

CURRICULUM VITAE

SUNIL S. PATEL MD/PHD
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Current Employment

Staff Vitreoretinal Surgeon
Ophthalmology Specialists of Texas, PA
(dba West/North Texas Retina Consultants)
5441 Health Center Dr.
Abilene, TX 79606

Director

Integrated Clinical Research, LLC
5441 Health Center Drive
Abilene, TX 79606
(325) 690-4414

Assistant Clinical Professor

Department of Ophthalmology
Texas Tech University School of Medicine
Lubbock, Texas

Prior Employment

7/1/1996 to 8/1/1997
Clinical Instructor
Doheny Eye Institute
Los Angeles, CA

9/1/1997 to 8/31/2000
Texas Retina Associates
7150 Greenville Ave.
Suite 400
Dallas, Texas 75231

Education

Bachelor of Science: University of California, Los Angeles (UCLA), (Biochemistry) Los Angeles, California (9/1979-6/1983)

Doctor of Philosophy: University of Texas Southwestern Graduate School of Biomedical (Immunology) Sciences, Dallas, Texas (6/1985-8/1989)

Doctor of Medicine: University of Texas Southwestern Medical School, Dallas, Texas (7/1983 - 5/1991)

Doctor of Philosophy Thesis

Advisor: Peter E. Lipsky, MD (6/1985-8/1989)

Date of defense: 8/21/1989

Title: Functional and phenotypic analysis of human T cell clones

Internship

Presbyterian Hospital of Dallas (7/1991-6/1992), Dallas, Texas.

Residency

Ophthalmology: Doheny Eye Institute-Los Angeles County Hospital (7/1992-6/1995), University of Southern California, Los Angeles, California.

Fellowships

- 1) Surgical and medical vitreoretinal fellowship: Doheny Eye Institute-Los Angeles County Hospital (7/1/95 to 6/30/96), University of Southern California, Los Angeles, California.
- 2) Uveitis fellowship: Doheny Eye Institute-Los Angeles County Hospital (7/1/96 to 7/31/97), University of Southern California, Los Angeles, California.

Additional Training

- 1) Director of the vitreoretinal service at the USC-Los Angeles County Hospital (7/1/96 to 7/31/97).
- 2) Chief Resident at USC-Los Angeles County Hospital (7/1/96 to 6/30/97).
- 3) Collaborative Ocular Melanoma Study (COMS) certification for the diagnosis and management of choroidal melanoma (7/1/96 to 8/1/97).
- 4) Ocular Oncology Training – Lynn Murphree at Doheny Eye Institute – USC School of Medicine (7/1/95 to 6/30/96)

- 5) SOCA (Study for Ocular Complications of AIDS) certification for the surgical placement of intraocular ganciclovir implant.

Medical License

Texas: K4185

Ophthalmology Board Certification

Diplomate of the American Board of Ophthalmology (10/1996)

Diplomate of the American Board of Ophthalmology (Renewal 10/2006)

Professional Societies

American Academy of Ophthalmology

American Society of Retinal Specialists

American Uveitis Society

American Association of Immunologists

American Association for the Advancement of Science

Association for Research in Vision and Ophthalmology

International Society for Stem Cell Research

Alpha Omega Alpha National Medical Honor Society

Phi Beta Kappa

American Academy of Ophthalmology Honor Award

Undergraduate Awards, Honors, and Fellowships

Dean's Honor List at UCLA

Marilyn F. Lohr Memorial Physics Scholarship

Departmental Honors in the Department of Chemistry and Biochemistry at UCLA

Magna Cum Laude

Phi Beta Kappa National Honor Society

Golden Key Honor Society

UCLA Summer Research Fellowship

American Heart Association Research Fellowship

Graduate Awards, Honors, and Fellowships

Southwestern Medical Foundation Scholarship

Medical Scientist Training Program (National Institutes of Health) MD/PHD Predoctoral Fellowship

Harold C. Simmons Research Fellowship

Alpha Omega Alpha Medical Honor Society

Award for Excellence in Resident Training at the Doheny Eye Institute - 1997

Academic Training:

- 1) Clinical Instructor at the Doheny Eye Institute, USC School of Medicine (7/1/96 to 7/31/97).
- 2) Scientific Reviewer for *Ophthalmology*.

Clinical Research Studies:

Collaborative Ocular Melanoma Study (1996-1997) at Doheny Eye Institute – Management of Choroidal melanoma with radioactive plaque or enucleation. Certified as a plaguing and enucleation surgeon.

Diabetic tractional retinal detachment (1998-1999) at Texas Retina Associates – Developed a new classification system for diabetic tractional retinal detachment and optimal time for surgical intervention.

VAM study for management of Wet Age Related Macular Degeneration (1999-2000) at Texas Retina Associates – Management of predominantly classic subretinal neovascular membranes with Visudyne.

Member of the Diabetic Retinopathy Clinical Research network (DRCR) for the management of diabetic macular edema (2004 – present) at West Texas Retina Consultants – Management of diabetic macular edema with laser or intravitreal triamcinolone.

Genentech FVF4168g RIDE, “ A phase III, double-masked, multicenter, randomized, sham-controlled study of the efficacy and safety of ranibizumab injection in subjects with clinically significant macular edema with center involvement secondary to diabetes mellitus.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. April 2007-present.

Allergan SIRIUS, “ A 2- year, Multicenter, randomized, controlled, masked, dose-finding trial to asses the safety and efficacy of multiple intravitreal injections of AGN 211745 in patients with subfoveal choroidal neovascularization secondary to age-related macular degeneration” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. April 2007-present.

Eyetechnology 1023, “A phase IV, multi-center trial of maintenance intravitreous injections of Macugen®(Pegaptanib Sodium) given every 6 weeks for 48 weeks in subjects with subfoveal neovascular age-related macular degeneration (AMD) initially treated with modality resulting in maculopathy improvement.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. June 2006-present.

Alimera Sciences C01-05-001, “A randomized, double-masked, parallel group, multicenter, dose-finding comparison of the safety and efficacy of ASI-001A 0.5µg/day and ASI-001B 0.2µg/day Fluocinolone Acetonide intravitreal inserts to sham injection in subjects with diabetic macular edema.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. April 2006-present.

Allergan 206207-009-01, “A six-month, phase III, multicenter, masked randomized, sham-controlled trial (with six0month open label extension) to assess the safety and efficacy of 700µg

and 350µg dexamethasone Posterior segment drug delivery system (DEX PS DDS) applicator system in the treatment of patients with macular edema following central retinal vein occlusion or branch retinal vein occlusion.” Primary Investigator, S. Young Lee. Sub-Investigator: Sunil Patel, MD, PhD. February 2006-present.

ALCON C0418 “Clinical evaluation of the safety of Next Generation Ophthalmic Irrigating Solution Compared to BSS Plus for use During Surgery for removal of epimacular membrane and virectomy.” Primary Investigator, S. Young Lee. Sub-Investigator: Sunil Patel, MD, PhD. February 2006-present.

EYETECH EOP1013,” A phase 2/3, randomized, controlled, double-masked, multi-center, comparative dose-finding trial in parallel groups, to compare the safety and efficacy of intravitreal injections of 0.3, 0.03, 0.003mg Macugen, given as often as every 6 weeks for 3 years, to sham injections, in subjects with Diabetic Macular Edema involving the center of the macula.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. September 2005-present.

ALCON C0459, “Anecortave Acetate 15mg administered every 3 months versus Anecortave Acetate 15mg administered every 6 months versus Anecortave Acetate 30mg administered every 6 months in patients with exudative age-related macular degeneration.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. May 2005-present.

EYETECH EOP1012, “A phase 3B/4, randomized, active-controlled, double masked, single dummy, multi-center comparative trial, in parallel groups, to compare the safety and efficacy of intravitreal injections of Macugen given every 6 weeks for up to 102 weeks plus sham Photodynamic Therapy to Macugen plus PDT with Visudyne, in subjects with predominantly classic subfoveal choroidal neovascularization secondary to age-related macular degeneration.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. March 2005-present.

DRCR Protocol B, “ A randomized trial comparing intravitreal triamcinolone acetonide and laser photocoagulation for DME.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. September 2004-present.

Diabetic Retinopathy Clinical Research Network. “A Randomized Trial Comparing Intravitreal Corticosteroids and Laser Photocoagulation for Diabetic Macular Edema.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. August 2004-present.

Eyetech EOP1011B. “A Phase II randomized, dose-ranging, double-masked, multi-center trial, in parallel groups, to determine the safety, efficacy and pharmacokinetics of intravitreal injections of pegaptanib sodium compared to sham injection for 30 weeks in patients with recent vision loss due to macular edema secondary to CRVO.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. August 2004-2005.

The Standard Care vs. Corticosteroid for Retina Vein Occlusion (SCORE) Study. “Two Randomized Trials to Compare the Efficacy and Safety of Intravitreal Injections of Triamcinolone Acetonide with Standard Care to Treat Macular Edema: One for Central Retinal Vein Occlusion and One for Branch Retinal Vein Occlusion.” Primary Investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. August 2004- present.

Anecortave Acetate Risk-Reduction Trial (AART) C-02-60. “Multicenter, double-masked, randomized, parallel groups clinical trial to demonstrate that Anecortave Acetate is safe and effective versus sham in arresting the progression of non-exudative AMD in patients who are at-risk for progressing to exudative AMD.” Primary investigator: Sunil Patel, MD, PhD. Sub-Investigator, S. Young Lee. August 2004-present.

PUBLICATIONS

- 1) **Patel, S.S.**, D.L. Thiele, and P.E. Lipsky. 1987. Major histocompatibility complex-unrestricted cytotoxic activity of human T cells. Analysis of precursor frequency and effector phenotype. *J. Immunology*. 139:3886.
- 2) Thiele D.L., **S.S. Patel**, and P.E. Lipsky. 1988. Anti-CD3 and phorbol myristate acetate regulation of MHC unrestricted T cell cytotoxicity: Lack of a requirement for CD3/T cell receptor complex expression during tumor lysis. *J. Immunology*. 140:3253.
- 3) Davis, L.S., **S.S. Patel**, J.P. Atkinson, and P.E. Lipsky. 1988. Decay-accelerating factor functions as a signal transducing molecule for human T cells. *J. Immunology*. 141:2246.
- 4) **Patel, S.S.**, A.D. Duby, D.L. Thiele, and P.E. Lipsky. 1988. Phenotypic and functional characterization of human T cell clones. *J. Immunology*. 141:3726.
- 5) Geppert, T.D., M.C. Wacholtz, **S.S. Patel**, E. Lightfoot, and P.E. Lipsky. 1989. Activation of human T cell clones and Jurkat cells by cross-linking class I major histocompatibility complex molecules. *J. Immunol.*142:3763.
- 6) Wacholtz, M.C., **S.S. Patel**, and P.E. Lipsky. 1989. Patterns of co-stimulation of T cell clones by cross-linking CD3, CD4/CD8, and class I MHC molecules. *J. Immunology*. 142:4201.
- 7) **Patel, S.S.** 1989. Functional and phenotypic analysis of human T cell clones. University of Texas Southwestern Medical School. Dissertation.
- 8) Wacholtz, M.C., **S.S. Patel**, and P.E. Lipsky. 1989. LFA-1 is a signaling molecule for human T lymphocytes. In *Structure and function of molecules involved in leukocyte adhesion*. Eds. A.S. Rosenthal, T.A. Springer, D.C. Anderson, and R. Rothlein. Springer-Verlag. p.254-264.

- 9) Wacholtz, M.C., **S.S. Patel**, and P.E. Lipsky. 1989. Leukocyte function-associated antigen 1 is an activation molecule for human T cells. *J. Exp. Med.* 170:431.
- 10) **Patel, S.S.**, M.C. Wacholtz, A.D. Duby, D.L.Thiele, and P.E. Lipsky. 1989. Analysis of the functional capabilities of CD3+CD4-CD8- and CD3+CD4+CD8+ human T cell clones. *J. Immunology.* 143:1108.
- 11) Hirohata, **S.**, **S.S. Patel**, and P.E. Lipsky. 1990. Regulation of human B cell responsiveness by CD8+ T cells: Differential effects of stimulation with monoclonal antibodies to CD3 and pokeweed mitogen. *Cell. Immunology.* 127:35.
- 12) **Patel, S.S.**, D.L. Thiele, and P.E. Lipsky. 1993. Stimulus-dependent modulation of human B cell function by T cell clones. *Cell. Immunology.* 146:362.
- 13) Jou, J., **S.S. Patel**, C. Yo, A.A. Sadun. 1995. Orbital Coccidioidomycosis presenting as a lacrimal fossa mass. *Brit J. Ophthalmic.* 79:1145.
- 14) **Patel, S.S.**, A.R. Rutzen, J.L. Marx, A.B. Thach, L.P. Chong, and N.A. Rao. 1996. Cytomegalovirus papillitis in patients with acquired immunodeficiency syndrome. I. Visual prognosis of patients treated with ganciclovir and/or foscarnet. *Ophthalmology.* 103:1476.
- 15) Marx, J.L., M.A. Kapusta, **S.S. Patel**, F. Walonker, N.A. Rao, and L.P. Chong. 1996. Use of the ganciclovir implant in the treatment of recurrent CMV retinitis. *Archives of Ophthalmology.* 114:815.
- 16) Johnston, R.H., R.L. Nguyen, A. Jongsareejit, B.R. Lee, **S. Patel**, and L. Chong. 1999. Clinical Study of combined penetrating keratoplasty, pars plana vitrectomy with temporary keratoprosthesis, and pars plana seton implant. *Retina* 19:116.
- 17) Collaborative Ocular Melanoma Study Group: The COMS randomized trial of Iodine 125 brachytherapy for choroidal melanoma, III: Initial mortality findings. 2001. COMS Report No. 18. *Archives of Ophthalmology.* 119:969.
- 18) Collaborative Ocular Melanoma Study Group: The COMS randomized trial of Iodine 125 brachytherapy for choroidal melanoma, II: Characteristics of patients enrolled and not enrolled. 2001. COMS Report No. 17. *Archives of Ophthalmology.* 119:951
- 19) Collaborative Ocular Melanoma Study Group: Collaborative Ocular Melanoma Study (COMS). Randomized trial of I-125 brachytherapy for medium choroidal melanoma. I. Visual Acuity after 3 years. 2001. COMS Report No.16. *Ophthalmology.* 108:348.

20) Collaborative Ocular Melanoma Study Group: Assessment of metastatic disease status at death in 435 patients with large choroidal melanoma in the Collaborative Ocular Melanoma Study. 2001. COMS Report No. 15. *Archives of Ophthalmology*. 119:670.

21) NAION paper

22) 25 gauge vitrectomy paper

ABSTRACTS

- 1) Kermani-Arab, V., **S.S. Patel**, J.L. Fahey, and A. Razzaque Ahmed. 1983. Interleukin 2 deficiency in pemphigus. *Clinical Research* 31:578A.
- 2) **Patel, S.S.**, D.L. Thiele, and P.E. Lipsky. 1987. Nonspecific cytotoxic potential of cloned human T lymphocytes. *Fed. Proc.* 46:476 (#931).
- 3) Parkey, R.T., D.L. Thiele, **S.S. Patel**, and P.E. Lipsky. 1988. Lack of a requirement for CD3/T cell receptor complex recognition in mediation of MHC-unrestricted cytotoxicity by activated T cells. *FASEB J.* 2:A463 (#975).
- 4) **Patel, S.S.**, D.L. Thiele, and P.E. Lipsky. 1988. Human peripheral blood T cell clones exhibit multiple functional activities. *FASEB J.* 2:A476 (#1047).
- 5) Ritter, A.R., L.S. Davis, **S.S. Patel**, J.P. Atkinson, and P.E. Lipsky. 1988. An antiserum to decay-accelerating factor (DAF) activates human T cells. *FASEB J.* 2:A871 (#3347).
- 6) Geppert, T.D., M.C. Wacholtz, **S.S. Patel**, E. Lightfoot, and P.E. Lipsky. 1988. T cell activation by cross-linking class I major histocompatibility complex (MHC) molecules. *FASEB J.* 2:A1655 (#7888).
- 7) Wacholtz, M.C., **S.S. Patel**, and P.E. Lipsky. 1988. Cross-linking class I major histocompatibility complex (MHC) determinants stimulates human CD4+ and CD8+ T cell clones. *FASEB J.* 2:A1828 (#8897).
- 8) Thiele, D.L., **S.S. Patel**, and P.E. Lipsky. 1988. Anti-CD3 mediated regulation of MHC-unrestricted cytotoxicity by activated T cells: Lack of role for CD3/T cell receptor complex in tumor lysis. *Clinical Research* 36:449A.
- 9) **Wacholtz, M.C., S.S. Patel, and P.E. Lipsky.** 1989. LFA-1 as a signaling molecule. *Clinical Research.* 37:560A.

- 10) **Patel, S.S.**, A.D. Duby, D.L. Thiele, and P.E. Lipsky. 1989. Functional characterization of human peripheral blood CD3+CD4-CD8- and CD3+CD4+CD8+ T cell clones. *FASEB J.* 3:A515 (#1681).
- 11) Wacholtz, M.C., **S.S. Patel**, and P.E. Lipsky. 1989. LFA-1 (CD11a/CD18) as a signaling molecule in T cell activation. *FASEB J.* 3:A786 (#3349).
- 12) **Kavanaugh, A.**, S.S. Patel, E. Lightfoot, P.E. Lipsky, and N. Oppenheimer-Marks. 1990. Delineation of the capacity of CD18 deficient T cells to bind to and migrate through endothelial cells. *FASEB J.* 4:A2054 (#2092).
- 13) **Patel, S.S.**, B.F. Jost, and G.E. Fish. 1992. Peripapillary choroidal neovascularization: laser treatment versus observation. *Amer. Acad. of Ophthalmology.*
- 14) **Patel, S.S.**, A.R. Rutzen, J.L. Marx, A.B. Thach, L.P.Chong, and N.A. Rao. 1995. Cytomegalovirus papillitis in patients with acquired immunodeficiency syndrome. I. Visual prognosis of patients treated with ganciclovir and/or foscarnet. *Amer. Acad. Of Ophthalmology.*
- 15) **Patel, S.S.**, A.R. Rutzen, J.L. Marx, A.B. Thach, L.P.Chong, and N.A. Rao. 1995. Cytomegalovirus papillitis in patients with acquired immunodeficiency syndrome. I. Visual prognosis of patients treated with ganciclovir and/or foscarnet. *Amer. Uveitis Society.*
- 16) **Patel, S.S.**, N. Ge, R. Varma, P. Chen, D.K. Heuer, P. Lee, M. Dacey, A. Phillips, and D. Minckler. 1996. Initial clinical experience with the Ahmed glaucoma valve in the management of neovascular glaucoma. *ARVO. S257 (#1173).*
- 17) Ge, N., **S. Patel**, D. Heuer, D. Minckler, and R. Varma. 1996. Initial clinical experience with the Ahmed glaucoma valve implant in the management of complicated glaucoma. *ARVO.S258(#1179).*
- 18) Kapusta, M., J.L. Marx, **S.S. Patel**, N.A. Rao, and L.P. Chong. 1996. The clinical outcome of high dose intravitreal ganciclovir in progressive outer retinal necrosis. *ARVO. S371(#1716).*
- 19) Marx, J.L., M.A. Kapusta, **S.S. Patel**, F. Walonker, N.A. Rao, and L.P. Chong. 1996. The use of the ganciclovir implant in the treatment of recurrent CMV retinitis. *ARVO. S669 (#3072).*
- 20) Johnston, R.H., P. Lee, **S. Patel**, M. Kapusta, D.A. Frambach, and L.P. Chong. 1997. Management of neovascular glaucoma using combined pars plana vitrectomy and seton implant. *ARVO.S769. (#3557).*
- 21) Kapusta, M.A., R.L. Nguyen, R. Johnston, **S. Patel**, P. Lee, and L. Chong. 1997. Is a combined procedure of penetrating keratoplasty, vitrectomy, and seton implant in the pars plana effective? *ARVO. S666(#3123).*

- 22) **Patel, S.S.** and R. Anand. 1998. A system for classifying diabetic tractional retinal detachments. AAO.
- 23) **Patel, S.S.**, R. Anand, D. Callanan, and R. Leonard. 1999. Diabetic tractional retinal detachment: Anatomic and functional variables important in visual prognosis. AAO.
- 24) **Patel, S.S.** and S.Y. Lee. NAION 2006
- 25) **Patel, S.S.**, and CRVO study. ARVO2007

INVITED LECTURES

Patel, S.S., B.F. Jost, and G.E. Fish. 1992. Peripapillary choroidal neovascularization: laser treatment versus observation. Amer. Acad. of Ophthalmology.

Patel, S.S., A.R. Rutzen, J.L. Marx, A.B. Thach, L.P.Chong, and N.A. Rao. 1995. Cytomegalovirus papillitis in patients with acquired immunodeficiency syndrome. I. Visual prognosis of patients treated with ganciclovir and/or foscarnet. Amer. Acad. Of Ophthalmology.

Patel, S.S., A.R. Rutzen, J.L. Marx, A.B. Thach, L.P.Chong, and N.A. Rao. 1995. Cytomegalovirus papillitis in patients with acquired immunodeficiency syndrome. I. Visual prognosis of patients treated with ganciclovir and/or foscarnet. Amer. Uveitis Society.

Patel, S.S. 1996. Ocular manifestations of the cytomegalovirus infection in patients with acquired immune deficiency syndrome. Vanderbilt University Invited Lecture.

Patel, S.S. 1997. Ocular manifestations of the cytomegalovirus infection in patients with acquired immune deficiency syndrome. University of Arkansas Invited Lecture.

Patel, S.S. 1998. Current management strategies for CMV retinitis. Southern Retinal Study Group. New Orleans, LA.

Patel, S.S. 1998. Evolution of macular hole surgery. Texas Tech University Alumni Lecture.

Patel, S.S. 1998. Evolution of macular hole surgery. Vanderbilt University Invited Lecture.

Patel, S.S. and R. Anand. 1998. A system for classifying diabetic tractional retinal detachments. Amer. Acad. of Ophthalmology

Patel, SS and S Y. Lee. 2006.NAION.

PRESENTATIONS

Patel, S.S., B.F. Jost, and G.E. Fish. Peripapillary choroidal neovascularization: laser treatment versus observation. Doheny Alumni Day 1993.

Patel, S.S., R. Kruger, and R. Green. Are two intraocular lenses better than one? Doheny Alumni Day 1994.

Patel, S.S., A.R. Rutzen, J.L. Marx, A.B. Thach, L.P.Chong, and N.A. Rao. 1995. Cytomegalovirus papillitis in patients with acquired immunodeficiency syndrome. I. Visual prognosis of patients treated with ganciclovir and/or foscarnet. Doheny Alumni Day 1994.

Patel, S.S., N. Ge, R. Varma, P. Chen, D.K. Heuer, P. Lee, M. Dacey, A. Phillips, and D. Minckler. Initial clinical experience with the Ahmed glaucoma valve in the management of neovascular glaucoma. Doheny Alumni Day 1996.

COURSES

Patel, S. S., R. Anand, D. Callanan, and W. Hutton. Surgical management of diabetic tractional retinal detachments. AAO (1998).

Patel, S. S., R. Anand, D. Callanan, and W. Hutton. Surgical management of diabetic tractional retinal detachments. AAO (1999).

Patel, S. S., R. Anand, D. Callanan, and R. Leonard. Surgical management of diabetic tractional retinal detachments. AAO (2000).

References available upon request