

CURRICULUM VITAE

Howard L. Tanenbaum, M.D., FRCS (C)

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MEDICAL TRAINING

POSTGRADUATE

FELLOWSHIP

Fellow, Retina Foundation & Retina Service, Massachusetts Eye & Ear
Infirmary Boston, MA, 1967 – 1968

RESIDENCY

Residency in Ophthalmology – Queens University, Kingston, Ontario, Canada
1963-1966

Residency in Internal Medicine – University of Colorado Medical Center, Denver, CO
1962-63

EDUCATION

Medical

MD.CM, McGill University, Faculty of Medicine, Montreal, Quebec, 1961

Undergraduate

Bachelor of Science, McGill University, Montreal, Quebec, 1957

Faculty of Pharmacy, University of Montreal, Montreal, Quebec, 1952-1954

CURRENT LICENSES & CERTIFICATES

UNITED STATES

Medical license, State of New York

Medical license, State of Vermont

Medical license, State of Massachusetts

CANADA

Fellow, Royal College of Physicians and Surgeons of Canada

Certified Specialist, Royal College of Physicians and Surgeons of Canada

Certified Specialist of the Province of Quebec

Licentiate, Medical College of Canada

LANGUAGES

English

French

Yiddish

PROFESSIONAL APPOINTMENTS

UNITED STATES

2016- current Attending Physician, Retina Consultants, PLLC Slingerlands, NY
1987-current Clinical Professor of Ophthalmology, Albany Medical College, Albany Medical Center, Albany, NY
1988-current Research Consultant, Rensselaer Polytechnic Institute (RPI), Troy, NY
1988-current Attending Ophthalmologist, Samaritan Hospital Troy, NY
1988-current Attending Ophthalmologist Albany Memorial Hospital, Albany, NY
1988-current Attending Ophthalmologist Albany Medical Center Hospital and AMC South Clinical Campus, Albany, NY
1987-2002 Attending Ophthalmologist, St. Peter's Hospital Albany, NY
1984-89 Consultant in Ophthalmology, Veteran's Administration Hospital, Albany NY
1984-87 Professor of Ophthalmology, Albany Medical College, Albany, NY
1984-87 Director, Division of Vitreo-Retinal Diseases, Albany Medical College, Albany, NY
1962-63 Instructor in Medicine, University of Colorado Medical Center, Denver, CO

CANADA

1970-84 Ophthalmologist-in-Chief, Jewish General Hospital, Montreal
Director, Retina Clinic and Diabetic Retinopathy Clinic, Jewish General Hospital, Montreal
1976-84 Associate Professor of Ophthalmology, Faculty of Medicine, McGill University, Montreal
1979-84 Consultant in Ophthalmology, Royal Victoria Hospital, Montreal
1979-84 Consultant in Ophthalmology, Montreal General Hospital, Montreal
1975-84 Consultant in Ophthalmology, Montreal Children Hospital, Montreal
1974-84 Consultant in Ophthalmology, Queen Mary Veteran's Hospital, Montreal
1973-84 Consultant in Ophthalmology, Jewish Hospital of Hope, Montreal
1973-76 Assistant Professor of Ophthalmology, Faculty of Medicine, McGill University
1970-84 Consultant in Ophthalmology, St. Mary's Hospital, Montreal
1970-79 Affiliate in Ophthalmology, Montreal General Hospital
1968-72 Lecturer, Faculty of Medicine, McGill University, Montreal
1968-69 Junior Assistant Ophthalmologist, Montreal General Hospital, Montreal,
1968-69 Hosmer, Teaching Fellow Ophthalmology, McGill University, Montreal
1968-69 Director, Retina and Diabetic Retinopathy Clinic, Montreal General Hospital

ACADEMIC HONORS AND AWARDS

Sean B. Murphy Award McGill Ophthalmology Annual Clinical & Scientific Day, Montreal, Quebec, 1997

Honorary Speaker, McGill Ophthalmology Annual Clinical & Scientific Day, Montreal, Quebec, 1997

Visiting Professor, Medical Ethics, Williams College, Williamstown, MA 1990-1991

Visiting Professor Ophthalmology, Queens University, Kingston, Ontario 1980-84, 1988

Invited Speaker, International Symposium on Laser Photocoagulation of the Macula; New Orleans, LA November 1986

Invited Speaker, "Ethical Issues in Modern Ophthalmology", Albany Medical College Ethic Symposium, September 1985

Invited Speaker, "Modern Concepts of Treatment of Diabetic Retinopathy," Turkish Ophthalmological Society: Ankara, Turkey, October 1985

Invited Speaker, Department of Ophthalmology, Universite' de Laval Quebec, 1975-1980

SCHOLARLY CONTRIBUTIONS

Refereed Journal Publications

1. Tsai, C.L., Madore, B., Leotta, M., Majerovics, A., Tanenbaum, H.L., Stewart, C.V., Roysam, B.: "RIVERS: A System for Automated Retinal Image Analysis Over the Internet," (in review), Journal of Medical Internet Research
2. Narasimha-Iyer, H., Can, A., Roysam, B., Stewart, C.V., Tanenbaum, H.L., Majerovics, A., Singh, H.: "Robust Classification of Longitudinal Changes in Color Retinal Fundus Images for Monitoring Diabetic Retinopathy," (accepted), IEEE Transactions on Biomedical Engineering.
3. Narasimha-Iyer, H., Can, A., Roysam, B., Stewart, C.V., Tanenbaum, H.L., Majerovics, A., and Singh, H.: "Semantic Change Understanding of Vascular and Non-Vascular Changes from Multi-temporal Color Retinal Fundus Images." Submitted to Association for Research in Vision and Ophthalmology (ARVO), 2005.
4. Narasimha-Iyer, H., Can, A., Roysam, B., Stewart, C.V., Tanenbaum, H.L., and Majerovics, A.: "Change Classification and Severity Scoring from Multi-Temporal Retinal Fundus Images for Monitoring Progression of Diabetic Retinopathy," Diabetic Technology Meeting, Philadelphia, PA, USA, October 2004.
5. Narasimha-Iyer, H., Can, A., Roysam, B., Stewart, C.V., Tanenbaum, H.L., Majerovics, A., and H. Singh: "Automated Analysis of Longitudinal Changes in Color Retinal Fundus Images for Monitoring Diabetic Retinopathy." Submitted to IEEE Transactions on Medical Imaging, December 2004.
6. Mahadevan, V., Narasimha-Iyer, H., Roysam, B., and Tanenbaum, H.L.: "Robust Model Based Vasculature Detection in Noisy Biomedical Images," IEEE Transactions of Information Technology in Biomedicine, vol. 8, No. 3, September 2004.
7. Tsai, C.L., Stewart, C.V., Tanenbaum, H.L., and Roysam, B.: "Model-Based Method for Improving the Accuracy and Repeatability of Estimating Vascular Bifurcations and Crossovers from Retinal Fundus Images," IEEE Transactions on IT for Biomedicine, vol. 8, No. 2, June 2004.
8. Lin, G. Fritzsche, K.H., Stewart, C.V., Tanenbaum, H.L., and Roysam, B.: "Predictive Scheduling Algorithms for Real-time Feature Extraction and Spatial Referencing: Application to Retinal Image Sequences," IEEE Transactions on Biomedical Engineering, vol. 51, No. 1, January 2004.
9. Shen, H., Stewart, C.V., Roysam, B., Lin, G., and Tanenbaum, H.L.: "Frame-Rate Spatial Referencing Based on Invariant Indexing and Alignment with Application to Laser Retinal Surgery," vol. 25, No. 3, pp. 379-384, IEEE Transactions on Pattern Analysis and Machine Intelligence, March 2003.

10. Tsai, C.L., Stewart, C.V., Tanenbaum, H.L., and Roysam, B.: "Model-Based Method for Improving The Accuracy and Repeatability of Estimating Vascular Bifurcations and Crossovers From Retinal Fundus Images," IEEE Transactions on IT for Biomedicine, January 2003.
11. Fritzsche, K.H., Can, A., Shen, H., Tsai, C.L., Turner, J.N., Tanenbaum, H.L., Stewart, C.V., and Roysam, B.: "Automated Model Based Segmentation, Tracing, and Analysis of Retinal Vasculature from Digital Fundus Images" Chapter in Angiography and Plaque Imaging: Advanced Segmentation, Jasjit Suri and Swami Laxminarayan (eds.), pp. 225-298, ISBN 0-8493-1740-1, CRC Press, Boca Raton, FL, Biomedical Engineering Series edited by Michael Neuman, 2003.
12. C.L. Tsai, Stewart, C.V., Roysam, B., and Tanenbaum, H.L.: "Covariance-Driven Retinal Image Registration Initialized From Small Sets of Landmark Correspondences, to appear in IEEE International Symposium on Biomedical Imaging, July 2002.
13. Lin, G., Fritzsche, K.H., Stewart, C.V., Tanenbaum, H.L., and Roysam, B.: "Predictive Scheduling Algorithms for Real-time Feature Extraction and Spatial Referencing: Application to Retinal Image Sequences," IEEE Transactions on Biomedical Engineering, April 2002.
14. Can, A., Stewart, C.V., Roysam, B., and Tanenbaum, H.L.: "A Feature-Based Algorithm for Joint, Linear Estimation of High-Order Image-to-Mosaic Transformations: Mosaicing the Curved Human Retina," vol. 24, no. 3, March 2002.
15. Can, A., Stewart, C.V., Roysam, B., and Tanenbaum, H.L.: "A Feature-Based Robust Hierarchical Algorithm for Registration Pairs of Images of the Curved Human Retina," IEEE Transactions on Pattern Analysis and Machine intelligence, vol. 24, No. 3, March 2002.
16. Shen, H., Stewart, C.V., Roysam, B., Lin, G., Tanenbaum, H.L.: "Frame-Rate Spatial Referencing Based on Invariant Indexing and Alignment with Application to Laser Retinal Surgery," Proc. IEEE Conference on Computer vision and Pattern Recognition, June 2001.
17. Shen, H., Roysam, B., Stewart, C.V., Turner, J.N., and Tanenbaum, H.L.: "Optimal Scheduling of Tracing Computations for Real-Time Vascular Landmark Extraction from Retinal Fundus Images," IEEE Transactions on Information Technology in Biomedicine, vol. 5, No. 1, March 2001.
18. Can, A., Stewart, C.V., Roysam, B., and Tanenbaum, H.L.: "A feature-Based Technique for Joint, Linear Estimation of High-Order Image-to-Mosaic Transformations: Application to Mosaicing the Curved Human Retina," Proceedings IEEE Computer Society Conference on Computer Vision and Pattern Recognition, June 2000.

19. Can, A., Shen, H., Turner, J.N., Tanenbaum, H.L., and Roysam, B.: "Rapid automated tracing and feature extraction from live high-resolution retinal fundus images using direct exploratory algorithms," IEEE Transactions on Information Technology in Biomedicine, vol. 3, no 2, pp. 125-138, June 1999.
20. Becker, D.E., Can, A., Tanenbaum, H.L., and Turner, J.N., Roysam, B.: "Image Processing Algorithms for Retinal Montage Synthesis, Mapping, and Real-Time Location Determination," IMIA Yearbook of Medical Informatics, International Medical Informatics, Association, Schattauer Press, Germany, (Bemmel et al., eds), pp. 433-446, 1999.
21. Can, A., Stewart, C.V., Tanenbaum, H.L., and Roysam, B.: "Robust Hierarchical Algorithm for Constructing a Mosaic from Images of the Curved Human Retina," Proceedings IEEE Computer Society Conference on Computer Vision and Pattern Recognition, June 1999.
22. Becker, D.E., Can, A., Tanenbaum, H.L., and Turner, J.N., and Roysam, B.: "Image Processing Algorithms for Retinal Montage Synthesis, Mapping, and Real-Time Location Determination," IEEE Transactions on Biomedical Engineering, vol. 45, No. 1, January 1998
23. Can, A., Shen, H., Al-Kofahi, K., Turner, J.N., Tanenbaum, H.L., McCandiess, B., and Roysam, B.: "Rapid, Automated, and Robust Tracing of Vasculature, and Quantification of Visual Features from Angiographic Images," 55th Annual Meeting of the Microscopy Society of America, Cleveland, Ohio, August 10-14, 1997.
24. Roysam, B., Becker, D.E., Can, A., Turner, J.N., and Tanenbaum, H.L.: "Real-Time Image Processing Algorithms For A Computer-Assisted Retinal Laser Surgery System," Investigative Ophthalmology and Visual Science, Vol. 37, No. 3, pp. S957, Association for Research in Vision and Ophthalmology, February 1996.
25. Becker, D.E., Roysam, B., Tanenbaum, H.L., and Turner, J.N.: "Real-Time Image Processing Algorithms for an Automated Retinal Laser Surgery System," Proceeding of the Second IEEE International Conference on Image Processing, 1995.
26. Mahoney, M.C., Burnett, W.S., Majerovics, A., and Tanenbaum, H.L.: The Epidemiology of Ophthalmic Malignancies in New York State American Academy of Ophthalmology 1990; 97:1143-1147.
27. Gangadhar, D.V., Wolf, B.M., and Tanenbaum, H.L.: Naka-Rushton Equation Parameters in Electroretinogram Analysis of Daunomycin Effects on Retinal Function. DOC Ophthalmology 72:61-70, 1989.
28. Majerovics, A., Dorfman, M., and Tanenbaum, H.L.: Incidence of Severe Retinopathy of Prematurity (ROP) in Extremely Low Birth Weight Infants Given Surfactant (Calf Lung Surface Extract); Abstract Investigative Ophthalmology, Supplement Vol 30, Page 107, March 1989.

29. Tanenbaum, H.L.: Editorial; Ophthalmic Practice, Vol. 7, No. 1, February 1989.
30. Majerovics, A., Tanenbaum, H.L., and McCabe, O.: Retinopathy of Prematurity and Intraventricular Hemorrhages in the Pre-Term Infant; Abstract, Investigative Ophthalmology, Supplement, Vol. 28, No. 3, pg. 105, March 1987.
31. Catalano, R., Tanenbaum, H.L., Majerovics, A., Brassel, T., and Kassoff A.: White-Centered Hemorrhages in Diabetic Retinopathy; Ophthalmology, Vol. 94, No. 4, April 1987.
32. Tanenbaum, H.L., Majerovics, A., and Kirsch, L.: "Multiple Krypton-Red Laser Treatment for Subretinal Neovascularization in Age-Related Macular Degeneration" Chapter in Text, Laser Photocoagulation of Retinal Disease, Editors: Gitter, Shatz, Yannuzzi and MacDonald, 1988.
33. Tanenbaum, H.L., Mehta, N., and Majerovics, A.: Transmission Profiles of Contact Lenses Used in Retino-Choroidal Photocoagulation; Abstract, Investigative Ophthalmology, Supplement, Vol. 27, No. 3, pg. 315, March 1986.
34. EYESAT Videotape - Central Retinal Vein Occlusions: Diagnosis and Treatment; EYESAT Corporation, 1984.
35. Tanenbaum, H.L.: "Deja Vu," Editorial; Archives of Ophthalmology, Vol. 103, April 1985.
36. Majerovics, A., and Tanenbaum, H.L.: Endophthalmitis and Pars Plana Vitrectomy; Canadian Journal of Ophthalmology, Vol. 9, No. 1, 1984.
37. Tanenbaum, H.L.: Cystoid Macular Edema; Perspectives in Ophthalmology, Vol. 4, No. 4, December 1980.
38. Brock, L., and Tanenbaum, H.L.: Penetrating Wooden Orbital Foreign Bodies; Canadian Journal of Ophthalmology, 15:70, 1980.
39. Tanenbaum, H.L.: Retinal Detachment and Pseudophakia; Canadian Journal of Ophthalmology, 14:249, 1979.
40. Tanenbaum, H.L. and Chandra, D.: Gelatin Implants in Retina Surgery; Canadian Journal of Ophthalmology, 11:1, 1976.
41. Tanenbaum, H.L., and Rotenberg, A.: C.W. Laser Adaptation of Jena 5000 Photocoagulator; Canadian Journal of Ophthalmology, 11:171, 1976.
42. Kaback, H.B., and Tanenbaum, H.L.: The Macula in Diabetes; Canadian Journal of Ophthalmology, 9:202, 1974.

43. Svarc, D., Mendelson, J., and Tanenbaum, H.L.: Intravenous Application of Fluorescent Protein Conjugates in Ophthalmology; Canadian Journal of Ophthalmology, 8:124, 1974.
44. Rosen, J., and Tanenbaum, H.L.: Venous Shunting and Macular Edema; Canadian Journal of Ophthalmology, 8:349, 1973.
45. Tanenbaum, H.L.: Editorial; Ophthalmic Practice, Vol. 7, No. 1, February 1989.
46. Tanenbaum, H.L.: Gas Injection in the Rabbit Vitreous - A Preliminary Study; Canadian Journal of Ophthalmology, 7:349, 1972.
47. Tanenbaum, H.L., and Eshagian, M.: Senile Disciform Degeneration of the Macula: The Other Eye - A Fluorescein Angiographic Study; Canadian Journal of Ophthalmology, 7:280, 1972.
48. Tanenbaum, H.L., Schepens, C.L., Elzenieny, I., and Freeman, H.: Macular Pucker Following Retinal Detachment Surgery; Archives of Ophthalmology, Vol. 83, March 1970.
49. Tanenbaum, H.L., Schepens, C.L., Elzenieny, I., and H. Freeman: Macular Pucker Following Retina Surgery, A Biomicroscopic Study; Canadian Journal of Ophthalmology, pg. 20, Vol. 4 #1, January 1969.
50. Hovland, K., Tanenbaum, H.L., and Schepens, C.L.: A New Scleral Depressor; American Journal of Ophthalmology, 66:117, 1968.
51. Tanenbaum, H.L., and DeMargerie, J.: Sudden Bilateral Loss of Central Vision in Pseudoxanthoma Elasticum Fluorescein Angiography; Canadian Journal of Ophthalmology, 1:221, 1966.
52. Tanenbaum, H.L., and Rosen, D.A.: Congenital Anterior Staphyloma; American Journal of Ophthalmology, 61:336, 1966.

Refereed Conference Proceedings

UNITED STATES

1. Narasimha-Iyer, H., Can, A., Roysam, B., Stewart, C.V., Tanenbaum, H.L., Majerovics, A., and Singh, H.: "Semantic Change Understanding of Vascular and Non-Vascular Changes from Multi-Temporal Color Retinal Fundus Images," Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting, Fort Lauderdale, USA, 2005.
2. Narasimha-Iyer, H., Can, A., Roysam, B., and Tanenbaum, H.L.: "Change Classification and Severity Scoring from Multi-Temporal Retinal Fundus Images for Monitoring Progression of Diabetic Retinopathy," Diabetic Technology Meeting, Diabetes Technology Society, Philadelphia, USA, October 28-30, 2004.

3. Tsai, C.L., Stewart, C.V., Roysam, B., and Tanenbaum, H.L.: "Covariance-Driven Retinal Image Registration Initialized From Small Sets of Landmark Correspondences, to appear in IEEE International Symposium on Biomedical Imaging, Washington DC, July 2002.
4. Shen, H., Stewart, C.V., Roysam, B., Lin, G., Tanenbaum, H.L.: "Frame-Rate Spatial Referencing Based on Invariant Indexing and Alignment with Application to Laser Retinal Surgery," Proc. IEEE Conference on Computer vision and Pattern Recognition, Hawaii, June 2001.
5. Can, A., Stewart, C.V., Roysam, B., and Tanenbaum, H.L.: "A feature-Based Technique for Joint, Linear Estimation of High-Order Image-to-Mosaic Transformations: Application to Mosaicing the Curved Human Retina, Proceedings IEEE Computer Society Conference on Computer Vision and Pattern Recognition, Hilton Head Island, South Carolina, June 2000.
6. Can, A., Shen, H., Al-Kofahi, K., Turner, J. N., Tanenbaum, H. L., McCandless, B., and Roysam, B.: "Rapid, Automated, and Robust Tracing of Vasculature, and Quantification of Visual Features from Angiographic Images," 55th Annual Meeting of the Microscopy Society of America, Cleveland, Ohio, August 10-14, 1997.
7. Roysam, B., Becker, D. E., Ali Can, Turner, J. N., Tanenbaum, H. L.: "Real-Time Image Processing Algorithms For An Computer-Assisted Retinal Laser Surgery System," Investigative Ophthalmology and Visual Science, Vol. 37, No. 3, pp. S957, Association for Research in Vision and Ophthalmology, February 1996.
8. Becker, D. E., Roysam, B., Tanenbaum, H. L., and Turner, J. N.: "Real-Time Image Processing Algorithms for an Automated Retinal Laser Surgery System," Proceedings of the Second IEEE International Conference on Image Processing, Washington DC, 1995.