 44:50-9 (2003).
44. Csaky, K.G. and Tolentino, M.J. Clinician's Corner: Ocular photodynamic therapy with verteporfin: Clinical trial results and current indications for treatment. *Focal Points.* 20: 12-17 (2002).
45. Ciulla, T.A., Criswell, M.H., Danis, R.P., Fronheiser, B.S., Yan, P. Cox, T.A., Csaky, K.G. and Robinson, M.R. Choroidal neovascular membrane inhibition in a laser-treated rat model with intraocular-sustained-release triamcinolone acetate micro-implants. *Br J Ophthal* 87: 1032-7(2003)
46. Zhang, C., Baffi, J., Cousins, S.W. and Csaky, K.G. Control of apoptosis in retinal pigment epithelial cells through the release of apoptosis-inducing factor. *J Cell Sci* 116:1915-23 (2003).
47. Wright ME, Suzman DL, Csaky KG, Masur H, Polis MA, Robinson MR. Extensive retinal neovascularization as a late finding in human immunodeficiency virus-infected patients with immune recovery uveitis. *Clin Infect Dis.* 36: 1063-6 (2003).
48. Csaky, K.G. Anti-VEGF therapy for neovascular age-related macular degeneration: promises and possible pitfalls. *Ophthalmol* 110:879-81 (2003).
49. Marmorstein, A., Peachey, N. and Csaky, K. In-vivo gene transfer as a means to study the physiology and morphogenesis of the retinal pigment epithelium in the rat. *Methods* 30:277-85 (2003).
50. Espinosa-Heidmann, D.G., Suner, I.J., Hernandez, E.P., Monroy, D., Csaky, K.G., Cousins, S.W. Macrophage depletion diminishes lesion size and severity in experimental choroidal neovascularization. *Invest Ophthalmol Vis Sci.* 44:3586-92 (2003).

51. Srivastava, S.K. and Csaky, K.G. Identification of well-defined intrachoroidal neovascularization by high-speed indocyanine green angiography. *Retina* 23: 712-4 (2003).
52. Emily Y. Chew, E.Y., Ferris, F.L., Csaky, K.G., Murphy, R.P., Agron, E., Thompson, D.J.S., Reed, G.F., Schachat, A.P. The long-term effects of laser photocoagulation treatment in patients with diabetic retinopathy: The early treatment diabetic retinopathy follow-up study. *Ophthalmol.* 23: 712-4 (2003).
53. Robinson, M.R., Csaky, K.G., Lee, S.S., Masur, H., Polis, M.A. Fibrovascular changes misdiagnosed as cytomegalovirus retinitis reactivation in a patient with immune recovery. *Infect Dis.* 38: 139-41 (2004).
54. Espinosa-Heidmann, D., Caicedo, A., Panneerselvam, K, Hernandez, E., Csaky, K., Cousins, S.W. Vasculogenesis contributes to choroidal neovascularization. *Invest Ophthalmol Vis Sci.* 44:4914-9 (2003).
55. Csaky, K.G., Baffi, J., Chan, C.C. and Byrnes, G. A. Clinicopathologic correlation of progressive fibrovascular proliferation associated with occult choroidal neovascularization in age-related macular degeneration. *Arch Ophthalmol* 122: 650-2 (2004).
56. Csaky, K.G., Baffi, J.Z., Byrnes, G.A., Ponce, L., Wolfe, J.D., Cousins, S.W. Recruitment of marrow-derived endothelial cells to experimental choroidal neovascularization (CNV) by local expression of vascular endothelial growth factor (VEGF). *Exp Eye Res* 78:1107-16 (2004).
57. Cousins, S., Espinosa-Heidmann, D. and Csaky, K.G. Monocyte activation in patients with AMD: a biomarker of risk for choroidal neovascularization? *Arch Ophthalmol* 122:1013-18 (2004).
58. Kim, H., Robinson, M.R., Lizak, M.J., Tansey, G., Lutz, R.J., Yuan, P., Wang, N.M., Csaky, K.G. Controlled drug release from an ocular implant: an evaluation using dynamic 3-dimensional magnetic resonance imaging. *Invest Ophthalmol Vis Sci:* 45: 2722-31 (2004).
59. Rodriguez-Coleman, H., Yuan, P., Kim, H., Gravlin, L., Srivastava, S., Csaky, K.G., Robinson, M.R. Intravitreal injection of triamcinolone for diffuse macular edema. *Arch Ophthalmol* 122:1085-6 (2004).
60. Tuo, J., Smith, B.C., Bojanowski, C.M., Meleth, A.D., Gery, I., Csaky, K.G., Chew, E.Y., Chan, C.C. The involvement of sequence variation and expression of CX3CR1 in the pathogenesis of age-related macular degeneration. *FASEB J* 18:1297-9 (2004).

61. Robinson, M.R., Lee, S.S., Rubin, B.I., Wayne, A.S., Pavletic, S.Z., Bishop, M.R., Childs, R., Barrett, A.J., Csaky, K.G. Topical corticosteroid therapy for cicatricial conjunctivitis associated with chronic graft-versus-host disease. *Bone Marrow Transplant* 33:1031-5 (2004).
62. Wolfe, J.D., Csaky, K.G. A study of retinal vessel closure using indocyanine green enhanced laser photocoagulation. *Exp Eye Res* 79:631-8 (2004).
63. Strunnikova, N, Baffi, J., Zhang , C., D. Teichberg, D., Becker, K.G., Cousins, S.W., Csaky K.G. Cellular and molecular responses to nonlethal oxidative injury in retinal pigment epithelial cells (RPE). *Invest Ophthal Vis Sci* 45:3767-77 (2004).
64. Robinson, M.R., Chan, C.C., Yang, J.C., Rubin, B.I., Gracia, G.J., Sen, H.N., Csaky, K.G., Rosenberg, S.A. Cytotoxic T lymphocyte-associated antigen 4 blockade in patients with metastatic melanoma: a new cause of uveitis *J Immunother.* 27:478-9 (2004).
65. Kim, H., Lizak, M.J., Tansey, G., Csaky, K.G., Robinson, M.R., Yuan, P., Wang, N.S., Lutz, R.J. Study of ocular transport of drugs released from an intravitreal implant using magnetic resonance imaging. *Annals of Biomedical Engineering*, 33:150-164 (2005).
66. Kim, H., Csaky, K.G., Gilger, B.C., Dunn, J.P., Lee, S.S., Tremblay, M., de Monasterio, F., Tansey, G., Yuan, P., Bungay, P.M., Lutz, R.J. Robinson, M.R. Preclinical evaluation of a novel episcleral cyclosporine implant for ocular graft-versus-host disease. *Invest Ophthal Vis Sci.* 46:655-62 (2005).
67. Espinosa-Heidmann, D., Reinoso, M.A., Pina, Y., Csaky, K., Caicedo, A., Cousins, S.W. Quantitative enumeration of vascular smooth muscle cells and endothelial cells derived from bone marrow precursors in experimental choroidal neovascularization. *Exp Eye Res.* 80: 369-78 (2005).
68. Hathout, Y., Flippin, J., Fan, C., Liu, P., Csaky, K. Metabolic labeling of human primary retinal pigment epithelial cells for accurate comparative proteomics. *J Proteome Res.* 4: 620-7 (2005).
69. Strunnikova, N., Hilmer. S., Flippin, J., Robinson, M.R., Hoffman, E., Csaky, K.G. Differences In gene expression profiles in dermal fibroblasts from control and patients with age related macular degeneration elicited by oxidative injury. *Free Radic Biol Med* 39: 781-96 (2005).
70. Cusick, M., SanGiovanni, J.P., Chew, E.Y., Csaky, K.G., Hall-Shimel, K., Reed, G.F., Caruso, R.C., Ferris, FL 3rd. Central visual function and the NEI-VFQ-25 near and distance activities subscale scores in people with type 1 and 2 diabetes. *Am J Ophthalmol.* 139: 1042-50 (2005).

71. Marin-Castano, M.E., Csaky, K.G., Cousins, S.W. Nonlethal oxidant injury to human retinal pigment epithelium cells causes cell membrane blebbing but decreased MMP-2 activity. *Invest Ophthalmol Vis Sci.* 46: 3331-40 (2005).
72. Chan, C.C., Tuo, J., Bojanowski, C.M., Csaky, K.G., Green, W.R. Detection of CX3CR1 single nucleotide polymorphism and expression on archived eyes with age-related macular degeneration. *Histol Histopathol.* 20: 857-63 (2005).
73. Cruysberg, L.P., Franklin, A.J., Sanders, J., Self, C., Yuan, P., Csaky, K.G., Robinson, M.R., Kohn, E.C., Edelhauser, H. Effective transscleral delivery of two retinal anti-angiogenic molecules: carboxyamido-triazole (CAI) and 2-methoxyestradiol (2ME2). *Retina* 25:1022-31 (2005).
74. Cusick, M., SanGiovanni, J.P., Chew, E.Y., Csaky, K.G., Hall-Shimel, K., Reed, G.F., Caruso, R.C., Ferris, F.L. 3rd. Central visual function and the NEI-VFQ-25 near and distance activities subscale scores in people with type 1 and 2 diabetes. *Am J Ophthalmol.* 139: 1042-50 (2005).
75. Meleth, A.D., Agron, E., Chan, C.C., Reed, G.F., Arora, K., Byrnes, G., Csaky, K.G., Ferris, F.L. 3rd, Chew, E.Y. Serum inflammatory markers in diabetic retinopathy. *Invest Ophthalmol Vis Sci.* 46: 4295-301 (2005).
76. Robinson, M.R., Lee, S.S., Kim, H., Kim, S., Lutz, R.J., Galban, C., Bungay, P.M., Yuan, P., Wang, N.S., Kim, J., Csaky, K.G. A rabbit model for assessing the ocular barriers to the transscleral delivery of triamcinolone acetonide. *Exp Eye Res.* 82:479-87(2006)
77. Hyuncheol, K., Csaky, K.G., Chan, C.C., Bungay, P.M., Lutz, R.J., Dedrick, R.L., Yuan, P., Rosenberg, J., Grillo-Lopez, A.J., Wilson, W.H., Robinson, M.R. The pharmacokinetics of rituximab following an intravitreal injection. *Exp Eye Res* 82:760-6 (2006)
78. Cruysberg, L.P., Franklin, A.J., Sanders, J., Self, C., Yuan, P., Csaky, K.G., Robinson, M.R., Kohn, E.C., Edelhauser, H.F. Effective transscleral delivery of two retinal anti-angiogenic molecules: carboxyamido-triazole (CAI) and 2-methoxyestradiol (2ME2). *Retina* 8:1022-31 (2006).
79. Gilger, B.C., Salmon, J.H., Wilkie, D.A., Cruysburg, L, Kim, Y., Hayat, M., Kim, H., Kim, S., Yuan, P, Lee, S.S., Harrington, S., Murray, P., Edelhauser, H.F., Csaky, K.G., Robinson, M.R., A Novel bioerodible suprachoroidal cyclosporine implant for uveitis. *Invest Ophthalmol Vis Sci.* 47:2596-605 (2006).
80. Bojanowski, C.M., Shen, D., Chew, E.Y., Ning, B., Csaky, K.G., Green, W.R., Chan, C.C., Tuo, J. An apolipoprotein E variant may protect against age-

related macular degeneration through cytokine regulation. *Environ Mol Mutagen.* 2006

81. Sirimaharaj, M., Robinson, M.R., Zhu, M., Csaky, K.G., Donovan, B., Sutter, F., Gillies, M.C. Intravitreal injection of triamcinolone acetonide for immune recovery uveitis. *Retina* 26:578-80 (2006).

82. Kim, H., Csaky, K.G., Gravlín, L., Yuan, P., Lutz, R.J., Bungay, P.M., Tansey, G., DeMonasterio, F., Potti, G.K., Grimes, G., Robinson, M.R. Safety and pharmacokinetics of a preservative-free triamcinolone acetonide formulation for intravitreal administration. *Retina* 26:523-30 (2006).

83. Bojanowski, C.M., Tuo, J., Chew, E.Y., Csaky, K.G., Chan, C.C. Analysis of Hemicentin-1, hOgg1, and E-selectin single nucleotide polymorphisms in age-related macular degeneration. *Trans Am Ophthalmol Soc.* 103:37-44 (2005).

84. An, E., Lu, X., Flippin, J., Devaney, J.M., Halligan, B., Hoffman, E., Csaky, K., Hathout, Y. Secreted Proteome Profiling in Human RPE Cell Cultures Derived from Donors with Age Related Macular Degeneration and Age Matched Healthy Donors. *J Proteome Res.* 5:2599-2610 (2006).

85. Fu, Y., Ponce, M.L., Thill, M., Yuan, P., Wang, N.S., Csaky, K.G. Angiogenesis inhibition and choroidal neovascularization suppression by sustained delivery of an integrin antagonist, EMD478761. *Invest Ophthalmol Vis Sci.* 48 :5184-9- (2007).

86. Kim, S.H., Csaky, K.G., Wang, N.S., Lutz, R.J. Drug elimination kinetics following subconjunctival injection using dynamic contrast-enhanced magnetic resonance imaging. *Pharm Res.* 25:512-30 (2008).

87. Wong, W.T., Agrón, E., Coleman, H.R., Tran, T., Reed, G.F., Csaky, K., Chew, E.Y. Clinical characterization of retinal capillary hemangioblastomas in a large population of patients with von Hippel-Lindau disease. *Ophthalmology.* 115:181-8 (2008).

88. Lee, S.S., Kim, H., Wang, N.S., Bungay, P.M., Gilger, B.C., Yuan, P., Kim, J., Csaky, K.G., Robinson, M.R. A pharmacokinetic and safety evaluation of an episcleral cyclosporine implant for potential use in high-risk keratoplasty rejection. *Invest Ophthalmol Vis Sci.* 48:2023-9 (2007).

89. Wong, W.T., Agrón, E., Coleman, H.R., Reed, G.F., Csaky, K., Peterson, J., Glenn, G., Linehan, W.M., Albert, P., Chew, E.Y. Genotype-phenotype correlation in von Hippel-Lindau disease with retinal angiomas. *Arch Ophthalmol.* 125:239-45 (2007).

90. Kim, S.H., Galbán, C.J., Lutz, R.J., Dedrick, R.L., Csaky, K.G., Lizak, M.J., Wang, N.S., Tansey, G., Robinson, M.R. Assessment of subconjunctival and intrascleral drug delivery to the posterior segment using dynamic contrast-enhanced magnetic resonance imaging. *Invest Ophthalmol Vis Sci.* 48:808-14 (2007).
91. Kim, H., Fariss R.N., Zhang, C., Robinson, S.B., Thill, M., Csaky, K.G. Mapping of the neonatal Fc receptor in the rodent eye. *Invest Ophthalmol Vis Sci.* 49:2025-9 (2008).
92. Csaky, K.G., Richman, E.A., Ferris, F.L 3rd. Report from the NEI/FDA Ophthalmic Clinical Trial Design and Endpoints Symposium. *Invest Ophthalmol Vis Sci.* 49:479-89 (2008).
93. Thill, M., Strunnikova, N.V., Berna, M.J., Gordiyenko, N., Schmid, K., Cousins, S.W., Thompson, D.J., Csaky, K.G. Late outgrowth endothelial progenitor cells in patients with age-related macular degeneration. *Invest Ophthalmol Vis Sci.* 49:2696-708 (2008).
94. Kim, H., Robinson, S.B., Csaky, K.G. Investigating the Movement of Intravitreal Human Serum Albumin Nanoparticles in the Vitreous and Retina. *Pharm Res.* 226:329-37 (2009).
95. Scott, I.U., Oden, N.L., VanVeldhuisen, P.C., Ip, M.S., Blodi, B.A., Antoszyk, A.N.; SCORE Study Investigator Group. SCORE Study Report 7: incidence of intravitreal silicone oil droplets associated with staked-on vs luer cone syringe design. *Am J Ophthalmol.* 148:725-732. (2009).
95. Lee, S.S., Ghosn, C., Yu, Z., Zacharias, L., Kao, H., Lanni, C., Abdelfattah, N., Kuppermann, B., Csaky, K.G., D'Argenio, D.Z., Burke, J.A., Hughes, P., Robinson, M.R. Vitreous VEGF Clearance is Increased following Vitrectomy. *Invest Ophthalmol Vis Sci.* (2009).
96. Csaky, K., Do, D.V. Safety implications of vascular endothelial growth factor blockade for subjects receiving intravitreal anti-vascular endothelial growth factor therapies. *Am J Ophthalmol.* 148:647-56 (2009).
97. Lindblad, A.S., Lloyd, P.C., Clemons, T.E., Gensler, G.R., Ferris, F.L. 3rd, Klein, M.L., Armstrong, J.R; Age-Related Eye Disease Study Research Group. Change in area of geographic atrophy in the Age-Related Eye Disease Study: AREDS report number 26. *Arch Ophthalmol.* 127:1168-74 (2009).
98. Scott, I.U., Ip, M.S., VanVeldhuisen, P.C., Oden, N.L., Blodi, B.A., Fisher, M., Chan, C.K., Gonzalez, V.H., Singerman, L.J., Tolentino, M.; SCORE Study Research Group. A randomized trial comparing the efficacy and safety of intravitreal triamcinolone with standard care to treat vision loss associated with

macular Edema secondary to branch retinal vein occlusion: the Standard Care vs Corticosteroid for Retinal Vein Occlusion (SCORE) study report 6. *Arch Ophthalmol.* 127:1115-28 (2009).

99. Ip, M.S., Scott, I.U., VanVeldhuisen, P.C., Oden, N.L., Blodi, B.A., Fisher, M., Singerman, L.J., Tolentino, M., Chan, C.K., Gonzalez, V.H.; SCORE Study Research Group. A randomized trial comparing the efficacy and safety of intravitreal triamcinolone with observation to treat vision loss associated with macular edema secondary to central retinal vein occlusion: the Standard Care vs Corticosteroid for Retinal Vein Occlusion (SCORE) study report 5. *Arch Ophthalmol.* 127:1101-14 (2009).

100. Kim, H., Csaky, K.G. Nanoparticle-integrin antagonist C16Y peptide treatment of choroidal neovascularization in rats. *J Control Release.* (2009).

101. Kim, H., Robinson, S.B., Csaky, K.G. FcRn receptor-mediated pharmacokinetics of therapeutic IgG in the eye. *Mol Vis.* 15:2803-12 (2009).

102. Chan, J.E., Pridgen, T.A., Csaky, K.G. Episcleral Clearance of Sodium Fluorescein from a Bioerodible Subtenon's Implant in the Rat. *Exp Eye Res.* (2010).

103. Edelhauser, H.F., Rowe-Rendleman, C.L., Robinson, M.R., Dawson, D.G., Chader, G.J., Grossniklaus, H.E., Rittenhouse, K.D., Wilson, C.G., Weber, D.A., Kuppermann, B.D., Csaky, K.G., Olsen, T.W., Kompella, U.B., Holers, V.M., Hageman, G.S., Gilger, B.C., Campochiaro, P.A., Whitcup, S.M., Wong, W.T. Ophthalmic drug delivery systems for the treatment of retinal diseases: basic research to clinical applications. *Invest Ophthalmol Vis Sci.* 51:5403-20 (2010).

104. Pons, M., Cousins, S.W., Csaky, K.G., Striker, G., Marin-Castaño, M.E. Cigarette smoke-related hydroquinone induces filamentous actin reorganization and heat shock protein 27 phosphorylation through p38 and extracellular signal-regulated kinase 1/2 in retinal pigment epithelium: implications for age-related macular degeneration. *Am J Pathol.* 177:1198-213 (2010).

105. Lee, S.J., He, W., Robinson, S.B., Robinson, M.R., Csaky, K.G., Kim, H. Evaluation of clearance mechanisms with transscleral drug delivery. *Invest Ophthalmol Vis Sci.* 51: 5205-12 (2010).

Book Chapters:

1. Brenner, R.M., Slayden, O.D., Koji, T., Izumi, S., Chedid, M., Csaky, K.G., and Rubin, J.S. Hormonal regulation of the paracrine growth factors HGF and KGF in the endometrium of the Rhesus Macaque. In: (eds) Beir, H.M., Harper, M.J.K., Chwalisz, K. The Endometrium as a Target for Contraception. Springer-Verlag, 21-49, 1996.
2. Csaky, K.G. Preparation of Recombinant Adenovirus Vectors. In: (eds) Rakoczy, E. Vision Research Protocols. Humana Press. 141-155, 2001.
3. Jensen, T. and Csaky, K.G. Skin as Bioreactor or Metabolic Sink- Treatment of Systemic Diseases. In: (eds) Volc-Platzer, B and Hengge, U.R. Gene Therapy in Dermatology. Springer Verlag (In Press).
4. Cousins, S.W. and Csaky K.G. Immunology of Age-Related Macular Degeneration. In: (eds) Lim, J. Age-related Macular Degeneration. Marcel Dekker, Inc. 66-88, 2002.
5. Csaky K.G. High Speed Indocyanine Green Angiography. In: (eds) Ciulla, T., Regillo, C., Harris, A. Ocular Posterior Segment Imaging. Lippincott, Williams & Wilkins, Inc. 187-203, 2003.
6. Cousins, S.W., Csaky, K.G. and Espinosa-Heidmann, D.G. Clinical strategies for diagnosis and treatment of AMD: Implications from research. In: (ed) Penfold, P. Age-related Macular Degeneration (Submitted).