

Jerry (Gerald) Sedgewick
Curriculum Vitae

Program Director
Biomedical Image Processing Lab (BIPL)
University of Minnesota
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Books/Book Chapters

Sedgewick, J. (2002). Quick Photoshop for Research: A Guide to Digital Imaging for Photoshop 4x, 5x, 6x, & 7x. *Kluwer Academic/Plenum Publishers*.

Sedgewick, J. (2007). Considerations When Altering Digital Images. *Essential Methods and Protocol*. Wiley Press.

Sedgewick, J. (2008). Post-Processing Confocal Images. (Book Chapter) *Confocal Microscopy: Methods & Protocols*. Humana Press (in publication).

Sedgewick, J. (2008). Scientific Imaging with Photoshop: Methods, Measurement and Output. *Peachpit Press*, Berkely, CA.

Selected Publications

A. T. Haase, K. Henry, M. Zupancic, **G. Sedgewick**, R. A. Faust, H. Melroe, W. Cavert, K. Gebhard, K. Staskus, Z-Q Zhang, P. J. Dailey, H. H. Balfour Jr., A. Erice, A. S. Perelson. (1996) Quantitative Image Analysis of HIV-1 Infection in Lymphoid Tissue. *Science* Vol 274: 885-1048.

G. Sedgewick, Z-Q Zhang, and N. Pham. (1996) Cover Image, *Science* Vol 274

J. Sedgewick. (1997) Cover image, *Science* Vol. 276

Z-Q Zhang, D. W. Notermans, **G. Sedgewick**, W. Cavert, S. Wietgreffe, M. Zupancic, K. Gebhard, K. Henry, L. Boies, Z. Chen, M. Jenkins, R. Mills, H. McDade, C. Goodwin, C. M. Schuwirth, S. A. Danner, A. T. Haase. (1997) Kinetics of CD4+ T Cell Repopulation of Lymphoid Tissues After Treatment of HIV-1 Infection. *Proc Natl Acad Sci U S A*. Vol 95(3): 1154-9.

Fatemi SH, Sidwell R, Kist D, Akhter P, Meltzer HY, Bailey K, Thuras P, **Sedgewick J.** (1998) Differential expression of synaptosome-associated protein 25 kDa [SNAP-25] in hippocampi of neonatal mice following exposure to human influenza virus in utero. *Brain Res*. Vol. 800(1):1-9.

Setiadi H, **Sedgewick G**, Erlandsen SL, McEver RP. (1998) Interactions of the cytoplasmic domain of P-selectin with clathrin-coated pits enhance leukocyte adhesion under flow. *J Cell Biol*. Vol. 142(3): 859-71.

Dombek PE, Cue D, **Sedgewick J**, Lam H, Ruschkowski S, Finlay BB, Cleary PP. (1999) High-

frequency intracellular invasion of epithelial cells by serotype M1 group A streptococci: M1 protein-mediated invasion and cytoskeletal rearrangements. *Mol Microbiol.* Vol. 31(3): 859-70.

Wild R, Ramakrishnan S, **Sedgewick J**, Griffioen AW. (2000) Quantitative assessment of angiogenesis and tumor vessel architecture by computer-assisted digital image analysis: effects of VEGF-toxin conjugate on tumor microvessel density. *Microvasc Res.* Vol. 59(3): 368-76.

Rudney JD, Chen R, **Sedgewick GJ**. (2001) Intracellular Actinobacillus actinomycetemcomitans and Porphyromonas gingivalis in buccal epithelial cells collected from human subjects. *Infect Immun.* Vol. 69(4): 2700-7.

Grube E, Gerckens U, Yeung AC, Rowold S, Kirchhof N, **Sedgewick J**, Yadav JS, Stertz S. (2001) Prevention of distal embolization during coronary angioplasty in saphenous vein grafts and native vessels using porous filter protection. *Circulation.* 2001 Vol. 104(20): 2436-41.

Fatemi SH, Earle JA, Stary JM, Lee S, **Sedgewick J**. (2001) Altered levels of the synaptosomal associated protein SNAP-25 in hippocampus of subjects with mood disorders and schizophrenia. *Clinical Neuroscience and Neuropathology.* Vol. 12(15): 3257-62.

Rudney JD, Chen R, **Sedgewick GJ**. (2005) Actinobacillus actinomycetemcomitans, Porphyromonas gingivalis, and Tannerella forsythensis are components of a polymicrobial intracellular flora within human buccal cells. *J Dent Res.* 2005 Jan;84(1):59-63.

Henry M, Polydorou A, Henry I, Liasis N, Polydorou A, Polydorou V, Demesticha T, Skandalakis P, Kotsiomitis E, Hugel M, **Sedgewick J**, Ruth G. (2007). New distal embolic protection device the FiberNet 3 dimensional filter: first carotid human study. *Catheter Cardiovasc Interv.* 2007 Jun 1;69(7):1026-35

Yokoyama Y, **Sedgewick G**, Ramakrishnan S. (2007) Endostatin binding to ovarian cancer cells inhibits peritoneal attachment and dissemination. *Cancer Res.* 2007 Nov 15;67(22):10813-22

Reilly C, Wietgreffe S, **Sedgewick G**, Haase A. (2007) Determination of simian immunodeficiency virus production by infected activated and resting cells. *AIDS.* 2007 Jan 11;21(2):163-8

Sedgewick, J. (2002). Resolution Confusion. *Microscopy Today.* Vol 9 18.

Sedgewick, J. (2003). Use Adobe Acrobat to Keep Original Resolutions and to Make TIFF Files From Any Program. *Microscopy Today.* Vol 10: 16 -18.

Sedgewick, J. (2003). Segmentation Before Quantization By Using Photoshop: Darkfield Images. *Microscopy Today.* Vol. 11 Number 1: 18 - 22.

Sedgewick, J. (2003). Photoshop Tutorials: Selecting ROIs from Brightfield Images. *Microscopy Today.* Vol. 11 Number 2: 16 - 20.

Education/Employment:

1998 to present

Program Director
Biomedical Image Processing Lab (BIPL)

Department of Neuroscience, University of Minnesota

1986 to 1998 Principal Photographer
Cell Biology and Neuroanatomy, University of Minnesota

1983 to 1998 Commercial Photographer
Gerald Sedgewick Photography, St. Paul, Minnesota

1973 to 1977 B.A. Journalism/English
University of Iowa

Professional Certification

Computer-Assisted Image Analysis, North Carolina State University, 1996. John Russ, Ph.D., instructor.

Applications of Unbiased Stereology to Neural Systems Course, 1997. Peter R. Mouton, Ph.D. and Mark West, Ph.D., instructors.

Consultantships

Training and Image Analysis, **Medtronic**, Minneapolis, MN (ongoing contract).

Image Analysis, **Lumenbio, Inc.** (start up medical device company)

Color & Contrast Correction Training, **Hewlett-Packard** (via Microscopy, Marketing & Education), Corvallis, OR (2003).

Imaging Device Invention Consultation, **Blizzard Genomics**, Minneapolis, MN (2001- 2002).

Digital Analysis Consultant, **Paul Termin and Associates, Inc.** (pathological analysis company), St. Paul, MN (1999-2001).

Digital Analysis Consultant, **Angiogard, Inc.** (bought by Johnson & Johnson, Inc.), Plymouth, MN (1998).

Teaching

University of Minnesota (1999 - Present)

Graduate Courses:

Light and Electron Microscopy. Co-taught with Stan Erlandsen, Ph.D.

Undergraduate Courses:

Tissue Engineering and Microscopy. Co-taught with Allison Hubbel, Ph.D.

Training Workshops:

Digital Imaging Workshops. University of Wisconsin (Madison), University of Michigan, University

of Indiana/Purdue, University of Iowa (2005)

Digital Imaging Workshop. University of Arizona, Tucson, AZ (2003)

Photoshop for Research. McCrone Research Institute, Chicago, IL (2002)

Streamlining Digital Imaging Applications. Microscopy Society of America, Long Beach, CA (2001)

Funded Projects

Sedgewick, J. (2000). Inverted Light Microscopy system for Live Cell Analysis. Minnesota Medical Foundation (\$24,000).

Sedgewick, J. (2002). Ultra-Low Light Video Rate Imaging Camera. Minnesota Medical Foundation (\$25,000).

Sedgewick J. (2003). Inverted Microscope for improved imaging of live tissue on a multi-photon confocal system. Grant-in-Aid of Research, Artistry and Scholarship Program (\$25,000).

Instrumentation:

Completion of a video-rate, multiphoton microscope according to Sanderson-Parker design: Included power supply and electronic control box for PMTs, housings and connectors for devices, optics, optical bench set up, etc.

Completion of a Second Harmonic Generation (SHG) multiphoton confocal microscope using an Olympus Fluoview 300 unit with 3 external detectors, electronics control box, optics, optical bench set up, etc.

Construction of metal-halide lamps for microscope illumination, along with additional, experimental light sources (currently being reviewed for patent possibilities).