Solltech Inc. Technology Innovation Center Suite #9 Oakdale, Ia. 52319 Phone (319) 335-4702 Fax (319) 335-4489 www.geocities.com/solltech

## **Recent Publications Employing DIAS® and DIAS® based Software**

Because DIAS was designed to be sed in research, we know that research showing the development of, and utilizing, DIAS provides the best examples of the systems capabilities. Listed below are a small sampling of papers using DIAS, as well as papers using DMS, the predecessor to DIAS.

van Es, S., et al., 2001. Tortoise, a Novel Mitochondrial Protein, Is Required for Directional Responses of *Dictyostelium* in Chemotatctic Gradients. J. Cell Biol., 152, 621-632.

Zebda, N., et al., 2000. Phosphorylation of ADF/Cofilin Abolishes EGF-induced Actin Nucleation at the Leading Edge and Subsequent Lamellipod Extension. J. Cell Biol., 151, 1119-1128.

Scholz, H., et al., 2000. Functional Ethanol Tolerance in Drosophila. Neuron, 28, 261-271.

Palmieri, S. J. et al., 2000. Mutant Rac1B Expression in *Dictyostelium*: Effects on Morphology, Growth, Endocytosis, Development, and the Actin Cytoskeleton. <u>Cell Motility and the Cytoskeleton</u>, 46, 285-304.

Wessels, D. J., et al, 2000. The Internal Phosphodiesterase RegA Is Essential for the Suppression of Lateral Pseudopods during *Dictyostelium* Chemotaxis. <u>Molecular Biology of the Cell</u>, 11, 2803-2820.

Condeelis, J. S., et al, 2000. Imaging of cancer invasion and metastasis using green flourescent protein. <u>European J of Cancer</u>. 36, 1671-1680.

Nurcombe, V., et al, 2000. The Proliferative and Migratory Activities of Breast Cancer Cells Can Be Differentially Regulated by Heparan. J Biol. Chem., 275, 300-318.

Chang, Y. C., et al, 2000. Role of Rac in Controlling the Actin Cytoskeleton and Chemotaxis in the Motile Cell. <u>PNAS</u>, 97, 5225-5230.

Shutt, D. C., et. al, 2000. Changes in the Motility, Morphology, and F-Actin Architecture of Human Dendritic Cells in an In Vitro Model of Dendritic Cell Development. <u>Cell Motility and the Cytoskeleton</u>., 46, 200-221.

Bear, J. E., et al, 2000. Negative Regulation of Fibroblast Motility by Ena/VASP Proteins. Cell, 101, 717-728.

Epstein, A. E., et al, 2000. Migration of cardiac neural crest cells in *Splotch* embryos. <u>Development</u>, 127, 1869-1878.

Bainton, R. J., et al, 2000. Dopamine modulates acute responses to cocaine, nicotine and ethanol in *Drosophila*. <u>Current Biology</u>, 10, 187-194.

Chung, C. Y., et al, 1999. PAKa, a Putative PAK Family Member, Is Required for Cytokinesis and the Regulation of the Cytoskeleton in *Dictyostelium discoideum* Cells . J. Cell Biol., 147, 559-576.

Shiraha, H., et al, 1999. IP-10 Inhibits Epidermal Growth Factor-induced Motility by Decreasing Epidermal Growth Factor Receptor-mediated Calpain Activity. J. Cell Biol., 146, 243-254.

Shutt, D. C., et al, 1999. HIV-induced T-cell syncytia release a two component T-helper cell chemoattractant composed of Nef and Tat. J. Cell Science, 112, 3931-3941.

Wu, X, et al, 1998. Visualization of Melanosome Dynamics within Wild-Type and Dilute Melanocytes Suggests a Paradigm for Myosin V Function in Vivo. J. Cell Biol., 143, 1899-1918.

de Bono, M., et al, 1998. Natural Variation in a Neuropeptide Y Receptor Homolog Modifies Social Behavior and Food Response in C. *elegans*. <u>Cell</u>, 94, 679-689.

Farina, K. L., et al, 1998. Cell Motility of Tumor Cells Visualized in Living Intact Primary Tumors Using Green Flourescent Protein. <u>Cancer Res.</u>, 58, 2538-2532.

Wyckoff, J. B., et al, 1998. Suppression of ruffling by the EGF receptor in chemotactic cells. <u>Experimental Cell</u> <u>Research</u>, 242, 100-109.

Bailly, M., et al, 1998. Regulation of Protrusion Shape and Adhesion to the Substratum during Chemotactic Responses of Mammalian Carcinoma Cells. <u>Exp. Cell Res.</u>, 241, 285-299.

Wu, C. -F., et al. 1998. Functional and developmental plasticity of *Drosophila* neurons. <u>Adv. Insect Physiol</u>. 17, 285-340.

Wang, Y, et al, 1998. MAP kinase function in amoeboid chemotaxis. J. Cell Sci, 111, 373-383.

Shutt, D, et al, 1998. T cell syncytia induced by HIV release T cell chemoattractants: demonstration with a newly developed single cell chemotaxis. J. Cell Sci., 111, 99-109.

Soll, D, et al, 1998. "Motion Analysis of Living Cells". John Wiley, Inc., Wiley-Liss Division, New York, 298 pages.

Wang, J. W., et al, 1997. Morphometric description of the wandering behavior in *Drosophila* larvae: aberrant locomotion in Na+ and K+ channel mutants revealed by computer-assisted motion analysis. J. Neurogent. 11, 231-254.

Taft, P. J., et al, 1997. The *Drosophila* ableson tyrosine kinase: effects on neuronal adhesion and growth cone motility in cell culture. <u>Abstr. Ann. Drosophila Res. Conf.</u> 38, 203.

Esenlante, R, et al, 1997. Chemotaxis to cAMP and slug migration in *Dictyostelium* both depend on MigA, a BTB protein. <u>Molec. Biol. Cell</u>, 8, 1763-1775.

Cammer, M., et al, 1997. Computer-assisted analysis of single-cell behavior. <u>Methods in Molecular Biology</u>. 75, 459-481.

Soll, D, et al, 1997. Researchers in cell motility and the cytoskeleton can play major roles in understanding AIDS. <u>Cell Motil. Cytoskel.</u>, 37, 91-97.

Aizawa, H, et al, 1997. A green fluorescent protein-actin fusion protein dominantly inhibits cytokinesis, cell spreading, and locomotion in *Dictyostelium*. <u>Cell. Struct. Funct.</u>, 22, 335-345.

Royal, D, et al, 1997. Quantitative analysis of *Caenochabditis elegans* sperm motility and how it is affected by mutsnts spell and unc54. <u>Cell Motil. Cytoskel.</u>, 37, 98-110.

Sylwester, A, et al, 1997. The invacive and destructive behaviour of HIV-induced T cell syncytia on collagen and endothelim. J. Leuk. Biol., 63, 233-244.

Stites, J, et al, 1997. Interpreting the role of myosin heavy chain (MHC) phosphorylation through a computerassisted behavioral analysis of a *Dictyostelium* mutant which can not phosphorylate the MHC tail region. <u>Cell Motil.</u> <u>Cytoskel.</u>, 39, 31-51.

Leberer, E., eta al, 1997. Functional characterization of the Cdc42p binding domain of yeast Ste20p protein kinase. <u>EMBO Journal</u>, 16, 83-97.

Sylwester, A, et al, 1997. HIV-induced T cell syncytia are self-perpetuating and the primary cause of T cell death in culture. J. Immun., 158, 3996-4007.

Warren, K, et al, 1996. Overexpression of microfilament-stabilizing human caldesmon fragment, CaD39, affects cell attachment, spreading and cytokinesis. <u>Cell Motil. Cytoskel.</u>, 34, 215-229.

Mizuno, T, et al, 1996. Locomotion of neutrophil fragments occurs by graded radial extension. <u>Cell Motil.</u> <u>Cytoskel.</u>, 35, 289-297.

Cox, D, et al, 1996. Re-expression of ABP-120 rescues cytoskeletal, motility, and phagocytosis defects of ABP-120-*Dictyostelium* mutants. <u>Mol. Biol. Cell</u>, 7, 803-823.

Aizawa, H, et al, 1996. Overexpression of cofilin stimulates bundling of actin filaments, membrane ruffling, and cell movement in *Dictyostelium*. J. Cell Biol., 132, 335-344.

Shelden, E., et al, 1996. *Dictyostelium* cell shape generation requires myosin II. <u>Cell Motility and the</u> <u>Cytoskeleton</u>, 35, 59-67.

Jung, G., et al, 1996. *Dictyostelium* mutants lacking multiple classic myosin I isoforms reveal combinations of shared and distint functions. <u>J Cell Biology</u>, 133(2), 305-323.

Kim, Y.-T, et al, 1996. Reduced growth cone motility in cultured neurons from *Drosophila* memory mutants with a defective cAMP cascade. J. Neurosci. 16, 5593-5602.

Cox, D, et al, 1996. Targeted disruption of the ABP-120 gene leads to cells with altered motility. J. Cell Biol., 116, 943-955.

Wessels, D, et al, 1996. A Dictyostelium myosin I plays a crucial role in regulating the frequency of pseudopods formed on the substratum. <u>Cell Motil. Cytoskel</u>., 33, 64-79.

Shutt, D, et al, 1995. Ponticulin plays a role in the spatial stabilization of pseudopods. J. Cell Biol., 131, 1495-1506.

Soll, D,1995. The Use of Computers in Understanding How Animal Cells Crawl. <u>Internat. Rev. Cytol.</u>, 163, 43-104.

Shutt, D, et al, 1995. HIV-Induced Syncytia in Peripheral Blood Cell Cultures Crawl by Extending Giant Pseudopods. <u>Cell. Immun.</u>, 166, 261-274.

Sylwester, A, et al, 1995. T cells and HIV-induced T cell syncytia exhibit the same motility cycle. <u>J. Leuk.</u> <u>Biol.</u>, 57, 643-650.

Royal, D, et al, 1995. In Ascaris Sperm Pseudopods, MSP Fibers Move Proximally at a Constant Rate Regardless of the Forward Rate of Cellular Translocation. <u>Cell Motil. Cytoskel.</u>, 31, 241-253.

Shelden, E, et al, 1995. Mutants lacking myosin II resist forces generated during multicellular morphogenesis. J. Cell Sci., 108, 1105-1115.

Chandrasekhar, A., et al, 1995. A Mutation That Depresses cGMP Phosphodiesterase Activity in *Dictyostelium* Affects Cell Motility through an Altered Chemotactic Signal. <u>Devel. Biol.</u>, 169, 109-122.

Soll, D.R., et al, 1994. The role of T cell motility and cytoskeletal reorganization in HIV-induced syncytium formation: a perspectus. <u>AIDS Res. and Hum. Ret.</u>, 10, 325-327.

Sylwester, A., et al, 1993. HIV-induced syncytia of a T cell line form single giant pseudopods and are motile. J. Cell Sci., 106, 941-953.

Titus, M., et al, 1993. The Unconventional Myosin Encoded by the *myoA* Gene Plays a Role in *Dictoyostelium* Motility. Mol. Biol. Cell, 4, 233-246.

Segall, J., 1992. Behavioral responses of streamer F mutants of *Dictyostelium discoideum*: effects of cyclic GMP on cell motility. J. Cell Sci., 101, 589-597

Wessels, D., et al, 1992. The complex behavior cycle of chemotaxing *Dictyostelium* Amoebae is Regulated Primarily by the Temporal Dynamic of the Natural cAMP Wave. <u>Cell Motil. Cytoskel.</u>, 23, 145-156.

Alexander, S., et al, 1992. Discoidin proteins of *Dictyostelium* are necessary for normal cytoskeletal organization and cellular morphology during aggregation. <u>Differentiation</u>, 51, 149-161.

Cox, D., et al, 1992. Targeted Disruption of the ABP-120 Gene Leads to Cells with Altered Motility. J. Cell Biol., 116, 943-955.

Kim, Y.-T, et al, 1991. Distinctions in growth cone morphology and motility between monopolar and multipolar neurons in Drosophila CNS cultures. J. Neurobiol. 22, 263-275.

Hegmann, T., et al, 1991. Inhibition of Intracellular Granule Movement by Microinjection of Monoclonal Antibodies Against Caldesmon. <u>Cell Motil. Cytol.</u>, 20, 109-120.

Wessels, D., et al, 1991. Myosin IB Null Mutant of *Dictyostelium* Exhibits Abnormalities in Motlity. <u>Cell</u> <u>Motil. Cytoske</u>l., 20, 301-315.

Brady-Kalnay, S.M., et al, 1991. Invasion by WC5 Rat Cerebellar Cells is Independent of RSV-Induced Changes in Growth and Adhesion. Internat. J. Cancer, 49, 239-245.

Fukui, Y., et al, 1991. Cell Behavior and Actomyosin Organization in *Dictyostelium* During Substrate Exploration. <u>Cell. Struct. Funct</u>. 16, 289-301.

Brady-Kalney, S., et al, 1991. Invasion of Rous Sarcoma Virus-Transformed Retinal Cells: Role of Cell Motility. Internat. J. Cancer, 47, 560-568.

Wessels, D., et al., 1990. Myosin II Heavy Chain Null Mutant of *Dictyostelium* Exhibits Defective Intracellular Particle Movement. J. Cell Biol., 111, 1137-1148.

Kim, Y.T., et al., 1990. Distinctions in Growth Cone Morphology and Motility Between Monopolar and Multipolar Neurons in *Drosophila* CNS cultures. J. Neurobiol., 22, 263-275.

Wessels, D., et al., 1989. cAMP-Mediated Inhibition of Intracellular Particle Movement and Actin Reorganization in *Dictyostelium*. J. Cell Biol., 109, 2841-2851.

Vale, R.D., et al, 1989. One-Dimensional Diffusion of Microtubules Bound to Flagellar Dynein. <u>Cell</u>, 59, 915-925.

Soll, D.R., et al, 1988. The "Dynamic Morphology System": a Method for Quantitating Changes in Shape, Pseudopod Formation and Motion in Normal and Mutant Amebae of *Dictyostelium discoideum*. J. Cell. Biochem., 37, 177-192.

Soll, D.R., et al, 1988. "DMS", a Computer-Assisted System for Quantitating Motility, the Dynamics of Cytoplasmic Flow and Pseudopod Formation: its Application to *Dictyostelium* Chemotaxis. <u>In</u>: "Optical Approaches to the Dynamics of Cellular Motility: (ed. J. Condeelis). Supplement to <u>Cell Motil. Cytoskel.</u>, 10, 91-106.

Soll, D.R., et al, 1988. Development and Application of the "Dynamic Morphology System" for the Analysis of Moving Amebae. SPIE Proceedings, Vol. 832 (ed. H.C. Johnson). pp. 21-30.