UNIVERSITY OF PENNSYLVANIA – SCHOOL OF MEDICINE
Curriculum Vitae

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Education:

1969	B.S.	Northwestern University (Electrical Engineering)
1975	M.D.	University of Pennsylvania
1975	Ph.D.	University of Pennsylvania (Physiology)

Postgraduate Training and Fellowship Appointments:

1975-1979	Post-doctoral Fellow, University College, London, England (Mentor: Professor Sir A.F. Huxley)

Faculty Appointments:

1979-1985	Assistant Professor of Physiology, Department of Physiology, University of Pennsylvania School of Medicine
1985-1987	Associate Professor of Physiology, Department of Physiology, University of Pennsylvania School of Medicine
1987-present	Professor of Physiology, Department of Physiology, University of Pennsylvania School of Medicine

Other Appointments:

1987-present	Member, Biochemistry and Molecular Biophysics Graduate Group, University of Pennsylvania School of Medicine
1988-2011	Director, Pennsylvania Muscle Institute, University of Pennsylvania School of Medicine
1988-present	Member, Pennsylvania Muscle Institute, University of Pennsylvania School of Medicine
1989-present	Member, Bioengineering Graduate Group University of Pennsylvania School of Engineering
1996-present	Member, Cell and Molecular Biology Graduate Group, University of Pennsylvania School of Medicine
1998-present	Member, Institute for Medicine and Engineering, University of Pennsylvania School of Engineering
2005-2015	Co-Director Nano-Bio Interface Center, University of Pennsylvania School of Engineering

Awards, Honors and Membership in Honorary Societies:

1969	Graduated with highest distinction, Northwestern University
1971-1975	Trainee, Medical Scientist Training Program, University of Pennsylvania
1975	Upjohn Achievement Award, University of Pennsylvania, School of Medicine
1975-1977	Research Fellowship, Muscular Dystrophy Association of America
1977-1979	National Research Service Award, National Institutes of Health
1980-1985	Research Career Development Award, National Institutes of Health
1985-1987	Elected Councilor of the Society of General Physiologists
1986	Bowditch Lecturer of the American Physiological Society
1987	Chairman for 1987 Gordon Conference on Muscle: Contractile Proteins
1989	Christian R. and Mary F. Lindback Foundation Award for Distinguished Teaching, School of Medicine, University of Pennsylvania
1990	Lamport Lecturer of the University of Washington, School of Medicine

1991	Participant in the National Research Plan Task Force of the National Institute of Arthritis and Musculoskeletal and Skin Diseases
1991-1993	Elected Member of Council and Executive Committee for the Biophysical Society
1991	Visiting Professor, Osaka University, Japan
1994, 1995	Visiting Professor, University of Florence, Italy
1995	Distinguished Speaker for Graduate Student Research Forum, University of Cincinnati
1997	Visiting Professor, University of Florence, Italy
2003-2004	President of the Biophysical Society
2004	Plenary Speaker for Biophysical Society Motility Subgroup
2005	Plenary Public Speaker for Aspen Center for Physics Meeting, "Single Molecule Biophysics".
2005	Stanley N. Cohen School of Medicine Biomedical Research Award
2006	Fellow of the Biophysical Society
2006	Plenary Speaker for Fairberg Cardiac Workshop
2007	Fellow of the American Association for the Advancement of Science
2008	National Institute of Heart Lung and Blood Director's Seminar Series Lecturer
2009	University of Alabama Distinguished Speaker
2011	University of Massachusetts, Amherst, Plenary Lecturer for Cell Biology Retreat
2011	Gordon Research Conference on Molecular Motors, Matsubara Honorary Lecture
2013	University of Virginia Distinguished Speaker
2014	University of Colorado Distinguished Speaker

Memberships in Professional and Scientific Societies and Other Professional Activities:

International:

1982 - present	Society of General Physiologists (Elected Councilor, 1985-1987)
1983 - present	Physiological Society, U.K.
1985 - present	Biophysical Society (Elected Councilor, 1991-1993; President, 2003-2004)

National:

1982 - present	American Physiological Society
1982 - present	Mount Desert Island Biological Laboratories
1992 - present	American Association for the Advancement of Science

Editorial Positions:

1983-1988	Editorial Board Member, Journal of Physiology (London)
1984-1986	Editor, Annual Reviews of Physiology (Guest Editor—Special Topic Section)
1992-1999	Editorial Board Member, Biophysical Journal
2004-present	Editorial Board Member, Structure (Cell-associated journal)
2007-present	Associate Editor, Biophysical Journal

Academic Committees and Institutional Committees:

1981-2008	Member, 12 Regular and Special NIH Study Sections
1982-1984	Member, Steering Committee, Physiology Department, University of Pennsylvania School of Medicine
1984-1985	Member, Committee to Review the Diabetes Center, University of Pennsylvania School of Medicine
1986-1989	Member, Long Range Planning Committee's Sub-Committee on Institutional Research and Training, University of Pennsylvania School of Medicine
1986-1988	Member, Steering Committee, Physiology Department, University of Pennsylvania School of Medicine
1986-1988	Member, Medical School Student Standards Committee, University of Pennsylvania School of Medicine
1987	Chairman, Search Committee for Chairman of the Cell Biology Graduate Group, University of Pennsylvania School of Medicine

1987-1988	Chairman, Cell Biology Curriculum and Student Advisory Committee, University of Pennsylvania School of Medicine
1987-1988	Member, Cell Biology Executive Committee, University of Pennsylvania School of Medicine
1988-1989	Member, Development Task Force of the Long-range Planning Committee, University of Pennsylvania School of Medicine
1988-1989	Member, Search Committee for Chairman of the Anatomy Department, University of Pennsylvania School of Medicine
1988-1993	Member, Long-range Planning Committee, University of Pennsylvania School of Medicine
1991	Member, Committee to review the Institute for Environmental Medicine, University of Pennsylvania School of Medicine
1990-1991	Chairman, Physiology Graduate Group Admissions Committee, University of Pennsylvania School of Medicine
1993	Member, Nominating Committee for the Medical Faculty Steering Committee, University of Pennsylvania School of Medicine
1993, 1995	Member, Teaching Awards Committee, University of Pennsylvania School of Medicine
1993-1996	Member, Committee on Appointments and Promotions, University of Pennsylvania School of Medicine
1994	Member, External Review Committee Member for tenure consideration of faculty at Brandeis University
1994-1995	Member, Search Committee for Director of the Institute for Medicine and Engineering, University of Pennsylvania School of Medicine
1994-1995	Chairman, Search Committee for a Chairman of the Pharmacology Department, University of Pennsylvania School of Medicine
1997	Member, Review Committee for University of Pennsylvania Research Foundation, University of Pennsylvania School of Medicine
1998-2000	Member, Committee for Outstanding Junior Faculty Awards, University of Pennsylvania School of Medicine
1999	Member, Faculty 2000 Committee on Tenure, University of Pennsylvania School of Medicine
1999-2000	Chairman, Physiology Department Committee on Appointments and Promotions, University of Pennsylvania School of Medicine
1999-2000	Chairman, Review Committee for the Graduate Group of Neuroscience, University of Pennsylvania School of Medicine
2000	Chairman, Search Committee for a Chairman of the Microbiology Department, University of Pennsylvania School of Medicine
2002-2003	Member, Committee to Review the Department of Orthopedics, University of Pennsylvania School of Medicine
2003-2004	Member, U.S. National Committee/International Union of Pure and Applied Biophysics (USNC/IUPAB)
2004	Member, Review Panel for BioCAT Beamline at Argonne National Laboratory Synchrotron Facility.
2004	Member, Outside Consultant and Reviewer for the Department of Physiology, University of Vermont School of Medicine.
2005-2006	Member, Committee on Biomolecular Materials and Processes of the Board on Physics and Astronomy and Board on Life Sciences, Division on Engineering and Physical Sciences and Division on Earth and Life Studies of the National Research Council of the National Academies of Science
2008-2009	Member, Faculty Senate Committee on Academic Freedom and Responsibility, University of Pennsylvania
2009	Member, Service on Study Sections for National Institute of Health Director's Pioneer Awards and ARRA Challenge Grants
2010	Member, Special Study Section for NIH NCRR Laboratory for Fluorescence Dynamics
2013-present	Member, Committee on the Sciences and the Arts, Franklin Institute, Philadelphia, Pennsylvania
2015	Member, BCMB-D Special Emphasis Study Section for the National Institute of Health

Major Academic Teaching Responsibilities:

1999-present	Medical Module II: Cardiovascular System, Human Physiology, 2 lectures per year, University of Pennsylvania
2004, 2006, 2010	Course Co-director, Mechano-Enzymes, Biochemistry and Molecular Biophysics, 5 lectures per year, University of Pennsylvania
2005, 2007	Nanoscale Biological and Chemical Engineering, School of Chemical and Biological Engineering, 1 lecture per year, University of Pennsylvania
2007-present	Cellular and Molecular Biology 532, 4 lectures per year, University of Pennsylvania
2007-present	Principles and Applications of Biophysics and Biochemistry 509, 2 lectures per year, University of Pennsylvania

Lectures by Invitation (Last 5 years)

February, 2009	"Unconventional Myosins, Kinesins and Dynein: They're in the Cardiovascular System, Too" - UCLA, Los Angeles, California
February, 2009	"Swinging of Conventional and Unconventional Myosins" - National Institute of Arthritis and Musculoskeletal and Skin Diseases, Bethesda, Maryland
June, 2009	"Navigation by Molecular Motors In Vitro" - University of Chicago, Chicago, Illinois
September, 2009	"Geometries for Studying Molecular Motors In Vitro" - Innovative Nanoscience of Motor Proteins, Kyoto, Japan
September, 2009	"Molecular Motors, Nature's Soft, Smart Nanomachines" - Distinguished Lectureship, University of Alabama, Huntsville, Alabama
October, 2009	"Navigation by Molecular Motors In Vitro" - University of Connecticut Health Center, Center for Cell Analysis and Modeling. Farmington, Connecticut
November, 2009	"Navigation by Molecular Motors In Vitro" - 3rd Mechanobiology Conference. National University of Singapore, Singapore
January, 2010	"Single Molecule Microscopy Techniques for Molecular Motor and Protein Synthesis Research" – Nikon Inc. Annual Calendar Rollout, Wistar Institute, Philadelphia, PA
February, 2010	"Single Molecule Techniques for Molecular Motor and Protein Synthesis Research" – Friday Research Discussions Graduate Student Recruitment Seminar, Department of Biochemistry and Molecular Biophysics, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania
February, 2010	"Biophysics of Molecular Motors" – What's New in Biophysics Graduate Student Workshop, Biophysical Society Meeting, San Francisco, California
March, 2010	"Myosin VI and Myosin X" – Alpbach Workshop on Molecular Motors, Alpbach, Austria
March, 2010	"Single Molecule Fluorescence Imaging for Molecular Motor Research" – Department of Cellular and Developmental Biology, Vanderbilt, Nashville, Tennessee
April, 2010	"Navigation by Molecular Motors In Vitro" – Department of Biophysics, University of Michigan, Ann Arbor, Michigan
April, 2010	"Navigation by Molecular Motors In Vitro" – Department of Physiology, University of Osaka, Osaka, Japan
January, 2011	"Single Molecule Techniques for Molecular Motor and Protein Synthesis Research" - Single Molecule Biophysics Colloquium, Aspen Center for Physics
March, 2011	"Single Molecule Techniques for Molecular Motor and Protein Synthesis Research" - University of Massachusetts, Amherst, Plenary Lecturer for Cell Biology Retreat
July, 2011	"Huxley-Simmons/Lymn-Taylor Implications for Processive Motor Activity" - Gordon Research Conference on Molecular Motors, Matsubara Honorary Lecture
April, 2012	"Allostery in the Protein Synthesis Elongation Cycle, a Single-Molecule Approach" - Chemistry Department, University of Illinois at Chicago, Illinois
June, 2012	"Allostery in the Protein Synthesis Elongation Cycle, a Single-Molecule Approach" - Departmental Retreat, Department of Biochemistry and Molecular Biophysics, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania
July, 2012	"Molecular Motors: Adding Complexity One Molecule at a Time" – Gordon Research Conference on Single Molecule Approaches to Biology, West Dover, Vermont
November, 2012	"Novel Approaches to Molecular Motor Transport and Intracellular Motility" - Department of Biophysics, University of Texas Southwestern, Texas

April, 2013 "Molecular Motors in Singulo: Examining Nature's Nano-Transporters One by One" – Department of Molecular Physiology and Biological Physics, University of Virginia, Charlottesville, Virginia

July, 2013 "Cytoskeletal Dynamics from Single Molecules to Motile Organisms" – Gordon Research Conference on Motile and Contractile Systems, Colby-Sawyer College, New London, New Hampshire

February, 2014 "New Methods for Molecular Motor and Cell Motility Research" – Regulation of Cytoskeletal Motors Symposium, 58th Biophysical Society Annual Meeting, San Francisco, California

February, 2014 "Molecular Motors in Singulo: Examining Nature's Nano-Transporters" – Department of Chemistry and Biochemistry, University of Colorado, Boulder, Colorado

May, 2014 "Muscle Fiber and Single Molecule Studies of Molecular Motors" - Training Program in Integrative Membrane Biology/Interdisciplinary Training Program in Muscle Biology Retreat 1st Annual Hugo-Gonzalez Scientific Presentation Award- University of Maryland, Baltimore, Maryland

November, 2014 "Protein Structural Dynamics One Tilt at a Time**" -** Biochemistry and Molecular Biology in Transition: from Basic to Translational, IUBMB, Taipei, China

November, 2014 "Protein Structural Dynamics One Tilt at a Time**" –** Biodynamic Optical Imaging Center, Peking University, Beijing, China

November, 2014 "Protein Structural Dynamics One Tilt at a Time**" –** Xi'an Jiaotong University, Xi'an, China

November, 2014 "Protein Structural Dynamics One Tilt at a Time**" -** Chinese Academy of Science SIBS, Shanghai, China

January, 2015 "Protein Structural Dynamics One Tilt at a Time" – Aspen, Colorado

Organizing Roles in Scientific Meetings:

1987 "Contractile Proteins", Gordon Conference on Muscle (Organizer), Tilton, New Hampshire

1988 "In-Vitro Assays of Cell Motility", American Physiology Society and Society of General Physiologists Joint Symposium (Organizer), Woods Hole, Massachusetts

1989 "Probing Cellular Dynamics with Spectroscopy", Biophysical Society and Society of General Physiologists Joint Symposium (Organizer), Woods Hole, Massachusetts

1991 "From Channels to Cross-bridges", American Physiological Society Specialty Conference (Co-organizer), Mount Desert Island, Maine

1994 "Molecular Motors: Structure, Mechanics & Energy Transduction", Biophysical Society Discussion Meeting (Co-organizer), Airlie, Virginia

1998 "Structural Dynamics in Myosin Cross-Bridges in Muscle Fibers", European Molecular Biology Meeting (Co-organizer) Alpbach, Austria

2001 "Structural Dynamics in Myosin Cross-Bridges in Muscle Fibers", 10th European Commission Muscle Workshop (Co-organizer), Alpbach, Austria

2014 "The Ribosome: Structure and Function", Research Symposium Honoring 2014 Benjamin Franklin Medal Laureate Joachim Frank, Philadelphia, Pennsylvania

Bibliography:

Research Publications, peer reviewed

1. Morad, M. and Goldman, Y.E. Excitation-Contraction Coupling in Heart Muscle: Membrane Control of Development of Tension. *Prog. Biophys. Mol. Biol*., **27**:257-313. 1973.
2. Weiss, J., Goldman, Y.E., and Morad, M. Electromechanical Properties of the Single Cell-Layered Heart of the Tunicate *Boltenia ovifera* (Sea Potato). *J. Gen. Physiol.*, **68**:503-518. 1976.
3. Goldman, Y.E. and Morad, M. Regenerative Repolarization of the Frog Ventricular Action Potential: A Time and Voltage-Dependent Phenomenon. *J. Physiol*., **268**:575-611. 1977.
4. Goldman, Y.E. and Morad, M. Measurement of Transmembrane Potential and Current in Cardiac Muscle. A New Voltage Clamp Method. *J. Physiol*., **268**:613-654. 1977.
5. Goldman, Y.E. and Morad, M. Ionic Membrane Conductance during the Time Course of the Cardiac Action Potential. *J. Physiol*., **268**:655-695. 1977.
6. Goldman, Y.E., Hibberd, M.G., McCray, J.A., and Trentham, D.R. Relaxation of Muscle Fibres by Photolysis of Caged ATP. *Nature*, **300**:701-705. 1982.
7. Morad, M., Goldman, Y.E., and Trentham, D.R. Rapid Photochemical Inactivation of Ca^{2+}-Antagonists Shows that Ca^{2+}-Entry Directly Activates Contraction in Frog Heart. *Nature*, **304**:635-638. 1983.

8. Matsubara, I., Goldman, Y.E., and Simmons, R.M. Changes in the Lateral Filament Spacing of Skinned Muscle Fibres when Cross-Bridges Attach. *J. Mol. Biol.*, **173**:15-33. 1984.
9. Goldman, Y.E. and Simmons, R.M. Control of Sarcomere Length in Skinned Muscle Fibres of *Rana Temporaria* during Mechanical Transients. *J. Physiol.*, **350**:497-518. 1984.
10. Ferenczi, M.A., Goldman, Y.E., and Simmons, R.M. The Dependence of Force and Shortening Velocity on Substrate Concentration in Skinned Fibres from *Rana Temporaria. J. Physiol*., **350**:519-543. 1984.
11. Goldman, Y.E., Hibberd, M.G., and Trentham, D.R. Relaxation of Rabbit Psoas Muscle Fibres from Rigor by Photochemical Generation of Adenosine-5'-Triphosphate. *J. Physiol*., **354**:577-604. 1984.
12. Goldman, Y.E., Hibberd, M.G., and Trentham, D.R. Initiation of Active Contraction by Photogeneration of Adenosine-5'-Triphosphate in Rabbit Psoas Muscle Fibres. *J. Physiol.,* **354**:605-624. 1984.
13. Hibberd, M.G., Webb, M.R., Goldman, Y.E., and Trentham, D.R. Oxygen Exchange between Phosphate and Water Accompanies Calcium-Regulated ATPase Activity of Skinned Fibers from Rabbit Skeletal Muscle. *J. Biol. Chem*., **260**:3496-3500. 1985.
14. Hibberd, M.G., Dantzig, J.A., Trentham, D.R., and Goldman, Y.E. Phosphate Release and Force Generation in Skeletal Muscle Fibers. *Science*, **228**:1317-1319. 1985.
15. Dantzig, J.A. and Goldman, Y.E. Suppression of Muscle Contraction by Vanadate: Mechanical and Ligand Binding Studies on Glycerol-Extracted Rabbit Fibers. *J. Gen. Physiol.*, **86**:305-327. 1985.
16. Sundell, C.L., Goldman, Y.E., and Peachey, L.D. Fine Structure in Near-Field and Far-Field Laser Diffraction Patterns from Skeletal Muscle Fibers. *Biophys. J*., **49**:521- 530. 1986.
17. Goldman, Y.E. and Simmons, R.M. The Stiffness of Frog Skinned Muscle Fibres at Altered Lateral Filament Spacing. *J. Physiol*., **378**:175-194. 1986.
18. Webb, M. R., Hibberd, M. G., Goldman, Y.E., and Trentham, D. R. Oxygen Exchange between P_i in the Medium and Water during ATP Hydrolysis Mediated by Skinned Fibers from Rabbit Skeletal Muscle. Evidence for P_i Binding to a Force-Generating State. *J. Biol. Chem*., **261**:15557-15564. 1986.
19. Walker, J.W., Somlyo, A.V., Goldman, Y.E., Somlyo, A.P., and Trentham, D.R. Kinetics of Smooth and Skeletal Muscle Activation by Laser Pulse Photolysis of Caged Inositol 1,4,5-Trisphosphate. *Nature*, **327**:249-255. 1987.
20. Goldman, Y.E. Measurement of Sarcomere Shortening in Skinned Fibers from Frog Muscle by White Light Diffraction. *Biophys. J.*, **52**:57-68. 1987.
21. Goldman, Y.E., McCray, J.A., and Ranatunga, K.W. Transient Tension Changes Initiated by Laser Temperature Jumps in Rabbit Psoas Muscle Fibres. *J. Physiol*., **392**:71-95. 1987.
22. Somlyo, A.V., Goldman, Y.E., Fujimori, T., Bond, M., Trentham, D.R., and Somlyo, A.P. Cross-bridge Kinetics, Cooperativity and Negatively Strained Cross-Bridges in Vertebrate Smooth Muscle: A Laser-Flash Photolysis Study. *J. Gen. Physiol*., **91**:165-192. 1988.
23. Dantzig, J.A., Walker, J.W., Trentham, D.R., and Goldman, Y.E. Relaxation of Muscle Fibers with Adenosine ATPγS and by Laser Photolysis of Caged ATPγS: Evidence for Ca^{2+}-Dependent Affinity of Rapidly Detaching Zero-Force Cross-Bridges. *Proc. Nat. Acad. Sci. U.S.A.*, **85**:6716-6720. 1988.
24. Smith, J.J., McCray, J.A., Hibberd, M.G., and Goldman, Y.E., Holmium Laser Temperature-Jump Apparatus for Kinetic Studies of Muscle Contraction. *Rev. Sci. Instr.*, **60**:231-236. 1989.
25. Horiuti, K., Somlyo, A.V., Goldman, Y.E., and Somlyo, A.P. Kinetics of Contraction initiated by Flash Photolysis of Caged Adenosine Triphosphate in Tonic and Phasic Smooth Muscle. *J. Gen. Physiol*., **94**:769-781. 1989.
26. Dantzig, J.A., Hibberd, M.G., Trentham, D.R., and Goldman, Y.E. Cross-Bridge Kinetics in the Presence of MgADP Investigated by Photolysis of Caged ATP in Rabbit Psoas Muscle Fibres. *J. Physiol*., **432**:639-680. 1991.
27. Higuchi, H. and Goldman, Y.E. Sliding Distance between Actin and Myosin Filaments per ATP Molecule Hydrolysed in Skinned Muscle Fibres. *Nature*, **352**:352-354. 1991.
28. Yamakawa, M. and Goldman, Y.E. Mechanical Transients Initiated by Photolysis of Caged ATP Within Fibers of Insect Fibrillar Flight Muscle. *J. Gen. Physiol*., **98**:657-679. 1991.
29. Tanner, J.W., Thomas, D.D., and Goldman, Y.E. Transients in Orientation of a Fluorescent Cross-Bridge Probe Following Photolysis of Caged Nucleotides in Skeletal Muscle Fibres. *J. Mol. Biol*., **223**:185-203. 1992.
30. Dantzig, J.A., Goldman, Y.E., Millar, N.C., Lacktis, J., and Homsher, E. Reversal of the Cross-Bridge Force-Generating Transition by Photogeneration of Phosphate in Rabbit Psoas Muscle Fibres. *J. Physiol*., **451**:247-278. 1992.
31. Hirose, K., Lenart, T.D., Murray, J.M., Franzini-Armstrong, C., and Goldman, Y.E. Flash and Smash: Rapid Freezing of Muscle Fibers Activated by Photolysis of Caged ATP. *Biophys. J*., **65**:397-408. 1993.

32. Hirose, K., Franzini-Armstrong, C., Goldman, Y.E., and Murray, J.M. Structural Changes in Muscle Crossbridges Accompanying Force Generation. *J. Cell Biol.,* **127**:763-778. 1994.
33. Berger, C.L., Craik, J.S., Trentham, D.R., Corrie, J.E.T., and Goldman, Y.E. Fluorescence Polarization from Isomers of Tetramethylrhodamine at SH-1 in Rabbit Psoas Muscle Fibers. *Biophys. J*., **68**:78s-80s. 1995.
34. Allen, T.St.C., Sabido-David, C., Ling, N., Irving, M., and Goldman, Y.E. Transients of Fluorescence Polarization in Skeletal Muscle Fibers Labeled with Rhodamine on the Regulatory Light Chain. *Biophys. J*., **68**:81s-86s. 1995.
35. Higuchi, H., Yanagida, T., and Goldman, Y.E. Compliance of Thin Filaments in Skinned Fibers of Rabbit Skeletal Muscle. *Biophys. J*., **69**:1000-1010. 1995.
36. Irving, M., Allen, T.St.C., Sabido-David, C., Craik, J.S., Brandmeier, B., Kendrick-Jones, J., Corrie, J.E.T., Trentham, D.R., and Goldman, Y.E. Tilting of the Light-Chain Region of Myosin During Step Length Changes and Active Force Generation in Skeletal Muscle. *Nature,* **375**:688-691. 1995.
37. Higuchi, H. and Goldman, Y.E. Sliding Distance per ATP Molecule Hydrolyzed by Myosin Heads During Isotonic Shortening of Skinned Muscle Fibers. *Biophys. J*., **69**:1491-1507. 1995.
38. Allen, T.St.C., Ling, N., Irving, M., and Goldman, Y.E. Orientation Changes in Myosin Regulatory Light Chains Following Photorelease of ATP in Skinned Muscle Fibers. *Biophys. J*., **70**:1874-1862. 1996.
39. Lenart, T.L., Murray, J.M., Franzini-Armstrong, C., and Goldman, Y.E. Structure and Periodicities of Cross-Bridges in Relaxation, in Rigor, and During Contractions Initiated by Photolysis of Caged Ca^{2+}. *Biophys. J.*, **71**:2289-2306. 1996.
40. Friedman, A.L. and Goldman, Y.E. Mechanical Characterization of Skeletal Muscle Myofibrils. *Biophys. J.*, **71**:2774-2785. 1996.
41. Berger, C.L., Craik, J.S., Trentham, D.R., Corrie, J.E.T., and Goldman, Y.E. Fluorescence Polarization Transients from Skeletal Muscle Fibers Labeled with Rhodamine Isomers at SH-1 of the Myosin Heavy Chain. *Biophys. J*., **71**:330-3343. 1996.
42. Zhukarev, V., Sanger, J.M., Sanger, J.W., Goldman, Y.E., and Shuman, H. Distribution and Orientation of Rhodamine-Phalloidin Bound to Thin Filaments in Skeletal and Cardiac Myofibrils. *Cell Motil. Cytoskeleton*, **37**:363-377. 1997.
43. Dantzig, J.A., Higuchi, H., and Goldman, Y.E. Studies of Molecular Motors using Caged Compounds. *Methods in Enzymology*, **291**:307-334. 1998.
44. Hopkins, S.C., Sabido-David, C., Corrie, J.E.T., Irving, M., and Goldman, Y.E. Fluorescence Polarization Transients from Rhodamine Isomers on the Myosin Regulatory Light Chain in Skeletal Muscle Fibers. *Biophys. J*., **74**:3093-3110. 1998.
45. Sabido-David, C., Hopkins, S.C., Saraswat, L.D., Lowey, S., Goldman, Y.E., and Irving, M. Orientation Changes of Fluorescent Probes at Five Sites on the Myosin Regulatory Light Chain During the Contractile Cycle in Single Muscle Fibres. *J. Mol. Biol*., **279**: 387-402. 1998.
46. Dale, R.E., Hopkins, S.C., van der Heide, U.A., Marszalek, T., Irving, M., and Goldman, Y.E. Model-Independent Analysis of the Orientation of Fluorescent Probes with Restricted Mobility in Muscle Fibers. *Biophys. J.*, **76**:1606-1618. 1999.
47. Taylor, K.A., Schmitz, H., Reedy, M.C., Goldman, Y.E., Franzini-Armstrong, C., Sasaki, H., Tregear, R.T., Poole, K., Lucaveche, C., Edwards, R.J., Chen, L.F., Winkler, H., and Reedy, M.K. Tomographic 3-D Reconstruction of Quick-Frozen, Ca^{2+}-Activated Contracting Insect Flight Muscle. *Cell*, **99**:421-431. 1999.
48. Dantzig, J.A., Barsotti, R.J., Manz, S., Sweeney, H.L., and Goldman, Y.E. The ADP Release Step of the Smooth Muscle Cross-Bridge Cycle is Not Directly Associated with Force Generation. *Biophys. J.*, **77**:386-397. 1999.
49. Rome, L.C., Cook, C., Syme, D.A., Ashley-Ross, M., Klimov, A., and Goldman, Y.E. Trading Force For Speed: Why Superfast Crossbridge Kinetics Leads to Super Low Forces. *Proc. Nat. Acad. Sci.*, **96**:5826-5831. 1999.
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51. Forkey, J.N., Quinlan, M.E., and Goldman, Y.E. Protein Structural Dynamics by Single Molecule Fluorescence Polarization. *Prog. Biophys. Mol. Biol.*, 74:1-35. 2000.
52. Van der Heide, U.A., Hopkins, S.C., and Goldman, Y.E. A Maximum Entropy Analysis of Protein Orientations Using Fluorescence Polarization Data from Multiple Probes. *Biophys. J.,* **78**:2138-2150. 2000.
53. Hopkins, S.C., Sabido-David, C., van der Heide, U.A., Ferguson, R.E., Brandmeier, B.D., Dale, R.E., Kendrick-Jones, J., Corrie, J.E.T., Trentham, D.R., Irving, M., and Goldman, Y.E. Orientation

Changes of the Myosin Light-Chain-Domain During Filament Sliding in Active and Rigor Muscle. *J. Mol. Biol.*, **318**:1275-1291. 2002.

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55. Bell, M.G., Dale, R.E., van der Heide, U.A., and Goldman, Y.E. Polarized Fluorescent Depletion Reports Orientation Distribution and Rotational Dynamic of Muscle Cross-Bridges. *Biophys. J.*, **83**:1050-1073. 2002.
56. Forkey, J.N., Quinlan, M.E., Shaw, M.A., Corrie, J.E., and Goldman, Y.E. Three-Dimensional Structural Dynamics of Myosin V by Single-Molecule Fluorescence Polarization. *Nature*, **422**:399-404. 2003.
57. Shaw, M.A., Ostap, E.M., and Goldman, Y.E. Mechanism of Inhibition of Skeletal Muscle Actomyosin by N-Benzyl-p-Toluene Sulfonamide. *Biochemistry*, **42**:6128-6135. 2003.
58. Yildiz, A., Forkey, J.N., McKinney, S.A., Ha, T., Goldman, Y.E., and Selvin, P.R. Myosin V Walks Hand-Over-Hand: Single Fluorophore Imaging with 1.5-nm Localization. *Science*, **300**:2061-2065. 2003.
59. Vanzi, F., Vladimirov, S., Knudsen, C.R., Cooperman, B.S., and Goldman, Y.E. Protein Synthesis by Single Ribosomes. *RNA*, **9**:1174-1179. 2003.
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