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Birthplace: Berkeley, California, United States

Nationality: USA

EDUCATION:

Stanford University, Department of Biochemistry, Stanford, CA, Ph.D. 1998

Harvard and Radcliffe Colleges, Cambridge, MA, B.A. in Biology, *magna cum laude*, 1987

RESEARCH EXPERIENCE:

Assistant Professor - IST Austria. *Jan 2012- present*

Research Scientist – New York University Medical Center, Skirball Institute, Dept. of Developmental Genetics

Advisor: Ruth Lehmann, Ph.D. *Understanding the mechanism of invasive migration in Drosophila immune cells. 2003-2011*

Post-doctoral Fellow – University of California Berkeley, Dept. of Molecular Cell Biology

Advisor: David Drubin, Ph.D. *Understanding the interpretation of chemotropic gradients in S. cerevisiae through cell biological and genetic analyses. 1999-2003*

Graduate Student – Stanford University, Dept. of Biochemistry

Advisors: Robert S. Fuller, Ph.D., Mark A. Krasnow, M.D. Ph.D. *Identification, and genetic and functional characterization of the neuropeptide and prohormone processing proteases in Drosophila involved in hatching behavior at the end of embryogenesis. 1989-1998*

Deutscher Akademischer Austauschdienst Fellow – Max Planck Institute for Biophysical Chemistry, Göttingen, Germany

Advisor: Peter Gruss, Ph.D. *Expression, purification and biochemical characterization of the murine neuron specific zinc finger gene, Zfp-2. 1987-1989*

Undergraduate Research – Harvard Medical School, Dept. of Microbiology

Advisor: Roberto Kolter, Ph.D. *Deletion analysis of a stationary phase promoter in E. coli. 1986-1987*

HONORS AND AWARDS:

- Lennart Philipson Prize for Outstanding Post-doctoral Talk, Skirball Institute Retreat (2009)
- Lennart Philipson Prize for Outstanding Poster, Skirball Institute Retreat (2005-2008)
- BIOMASS Community Service Award (1997)
- Hormonal and Neuropeptide Biosynthesis Gordon Conference Award for 10 best posters (1996)
- National Science Foundation Graduate Fellowship Finalist (1989)
- Elizabeth Cary Agassiz Scholar (1984-1986)
- Harvard College Scholarship (1984-1986)
- Bank of America Liberal Arts Scholar (1983)

RESEARCH GRANTS:

- NFB Grant (2017-2020)
- FWF Stand Alone Grant (2016-2019)
- Marie Curie Career Integration Grant (2013-2015)
- NIH Fellowship for Scientists with Disabilities (2003-2006)
- National Research Service Award Post-doctoral Grant (2000-2003)
- Max Planck Gesellschaft Fellowship (1988)
- Deutscher Akademischer Austauschdienst Fellowship (1987)

Postdoctoral Fellowships:

Aparna Ratheesh Marie Curie, IIF (2013-2015)
Maria Akhmanova Lise Meitner, FWF (2018-2019)

Doctoral Fellowships:

Katka Hribikova Valoskova Austrian Academy of Sciences, DOC (2015-2017)
Stephanie Wachner Austrian Academy of Sciences, DOC (2017-2020)

Other Grants:

Direnis Cayli Erasmus Programme Grant, 2012
Shamsi Emtenani & Stephanie Wachner & Marko Roblek: Erasmus Staff Mobility Training Grants, 2018
Julia Salapa Femtech FFG Grant, 2017
Adam Szabo Austrian Academy of Sciences, Austria-Slovakia Cooperation Grant, 2015

PUBLICATIONS:

Kierdorf, K., Sharrock, J.A., Vincent, C.M., Ustaoglu, P., Dou, J., Gyoergy, A., Gross, O., **Siekhaus, D.E.**, Dionne, M.S. Muscle function and homeostasis require cytokine inhibition of AKT activity in *Drosophila*. (*in revision at Cell Reports*)

Valoskova, K., Biebl, J., Roblek, M., Emtenani, S., Gyoergy, A., Misova, M., Ratheesh, A., Shkarina, K., Larsen, I.S.B, Vakhrushev, S.Y., Clausen, H., **Siekhaus, D.E.** (2019) A conserved MFS orchestrates a subset of O-glycosylation to facilitate macrophage dissemination and tissue invasion. *Elife* (<https://doi.org/10.7554/eLife.41801>)
highlighted in Elife Digests, PreLights and Faculty of 1000 Prime

Trebuchet, G., Cattenoz, P., Zsomboki, J., Mazaud, D., **Siekhaus, D.E.**, Fanto, M., and Giangrande, A. (2019) The Repo homeodomain transcription factor suppresses hematopoiesis in *Drosophila* and preserves the glial fate. *J. Neuroscience* 39(2):238-255.

Ratheesh, A, Biebl, J., Vesela, J., Smutny, M., Papusheva, E. Krens, S.F.G, Kaufmann, W., Gyoergy, A., Casano, A.M., **Siekhaus D.E.** (2018) *Drosophila* TNF modulates tissue tension in the embryo to facilitate macrophage invasive migration. *Developmental Cell* 45(3):331-346
highlighted three times in Faculty of 1000 Prime

Gyoergy, A., Roblek, M., Ratheesh, A., Valoskova, K., Belyaeva, V., Wachner, S., Matsubayashi, Y., Sanchez-Sanchez, B.J., Stramer, B., and **Siekhaus D.E.** (2018) Tools allowing independent visualization and genetic manipulation of *Drosophila melanogaster* macrophages and surrounding tissues. *G3 (Bethesda)* 8(3):845-857

Yamamoto, W., Wada, S., Nagano, M., Aoshima, K., **Siekhaus, D.E.**, Toshima, J.Y., and Toshima, J. (2017) Distinct roles for plasma membrane PtdIns(4)P and PtdIns(4,5)P₂ during yeast receptor-mediated endocytosis. *J. Cell Science* 131(1) doi:10.1242/jcs.207696

Matsubayashi, Y., Louani, A., Dragu, A., Sánchez-Sánchez, B.J., Serna-Morales, E., Yolland, L., Gyoergy, A., L Vizcay, G., Fleck, R.A., Heddleston, J.M., Chew, T.L., **Siekhaus D.**, Stramer B. (2017) A moving source of matrix components is essential for *de novo* basement membrane formation. *Current Biology* 27(22):3526-34

Toshima, J.Y., Furuya, E., Nagano, M., Kanno, C., Sakamoto, Y., Ebihara, M., **Siekhaus, D.E.**, Toshima, J. (2016) Yeast Eps-like endocytic protein Pan1p regulates the interaction between endocytic vesicles, endosomes and the actin cytoskeleton. *Elife* e10276

Toshima, J.Y., Horikomi, C., Okada, A., Hatori M.N., Nagano, J., Masuda, A., Yamamoto, W., **Siekhaus D.E.**, and Toshima, J. (2016) Srv2/CAP is required for polarized actin cable assembly and patch internalization during clathrin-mediated endocytosis. *J Cell Science* 129(2):367-79

Ratheesh, A., Belyaeva, V., **Siekhaus, D.E.** (2015) *Drosophila* immune cell migration and adhesion during embryonic development and larval immune responses. *Current Opin Cell Biol* 36:71-79

Kawada, D., Kobayashi, H., Tomita, T., Nakata E., Nagano, M., **Siekhaus, D.E.**, Toshima, J.Y., Toshima, J. (2015) The yeast ARF-GAP Glo3p is required for the endocytic recycling of cell surface proteins. *Biochem Biophysica Acta* 1853(1):144-156

Toshima, J.Y., Nishinoaki, S., Sato, Y., Yamamoto, W., Furukawa, D., **Siekhaus D.E.**, Sawaguchi, A. and Toshima, J. (2014) Bifurcation of the endocytic pathway into Rab5 dependent and independent transport to the vacuole. *Nature Communications* 5:3498

DeGennaro, M.*, Hurd, T.*, **Siekhaus, D.**, Biteau, B., Jasper, H. and R. Lehmann. (2011) Peroxiredoxin stabilization of E-cadherin promotes primordial germ cell adhesion. *Developmental Cell* 20(2):233-243
*authors contributed equally

Siekhaus, D., Haesemeyer, M., Moffitt, O. and Lehmann, R. (2010) RhoL controls invasion and Rap1 localization during immune cell transmigration in *Drosophila*. *Nature Cell Biology* 12(6):605-610

Kunwar, P.S., **Siekhaus, D. E.** and Lehmann, R. (2006) In vivo migration: a germ cell perspective. *Ann Rev of Cell and Develop Biology* 22:237-65

Siekhaus, D.E. and Drubin, D.G. (2003) Spontaneous receptor-independent heterotrimeric G protein signaling in an RGS mutant. *Nature Cell Biology* 5(3):231-5
highlighted in Faculty of 1000

Rayburn, L.Y.M., Gooding, H.C. Choksi, S.P., Maloney, D., Kidd, A.R., **Siekhaus, D.E.** and Bender, M. (2003) *amontillado*, the *Drosophila* homolog of the prohormone processing protease PC2, is required during embryogenesis and early larval development. *Genetics* 163(1):227-237

Hwang J.R., **Siekhaus D.E.**, Fuller R.S., Taghert P.H. and Lindberg I. (2000) Interaction of *Drosophila* melanogaster Prohormone Convertase 2 and 7B2. *Insect Cell-Specific Processing and Secretion. J Biological Chemistry* 275(23):17886-17893

Siekhaus, D.E. and Fuller, R.S. (1999) A role for *amontillado*, the *Drosophila* homolog of the neuropeptide precursor processing protease PC2, in hatching behavior. *J Neurosci* 19: 6942-6954

INVITED TALKS:

GRK 2213: *Membrane Plasticity in Tissue Development and Remodeling*, Marburg, Germany, 2019

MRC London Institute of Medical Sciences Seminar Series, Imperial College London, UK, 2019

New Directions in Drosophila Blood Cell Biology, Klosterneuburg, Austria 2018

Cells in Motion International Max Planck Research Graduate School Meeting, Münster Germany 2017

Austria-Japan Joint Meeting on understanding the logic of developmental dynamics, IST Austria 2016

Daria Siekhaus, Ph.D.

Department of Developmental Genetics, Skirball Institute, NYU School of Medicine, NY, NY, USA 2016
New Directions in Drosophila Blood Cell Biology, Woods Hole, MA USA 2016
Cells in Motion Münster, Münster, Germany, 2015
European Molecular Biological Laboratories, Heidelberg, Germany 2015
MD Anderson Department of Genetics, 2015, Houston, TX, USA 2015
Gordon Conference on Directed Cell Migration, Galveston, TX, USA 2015
Department of Cell and Tissue Biology, University of California, San Francisco, CA, USA 2014
Junior European Drosophila Investigators Meeting, Carry Le Rouet, France 2014
Department of Genetics Seminar Series, Cambridge University, UK 2014
Department of Biological Sciences, University at Albany, State University of New York 2013
Junior European Drosophila Investigators Meeting, Windsor Great Park, UK 2013
Max Planck Institute for Developmental Biology Colloquium Tuebingen, Germany 2013
Westfälische Wilhelms-Universität Münster, SFB Seminar series Muenster, Germany 2013
Osterreichische Gesellschaft für Allergologie & Immunologie Symposium, Klosterneuburg, Austria 2012
Vienna Infection Immunology Researchers- United Symposium Vienna, Austria 2012

TALKS AFTER SELECTION:

Gordon Conference on Directed Cell Migration, Galveston, TX, USA, 2019
*ASCB/ EMBO Meeting Minisymposium on Patterning Tissue Morphogenesis
San Diego, USA 2018*
EMBO Conference on Molecular and Developmental Biology of Drosophila, Crete, Greece, 2018
25th European Drosophila Research Conference, London, UK, 2017
8th Abercrombie Meeting (talk selected from application), Oxford, UK, 2017
Drosophila Research Conference Early PI forum, San Diego, CA USA 2017
Vienna Biocenter Recess, Schloss Hernstein, Austria, 2017
Gordon Conference on Directed Cell Migration, Galveston, TX USA 2017
24th European Drosophila Research Conference, Heidelberg, Germany 2015
Vienna Biocenter Recess, Schloss Hernstein, Austria, 2015
Ipsen Foundation Exciting Biologies Conference: Biology of Boundaries, Savudrija, Croatia 2013
22nd European Drosophila Research Conference, Lisbon, Portugal 2011
Institute of Science and Technology, Vienna, Austria 2011
Experimental Immunology Branch, National Cancer Institute, NIH, Bethesda, MD USA 2011
Department of Biology, Emory University, Atlanta, GA, USA 2011
Department of Human Genetics, University of Utah School of Medicine, Salt Lake City, UT USA 2011
Section of Cell and Developmental Biology, UC San Diego, La Jolla, CA USA 2011
American Society of Cell Biology, Philadelphia, PA USA 2010
Drosophila Research Conference, Chicago, IL USA 2009
Gordon Conference on Developmental Biology, Andover, NH, USA 2007
Drosophila Research Conference, Washington D.C., USA 2004
Yeast Cell Biology Conference, Cold Spring Harbor, NY USA 2001

SCIENTIFIC SERVICE:

Committees

Member of the Search Committee for new Principal Investigators at the Center for Molecular Medicine, Vienna, Aug-Nov 2014

Conferences

Co-organizer of the New Directions in *Drosophila* Blood Cell Biology Conference at IST Austria with Prof. Angela Giangrande of University of Strasbourg, France and Prof. K. Brueckner of University of California San Francisco, USA, September 2018

Reviewer for funding agencies

European Research Council advanced grants
Agence National de la Recherche (France)
Gutenberg Chair (France)
Sir Henry Dale Fellowship, Royal Society and Wellcome Trust (UK)
Houska Prize (Austria)

Reviewer for journals

Development, Developmental Cell, Journal of Cell Biology, Journal of Cell Science, Journal of Visual Experiments, PLOS Genetics, PLOS One, PNAS

TEACHING EXPERIENCE:

- Developed and taught course on Cell Migration, IST Austria, 2017, 2019
- Developed and taught Core Course in Cell and Developmental Biology, IST Austria, 2016
- Developed and taught Cell Biology, IST Austria, 2013, 2014, 2015
- Teaching assistant for Innate Immunology section of Intro to Immunology, NYUSOM, 2009
- Teaching assistant for Genetics section of Foundations, NYUSOM, 2005-2009
- Initiated and supervised Drubin Lab Cell Biology Journal Club, 1999-2002
- Teaching Assistant Graduate Biochemistry, Stanford University, 1989-1990
- Tutored high school student with Upward Bound who then was accepted at Stanford, 1992-1995

TRAINEES:

Post-doctoral Fellows:

Aparna Ratheesh 2012-2018
Present Position: Assistant Professor, Centre for Mechanochemical Cell Biology, University of Warwick, UK
Marko Roblek 2016-
Maria Akhmanova 2018-

Graduate students:

Vera Belyaeva 2013-2018
Katarina Hribikova, 2013-2019
Shamsi Emtenani, 2015-
Stephanie Wachner, 2016-
Michaela Misova, 2018-

Graduate Rotation Students:

Patricia Rodrigues 2018-2019
Michaela Misova, Bettina Krens, 2017-2018
Christina Artner, Julian Stopp, 2016-2017
Stephanie Wachner, Sina Metzler, Kathrin Tomasek, 2015-2016
Kresimir Ferencak, Shamsi Emtenani, Anna Catarina Pontes 2014-2015
Madhumita Narasimhan, Lena Bunatyan, Dora Tarungleanu, Cornelia Schwayer, 2013-2014
Alex Leithner, Chris Pull, Vera Belyaeva, Katarina Hribikova, Mabel Cruz, 2012-13

Interns:

Julia Salapa, Jan-September 2017, Bachelor's Student Thesis
Present Position: Masters studies at TU Wien
Irene Argudo-Garcia, Jan-Aug 2016, Post Master's Intern,
Present Position: PhD student at the Champalimaud Centre for the Unknown, Lisbon, Portugal
Gemma Puixeu Sala, Jan-May, 2016, Bachelor's level ISTern, June-August 2016
Present Position: PhD student in Barton and Vicoso's labs at IST Austria
Adam Szabo, Jan-May 2015, Post Master's Intern
Present Position: Clinical Research Associate at Quintiles Gesmbh, Austria
Kateryna Shkarina June-Aug 2014 Master's ISTern, Sept 2015-Feb 2016, Post Master's Intern

Daria Siekhaus, Ph.D.

Present Position: Ph.D. student in the Dept of Biochemistry at the University of Lausanne, Switzerland

Matthew Doerfler, July-Dec 2013 ISTern, March-July 2015, Bachelor's level Intern

Present Position: Medical Student at Northwestern University School of Medicine, USA

Antonia Sikhegyi, June-Aug 2013 Bachelor's level ISTern

Finished her Master's degree at Pazmany Peter Catholic University, Hungary

Direnis Cayli, June-Sept 2012, Bachelor's level Intern

At NYU:

Olivia Moffitt, Undergraduate student, August 2008-2011

Present position: Psychiatrist, Houston, Texas

Doris-Lou Demy, Summer undergraduate student, April-August 2007

Present position: Postdoctoral Fellow, Institut Pasteur

Martin Haesemeyer, Masters (Diplom) student, 2005-2006

Present position: Post-doctoral fellow, Department of Molecular and Cell Biology, Harvard University