

CURRICULUM VITAE
HENRY G. ZOT

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EDUCATION

1976	Denison University	B.A.	Biology
1979	University of Cincinnati	M.S.	Biology
1986	University of Miami	Ph.D.	Pharmacology

PROFESSIONAL EXPERIENCE

2004-pres Professor of Biology, University of West Georgia
2017-pres Courtesy Appointment, Florida State University
2004-13 Professor and Chair of Biology, University of West Georgia
2003-04 Professor, Department of Biology, Eastern Michigan University
1998-03 Associate Professor, Department of Biology, Eastern Michigan University
1991-98 Assistant Professor, Department of Physiology, UT Southwestern Medical Center at Dallas
1988-91 Postdoctoral Fellow, Dept. of Cell Biology and Anatomy, Johns Hopkins Medical School
1986-88 Postdoctoral Associate, Dept. of Biochemistry and REPSCEND Labs, University of Miami Medical School
1981-86 Graduate Student, Dept. of Pharmacology, University of Miami Medical School
1978-81 Research Assistant, Dept. of Pharmacology and Cell Biophysics, University of Cincinnati Medical School
1976-78 Teaching Assistant, Department of Biology, University of Cincinnati

TEACHING EXPERIENCE

Biochemistry (UG majors and MS levels)
Human Physiology (UG majors and MS levels)
Cell, Molecular Biology, and Genetics Lab (UG majors)
Cell Physiology (UG majors)
Science Majors Introductory Biology
Biological Diversity (introductory)
Non-science Majors Biology
Human Anatomy & Physiology (Nursing)
Cell and Molecular Biology (Ph.D. level)

ADMINISTRATIVE EXPERIENCE

2004-13 Chair, Biology Department
2003-04 Coordinator, Bioinformatics graduate program, EMU
2002-04 Coordinator, Biology's graduate programs (3), EMU
1994 President, Sigma Xi, Local Chapter, UTSW
1993 Executive Treasurer, Sigma Xi, Local Chapter, UTSW
1993-97 Founder and Director, Summer Research for Teachers Program (community outreach), UTSW

COMMITTEE SERVICE

2018 Chair UWG Senate Budget Committee
2017-2018 COSM Ad Hoc Policies and Procedures Committee
2016 Provost Fellow
2016-2018 UWG Senate representative to Budget Committee
2016-2018 UWG Faculty Senate
2015-2016 University Rules Committee
2014 COSM Dean Search Committee

2011-12 College of Science and Mathematics Procedures, Policies, and Planning Committee
 2010-11 Taskforce on Realignment of the College of Arts and Sciences
 2009 College Taskforce on Compensation and Accountability
 2008-2009 General Education Committee
 2008-pres Founding member STEM research center
 2006 Chair, ad hoc Committee for Summer School Policy
 2005 College Chair's ad hoc Committee for Assessment of Graduate Education
 2005-06 Co-Chair, University ad hoc Committee for Retention and Graduation
 2005 College Chair's ad hoc Committee for Review Summer School Policy
 2003-04 Chair, Faculty development director search, EMU
 2003 Graduate Council, EMU
 2002-04 Chair, Academic Issues committee, EMU
 2002-03 Faculty Council Executive Committee, EMU
 2002 Chair, Faculty Development Taskforce
 2002 Chair, Development team for professional masters degree in bioinformatics, EMU
 2002 Faculty Director, Office of Academic Program Development, EMU
 2001-03 Biosafety Committee, EMU
 2001 Chair, Biology faculty search committee, EMU
 1999-03 Faculty Council, EMU
 1998-01 Member, NSF Review Panel (Cellular Organization), EMU
 1995-96 Medical School Admissions Committee, UTSW
 1993-97 Faculty Council, UTSW

AFFILIATIONS:

Phi Kappa Phi Honor Society
 American Society for Cell Biology
 Sigma Xi
 American Society for the Advancement of Science

INVITED TALKS

October 31, 2012 Columbus State University "Second Chances and the Steady-State"
 November 25, 2002. University of Cincinnati, "Regulation of Actin Filaments by Actin Filament Associated Protein (AFAP-110)"
 January 14, 1998 Eastern Michigan University, "Moving on with myosin-I"
 April 16, 1997 West Virginia University School of Medicine, Cancer Center, "The SH3 domain of myosin-I at the frontier of nonconventional myosins"
 February 11, 1991 Johns Hopkins Medical School, Dept. of Mechanical Engineering, "Movements on planar membranes mediated by myosin-I"
 November 26, 1990 Florida Sate University, dept. of Biology, "Motility of myosin-I"
 November 13, 1990 Case Western University, Dept. of Physiology, "Myosin-I mediated translocation on planar membranes"
 October 15, 1990 UT Southwestern Medical Center in Dallas, Dept. of Physiology, "Motility of myosin-I on planar membranes"
 August 27, 1986 Clarkson College, Dept. of Biochemistry, "Calcium regulation of striated muscle contraction"

SYMPOSIA ORGANIZED

2003 (June 12, 13, 16, 17, 26, 27) Bioinformatics Workshops (organize and local arrangements)
 1996 (May 11) Young Scholars' Symposium (opening remarks)
 1996 (July 25) Summer Research for Teachers Symposium (organize and opening remarks)
 1995 (July 25) Summer Research for Teachers Symposium (organize and opening remarks)
 1994 (July 26) Summer Research for Teachers Symposium (organize and opening remarks)
 1994 (Nov. 9) Summer Research for Teachers Symposium (organize and opening remarks)
 1993 (Nov. 10) Sigma Xi Research Forum and Symposium (organize)
 1993 (Aug. 6) Summer Research for Teachers Symposium (organize and opening remarks)

GRANTS FUNDED (FEDERAL RESEARCH)

- 2004-09 National Institutes of Health (2RO1CA60731-10A1) "AFAP-110 modulates signals that effect actin filaments" Total award \$1,125,000 to Western Virginia University School of Medicine, Daniel Flynn, PI; Subcontract \$100,660 to University of West Georgia, Henry Zot, Co-PI.
- 2002-06 National Science Foundation "RUI: regulation of cytoskeletal linkages by AFAP-110 and Src: focus on myofibrils" Total award \$285,000 Henry Zot, PI
- 1999-03 National Institutes of Health (2RO1CA60731-06); "AFAP-110 modulates signals that effect actin filaments" Total award \$1,150,815 to Western Virginia University School of Medicine, Daniel Flynn, PI; Subcontract \$92,107 to Eastern Michigan University, Henry Zot, collaborator.
- 1999-01 The National Science Foundation (shared instrument grant) "An image acquisition/analysis system for multidisciplinary research in biology and biochemistry" Total award: \$108,000 Robert Winning (Eastern Michigan University), PI; Henry Zot, major user.
- 1996-01 The National Science Foundation (MCB-9514248); "Regulation of protozoan myosin-I function" (renewal 1) direct costs year 1: \$264,000. Henry Zot, PI
- 1995-96 The National Science Foundation (MCB-9205344); "Regulation of protozoan myosin-I function" (extension) Total award.: \$23,000. Henry Zot, PI
- 1992-95 The National Science Foundation (MCB-9205344); "Regulation of protozoan myosin-I function" Total award: \$224,000. Henry Zot, PI
- 1992-95 American Heart Association, National: "Membrane motility of brush border myosin-I" Total award: \$120,000. Henry Zot, PI
- 1989-92 American Heart Association, Florida Affiliate: "Fluorescent modification of calmodulin" Total award: \$80,000. Henry Zot, PI
- 1987-88 American Heart Association, Florida Affiliate: "Phosphorylation, Ca²⁺ binding and heart muscle contraction" Total award: \$80,000. Henry Zot, PI

GRANTS FUNDED (INTERNAL)

- 2020-21 Faculty Research Grant (UWG Academic Affairs) "Attend Annual Meeting of Biophysical Society" \$3000

GRANTS FUNDED (OTHER)

- 2003-04 Council of Gradual Schools and Alfred P. Sloan Foundation. Phase B Implementation of Professional Masters in Bioinformatics, \$50,000.
- 2002 Council of Gradual Schools and Alfred P. Sloan Foundation. Phase A feasibility study of Professional Masters in Bioinformatics, \$7930.
- 1998 Eastern Michigan University, Spring/Summer Award, \$8,000.
- 1998 Eastern Michigan University, Provost's New Faculty Award, \$5,000.
- 1998 Eastern Michigan University, Equipment transfer, \$144,432
- 1996 Supplement to NSF grant MCB-9514248, stipend for minority undergraduate student (Shemega Bradley)
- 1994 American Association of Immunologists, salaries for two teacher internships
- 1993 American Association of Immunologists, salaries for two teacher internships

PUBLICATIONS (1DENOTES UNDERGRADUATE STUDENT)

Theses

- (M.S.) Evidence for a membrane-bound ATPase from *Thermus aquaticus*, University of Cincinnati
(Ph.D.) The relationship between calcium binding to troponin C and thin filament regulation of muscle contraction. University of Miami

ARTICLES IN PEER REVIEW JOURNALS

1. Zot, H.G. and J.D. Potter (1981) Purification of actin from cardiac muscle. *Prep.Biochem.* 11:381-395.
2. Zot, H.G. and J.D. Potter (1982) A structural role for the Ca²⁺-Mg²⁺ sites of troponin C (TnC) in the regulation of muscle contraction. Preparation and properties of TnC-depleted myofibrils. *J. Biol. Chem.* 257:7678-7683.
3. Zot, H.G., S. Iida, and J.D. Potter (1983) thin filament interaction and Ca²⁺ binding to Tn. *Chemica scripta* 21:133-136.

4. Kerrick, W.G.L., H.G. Zot, P.E. Hoar, and J.D. Potter (1985) Evidence that the Sr²⁺-activation properties of cardiac troponin C are altered when substituted into skinned skeletal muscle fibers *J. Biol. Chem.* 260:15687-15693.
5. Zot, H.G., K. Guth, and J.D. Potter (1986) Fast Skeletal muscle skinned fibers and myofibrils reconstituted with N-terminal fluorescent analogues of troponin C *J. Biol. Chem.* 261:15883-15890.
6. Zot, H.G. and J.D. Potter (1987) Calcium binding and fluorescence measurements of dansylaziridine labeled troponin C in reconstituted thin filaments *J. Mus. Res. Cell Motil.* 8:428-436.
7. Zot, H.G. and D. Puett (1988) Crosslinking of calmodulin to troponin I and myosin light chain kinase with carbodiimides *ICSU Short Reports* 8:161.
8. Zot, H.G. and J.D. Puett (1989) An enzymatically active cross-linked complex of calmodulin and rabbit skeletal muscle myosin light chain kinase. *J. Biol. Chem.* 264:15552-15555.
9. Zot, H.G., R. Aden¹, S. Samy¹, and D. Puett (1990) Association of skeletal muscle myosin light chain kinase with fluorescent adducts of wheat germ calmodulin. *J. Biol. Chem.* 265:14796-14801.
10. Maciver, S.K., H.G. Zot, and T.D. Pollard (1991) Characterization of actin filament severing by actophorin from *Acanthamoeba castellanii*. *J. Cell Biol.* 115:1611-620.
11. Kobayashi, T., H.G. Zot, T.D. Pollard, and J.H. Collins (1991) Functional implications of the unusual amino acid sequence for the regulatory light chain of *Acanthamoeba* myosin-II. *J. Muscle Res. Cell Motil.* 12:553-559.
12. Zot, H.G., Doberstein, S.K., and Pollard, T.D. (1992) Myosin-I moves actin filaments on a phospholipid membrane: implications for membrane targeting. *J. Cell Biol.* 116:367-376.
13. Pollard, T.D., Bhandari, P., Maupin, Wachsstock, D., Weeds, A.G., and Zot, H.G. (1993) Direct visualization by electron microscopy of the weakly-bound intermediates in the actomyosin ATPase cycle. *Biophys. J.* 64:454-471.
14. Parra-Diaz, D., Zot, H.G., Echegoyen, L., and Puett, J.D. (1995) Inhibitory effect of vanadyl on calmodulin-activated skeletal muscle myosin light chain kinase activity *BioFactors* 6:1-4.
15. Zot, H.G. (1995) Phospholipid membrane-associated brush border myosin-I activity. *Cell Motil. Cytoskel.* 30:26-37.
16. Xu, P., Zot, A.S., and Zot, H.G. (1995) Identification of Acan125 as a myosin-I binding protein present with myosin-I on cellular organelles of *Acanthamoeba* *J. Biol. Chem.* 270:25316-25319.
17. Xu, P., Mitchelhill, Kobe, B., Kemp, B.E., and Zot, H.G. (1997) The myosin-I binding protein, Acan125, binds SH3 and belongs to the superfamily of leucine rich repeat proteins. *Proc. Natl. Acad. Sci. USA* 94: 3685-3690.
18. Lee, W.L., Ostap, E.M., Zot, H.G., and Pollard, T.D. (1999) Hydrodynamic and ligand binding properties of the *Acanthamoeba* myosin-IA GPA/SH3 domain. *J. Biol. Chem.* 274:35159-71.
19. Zot, H.G. Bhaskara¹, V., and Liu, L. (2000) Acan125 binding to the SH3 domain of *Acanthamoeba* myosin-IC. *Arch. Biochem. Biophys.* 375: 161-164.
20. Qian, Y., Baisden, J.M., Zot, H.G., Van Winkle, B., and Flynn, D.C. (2000) The carboxy terminus of AFAP-110 modulates direct interactions with actin filaments and regulates its ability to alter actin filament integrity and induce lamellipodia formation. *Ex. Cell Res.* 255:102-113
21. Baisden, J.M., Qian, Y., Zot, H.G., and Flynn, D.C. (2001) The actin filament-associated protein AFAP-110 is an adapter protein that modulates changes in actin filament integrity. *Oncogene* 20:6435-47
22. Qian, Y., Baisden, J.M., Cherezova, L., Summy, J.M., Guappone-Koay, A., Xianglin, S., Mast¹, T., Pastula¹, J., Zot, H.G., Mazloun, N., Lee, M.Y., and Flynn, D.C. (2002) PKC phosphorylation increases the ability of AFAP-110 to cross-link actin filaments. *Mol Biol Cell.* 13:2311-22
23. Qian, Y., Gatesman, A.S. Baisden, J.M., Zot, H.G., Cherezova, L., Qazi, I., Mazloun, N., Lee, M.Y., Guappone-Koay, A., and Flynn, D.C. (2004) Analysis of the role of the leucine zipper motif in regulating the ability of AFAP-110 to alter actin filament integrity *J. Cell. Biochem.* 91:602-20
24. Walker, V.G. Ammer, A., Cao, Z., Clump, A.C., Jiang, B-H, Kelley, L.C., Weed, S.A., Zot, H., and Flynn, D.C. (2007) PI -3-Kinase activation is required for PMA directed activation of cSrc by AFAP-110 *Am. J. Physiol.* 293: C119-32.
25. Zot, H.G., Hasbun, J.E. Hasbun, and Minh, N.V. (2009) Striated Muscle Regulation of Isometric Tension by Multiple Equilibria *PLoS One* 4:e8052.

26. Clump D.A., Yu J.J., Cho Y., Gao R., Jett J, Zot H., Cunnick J.M., Snyder B., Clump A.C., Dodrill M., Gannett P., Coad J.E., Shurina R., Figg W.D., Reed E., Flynn D.C. (2010) A Polymorphic Variant of AFAP-110 Enhances cSrc Activity. *Transl Oncol.* 3:276-85.
27. Lee R.S., Tikunova S.B., Kline K.P., Zot H.G., Hasbun J.E., Van Minh N., Swartz D.R., Rall J.A., Davis J.P. (2010) Effect of the Ca²⁺ Binding Properties of Troponin C on the Rate of Skeletal Muscle Force Redevelopment *Am. J. Physiol. Cell Physiol.* 299: C1091–C1099. doi: 10.1152/ajpcell.00491.2009
28. Zot H.G., Hasbun J.E., Van Minh N. (2012) Second Chance Signal Transduction Explains Cooperative Bacterial Flagellar Switching *PLoS One* 7: e41098. doi: 10.1371/journal.pone.0041098
29. Van Minh N., Hasbun J.E., Zot H.G. (2013) Dynamical Analysis of a Model for Calcium Regulation of Muscle Stretched Beyond Overlap. *J. Nonl. Evol. Equ. Appl.* 2: 11-22.
30. Zot H.G., Hasbun J.E., Michell C.A., Landim-Vieirac M., Pinto J.R. (2016) Enhanced troponin I binding explains the functional changes produced by the hypertrophic cardiomyopathy mutation A8V of cardiac troponin C. *Arch Biochem. Biophys.* 601: 97-104. doi:10.1016/j.abb.2016.03.011
31. Zot H.G., Hasbun J.E. (2016) Modelling Ca²⁺-bound Troponin in Excitation Contraction Coupling. *Frontiers in Physiol.* 7: 406. doi: 10.3389/fphys.2016.00406.
32. Zot H. G., Chase P. B., Hasbun J. E., Pinto J. R. (2020) Mechanical Contribution to Muscle Thin Filament Activation. *J. Biol. Chem.* 295: 15913-15922. doi: 10.1074/jbc.RA120.014438.

¹Denotes undergraduate student.

ARTICLES PUBLISHED NON-PEER REVIEWED

Zot H.G., Hasbun J.E., Van Minh M. (2015) Common basis for cellular motility *arXiv Doc.* arxiv.org/abs/1511.00123. arXiv is a free online document publication site that is not peer reviewed.

REVIEWS AND BOOK CHAPTERS

1. Zot., H.G., J.D. Potter (1984) The role of calcium in the regulation of the skeletal muscle contraction-relaxation cycle. In *Metal Ions in Biological Systems* (Helmut Sigel ed.) Volume 17, Marcel Deker, NY, pp. 381-410.
2. Pollard, T.D., S.K. Doberstein, H.G. Zot (1991) Myosin-I. In *Annu Rev Physiol.* 53:653-681.
3. Zot, H.G., T.D. Pollard (1993) Motility of myosin-I on planar lipid surfaces. In *Meth Cell Biol.* 39:51-63.

ABSTRACTS FOR SCIENTIFIC MEETINGS (2000-PRESENT).

1. Zot, H.G., Mast¹, T., Pastula¹, J., Atkins¹, S, Liggitt, P, Greco, T. (2000) Transduction of peptides into Chlamydomonas. *Mol. Biol. Cell* 11:130a
2. Zot, H.G., LaForest¹, J., Gant¹, J., Varzoaba¹, C., Qian, Y., Flynn, D.C. (2001) AFAP-110 is a Z-line protein that acts synergistically with α -actinin to increase the viscosity of actin in solution. *Mol. Biol. Cell* 12:286a
3. Varzoaba¹, C., Flynn, D.C., and Zot, H.G. (2002) Presence of AFAP-110 in Developing Z-line Structures of Vertebrate Skeletal Muscle. *Mol. Biol. Cell* 13:319a.
4. Zot, H.G., Hasbun, J.E., Minh, N. V.; (2009). Molecular Model for the Cooperative Activation of Molluscan Muscle by Calcium. *Mol. Biol. Cell.* doi: 10.1091/mbc.E11-08-0667 (abstract 1772).
5. Zot, H.G., Hasbun, J.E., Minh, N.V. (2010) Model for Transient Activation of Isometric Force by Calcium. *Biophys. J.* 98 (suppl): 151a.
6. Zot, H.G., Hasbun, J.E., Minh, N.V. (2010) Equilibrium Model for Cooperative Activation of Muscle by Calcium. *Biophys. J.* 98 (suppl): 151a-152a.
7. Hasbun, J.E., Minh, N.V., Lee R.S., Davis J.P., and Zot, H.G. Common Characteristics Found by Fitting Divergent Data from TnC Mutations. (2011) *Biophys. J.* 100(suppl): p112a
8. Zot H.G., Hasbun J.E., Minh, N.V. (2012) Second-Chance Signal Transduction is a Model for Bacterial Flagellar Switching and Tropomyosin-Based Motility. *Biophys. J.* 102 (suppl): 159a - 160a.
9. Zot H.G., Hasbun J.E., and Minh, N.V. (2013) How Muscle Exploits The Steady State To Regulate Contraction. *Biophys. J.* 104 (suppl): 450a
10. Zot H.G., Hasbun J.E., Minh, N.V. (2014) Second Chance Mechanism Explains Dwell Time Distributions of Myosin and Dynein. Presentation at the Biophysical Society Meeting, *Biophys. J.* 104 (suppl): 361a.

11. Zot H.G., Hasbun J.E., Minh, N.V. (2015) Bacterial Flagellar Switching: Hidden Markov Steps Revealed. *Biophys. J.* 108 (suppl): 601a
12. Michell C.A., Pinto J.R., Hasbun J.E., Zot H.G. (2015) Enhanced Troponin-I Binding Explains the Functional Changes Produced by the Hypertrophic Cardiomyopathy A8V Mutation of Cardiac Troponin-C. *Biophys. J.* 108 (suppl): 466a
13. Hasbun J.E., Zot, H.G., Michel, C.A., Landim-Vieira, M., Pinto, J.R. (2016) A8V Mutation of Cardiac Troponin C Enhances Troponin I Binding *Biophys. J.*, 110 (suppl): 124a
14. Zot H.G., Hasbun, J.E., Minh, N.V. (2016) A Statistical Mechanical Basis of Cellular Motility. *Biophys. J.*, 110 (suppl): 308a.
15. Zot H.G. and Hasbun, J.E. (2017) Cooperative changes in troponin structure explained without cooperative Calcium binding. *Biophys. J.*, 112 (suppl): 236a–237a.
16. Zot, H.G., Chase, B., Hasbun, J.E., Pinto, J.R. (2018) Is thin filament movement switched on and off by a thermodynamic process alone? *Biophys. J.* 114 (suppl): 136a.
17. Zot, H.G., Chase, B., Hasbun, J.E., Pinto, J.R. (2019) Thin filament regulation blends thermodynamic and mechanical mechanisms. *Biophys. J.* 116 (suppl): 177-178a.
18. Zot, H.G., Hasbun, J.E., Chase, P.B. Pinto, J.R. (2020) Calcium Regulates Average Time and not Velocity a Thin Filament Moves. *Biophys. J.* 118: 258A
19. Zot, H.G, Chase, P.B., Hasbun, J.E., Pinto, J.R. (2021) Mechanical Force Rather Than Strong Binding Intermediates Extends Activation of Regulated Actin. *Biophys. J.* 120: 60A.
20. Zot, H.G, Chase, P.B., Hasbun, J.E., Pinto, J.R. (2021) Zot, H.G, Chase, P.B., Hasbun, J.E., Pinto, J.R. (2022) Modeling force redevelopment as a response to thin filament activation time. *Biophys. J.* (submitted).

¹Denotes undergraduate student.

ABSTRACTS FOR OTHER MEETINGS (2000-PRESENT).

1. Zot, H.G., Hasbun, J.E., and Minh N.V. (2010) Building an Infrastructure for STEM Research. Presentation for Regional STEM Institute. UWG.