

# Curriculum Vitae of Leandra Vicci

Ms. Leandra Vicci  
Lecturer of Computer Science and  
Director of the Applied Engineering Laboratory  
Department of Computer Science  
University of North Carolina, Chapel Hill, NC.

## Education:

- ★ Antioch College, Physics, B.S., 1964.

## Previous Appointments:

- ★ 1978 – Engineer, Electro Scientific Industries, Portland, OR;
- ★ 1975 – Supervisor, University of Oregon, Eugene, OR;
- ★ 1972 – Engineer, Oregon Graduate Center, Beaverton, OR;
- ★ 1965 – Engineer, Boeing Aerospace, Seattle, WA;
- ★ 1962 – Lab Technician, Scripps Institute of Oceanography, La Jolla, CA;
- ★ 1961 – Coop Intern, Woods Hole Oceanographic Institution, Woods Hole, MA;
- ★ 1960 – Coop Bench Technician, ACF Industries, Paramus, NJ;
- ★ 1960 – Coop Research Assistant, Florida State University, Tallahassee, FL.

## Awards:

- ★ 1996 UNC Chapel Hill Chancellor's Award for Innovation in Research.
- ★ 1996 North Carolina Governor's Award for Innovation.

## Publications: (n.b. change of name from V. Chi in 1999)

### BOOK CHAPTERS

- ★ Fisher, J. K., L. Vicci, K. Bloom, E. T. O'Brien, C. W. Davis, R. M. Taylor II, R. Superfine, "Magnetic Manipulation for the Biomedical Sciences," in *Handbook of Nanoscience, Engineering, and Technology, Second Edition*, CRC Press, 2007, pp. 15.1-15.21.
- ★ Taylor II, R. M., D. Borland, F. P. Brooks Jr., M. Falvo, M. Guthold, T. Hudson, K. Jeffay, G. Jones, D. Marshburn, S. J. Papadakis, L.-C. Qin, A. Seeger, F. D. Smith, D. H. Sonnenwald, R. Superfine, S. Washburn, C. Weigle, M. C. Whitton, P. Williams, L. Vicci and W. Robinett, "Visualization and Natural Control Systems for Microscopy," in *Visualization Handbook*, edited by C. Johnson and C. Hansen, Harcourt Academic Press, 2004, pp. 875-900.

### REFEREED JOURNALS

- ★ Spero, R. C., L. Vicci, J. Cribb, D. Bober, V. Swaminathan, E. T. O'Brien, S. Rogers, R. Superfine, "High Throughput system for magnetic manipulation of cells, polymers, and biomaterials," *Review of Scientific Instruments*, **79**, 083707 (2008), August 2008, pp. 083707/1-7.

- ★ Desai, K. V., G. Bishop, L. Vicci, E. T. O'Brien, R. M. Taylor II, R. Superfine, "Agnostic particle tracking for three-dimensional motion of cellular granules and membrane-tethered bead dynamics," *Biophysical Journal*, vol. 94 no. 6, March 2008, pp. 2374-84.
- ★ E. L. Bouzarth, A. Brooks, R. Camassa, J. Hao, T. J. Leiterman, R. M. McLaughlin, R. Superfine, J. Toledo, L. Vicci, "Epicyclic orbits in a viscous fluid about a precessing rod: Theory and experiments at the micro- and macro-scales," *Physical Review E*, vol. 76 no. 1, July 2007, pp. 016313/1-5.
- ★ Spero, R. C., B. Smith, L. Vicci, J. Cribb, E. T. O'Brien, S. T. Lord, R. Superfine, "High throughput microbead rheology of fibrin gels," *Biophysical Journal*, vol. 92 no. 1, Suppl. S, Jan 2007, p. 521A.
- ★ Cribb, J., D. B. Hill, R. M. Taylor II, L. Vicci, J. Fisher, K. V. Desai, M. G. Forest, R. Superfine, "Nonlinear rheology of entangled lambda-DNA solutions via driven microbead rheology" *Biophysical Journal*, vol. 92 no. 1, Suppl. S, Jan 2007, p. 638A.
- ★ Fisher, J. K., L. Vicci, J. Cribb, E. T. O'Brien, R. M. Taylor, R. Superfine, "Magnetic force micromanipulation systems for the biological sciences," *NANO*, vol. 1, no. 3, November 2006, pp. 191-205.
- ★ Hall, A. R., An, L., Liu, J., Vicci, L., Falvo, M. R., Superfine, R., Washburn, S., "Experimental measurement of single-wall carbon nanotube torsional properties," *Physical Review Letters*, vol. 96, no. 25, 30 June 2006, pp. 256102/1-4.
- ★ Fisher, J., J. Cribb, K. Desai, L. Vicci, B. Wilde, K. Keller, R. Taylor II, J. Haase, K. Bloom, T. O'Brien, R. Superfine, "Thin-foil magnetic force system for high-numerical-aperture microscopy," *Review of Scientific Instruments*, vol. 77 no. 2, February 2006, pp. 023702/1-9.
- ★ Fisher, J., L. Vicci, J. Cummings, K. Keller, B. Wilde, T. O'Brien, K. Desai, C. Weigle, G. Bishop, R. Taylor II, C. Davis, R. Boucher, R. Superfine, "Three-dimensional force microscope: A nanometric optical tracking and magnetic manipulation system for the biomedical sciences," *Review of Scientific Instruments*, vol. 76 no. 5, May 2005, pp. 053711/1-11.
- ★ Meehan, T.D., Vicci, L., O'Brien, E.T., Fisher, J., Superfine, R., "Quantitative study of the magnetophoresis of ferritin labeled beads," *Biophysical Journal*, vol. 88 no. 1, Jan 2005, p. 529A.
- ★ Cribb, J., Hill, D.B., Taylor, R.M., Vicci, L., Fisher, J., Desai, K.V., Wilde, B., Sheehan, J., Forest, M.G., Superfine, R., "Measuring local microrheological properties of human mucus with magnetically driven microbeads," *Biophysical Journal*, vol. 88 no. 1, January 2005, p 505A.
- ★ Dwyer, C., L. Vicci, J. Poulton, D. Erie, R. Superfine, S. Washburn, R. M. Taylor II, "The design of DNA self-assembled computing circuitry," *IEEE Tran. VLSI Systems*, vol. 12, November 2004, pp. 1214-20.
- ★ Papadakis, S. J., A. R. Hall, P. W. Williams, L. Vicci, M. R. Falvo, R. Superfine, S. Washburn, "Resonant Oscillators with Carbon-Nanotube Torsion Springs," *Physical Review Letters*, vol. 93, 1 October 2004, pp. 146101/1-4.

- ★ Dwyer, C., J. Poulton, R. Taylor, L. Vicci, “DNA self-assembled parallel computer architectures,” *Nanotechnology*, vol. 15, October 2004, pp. 1688-94.
- ★ Dwyer, C., L. Vicci, and R. M. Taylor, “Performance simulation of nanoscale silicon rod field-effect transistor logic,” *IEEE Trans. Nanotechnology*, vol. 2 no. 2, June 2003, pp. 69-74.
- ★ Cummings, J., C. Weigle, L. Vicci, K. Keller, B. Wilde, J. Fisher, D. Sill, G. Bishop, G. Welch, J. Y. Jeong, R. M. Taylor and R. Superfine, (2002). “A 3D force microscope.” *Biophysical Journal*, vol. 82 no. 1, January 2002, p. 512A.
- ★ Welch, Greg, G. Bishop, L. Vicci, S. Brumback, K. Keller, D. Colucci, “High-performance wide-area tracking, the HiBall Tracking System,” *Presence: Teleoperators & Virtual Environments*, MIT Press, February 2001, pp. 1-21.
- ★ Falvo, M. R., R. M. Taylor II, A. Helsen, V. Chi, F. P. Brooks Jr., S. Washburn, R. Superfine, “Nanometre-scale rolling and sliding of carbon nanotubes,” *Nature*, Vol. 397, 21 January 1999, pp. 236-238.
- ★ Falvo, M. R., G. J. Clary, R. M. Taylor II, V. Chi, F. P. Brooks Jr., S. Washburn, R. Superfine, “Bending and buckling of carbon nanotubes under large strain,” *Nature*, Vol. 389, 9 October 1997, pp. 582-584.
- ★ Falvo, M. R., S. Washburn, R. Superfine, M. Finch, F. P. Brooks, Jr., V. Chi, R. M. Taylor II, “Manipulation of Individual Viruses: Friction and Mechanical Properties,” *Biophysical Journal*, Vol. 72 No. 3, March 1997, pp. 1396-1403.
- ★ Chi, Vernon L., “Salphasic Distribution of Clock Signals for Synchronous Systems,” *IEEE Trans. Computers*, vol. 43, pp. 597–602, May 1994; also in *Clock Distribution Networks in VLSI Circuits and Systems*, (E. G. Friedman, Ed.), IEEE Press, 1995, pp. 164-169.
- ★ Taylor, R., R. S. Williams, V. L. Chi, G. Bishop, J. Fletcher, W. Robinett, S. Washburn, “Nanowelding: Tip Response During STM Modification of Au Surfaces,” *Surface Science Letters*, vol 306, no. 1 & 2, March 1994, pp. 534-538.

#### CONFERENCE PROCEEDINGS, TALKS and POSTERS

- ★ Camassa, Roberto, R. McLaughlin, L. Vicci, L. Zhao, “A Bent Spinning Rod in a Viscous Fluid: Symmetry Breaking and Tori,” *SIAM SEAS* meeting, Raleigh NC, March 2010.
- ★ Spero, R. C., L. Vicci, R. Schubert, V. Swaminathan, J. Cohen, E. T. O'Brien, R. M Taylor II, R. Superfine, “Design and validation of a Multiforce High Throughput System (MHTS) for measuring single-cell mechanics,” *American Society For Cell Biology* Annual Conference, San Diego CA, December 2009.
- ★ Zhao, Longhua, E. Bouzarth, R. Camassa, P. Chtcheprov, D. Marron, R. M. McLaughlin, P. Petrochenko, L. Vicci, “A fully 3D experimental and theoretical study of flow patterns and Lagrangian trajectories generated by spinning bent rods in viscous fluids,” *APS Division of Fluid Dynamics* 62nd Annual Meeting, Minneapolis MN, November 2009, v. 54, no. 19 .
- ★ Zhao, Longhua, E. Bouzarth, R. Camassa, P. Chtcheprov, D. Marron, R. M. McLaughlin, P. Petrochenko, L. Vicci, “A fully 3D experimental and theoretical study of flow induced

by spinning bent rods in viscous fluids,” *South Eastern Atlantic Mathematical Sciences Workshop*, UCF, Orlando FL, November 2009.

- ★ Spero, R. C., L. Vicci, R. Schubert, J. Cribb, V. Swaminathan, E. T. OBrien, R. M Taylor II, R. Superfine, “High Throughput Viscometry of Mucus,” *North American Cystic Fibrosis Conference*, Minneapolis MN, October 2009.
- ★ Spero, R. C., L. Vicci, R. Schubert, J. Cribb, V. Swaminathan, E. T. OBrien, R. M Taylor II, R. Superfine, “High Throughput Optical Microscopy, nN Force Application, and Drug Delivery,” *Biomedical Engineering Society Annual Conference*, Pittsburg PA, October 2009.
- ★ Gill, Gennette, John Hansen, Ankur Agiwal, Leandra Vicci, Montek Singh, “A High-Speed GCD Chip: A Case Study in Asynchronous Design,” *IEEE Computer Society Annual Symposium on VLSI*, Tampa FL, May 2009, pp.205-10.
- ★ Desai, K. V., G. Bishop, L. Vicci, E. T. OBrien, R. M. Taylor II, R. Superfine, “Agnostic Tracking: in situ and on-the-fly calibration for 3D position tracking,” *Biomedical Engineering Society meeting*, 2006.
- ★ Hao, J., B. Wilde, R. M. Taylor II, L. Vicci, R. M. McLaughlin, R. Camassa, T. J. Leiterman, R. Superfine, “Nanoscale Fluidics: Modeling Cilia with a Rotating Magnetic Nanowire,” *Materials Research Soc. Annual Fall Mtg*, 2005.
- ★ Carroll, R. L., B. Wilde, R. M. Taylor, L. Vicci, S. Washburn, and R. Superfine, “Biomimetic Flexible Polymer Rods–Artificial Cilia,” *American Physical Soc. Southern Section Annual Mtg.*, 2003.
- ★ Desai, K. V., G. Welch, G. Bishop, L. Vicci, R. M. Taylor, R. Superfine, “3D Tracking of a Particle in 3DFM,” *American Physical Soc. Southern Section Annual Mtg.*, 2003.
- ★ Hao, J., B. Wilde, J. Cribb, C. Dwyer, J. Fisher, K. Desai, L. Vicci, R. M. Taylor II, R. Superfine, “Nanoscale Fluidics: Using Magnetic Nanorods as Model Cilia,” *American Physical Soc. Southern Section Annual Mtg.*, 2003.
- ★ Fisher, J., R. Superfine, T. O’Brien, R. M. Taylor II, C. W. Davis, H. Matsui, L. Vicci, G. Matthews and B. Wilde “Motion and Force Generation of Cilia in Human Lung Cell Cultures,” *47th Biophysical Society Annual Meeting*, San Antonio, TX, March 1-5, 2003.
- ★ Sill, D., J. Hao, D. Brandl, B. Wilde, J. Fisher, L. Vicci, R. M. Taylor II, R. Superfine, “Microfabricated Magnetic Pole Structures for Biological Force Measurements,” *47th Biophysical Society Annual Meeting*, San Antonio, Texas., March 1-5, 2003.
- ★ Superfine, R., G. Bishop, J. Cummings, J. Fisher, K. Keller, G. Matthews, D. Sill, R. M. Taylor II, L. Vicci, C. Weigle, G. Welch and B. Wilde, “Touching In Biological Systems: A 3D Force Microscope,” *Proceedings of Microscopy and Microanalysis*, Quebec City, Canada, 2002.
- ★ Dwyer, C., R. Taylor, L. Vicci, “Transport simulation of a nanoscale silicon field effect transistor,” *Proc. 2002 2nd IEEE Conference on Nanotechnology*, Washington, DC, August 26-8, pp.601-4.
- ★ Welch, Greg, G. Bishop, L. Vicci, S. Brumback, K. Keller, D. Colucci. “The HiBall Tracker: High-Performance Wide-Area Tracking for Virtual and Augmented Environ-

- ments,” *Proc. VRST 99 (ACM Symposium on Virtual Reality Software and Technology)*, University College London, December 20–22, 1999. (BEST PAPER DESIGNATION)
- ★ Chi, Vernon L., “Salphasic Clock Planes – a novel clock method,” *Proc. τ97 (ACM/IEEE International Workshop on Timing Issues in the Specification and Synthesis of Digital Systems)*, Austin, TX, December 4–5, 1997, pp. 129–134.
  - ★ Taylor, Russell M., J. Chen, S. Okimoto, N. Llopis-Artime, V. L. Chi, F. P. Brooks, Jr., M. Falvo, S. Paulson, P. Thiansathaporn, D. Glick, S. Washburn and R. Superfine, “Pearls Found on the way to the Ideal Interface for Scanned-probe Microscopes,” *Proc. IEEE Visualization '97*, Phoenix, AZ, October 19–24, 1997, pp. 467–470.
  - ★ Chi, Vern, T. Greer, J. Poulton, “The PixelFlow System Clock: the specification, design, debug, and development of a synchronous scalable graphics supercomputer clock,” *IEEE SSCTC97: International Workshop on Clock Distribution Networks – Design, Synthesis and Analysis* (October 9–10 1997, Atlanta, GA).
  - ★ Superfine, Richard, M. R. Falvo, S. Paulson, S. Washburn, R. M. Taylor II, G. J. Clary, V. Chi and F. P. Brooks, Jr., “Manipulation of Nanometer Objects: Friction, Mechanical Properties and Devices,” *Proc. of the International Conference on Novel Materials*, Puri, India (March 3–7, 1997), Nova Science Publishers, Commack NY.
  - ★ Falvo, M., R. Superfine, S. Washburn, M. Finch, R. M. Taylor, V. L. Chi, F. P. Brooks Jr., “The Nanomanipulator: A Teleoperator for Manipulating Materials at the Nanometer Scale,” *Proc. International Symposium on the Science and Technology of Atomically Engineered Materials* (Richmond, VA, Oct 30 – Nov 4, 1995) Editors P. Jena, S. N. Khana and B. K. Rao, pp. 579–586, World Scientific Publishing, 1996.
  - ★ Colucci, D., and V. Chi, “Computer Glasses: A compact, light weight and cost effective display for monocular and tiled wide field of view systems,” *Proc. SPIE Conference on Novel Optical Systems Design and Optimization, V. 2537* (July 1995, San Diego, CA), pp. 61–70, 1995.
  - ★ Finch, Mark, S. Washburn, R. Taylor, F. P. Brooks, Jr., V. L. Chi, M. Falvo, R. Superfine, and R. S. Williams, “The Nanomanipulator: A Virtual Reality Interface For Scanning Probe Microscopy,” *Video Proc. of VRAIS-95* (Research Triangle Park, NC, March 11–15, 1995), IEEE Ed. Act., Piscataway, NJ, 1995.
  - ★ Finch, Mark, V. Chi, R. M. Taylor II, M. Falvo, S. Washburn, and R. Superfine, “Surface Modification Tools in a Virtual Environment Interface to a Scanning Probe Microscope,” *Proc. of the ACM Symposium on Interactive 3D Graphics* (Monterey, CA, April 9–12, 1995); also appearing in special issue of *Computer Graphics*, pp. 13–18, ACM SIGGRAPH, New York, 1995.
  - ★ Taylor, R. M. II, W. Robinett, V. L. Chi, F. P. Brooks, Jr., W. V. Wright, R. S. Williams, and E. J. Snyder, “The Nanomanipulator: A Virtual-Reality Interface for a Scanning Tunneling Microscope,” *Proc. SIGGRAPH'93* (Anaheim, Calif., 1–6 August 1993). In *Computer Graphics Proceedings, Annual Conference Series, 1993*, ACM SIGGRAPH, New York, 1993: pp. 127–134. Also published in *Proc. Imagina '94* (Monte Carlo, February 1994): pp. 69–76. Translated into Italian by Diego Montefusco and published as “I dominatori dell’atomo,” *VIRTUAL*, no. 2 (2 October 1993): pp. 18–21.

- ★ Singh, R. K., S. G. Tell, S. J. Bharrat, D. Becker, V. L. Chi, “A Programmable HIPPI Interface for a Graphics Supercomputer,” *Proc. of Supercomputing '93* (ACM/IEEE), Portland, OR, November 1993, pp. 124–132.
- ★ Singh, R. K., S. Bharrat, S. Tell, D. Becker, V. Chi, “Experiences with Outboard Protocol Processing on the NIU,” *Proc. of the Fourth Gigabit Testbed Workshop*, Washington DC, June 1993, CNRI, pp. 141–150.
- ★ Singh, R. K., S. G. Tell, C. T. White, D. Hoffman, V. L. Chi, B. W. Erickson, “A Scalable Systolic Multiprocessor System for Analysis of Biological Sequences,” *Proc. of the 1993 University of Washington Symposium on Integrated Systems*, Seattle WA, March 1993, MIT Press, pp. 168–182.
- ★ Chi, Vernon, “Designing Salphasic Clock Distribution Systems,” *Proc. of the 1993 University of Washington Symposium on Integrated Systems*, Seattle WA, March 1993, MIT Press, pp. 219–233.
- ★ White, C. T., R. K. Singh, P. B. Reintjes, J. Lampe, B. W. Erickson, W. D. Dettloff, V. L. Chi, and S. F. Altschul, “BioSCAN: A VLSI-Based System for Biosequence Analysis,” *Proc. International Conference on Computer Design*, 14–16 Oct. 1991, pp. 504–509. (BEST PAPER AWARD in Architectures and Algorithms track)
- ★ Chi, Vernon L., R. K. Singh, “Microelectronic System Building: Scope, Issues, and Model Curriculum,” *Proc. 1991 Microelectronic System Education Conference and Exposition*, San Jose, CA, 22–25 July 1991.
- ★ Dollas, Apostolos, V. Chi, “The Role and the Challenges of System Prototyping in Academic Laboratories in the 90’s,” *Proc. 1st International Workshop on Rapid System Prototyping*, June 1990.
- ★ Wang, Jih-fang, V. Chi, H. Fuchs, “A Real-time Optical 3D Tracker for Head-mounted Display Systems,” *Proc. 1990 Symposium on Interactive 3D Graphics*, Snowbird, UT, 25–28 March 1990; in *Computer Graphics*, Vol. 24, No. 2, March, 1990, pp. 205–215.
- ★ Wang, Jih-fang, R. Azuma, G. Bishop, V. Chi, J. Eyles, H. Fuchs, “Tracking a Head-mounted Display in a Room-sized environment with Head-mounted Cameras,” *Proc. SPIE 1990 Technical Symposium on Optical Engineering and Photonics in Aerospace Sensing*, Orlando, Florida, 16–20 April 1990.

#### PATENTS

- ★ Vicci, Leandra and R. Superfine, “Methods and systems for three-dimensional motion control and tracking of a mechanically unattached magnetic probe,” U.S. Pat. No. 7,305,319; 4 December 2007.
- ★ Vicci, Leandra and R. Superfine, “Methods and systems for controlling motion of and tracking a mechanically unattached probe,” U.S. Pat. No. 7,191,092; 13 March 2007.
- ★ Vicci, Leandra and R. Superfine, “Methods and systems for controlling motion of and tracking a mechanically unattached probe,” U.S. Pat. No. 7,189,969; 13 March 2007.
- ★ Vicci, Leandra and R. Superfine, “Methods and systems for controlling motion of and tracking a mechanically unattached probe,” U.S. Pat. No. 7,119,645; 10 October 2006.

- ★ Vicci, Leandra, “Methods and systems for reactively compensating magnetic current loops,” U.S. Pat. No. 6,960,984; 1 November 2005.
- ★ Vicci, Leandra, “Magnetic-flux conduits,” U.S. Pat. No. 6,720,855; 13 April 2004.
- ★ Vicci, Leandra, “Automatic emergency and position indicator,” U.S. Pat. No. 6,175,329; 16 January, 2001.
- ★ Chi, Vernon L., “Salphasic distribution of timing signals for the synchronization of physically separated entities,” U.S. Pat. No. 5,387,885; 7 February 1995.

#### TECHNICAL REPORTS

- ★ Vicci, Leandra “Feedback and Stability in Control Systems,” TR10-003, Department of Computer Science, UNC at Chapel Hill, November 2009.
- ★ Vicci, Leandra “The 3DFM Magnet Drive Amplifier,” TR05-002, Department of Computer Science, UNC at Chapel Hill, January 2005.
- ★ Vicci, Leandra “Analytical bead force model for the 3DFM,” TR03-029, Department of Computer Science, UNC at Chapel Hill, September 2003.
- ★ Vicci, Leandra “B&K 4370 Accelerometer and Charge Amplifier Manual,” TR03-002, Department of Computer Science, UNC at Chapel Hill, January 2003.
- ★ Vicci, Leandra “A 3D Magnetic Force Manipulator DC Prototype,” TR01-031, Department of Computer Science, UNC at Chapel Hill, October 2001.
- ★ Vicci, Leandra “Averages of Rotations and Orientations in 3-space,” TR01-029, Department of Computer Science, UNC at Chapel Hill, August 2001.
- ★ Vicci, Leandra “Quaternions and Rotations in 3-space: The Algebra and its Geometric Interpretation,” TR01-014, Department of Computer Science, UNC at Chapel Hill, April 2001.
- ★ Chi, Vernon L. “A 2D Finite Element Formulation of Maxwell’s Equations for Propagation of TEM waves between PCB Planes,” TR96-050, Department of Computer Science, UNC at Chapel Hill, December 1996.
- ★ Chi, Vernon L. “Noise Model and Performance Analysis Of Outward-looking Optical Trackers Using Lateral Effect Photo Diodes,” TR95-012, Department of Computer Science, UNC at Chapel Hill, April 1995.
- ★ Gottschalk, Stefan and V. L. Chi, “Sensitivity of System Accuracy to Fabrication Tolerances in an Outward-looking Tracker,” TR94-055, Department of Computer Science, UNC at Chapel Hill, October 1994.
- ★ Chi, Vernon L., “Cview – A Salphasic Clock Distribution Tree Simulator,” TR92-035, Department of Computer Science, UNC at Chapel Hill, October 1992.
- ★ Chi, Vernon L., “Salphasic Distribution of Clock Signals,” TR90-026, Department of Computer Science, UNC at Chapel Hill, 1990.
- ★ Mago, Gyula A., V. L. Chi, R. K. Singh, “Towards a Large-Grain FFP Machine,” TR89-018 Department of Computer Science, UNC at Chapel Hill, 1989.
- ★ Singh, Raj K., V. L. Chi, “Design of a Memory Management Subsystem for the FFP Machine,” TR89-017, Department of Computer Science, UNC at Chapel Hill, 1989.

#### TRADE MAGAZINE ARTICLES

- ★ Key, Jolyn P. K. and (ghostwriter) Leandra Vicci, “Water Works – Researchers use microwaterjetting for a medical part,” *Micro manufacturing*, January/February 2010, v. 3, no. 1, pp. 47-8.
- ★ Taylor, R. and V. L. Chi, “Walk on the image with virtual-reality microscope display,” *Laser Focus World*, May 1994, pp. 145–149.

#### OTHER PUBLICATIONS

- ★ Robinett, Warren, R. Taylor, V. Chi, W. V. Wright, F. P. Brooks, Jr. “The Nanomanipulator: An Atomic-Scale Teleoperator.” SIGGRAPH’92 notes for the course, “Implementation of Immersive Virtual Environments.”

#### **Professional activities and service:**

- ★ Senior Life Member of IEEE
- ★ Member of ACM
- ★ Conference committee, ARVLSI95
- ★ Nine MCNC technical advisory committees, 1982-1991
- ★ UNC Patent Committee 1988-1998
- ★ UNC College of Arts and Sciences Conflict of Interest Oversight Committee 1996-2006