

CURRICULUM VITAE

ZYGMUNT STANISLAW DEREWENDA

PERSONAL DATA

Birthplace: Lodz, Poland

Citizenship: Canadian/Polish/US Permanent Resident

Current Position: Professor

Address of Employment: Department of Molecular Physiology and Biological Physics
University of Virginia
P.O. Box 800736
Charlottesville, VA 22908-0736
USA

EDUCATION:

1975	BSc	Biology	University of Lodz, Poland
1977	MSc	Biophysics	University of Lodz, Poland
1982	PhD	Chemistry	University of Lodz, Poland

PROFESSIONAL EXPERIENCE:

1976-1982	Graduate Research Assist, Department of Crystallography University of Lodz, Poland
1982-1985	Assistant Professor, Department of Crystallography University of Lodz, Poland
1985-1988	Research Fellow, Department of Chemistry, University of York, U.K.
1988-1990	Research Associate, Department of Chemistry University of York, U.K.
1991- June 1996	Associate Professor of Biochemistry, University of Alberta, Edmonton, Canada
Jan 1996-present	Professor of Molecular Physiology and Biological Physics, University of Virginia, Charlottesville, VA, USA

HONORS AND AWARDS:

1980	British Council visiting scientist, University of York, UK.
1981	EMBO Short-term fellowship (extended), University of York, U.K.
1982/83/84	Medical Research Council, UK., visiting scientist, University of York, U.K.
1990	NOVO-NORDISK Lectureship in Protein Crystallography (York, U.K.) – declined
1991-1995	MRC (Canada) Group in Protein Structure and Function, Associate Member
1992-1996	Alberta Heritage Foundation for Medical Research – Scholar
1995-1996	MRC (Canada) Group in Protein Structure and Function, Member
2004	Doctor habilitatus (DSc) from University of Lodz
2011	Medal Universitatis Lodziensis Amico (bestowed by the Senate of the University of Lodz)
2014	Honorary Merit Award from the Lodz University of Technology
2014	Honorary Committee Member for the 75 th Anniversary of the Lodz University
2014-2019	Distinguished Harrison Professor, University of Virginia
2018-2023	Distinguished Harrison Educator
2021-2026	Distinguished Harrison Professor

UNIVERSITY AND COMMUNITY SERVICE (since 1991):

1993	<i>Session Organizer and Chair</i> , Canadian Federation of Biological Sciences, Windsor
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1993-1996	Councilor, Canadian Society for Biochemistry and Molecular Biology
1994	<i>Session Organizer and Chair</i> , CFBS Meeting, Montreal
1994-1996	Public Affairs Committee, Faculty of Medicine, U. of Alberta
1994	Scientific Consultant for Procter & Gamble Co.
1995	Faculty of Medicine U. of Alberta Admissions Committee
1996-1997	Biochemistry Chair, UVA Search Committee member
1997-1998	Departmental NMR Search Committee
1997	Mid-Atlantic Protein Crystallography Annual Meeting, Organizing Committee
1997-2001; 2003-present	UVA Departmental Promotions and Tenure Committee
1997-1998	UVA LCME self-study task force Basic Sciences Sub-Committee
1998	UVA Pharmacology Chair Review Committee
1998-2001	UVA PRATT Committee, School of Medicine
1998-present	UVA Interdisciplinary Biophysics Training Program, Executive Com.
2000-2001	Mid-Atlantic Protein Crystallography Annual Meeting, Organizing Committee
2000-2002	UVA School of Medicine Compensation Management Committee
2000-2001	UVA Research Computing Task Force
2001-2006	NIH Special Study Section
2002	Session Co-Chair, ACA Annual Meeting, San Antonio
2003-present	UVA Polish Visiting Graduate Student Program Director
2002/3; 2005/6	UVA Biophysics Program seminar coordinator
2004-2005	DOD CDMRP NF Program review panel
2005-2010	Integrated Center for Structure-Function Innovation, Co-Director
2006	UVA Structural Biology Symposium organizer
2006-2007	Mid-Atlantic Protein Crystallography Annual Meeting, Organizing Committee
2007	NIH Special Study Section
2008	DOD CDMRP NF Program review panel
1998-2014	UVA Biotechnology Training Program, Executive Com.
2009	WCG-2009 Fosham, China, Session Chair and organizer
2011-present	Acta Crystallographica D, Co-Editor
2012	NIH Special Study Section
2011-2012	UVA Biomedical Sciences Graduate Program recruitment committee
2014-2017	Foundation for Polish Science, Annual Prize Nominating Committee Member
2014-2022	MSFC NIH Study Section Permanent Member
2015-2016	Mid-Atlantic Protein Crystallography Annual Meeting, Organizing Committee
2017	Committee of Visitors for the assessment of the Biological Systems Science Division of the Office of Biological and Environmental Research of the Department of Energy
2017-2019	UVA School of Medicine Promotions and Tenure Committee
2021-2022	UVA Provost's Promotions and Tenure Committee

PROFESSIONAL SOCIETIES:

American Association for the Advancement of Science
American Chemical Society
American Crystallographic Association
American Society for Biochemistry and Molecular Biology

AD HOC:

External Research Grant Proposal Referee for:

Medical Research Council of Canada
Natural Sciences and Engineering Research Council of Canada
National Science Foundation, U.S.
US Department of Agriculture
Heart and Stroke Foundations of Canada
American Chemical Society
Wellcome Trust UK
BBRC UK

Referee for:

Cell, Science, Nature Structural and Molecular Biology, EMBO Journal, Journal of the American Chemical Society, Biochemistry Acta Crystallographica, FEBS Letters, Journal of Lipid Research, Journal of Molecular Biology, Journal of Biological Chemistry, Protein Engineering, Protein Science, Proteins, Structure, Exp. Cell Research, and several others

Current Support:

R01 – (MPI – A.V. Somlyo* & S. Sonkusare, Z.S. Derewenda;)

NIH/NHLBI New signaling pathways in smooth contractility
01/01/2019 - 11/30/2023

Goals: The overarching aim of this proposal is to identify characterize signaling pathways mediated by the RSK2 kinase, and contributing to VSM contractility and blood pressure regulation.

R21 – (MPI – Z.S. Derewenda* & S. Sonkusare, A.V. Somlyo;)

NIH/NISND RhoA signaling in stroke
06/01/2020 - 06/30/2022

Goals: The overarching aim of this proposal is to identify characterize signaling pathways mediated by the RhoA GTPase in brain, in connection to stroke

Recently Completed Research Support

5R01GM086457-04 (MPI – A.V. Somlyo* & Z.S. Derewenda)

NIH/NIGMS Molecular Mechanisms of RhoA-mediated Ca²⁺ Sensitization in Vascular Smooth Muscle
04/30/20014-04/30/2019

Goals: The overarching aim of this proposal is to identify those signaling pathways in SM that are critical to the regulation of contractility via Ca²⁺-sensitization and RhoA, and to elucidate at the cellular and structural level, how specific GEFs and GAPs function in these pathways.

R21 AI13042001 (MPI – Z.S. Derewenda and D. Engel*)

NIH/NIGMS Targeting Ebola virus for small molecule drug discovery
01/30/2017-01/30/2019

Goals: To identify new drug leads targeting the Ebola virus.

BIBLIOGRAPHY

Citation statistics - ISI Web of Knowledge **h-index 59**; (Google Scholar **h-index 65**)

Sum of the time cited	12,392 (17251)
Without self-citations	11,842
Citing articles	9,094
Average citations per item	69

Peer reviewed research papers and reviews (the top 20 papers with respect to citations are shown with the number of citations (ISI) in square brackets; numbering is chronological):

TOP TWENTY PUBLICATIONS:

16. Brady, L., A.M. Brzozowski, **Z.S. Derewenda**, E. Dodson, G. Dodson, S. Tolley, J.P. Turkenburg, L. Christiansen, B. Hüge-Jensen, L. Norskov, L. Thim and U. Menge. A serine protease triad forms the catalytic centre of a triacylglycerol lipase. *Nature* 343:767-770 (1990). **[1074 citations]**

20. Brzozowski, A.M., U. Derewenda, **Z.S. Derewenda**, G.G. Dodson, D.M. Lawson, J.P. Turkenburg, F. Bjorkling, B. Hüge-Jensen, S.A. Patkar and L. Thim. A model for interfacial activation in lipases from the structure of a fungal lipase-inhibitor complex. *Nature* 351:491-494 (1991). **[988 citations]**

58. Sheffield, P.J., S. Garrard, and Z. S. Derewenda. Overcoming expression and purification problems of RhoGDI using a family of "parallel" expression vectors. *Protein Expr Purif* 15: 34-39 (1999). **[502 citations]**

26. Derewenda, U., A.M. Brzozowski, D.M. Lawson and **Z.S. Derewenda**. Catalysis at the interface: The anatomy of a conformational change in a triglyceride lipase. *Biochemistry* 31:1532-1541 (1992). **[488 citations]**

48. **Derewenda, Z.S.**, L. Lee, and U. Derewenda. The occurrence of C-H...O hydrogen bonds in globular proteins. *J. Mol. Biol.* 252: 248-262 (1995). **[485 citations]**

13. Hough, E., L.K. Hansen, B. Birksen, K. Jynge, S. Hansen, A. Hordvik, C. Little, E. Dodson and **Z.S. Derewenda**. High resolution (1.5) crystal structure of phospholipase C from *Bacillus cereus*. *Nature* 338:357-360 (1989). **[431 citations]**

10. Derewenda, U., **Z.S. Derewenda**, E.J. Dodson, G.G. Dodson, D. Smith, C.D. Reynolds G.D. Smith, C. Spark and D. Swenson. Phenol stabilizes more helix in a new symmetrical zinc insulin hexamer. *Nature* 338:594-596 (1989). **[316 citations]**

18. Boel, E., L. Brady, A.M. Brzozowski, **Z.S. Derewenda**, G.G. Dodson, V.J. Jensen, S.B. Petersen, H. Swift, L. Thim and H.F. Woldike. Calcium binding in alpha-amylases: An X-ray diffraction study at 2.1Å resolution of two enzymes from *Aspergillus*. *Biochemistry* 29:6244-6249 (1990). **[308 citations]**

14. Derewenda, Z.S., J. Yariv, J.R. Helliwell, A.J. Kalb(Gilboa), E.J. Dodson, M.Z. Papiz, T. Wan and J. Campbell. The structure of the saccharide binding site of concanavalin A. *EMBO J.* 8:2189-2194 (1989). **[286 citations]**

30. **Derewenda, Z.S.**, U. Derewenda and G.G. Dodson. The crystal and molecular structure of the *Rhizomucor miehei* triacylglyceride lipase at 1.9 resolution. *J. Mol. Biol.* 227:818-839 (1992). **[240 citations]**
88. **Derewenda, Z.S.** Rational protein crystallization by mutational surface engineering. *Structure* 12: 529-535 (2004). **[210 citations]**
23. Derewenda, U., **Z.S. Derewenda**, E.J. Dodson, G.G. Dodson, Xiao Bing and J. Markussen. X-ray analysis of the single chain B29-A1 peptide-linked insulin molecule. A completely inactive analogue. *J. Mol. Biol.* 220:425-433 (1991). **[195 citations]**
40. **Derewenda, Z.S.**, U. Derewenda and P.M. Kobos (His)Ce-H.....O=C< hydrogen bonds in the active sites of serine hydrolases. *J. Mol. Biol.* 241:83-89 (1994). **[194 citations]**
36. Derewenda, U., L. Swenson, Y. Wei, R. Green, P.M. Kobos, R. Joerger, M.J. Haas and **Z.S. Derewenda**. Conformational lability of lipases observed in the absence of an oil-water interface. Crystallographic studies of enzymes from the fungi *Humicola lanuginosa* and *Rhizopus delemar*. *J. Lipid Research* 35: 524-534 (1994). **[188 citations]**
33. **Derewenda, Z.S.** and A.M. Sharp. News from the interface: The molecular structures of triglyceride lipases. *TIBS* 18:20-25 (1993). **[185 citations]**
108. Goldschmidt L, Cooper DR, **Derewenda ZS**, Eisenberg D. Toward rational protein crystallization: A Web server for the design of crystallizable protein variants. *Protein Sci.* 16:1569-1576 (2007) **[183 citations]**
101. **Derewenda, Z.S.** and P.G. Vekilov. Entropy and surface engineering in protein crystallization. *Acta Crystallogr D Biol Crystallogr.* 62:116-24 (2006). **[180 citations]**
52. Ho Y.S., L. Swenson, Z. Dauter, U. Derewenda, L. Serre, Y. Wei, M. Hattori, J. Aoki, H. Arai, T. Adachi, K. Inoue, and **Z.S. Derewenda**. Brain acetylhydrolase that inactivates platelet-activating factor is a G-protein-like trimer. *Nature*, 385: 89-93 (1997). **[160 citations]**
47. Serre, L., E.C. Verbree, Z. Dauter, A.R. Stuitje, and **Z.S. Derewenda**. The *Escherichia coli* malonyl-CoA:ACP transacylase at 1.5Å resolution. *J. Biol. Chem.* 270: 12961-12964 (1995). **[159 citations]**
43. Derewenda, U., L. Swenson, R. Green, Y. Wei, C. Morosoli, R., Shareck, D. Kluepfel, and **Z.S. Derewenda**. Crystal structure, at 2.6Å resolution, of the *Streptomyces lividans* xylanase A, a member of the F family of b-1,4,-D-glycanases. *J. Biol. Chem.* 269: 20811-20814 (1994). **[158 citations]**.