

## David J. Odde

### Education

1995 Ph.D. Chemical and Biochemical Engineering, Rutgers University  
1992 M.S. Chemical and Biochemical Engineering, Rutgers University  
1988 B.Ch.E. Chemical Engineering, University of Minnesota

### Academic Appointments

2007- Professor, Department of Biomedical Engineering  
2006-7 Acting Department Head, Department of Biomedical Engineering,  
University of Minnesota  
1999-2007 Associate Professor, Department of Biomedical Engineering,  
University of Minnesota  
1995-1999 Assistant Professor, Department of Chemical Engineering,  
Michigan Technological University

### Professional Appointments

2007- Founding Co-Editor-In-Chief of *Cellular and Molecular Bioengineering*,  
an official journal of the Biomedical Engineering Society (BMES),  
published by Springer Publishing.  
2007- Editorial Board Member, *Current Biology*  
2007- Board Member, Institute for Advanced Study, University of Minnesota  
2004 Visiting Scientist, Department of Anatomy, University of Cambridge  
2004 Visiting Fellow, Clare Hall, University of Cambridge  
2003 Research Associate, Marine Biological Laboratory, Woods Hole, MA  
2003 Visiting Scientist, Department of Biology, University of North Carolina  
2000-2003, Director of Undergraduate Studies, Department of Biomedical Eng.  
2006-2007  
1999 James and Lorna Mack Endowed Chair in Cellular and Molecular  
Bioengineering  
Department of Chemical Engineering, Michigan Technological University

### Awards and Recognition

2008 Medal of Excellence Award for Distinguished Young Alumni,  
Rutgers University School of Engineering  
2007 Election to College of Fellows, American Institute for Medical and  
Biological Engineering, AIMBE  
2006 Paper of the Year Award for *Molecular Biology of the Cell* (Award made  
to graduate advisee Melissa Gardner, first author, by the American Society  
for Cell Biology; DJO was senior and corresponding author)  
2003 Annual Reviews Best Poster Award, Biomedical Engineering Society  
Annual Meeting  
2003 Whitaker Foundation Academic Leadership Program  
2002-2004 McKnight Land-Grant Professorship  
2000-2004 National Science Foundation CAREER Award  
2000-2001 Institute of Technology Student Board Award as Professor of the Year in  
Biomedical Engineering

## Membership in Professional Societies

Biomedical Engineering Society  
American Society for Cell Biology  
Biophysical Society

## Articles

1. Lipkow, K. and **D.J. Odde**, "Model for protein concentration gradients in the cytoplasm," *Cellular and Molecular Bioengineering*, in press.
2. Gardner, M.K. and **D.J. Odde**, "Dam1 goes it alone on disassembling microtubules," *Nature Cell Biology*, in press.
3. Gardner, M.K., A.J. Hunt, H.V. Goodson, and **D.J. Odde**, "Microtubule Assembly Dynamics: New Insights at the Nanoscale," *Current Opinion in Cell Biology*, 20, 64-70 (2008).
4. Gardner, M.K., J. Haase, M.B. Anderson, J.N. Molk, K. Myhre, E.T. O'Toole, M. Winey, E.D. Salmon, **D.J. Odde**, and K. Bloom, "The microtubule-based motor Kar3 and plus-end binding protein Bim1 provide structural support for the anaphase spindle," *The Journal of Cell Biology*, 180, 91-100 (2008).
5. Schek HT, 3rd,\* Gardner MK,\* Cheng J, **Odde DJ,\*\*** Hunt AJ,\*\* "Microtubule assembly dynamics at the nanoscale," *Current Biology*, 17(17), 1445-55 (2007). \*denotes authors contributed equally. \*\* denotes authors co-directed the project equally.
6. Bicek AD, Tuzel E, Kroll DM, **Odde DJ**, "Analysis of microtubule curvature," *Methods in Cell Biology*, 83, 237-68 (2007).
7. Gardner M, **D. J. Odde**, and K. Bloom, "Hypothesis testing via integrated computer modeling and digital fluorescence microscopy," *METHODS*, **41**, 232-237 (2007).
8. Nahmias Y. and **D. J. Odde**, "Micropatterning of hepatic-endothelial sinusoid-like structures by laser-guided direct writing," *Nature Protocols*, 1, 2288-2296 (2006).
9. Gardner, M.K., and **Odde, D.J.**, "Asymmetric Division: Motor Persistence Pays Off," *Current Biology*, 16, R1021-1023 (2006).
10. Meyers J\*, Craig J\*, and **D. J. Odde**, "Potential for control of signaling pathways via cell size and shape," *Current Biology*, 16, 1685-1693 (2006). \*denotes authors contributed equally.
11. Gardner, M.K. and **D. J. Odde**, "Modeling kinetochore motility in mitosis," *Current Opinion in Cell Biology*, 18, 639-647 (2006).
12. Pearson C\*, Gardner M\*, Paliulis L, Salmon ED, **D. J. Odde**, K. Bloom, "Measuring nanometer scale gradients in spindle microtubule dynamics using model convolution microscopy," *Molecular Biology of the Cell*, 17, 4069-4079 (2006). \*denotes authors contributed equally.
13. Shimogawa, M.M., Graczyk, B., Gardner, M.K., Francis, S.E., White, E.A., Ess, M., Molk, J.N., Ruse, C., Niessen, S., Yates, J.R., 3rd, Muller, E.G., Bloom, K., **Odde, D.J.**, and T.N. Davis, "Mps1 phosphorylation of dam1 couples kinetochores to microtubule plus ends at metaphase," *Current Biology*, 16, 1489-1501 (2006).
14. Nahmias, Y. K., R. Schwartz, W.-S. Hu, C. M. Verfaillie and **D. J. Odde**, "Establishment of liver-like tissue in vitro via endothelium-mediated hepatocyte recruitment." *Tissue Engineering*, 12, 1627-1638 (2006).
15. DeSilva MN, Paulsen J, Renn MJ, and **D. J. Odde**, "Two-step cell patterning on planar and complex curved surfaces by precision spraying of polymers," *Biotechnology and Bioengineering*, 93, 919-927 (2006).

16. Fischer TM, Steinmetz PN, and **D. J. Odde**, "Robust micromechanical neurite elicitation in synapse-competent neurons via magnetic bead force application," *Annals of Biomedical Engineering* 9, 1229-1237 (2005).
17. **Odde, D. J.**, "Mitotic spindle: Disturbing a subtle balance," *Current Biology* 15, R956-R959 (2005).
18. VanBuren, V., L.U. Cassimeris, and **D. J. Odde**, "A mechanochemical model of microtubule structure and kinetics," *Biophysical Journal*, 89, 2911-2926 (2005).
19. Gardner, M., C. Pearson, B. Sprague, T. Zarzar, K. Bloom, E.D. Salmon, and **D. J. Odde**, "Tension-dependent regulation of microtubule dynamics at kinetochores can explain metaphase congression in yeast," *Molecular Biology of the Cell*, 16, 3764-3775 (2005).
20. Nahmias, Y.K., A. Arneja, T. Tower, M.J. Renn, and **D. J. Odde**, "Cell patterning on biological gels via cell spraying through a mask," *Tissue Engineering*, 11, 701-708 (2005).
21. Nahmias, Y.K., R. Schwartz, C.M. Verfaillie, and **D. J. Odde**, "Laser-guided direct writing for three-dimensional tissue engineering," *Biotechnology and Bioengineering*, 92, 129-136 (2005).
22. **Odde, D.J.**, "Chromosome capture: take me to your kinetochore," *Current Biology*, 15, R328-30 (2005).
23. DeSilva, M. N., R. Desai and **D. J. Odde**, "Micro-patterning of animal cells on PDMS substrates in the presence of serum without use of adhesion inhibitors," *Biomedical Microdevices*, 6, 219-222 (2004).
24. Nahmias, Y. K., B. Z. Gao and **D. J. Odde**, "Dimensionless Parameters for the Design of Optical Traps and Laser Guidance Systems," *Applied Optics*, 43, 3999-4006 (2004).
25. Pearson, C.G., E. Yeh, M. Gardner, **D.J. Odde**, E.D. Salmon, and K. Bloom, "Stable kinetochore-microtubule attachment constrains centromere positioning in metaphase," *Current Biology*, 14, 1962-1967 (2004).
26. Baldi, A., J. N. Fass, M. N. DeSilva, **D. J. Odde** and B. Ziaie, "A micro-tool for mechanical manipulation of *in vitro* cell arrays," *Biomedical Microdevices* 5, 291-295 (2003).
27. Fass, J. N. and **D. J. Odde**, "Tensile force-dependent neurite elicitation via anti-b1 integrin antibody coated magnetic beads," *Biophysical Journal* 85, 623-636 (2003).
28. Sprague, B. L., C. G. Pearson, P. S. Maddox, K.S. Bloom, E. D. Salmon and **D. J. Odde**, "Mechanisms of microtubule-based kinetochore positioning in the yeast metaphase spindle," *Biophysical Journal*, 84, 3529-3546 (2003).
29. VanBuren, V., **D. J. Odde** and L. U. Cassimeris, "Estimates of lateral and longitudinal energies within the microtubule lattice," *Proceedings of the National Academy of Sciences USA*, 99, 6035-6040 (2002). (erratum in 101, p. 14989 (2004))
30. Davis, L. J., **D. J. Odde**, S. M. Block and S. P. Gross, "The importance of lattice defects in katanin-mediated microtubule severing *in vitro*," *Biophysical Journal*, 82, 2916-2927 (2002).
31. Nahmias, Y. and **D. J. Odde**, "Analysis of radiation forces in laser trapping and laser-guided direct writing applications," *IEEE Journal of Quantum Electronics*, 38, 131-141 (2002).
32. Bulinski, J. C., **D. J. Odde**, B. J. Howell, E. D. Salmon and C. M. Waterman-Storer, "Rapid dynamics of the microtubule binding of ensconsin *in vivo*." *Journal of Cell Science* **114**, 3885-3897 (2001).
33. **Odde, D. J.** and M. J. Renn, "Laser-guided direct writing of living cells," *Biotechnology and Bioengineering*, **67**, 312-318 (2000).
34. **Odde, D. J.** and M. J. Renn, "Laser-guided direct writing for applications in biotechnology," *Trends in Biotechnology*, **17**, 385-389 (1999).

35. **Odde, D. J.**, L. Ma, A. H. Briggs, A. DeMarco, and M. W. Kirschner, "Microtubule bending and breaking in living cells," *Journal of Cell Science*, **112**, 3283-3288 (1999).
36. **Odde, D. J.**, "Diffusion inside microtubules," *European Biophysics Journal*, **27**, 514-520 (1998).
37. **Odde, D. J.** and H. M. Buettner, "Autocorrelation function and power spectrum of two-state random processes used in neurite guidance," *Biophysical Journal*, **75**, 1189-1196 (1998).
38. **Odde, D. J.** and S. S. Hawkins, "Computer-assisted motion analysis of fluorescent tubulin dynamics in the nerve growth cone," *Journal of Computer-Assisted Microscopy*, **9**, 143-151 (1997).
39. Howell, B., **D. J. Odde** and L. Cassimeris, "Kinase and phosphatase inhibitors cause rapid alterations in microtubule dynamic instability in living cells," *Cell Motility and the Cytoskeleton*, **38**, 201-214 (1997).
40. **Odde, D. J.**, "Estimation of the diffusion-limited rate of microtubule assembly," *Biophysical Journal*, **73**, 88-96 (1997).
41. **Odde, D. J.**, E. M. Tanaka, S. S. Hawkins and H. M. Buettner, "Stochastic dynamics of the nerve growth cone and its microtubules during neurite outgrowth," *Biotechnology and Bioengineering*, **50**, 452-461 (1996).
42. **Odde, D. J.**, L. Cassimeris and H. M. Buettner, "Spectral analysis of microtubule assembly dynamics," *American Institute of Chemical Engineers Journal*, **42**, 1434-1442 (1996).
43. **Odde, D. J.**, L. Cassimeris and H. M. Buettner, "Kinetics of microtubule catastrophe assessed by probabilistic analysis," *Biophysical Journal*, **69**, 796-802 (1995).
44. **Odde, D. J.** and H. M. Buettner, "Time series characterization of simulated microtubule dynamics in the nerve growth cone," *Annals of Biomedical Engineering*, **23**, 268-286 (1995).
45. Yarmush, M. L., A. M. Weiss, K. P. Antonsen, **D. J. Odde**, and D. M. Yarmush, "Immunoaffinity purification: Basic principles and operational considerations," *Biotechnology Advances*, **10**, 413-446 (1992).

### Chapters in Books

1. Bicek A, Tuzel E, Kroll D, and **D. J. Odde**, "Analysis of microtubule curvature," In: Wang YL, Discher D, editors. *Methods in Cell Biology: Cell Mechanics*: Elsevier, in press.
2. Buettner, H. M., **D. J. Odde** and A. M. Burt, "Cell Structure and Motion: Cytoskeleton and Cell Movement," in *Encyclopedia of Cell Technology*, R. Spier, ed., New York, Wiley, pp. 472-481 (2000).
3. **Odde, D. J.**, "Affinity Adsorption," in *Handbook of Fermentation and Downstream Processing*, E. Goldberg, ed., New York, Chapman & Hall, pp. 70-89 (1997).

### Patents

1. Bonne, U., Deetz, D., Lai, J., **Odde, D.** and Zook, D., "Membrane dehumidification," U.S. Pat. No. 4900448 (1990). Assigned to Honeywell, Inc.
2. Renn, M. J., **D. J. Odde**, and R. Pastel, "Laser guidance of nonatomic particles," U.S. Patent No. 6823124 (2004).

### Selected Technical Reports

1. Odde, D. J., "Nanoscience and Nanotechnology in Tissue Engineering," in *Nanotechnology Research Directions: IWGN Workshop Report*, Eds. M.C. Roco, R.S. Williams, P. Alivisatos, Kluwer Academic Publishers, Dordrecht, The Netherlands, pp.

- 163-164 (2000). The report formed the basis for establishing the National Nanotechnology Initiative during the Clinton Administration.
2. L. McIntire and D. J. Odde, "Cellular and Molecular Engineering Curriculum," in Whitaker Foundation Biomedical Engineering Educational Summit Report, Whitaker Foundation, Rosslyn, VA, 2000. Available at <http://summit.whitaker.org/>. The Summit Report provided the first comprehensive statement on the state of the art in biomedical engineering education.

### **Invited Lectures and Presentations**

#### Conferences:

1. Gordon Conference on Theoretical Biology & Biomathematics, Il Ciocco, Italy, June 2008 (Organizers: Eric Cytrynbaum, Aaron Fogelson, Gregory D. Smith, and Peter Swain)
2. International Society for Automated Cytology (ISAC) Annual Meeting. Budapest, Hungary, May 2008. (Organizer: Robert Murphy)
3. Systems Biology Workshop, Warwick University, Warwick, UK, May 2008. (Organizers: Nigel Burroughs and Till Bretschneider).
4. Building the Cell, Premeeting Workshop of the American Society for Cell Biology, December 2007. (Organizer: Wallace Marshall).
5. Biointerface 2007 Meeting. San Mateo, CA, October, 2007. (Organizers: Jeff Ross and David Sogard).
6. Biophysical Society Discussions Meeting. "Molecular Motors: Point Counterpoint," Asilomar Conference Center, Pacific Grove, CA, October, 2006. (Organizers: Sharyn Endow, Steven Rosenfeld, Steven Block, Hideo Higuchi, F. Jon Kull, Ron Milligan, H. Lee Sweeney, Richard Vallee, Claudia Veigel)
7. Minnesota Chapter of the American Chemical Society Biological Coatings Symposium, 3M, Inc., St. Paul, MN, October, 2006 (invited oral presentation, Richard Walsh, organizer)
8. Medical Alley/MNBIO Annual Conference, Session on "Biodeposition Technologies", St. Paul, MN, October 2005 (invited oral presentation, Mark von Keitz, organizer).
9. "Stochastic mechanics of the mitotic spindle," invited presentation at the Applications of Methods of Stochastic Systems and Statistical Physics in Biology, Univ. of Notre Dame, October, 2005. (Marc Alber, organizer).
10. "Modeling kinetochore microtubule dynamics in budding yeast," invited presentation at the *Mathematical Biology of the Cell: Cytoskeleton and Motility*, Banff, CA, July 2005. (invited oral presentation, Eric Cytrynbaum, Leah Edelstein-Keshet, Alex Mogilner, and Paul Janmey, organizers).
11. "Modeling kinetochore microtubule dynamics in budding yeast," invited presentation at the *Gordon Research Conference on Motile and Contractile Systems*, New London, NH, July 2005. (invited oral presentation, Meg Titus and Vladimir Gelfand, organizers)
12. "Laser-guided direct writing for applications in biotechnology," invited presentation at the *Advances in Optics for Biotechnology, Medicine, and Surgery* (United Engineering Foundation Conference). Banff, Canada, July, 2001.
13. "Chemical and mechanical interactions in microtubules," invited presentation at the *Biochemistry and Biophysics of Molecular Motors Conference*, Banff, Canada, August, 2000.

14. "Laser-guided direct writing of living cells," invited presentation at the *36<sup>th</sup> Annual Symposium of the American Vacuum Society - New Mexico Chapter*, Albuquerque, NM, April, 2000.
15. "Cell placement by laser-guided direct writing," invited presentation at the *Gordon Conference on Tissue Engineering, Biomaterials and Biocompatibility*, Plymouth, NH, July, 1999.
16. "The bending and breaking of individual microtubules in living cells," invited presentation at the *Molecular Biophysics of the Cytoskeleton Conference*, Banff, Canada, August, 1997.

Academic:

1. Institut Curie, Paris, France, May 2008 (Host: Phong Tran)
2. Cancer Research UK, Lincoln's Inn Fields, London, England, May 2008 (Host: Takashi Toda)
3. Washington University, Department of Biomedical Engineering, St. Louis, MO, April, 2008 (Host: David Sept)
4. University of Missouri-Kansas City, Kansas City, MO, April 2008 (Host: Stephen King)
5. Johns Hopkins University, Department of Biology, Baltimore, MD, October, 2007 (Host: Van Moudrianakis)
6. University of Virginia, Department of Biochemistry and Molecular Genetics, Charlottesville, VA, September, 2006 (Host: Todd Stukenberg)
7. Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, May 2006 (Host: Jonathon Howard)
8. European Molecular Biology Laboratory (EMBL), Heidelberg, Germany, May 2006 (Host: Francois Nedelec) FOM Institute for Atomic and Molecular Physics (AMOLF), Amsterdam, The Netherlands, May 2006 (Host: Marileen Dogterom)
9. University of Pennsylvania, Institute of Medicine and Engineering, Philadelphia, PA, October 2005. (Host: Paul Janmey)
10. University of Colorado, Department of Molecular, Cellular, and Development Biology, Boulder, CO, September, 2005. (Hosts: Dick McIntosh and Katya Grischuk)
11. University of Connecticut, Department of Cell Biology and Center for Cell Analysis and Modeling, Farmington, CT, July 2005. (Host: Vladimir Rodionov)
12. Friday Harbor Laboratories, Center for Cellular Dynamics, Friday Harbor, WA, May 2005 (Host: Garrett Odell)
13. University of Washington, Department of Biochemistry, Seattle, WA, May 2005. (Host: Trisha Davis)
14. Northwestern University Medical School, Chicago Cytoskeleton Group, Chicago, IL, March 2005. (Host: Holly Goodson)
15. University of Notre Dame, Department of Biochemistry, South Bend, IN, March 2005. (Host: Holly Goodson)
16. University of California-Davis, Section of Molecular and Cellular Biology, Davis, CA, February 2005. (Hosts: Roy Wollman and Alex Mogilner)
17. Arizona State University, Department of Bioengineering, Tempe, AZ, February 2005. (Host: Eric Guilbeau)
18. University of Minnesota, Department of Biomedical Engineering, January 2005
19. University of Minnesota, Department of Genetics, Cell Biology, and Development, Minneapolis, MN, Sept., 2004.

20. University of Cambridge, Computer Modelling in Biology Group (organized by M. Levin and D. Bray), Cambridge, UK, June 2004.
21. Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, June 2004 . (Host: Tom McLeish)
22. University of Cambridge, Department of Anatomy, Cambridge, UK, Mar. 2004. (Host: Bill Harris)
23. University of Florida, Department of Chemical Engineering, Gainesville, FL, Feb. 2004. (Host: Rich Dickinson)
24. Pennsylvania State University, Dept. of Bioengineering, State College, PA, Oct, 2002. (Host: Will Hancock)
25. Brown University, Dept. of Molecular Pharmacology, Physiology, and Biotechnology, Providence, RI, Apr, 2002. (Host: Diane Hoffman-Kim)
26. Lehigh University, College of Engineering, Bethlehem, PA, Nov, 2001. (Host: Lynne Cassimeris)
27. University of Wisconsin-La Crosse, Dept. of Physics, La Crosse, WI, Apr, 2001.
28. University of Arizona, Dept. of Biomedical Engineering, Tucson, AZ, Apr, 2001. (Host: Mark Riley)
29. University of Michigan, Dept. of Biomedical Engineering, Ann Arbor, MI, Apr, 2000. (Host: Alan Hunt)
30. University of Minnesota, Dept. of Biomedical Engineering, Minneapolis, MN, Oct, 1999.
31. University of Missouri-Rolla, Dept. of Chemical Engineering, Rolla, MO, Apr, 1999.
32. Case Western Reserve University, Dept. of Chemical Engineering, Cleveland, OH, Mar, 1999. (Host: Phil Morrison)
33. Michigan Technological University, Dept. of Physics, Houghton, MI, Dec, 1998. (Host: Mike Renn)
34. University of Minnesota, Dept. of Biomedical Engineering, Minneapolis, MN, Oct, 1998.
35. University of North Carolina-Chapel Hill, Dept. of Biology, Chapel Hill, NC, Aug, 1998. (Host: Ted Salmon)
36. Michigan Technological University, Dept. of Chemical Engineering, Houghton, MI, Jan, 1995. (Host: Edward Fisher)
37. University of North Carolina-Chapel Hill, Dept. of Biology, Chapel Hill, NC, Dec, 1994. (Host: Ted Salmon)
38. Harvard Medical School, Dept. of Cell Biology, Boston, MA, Nov, 1994. (Host: Bruce Schnaap)

Industrial:

1. Boston Scientific/SciMed, Maple Grove, MN, August 2006
2. 3M, Inc., St. Paul, MN, November 2004.
3. Beckman-Coulter, Miami, FL, February 2002.
4. Cellomics, Inc., Pittsburgh, PA, February, 2000.
5. BioWhittaker, Inc., Walkersville, MD, July, 1998.
6. Medtronic, Inc., Minneapolis, MN, October, 1997.

Non-profit organizations:

7. Minnesota High Technology Association, Minneapolis, MN, January 2002.

### **Invited Special Workshop Presentations**

1. Keynote speaker at IEEE-EMBS/ASME Workshop on Nanoscale Modeling and Measurement of Mechanical Properties of Cells and Proteins (B. Layton, organizer, Drexel Univ., Philadelphia, PA, September, 2006)
2. Invited speaker at Lorentz Workshop on Soft Condensed Matter Physics in Molecular and Cell Biology, University of Leiden, the Netherlands (invited oral presentation, M. Howard, T.B. Liverpool, F.C. MacKintosh, H. Schiessel, D.R. Nelson, organizers) (2006)
3. Invited workshop participant in “Cell Adhesion and Motility,” Institute for Mathematics and its Applications, University of Minnesota (1999)

### **Sponsored Projects**

*National Institute of General Medical Sciences*, R01-GM-71522

“Modeling Microtubule Dynamics in Mitosis”

(PI, \$938,830 total, \$185,000 direct/yr, 1/1/06-12/31/09)

*National Science Foundation*, MCB-0615568

“Chemical and Mechanical Interactions in Microtubules”

(PI, \$525,307 total, \$130,000 direct/yr; 8/1/06-7/31/09)

*National Institute of General Medical Sciences*, subcontract from Univ. of Michigan (PI Alan Hunt)

“Microtubule Dynamics at the Nanoscale”

(PI at Univ. Minnesota, Budget t.b.d., R01 mechanism, notice from Program Officer, Jim Rodewald)

### **Organization of Symposia and Conferences**

1. “Molecular Motors”, *Biomedical Engineering Society Annual Meeting*, Los Angeles, CA, September 2007.
2. “Catastrophe”, sponsored by the Institute for Advanced Study, University of Minnesota, Minneapolis, MN July and August, 2007.
3. “Cell Motility Workshop” with Hans Othmer (Mathematics), Digital Technology Center, University of Minnesota, April 3-4, 2006. Attended by ~50 people, several external speakers from US and abroad participated.
4. “Molecular Motors,” *Biomedical Engineering Society Annual Meeting*, Chicago, IL, October 2006.
5. “Neural Circuits-Artificial and Biological,” *Biomedical Engineering Society Annual Meeting*, Chicago, IL, October 2006.
6. “Cell Division,” *SIAM/SMB (Society for Industrial Applications of Mathematics/Society for Mathematical Biology) Life Sciences meeting*, Raleigh, NC August 2006
7. “Molecular Motors and Mechanics of the Cytoskeleton,” *Biomedical Engineering Society Annual Meeting*, Baltimore, MD, October 2005.
8. “Assembly and Mechanics of the Cytoskeleton,” *Biomedical Engineering Society Annual Meeting*, Baltimore, MD, October 2005.
9. “Molecular Bioengineering,” *Biomedical Engineering Society Annual Meeting*, Philadelphia, PA, October 2004.

10. "Systems Biology," *Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society*, Houston, TX, October, 2002.
11. "Design of Stem Cell and Gene Therapy Devices", *Design of Biomedical Devices Conference*, Minneapolis, MN, April 2001. One of 12 Presidential Sesquicentennial Conferences (organized by Prof. Arthur Erdman).
12. "Intracellular Processes," *American Institute of Chemical Engineers Meeting*, Dallas, TX, November, 1999.
13. "Engineering Fundamentals in Life Sciences Poster Session," *American Institute of Chemical Engineers Meeting*, Miami Beach, FL, November, 1998.
14. "The First Year Experience," *American Institute of Chemical Engineers Meeting*, Miami Beach, FL, November, 1998.
15. "Mathematical Approaches to Cellular Engineering," *Experimental Biology/Biomedical Engineering Society Spring Meeting*, New Orleans, LA, April, 1997.
16. "Emerging Issues in Bioengineering Education," *American Institute of Chemical Engineers Annual Meeting*, Los Angeles, CA, November, 1997.
17. "Neural Tissue Engineering and Cytoskeletal Basis of Cell Function," *Biomedical Engineering Society Annual Meeting*, University Park, PA, October, 1996.
18. "Cell and Tissue Engineering: Cell and Molecular Properties," *ASME/AICHE/ASCE Summer Bioengineering Conference*, Beaver Creek, CO, June, 1995.

### Manuscript Reviews

*Advanced Materials*

*American Institute of Chemical Engineers Journal*

*Annals of Biomedical Engineering*

*ASME Biomechanical Engineering*

*Biochemical Journal*

*Biomaterials*

*Biomedical Engineering Online*

*Biophysical Journal\*\**

*Biotechnology and Bioengineering\**

*BMC Bioinformatics*

*Bulletin of Mathematical Biology*

*Cell Motility and the Cytoskeleton*

*Cellular and Molecular Bioengineering*

*Chromosoma*

*Current Biology\*\**

*European Biophysics Journal\**

*IEEE Transactions on Advanced Packaging*

*IEEE Transactions on Biomedical Engineering*

*Journal of Applied Physiology*

*Journal of Biological Chemistry\**

*Journal of Biomechanical Engineering\**

*Journal of Biotechnology\**

*The Journal of Cell Biology*

*Journal of Cell Science\**

*Journal of Microscopy*

*Journal of Theoretical Biology*

*Methods in Cell Biology*

*Molecular Biology of the Cell\**

*Langmuir*

*Nanoletters*

*Nature\**

*Nature Cell Biology\**

*Nature Materials*

*Nature Methods\**

*Nature Protocols*

*Physical Biology*

*Physical Review E\*\**

*Proceedings of the National Academy of Sciences USA\*\**

*Science\*\**

*Systems and Synthetic Biology*

*Tissue Engineering*

*Traffic*

*Trends in Cell Biology*

\*At least 2 reviews

\*\*Frequent reviewer (at least 5 reviews)

**Proposal Reviews**

*Alzheimer's Association (ad hoc review)*

*Alberta Heritage Foundation*

*National Science Foundation (3 review panels, ad hoc reviews)*

*National Institutes of Health (5 review panels, ad hoc reviews)*

*NWO-Science funding agency of the government of the Netherlands*

*Swiss National Science Foundation*

*United States Army*

*U.S. Israeli Bi-national Science Foundation*