

**CURRICULUM VITAE
OREGON HEALTH & SCIENCE UNIVERSITY**

NAME	Holly L. Rosenzweig	DATE	8/30/2017
PRESENT POSITION AND ADDRESS			
Academic Rank:	Associate Professor		
Department/Division:	Dept. Molecular Microbiology & Immunology Research/VA Portland Health Care System		
Professional Address:	VA Portland Health Care System 3710 SW US Veterans Hospital Rd. Building 103; Lab E-222; Office E-221A Portland, OR 97239		
E-Mail Address:	rosenzwh@ohsu.edu		

II. EDUCATION

Undergraduate and Graduate:

1994-1998 **B.S. in Molecular & Cell Biology/Biochemistry**
University of Colorado, Boulder, CO

1999-2006 **Ph.D. in Immunology**
Oregon Health & Science University (OHSU), Portland, OR

Postgraduate:

2006-2009 **Post-doctoral Fellowship (Ocular Immunology), Casey Eye Institute,**
OHSU, Portland, OR.

III. PROFESSIONAL EXPERIENCE

Academic (Include Year, Position, and Institution):

1995-1998 **Undergraduate Research,** University of Colorado, Boulder, CO

1998-1999 **Research Assistant,** Institute for Behavioral Genetics, University of
Colorado, Boulder, CO

- 1999-2006 **Graduate Thesis Research**, Dept. MMI, OHSU, Portland, OR. My graduate work focused on the role of Toll-like receptor (TLR) signaling in neuroprotective responses of the brain.
- 2006-2009 **Postdoctoral Fellowship**, Casey Eye Institute, OHSU, Portland, OR. This was an NIH/Ruth L. Kirschstein National Research Service Award (NRSA) funded fellowship, which focused on the biologic function of *Nod2* in ocular immune responses.
- 2009-2017 **Assistant Professor**, Dept. Ophthalmology, OHSU, OR, USA
- 2012-present **Research Microbiologist**, VA Portland Health Care System, Portland, OR, USA
- 2013-2017 **Assistant Professor**, Dept. Molecular Microbiology & Immunology, OHSU, OR, USA
- 2017-present **Associate Professor**, Dept. Molecular Microbiology & Immunology, OHSU, OR, USA

IV. SCHOLARSHIP

Area(s) of Research/Scholarly Interest:

Research efforts in my lab support a new paradigm that autoimmunity develops from complex environmental and genetic interactions. Historically, the adaptive immune system, particularly the T cells, has been the prime focus of research in autoimmune diseases. However, the relatively recent discovery of innate immune receptors, e.g. Toll-like receptors (TLRs), Nod-like receptors (NLRs), and C-type lectin receptors (CLRs) has revolutionized our understanding and increased our appreciation of innate immunity and the cross-talk that occurs between the innate and adaptive systems in health (i.e. homeostasis) and disease (i.e. inflammation). I am driven towards understanding how these immune-defense mechanisms (both innate and adaptive) that would normally provide protection against infection, “turn rogue” and inappropriately attack our own body to cause disease such as arthritis and/or uveitis (which occurs in many arthritic syndromes). This central interest is reflected by the projects in my lab that delve into clinically significant questions using various relevant experimental models of arthritis and/or uveitis. We use a wide-ranging breadth of approaches that span molecular and cellular technology to studies at the animal level (such as near-infrared (NIR)-imaging, intravital videomicroscopy, and topic endoscopic fundus imaging (TEFI) of standard and genetically engineered mouse strains). Collectively, this work seeks to understand the basic mechanisms of how innate immune receptors are involved in shaping chronic (auto) inflammatory disease.

Grants and Contracts:

Federal		
Funding period	Source, PI, Title	Total Direct Amount (calendar months/yr)
02/06/2006-02/05/2009	NIH-F32 EY017254 (PI: HL Rosenzweig) Ruth L. Kirschstein National Research Service Award; NRSA-individual post-doctorate fellowship <i>Investigation of NOD2: Implications for Uveitis</i>	\$131,988/ 3 yrs (12 mo.)
08/01/2009-07/31/2013	NIH-RO1 EY019020 (PI: HL Rosenzweig) <i>NOD2 and Uveitis</i>	\$950,400/ 4 yrs (7.2 mo.)
08/04/2009-07/31/2011	NIH-RO1 EY019604 (Co-I: HL Rosenzweig; PI: JT Rosenbaum) <i>Endotoxin-induced Uveitis Revisited</i>	\$463,894/ 2 yrs (1.5 calendar)
09/30/2011-08/31/2015	NIH-RO1 EY021733 (PI: HL Rosenzweig) <i>Understanding uveitis in a multi-system disease model of spondyloarthritis</i>	\$950,000/ 4 yrs (2.4 mo.)
01/01/2014-12/31/2017	1I01 BX002180 (PI: HL Rosenzweig) Dept. of Veterans Affairs: BLR&D Merit Review Award <i>Interaction of environment and genetics in predisposition to autoimmune arthritis.</i>	\$1,065,247/ 4 yrs (12 mo.)
02/01/2015-02/28/2019	NIH-RO1 EY025250 (PI: HL Rosenzweig) <i>Innate Immunity and Its Integration in Autoimmune Disease of the Eye</i>	\$900,000/ 4 yrs (1.8 mo.)
09/01/2015-08/31/2017	NIH-R21 EY025039-01 (PI: HL Rosenzweig) <i>Monarch/NLRP12: A Newly Discovered Innate Immune Receptor in Uveitis</i>	\$275,000/ 2 yrs (1.2 mo.)
01/01/2018-12/31/2021	2I01 BX002180 (PI: HL Rosenzweig) Dept. of Veterans Affairs: BLR&D Merit Review Award <i>Interaction of environment and genetics in predisposition to autoimmune arthritis.</i>	\$1,115,247/ 4 yrs (12 mo.)

Other/Foundation

Funding period	Source, PI, Title	Direct Amount (calendar months)
07/01/2009-06/30/2011	American College of Rheumatology New Investigator award (PI: HL Rosenzweig)	\$90,800/ 2 yrs (2.4 mo)
07/01/2009-06/01/2014	Research to Prevent Blindness Award-New Investigator Award (PI: HL Rosenzweig)	\$200,000/ 4 yrs (0.6 mo.)
2009	Kuzell Arthritis National Research Award (PI: HL Rosenzweig) <i>The role of NOD2 in Inflammatory Arthritis</i>	\$30,000/ 1 yr
2011	Kuzell Arthritis National Research Award (PI: HL Rosenzweig) <i>Investigation of the Th17 response in a novel mouse model of uveitis coinciding with arthritis and spondylitis.</i>	\$30,000/ 1 yr
05/01/2013-03/31/2016	BD Biosciences Immunology Research Award (PI: HL Rosenzweig)	\$10,000/ 3 yrs
07/01/2017-07/01/2018	Gerlinger Research Award, OHSU & Doernbecher Foundations (PI: HL Rosenzweig)	\$20,000/ 1 yr

Pending funding		
Funding period	Source, PI, Title	Direct Amount (calendar months)

Awards:

2006-2009 Ruth Kirschstein NRSA Individual Postdoctoral Fellowship
2007 Young Investigator Award in Ophthalmology (of Oregon)
2007 Federation of Clinical Immunology Society, Poster of Distinction
2007 International Cytokine Society Award
2008 American Uveitis Society Award, ARVO annual meeting
2009 American College of Rheumatology, New Investigator Award
2009 Research to Prevent Blindness Foundation, New Investigator Award
2009, 2011 Kuzell Arthritis National Research Award
2010 Experimental Uveitis Research Award, European Uveitis Patient Interest Group—
for best basic science article of the year
2013 BD Bioscience Immunology Research Award
2014 OHSU Institutional Nominee, Burroughs Wellcome Fund Award
2017 Gerlinger Research Award

Publications/Creative Work:

Peer-reviewed

1. Murray SE, **Lallman H***, Heard AD, Rittenberg MB, Stenzel-Poore MP. A genetic model of stress displays decreased lymphocytes and impaired antibody responses without altered susceptibility to *S. pneumoniae*. *Journal of Immunology* (2001); 167(2): 691-698. PMID: 11441072 *former (maiden name)
2. Stenzel-Poore MP, Stevens SL, Xiong Z, Lessov NS, Harrington CA, Mori M, Meller R, **Rosenzweig HL**, Tobar E, Shaw TE, Chu X, Simon RP. Effect of ischemic preconditioning on genomic response to cerebral ischaemia: Similarity to neuroprotective strategies in hibernation and hypoxia-tolerant states. *The Lancet* (2003); 362(9389): 1028-1037. PMID: 14522533
3. **Rosenzweig HL**, Lessov NS, Henshall DC, Minami M, Simon RP, Stenzel-Poore MP. Endotoxin preconditioning prevents the cellular inflammatory response during ischemic neuroprotection in mice. *Stroke* (2004); 35(11): 2576-2581. PMID: 15375302
4. Murray SE, **Rosenzweig HL**, Johnson M, Huising MO, Sawicki K, Stenzel-Poore MP. Overproduction of corticotropin-releasing hormone blocks germinal center formation: Role of corticosterone and impaired follicular dendritic cell networks. *Journal of Neuroimmunology* (2004); 156(1-2): 31-41. PMID: 15465594
5. Meller R, Stevens SL, Minami M, Cameron JA, King S, **Rosenzweig HL**, Doyle K, Lessov NS, Simon RP, Stenzel-Poore MP. Neuroprotection by osteopontin in stroke. *Journal of Cerebral Blood Flow and Metabolism* (2005); 25(2): 217-225. PMID: 15678124
6. **Rosenzweig HL**, Minami M, Lessov NS, Coste SC, Stevens SL, Henshall DC, Meller R, Simon RP, Stenzel-Poore MP. Endotoxin preconditioning protects against the cytotoxic effects of TNFalpha after stroke: a novel role for TNFalpha in LPS-ischemic tolerance. *J Cereb Blood Flow Metab* (2007); 28:1-12. PMID: 17327883
7. **Rosenzweig HL**, Martin, TM, Jann MM, Planck SR, Davey MP, Kobayashi K, Flavell RA, Rosenbaum JT. NOD2, the gene responsible for familial granulomatous uveitis, in a mouse model of uveitis. *Invest Ophthalmol Vis Sci* (2008); 49(4): 1518-24. PMID: 18385071
8. **Rosenzweig HL**, Martin TM, Planck SR, Jann MM, Smith JR, Glant TT, van

- Eden W, Davey MP, Rosenbaum JT. Anterior uveitis accompanies joint disease in a murine model resembling ankylosing spondylitis. *Ophthalmic Res* (2008); 40(3-4): 189-92. PMID: 18421237
9. Rosenbaum JT, **Rosenzweig HL**, Smith JR, Martin TM, Planck SR. Uveitis secondary to bacterial products. *Ophthalmic Res* (2008); 40(3-4): 165-8. PMID: 18421233
 10. **Rosenzweig HL**, Martin TM, Planck SR, Galster K, Jann MM, Davey MP, Kobayashi K, Flavell RA, Rosenbaum JT. Activation of NOD2 *in vivo* induced IL-1 beta production in the eye via caspase-1 but results in ocular inflammation independently of IL-1 signaling. *J Leukoc Biol* (2008); 84(2): 529-36. PMID: 18495787
 11. **Rosenzweig HL**, Jann MM, Glant TT, Martin TM, Planck SR, van Eden W, van Kooten PJS, Flavell RA, Kobayashi K, Rosenbaum JT, Davey MP. Activation of Nucleotide Oligomerization Domain Two Exacerbates a Murine Model of Proteoglycan-Induced Arthritis. *J Leukoc Biol* (2009); 85(4): 711-18. PMID: 19129483
 12. Farkas B, Boldizsar F, Tarjanyi O, Laszlo A, Lin SM, Hutas G, Trynieszewska B, Mangold A, Nagyeria G, **Rosenzweig HL**, Finnegan A, Mikecz K and Glant TT. BALB/c mice genetically susceptible to proteoglycan-induced arthritis and spondylitis show colony-dependent differences in disease penetrance. *Arthritis Res Ther* (2009); 11(1): R21. PMID: 19220900
 13. **Rosenzweig HL**, Galster KT, Planck SR, Rosenbaum JT. NOD1 is expressed in the eye and functionally contributes to IL-1 β dependent ocular inflammation in mice. *Invest Ophthalmol Vis Sci* (2009); 50(4): 1746-53. PMID: 19074813
 14. Dugan JW, Albor A, David L, Fowlkes J, Blackledge MT, Martin TM, Planck SR, **Rosenzweig HL**, Rosenbaum JT, Davey MP. Nucleotide oligomerization domain-2 interacts with 2'-5'-oligoadenylate synthetase type 2 and enhances RNase-L function in THP-1 cells. *Mol Immunol* (2009); 47(2-3): 560-6. PMID: 19853919
 15. **Rosenzweig HL**, Kawagushi T, Martin TM, Planck SR, Davey MP, Rosenbaum JT. Nucleotide Oligomerization Domain-2 (NOD2)-Induced Uveitis is Dependent on IFN. *Invest Ophthalmol Vis Sci* (2009); 50(4): 1739-45. PMID: 19098321
 16. **Rosenzweig HL**, Jann MJ, Vance EE, Planck SR, Rosenbaum JT, Davey MP. Nucleotide-binding oligomerization domain 2 and Toll-like receptor 2 function independently in a murine model of arthritis triggered by intraarticular peptidoglycan. *Arthritis & Rheumatism* (2010); 62(4): 1051-9. PMID: 19129483

17. **Rosenzweig HL**, Clowers, JS, Nunez, G, Rosenbaum JT, Davey, MP. Dectin-1 and NOD2 Mediate Cathepsin Activation in Zymosan-Induced Arthritis in Mice. *Inflammation Research* (2011); 60(7): 705-14. PMID: 21424514
18. **Rosenzweig HL**, Galster K, Vance EE, Ensign-Lewis J, Nunez G, Davey MP, Rosenbaum JT. NOD2 Deficiency Results in Increased Susceptibility to Peptidoglycan-Induced Uveitis in Mice. *Invest Ophthalmol Vis Sci* (2011); 52(7): 4106-12. PMID: 21296813
19. Kezic J, Taylor S, Gupta S, Planck SR, **Rosenzweig HL**, Rosenbaum JT. Endotoxin-induced uveitis is primarily dependent on radiation resistant cells and on MyD88 but not TRIF. *J Leukoc Biol* (2011); 90(2): 305-11. PMID: 21610198
20. Allensworth JJ, Planck SR, Rosenbaum JT, **Rosenzweig HL**. Investigation of the differential potentials of TLR agonists to elicit uveitis in mice. *J Leukoc Biol* (2011); 90(6): 1159-66. PMID: 21934069
21. Rosenbaum JT, Woods A, Kezic J, Planck SR, **Rosenzweig HL**. Contrasting ocular effects of local versus systemic endotoxin. *Invest Ophthalmol Vis Sci* (2011); 52(9): 6472-7. PMID: 21757585
22. Kezic JM, Davey MP, Glant TT, Rosenbaum JT, **Rosenzweig HL**. IFN regulates discordant mechanisms of uveitis versus joint and axial disease in a murine model resembling spondyloarthritis. *Arthritis & Rheumatism* (2012); 64(3): 762-71. PMID: 21987263
23. Kezic JM, Glant TT, Rosenbaum JT, **Rosenzweig HL**. Neutralization of IL-17 ameliorates uveitis but damages photoreceptors in a murine model of spondyloarthritis. *Arthritis Res Ther* (2012); 14(1): R18. PMID: 22269151
24. **Rosenzweig HL**, Woods A, Clowers JS, Planck SR, Rosenbaum JT. The NLRP3 inflammasome is active but not essential in endotoxin-induced uveitis. *Inflammation Research* (2012); 61(3): 225-31. PMID: 22119862
25. Planck SR, Woods A, Clowers JS, Nicklin MJ, Rosenbaum JT, **Rosenzweig HL**. The impact of IL-1 signaling on experimental uveitis and arthritis. *Annals of the Rheumatic Diseases* (2012); 71(5): 753-60. PMID: 22267332
26. Clowers JS, Allensworth JJ, Lee EJ, **Rosenzweig HL**. Investigation of the peptidoglycan sensing molecule, PGLYRP-2, in murine inflammatory uveitis. *British Journal of Ophthalmology* (2013); 97(4): 504-10. PMID: 23361435
27. Dugan J, Griffiths E, Snow, P, **Rosenzweig HL**, Lee EJ, Brown B, Carr DW, Rose C, Rosenbaum JT, Davey MP. A Blau syndrome-associated Nod2 mutation

alters expression of full length NOD2 and limits responses to muramyl dipeptide in knock-in mice. *Journal of Immunology* (2015); 194(1): 349-57. PMID: 25429073

28. Lee EJ, Allensworth JJ, Clowers JS, **Rosenzweig HL**. Aberrant IL-1 signaling does not increase susceptibility of mice to NOD2-dependent uveitis. *Clinical and Experimental Ophthalmology* (2015); 43(4): 349-57. PMID: 25255917
29. Lee EJ, Vance EE, Brown BR, Snow P, Clowers JS, Sakaguchi S, **Rosenzweig HL**. Investigation of the relationship between the onset of arthritis and uveitis in genetically predisposed SKG mice. *Arthritis Research & Therapy* (2015); 17: 218. PMID: 26286534
30. Lee EJ, Brown BR, Vance EE, Snow PE, Silver PB, Hinrichs D, Lin X, Iwakura Y, Wells CA, Caspi RR, **Rosenzweig HL**. Mincle activation and the Syk/Card9 signaling axis are central to development of autoimmune disease of the eye. *Journal of Immunology* (2016); 196(7): 3148-58. PMID: 26921309
31. Napier RJ, Lee EJ, Vance EE, Snow P, Davey MP, Sakaguchi S, **Rosenzweig HL**. A Newly identified role for Nod2 in suppression of autoimmune arthritis. *Journal of Immunology* (2017); under revision
32. Brown BB, Lee EJ, Snow PE, Vance EE, Iwakura Y, Ohno N, Miura N, Lin X, Brown G, Wells CA, Smith JR, Caspi RR, **Rosenzweig HL**. Fungal-derived cues promote ocular autoimmunity through a Dectin-2/Card9-mediated mechanism. *Clinical and Experimental Immunology* (2017); *Epub ahead of print*. PMID: 28763100

Book Chapters

Rosenbaum JT, **Rosenzweig HL**, Martin TM. "Blau Syndrome". Edited by Zierhut M et al: *Intraocular Inflammation*; 2015 Edition (Nov. 18th, 2015)

Invited Reviews

1. **Rosenzweig HL**, Planck SR, Rosenbaum JT. NLRs in immune privileged sites. *Current Opinion in Pharmacology* (2011); 11(4): 423-8. PMID: 21803656
2. Willermain F, Rosenbaum JT, Bodaghi B, **Rosenzweig HL**, Childers S, Behrend T, Wildner G, Dick AD. Interplay between innate and adaptive immunity in the development of non infectious uveitis. *Progress in Retinal Eye Research* (2012); 31(2): 182-94. PMID: 22120610

3. Rosenbaum JT, **Rosenzweig HL**. The Eyes have it: Uveitis in patients with spondyloarthritis. *Nature Reviews Rheumatology* (2012); 8(5): 249-50. PMID: 22469907
4. Lee EJ, **Rosenzweig HL**. Molecular signaling and ocular inflammation: An update on the NOD-like receptors. *Clinical Microbiology* (2014); 3(5): ISSN: 2327-5073.1000170.

Abstracts (since 2009):

1. **H.L. Rosenzweig**, M.J. Jann, BS, E.E. Vance, S.R. Planck, J.T. Rosenbaum, M.P. Davey. 2009. NOD2 and TLR2 function independently in arthritis triggered by intra-articular peptidoglycan. American College of Rheumatology Annual Scientific Meeting, Philadelphia, PA
2. **HL Rosenzweig**, T. Kawaguchi, H. Sawkar, S.R. Planck, T.M. Martin, M.P. Davey, J.T. Rosenbaum. 2009. Identification of IFN as a novel regulator of NOD2-mediated uveitis. Oral presentation. Reducing Disparities in Eye Disease an Treatment, Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL
3. JM Kezic, MP Davey, TT Glant, K Dahlhausen, SR Planck, TM Martin, JT Rosenbaum, **HL Rosenzweig**. 2010. A Novel murine model of Behcet's like eye disease associated with proteoglycan induced arthritis in the absence of gamma interferon. **Oral Presentation**. International Conference on Behcet's Disease Annual Meeting, London, UK
4. JT Rosenbaum, JM Kezic, SR Planck, **HL Rosenzweig**. 2010. A Comparison of the ocular inflammatory response induced by local versus systemic LPS treatment. **Oral presentation**. Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL
5. JM Kezic, MP Davey, TT Glant, K Dahlhausen, SR Planck, TM Martin, JT Rosenbaum, **HL Rosenzweig**. 2010. Absence of gamma interferon markedly exacerbates uveitis without comparable joint effects in a mouse transgenic model resembling ankylosing spondylitis. **Oral Presentation**. Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL
6. **HL Rosenzweig**, K Galster, EE Vance, J Ensign-Lewis, MP Davey, SR Planck, JT Rosenbaum. 2010. Nod2 plays a negative regulatory role in ocular inflammation triggered by peptidoglycan. **Oral presentation**. Association for Research in Vision and

Ophthalmology Annual Meeting, Ft. Lauderdale, FL

7. **HL Rosenzweig**, JM Kezic, SR Planck, TM Martin, MP Davey, JT Rosenbaum. 2010. Deficiency in IFN-gamma has markedly different effects on uveitis versus arthritis in the aggrecan-induced mouse model of spondyloarthritis. **Oral presentation**. American College of Rheumatology Annual Scientific Meeting, Atlanta, GA
8. **HL Rosenzweig**, JS Clowers, G Nunez, JT Rosenbaum, MP Davey. 2010. Dectin-1 and Nod2 mediate zymosan-induced arthritis in mice. American College of Rheumatology Annual Scientific Meeting, Atlanta, GA
9. **HL Rosenzweig**, SR Planck, AL Woods, JS Clowers, MJ Nicklin, JT Rosenbaum. 2011. The discordant impact of IL-1 signaling on experimental uveitis and arthritis. American College of Rheumatology Annual Scientific Meeting, Chicago, IL
10. **HL Rosenzweig**, JM Kezic, MP Davey, SR Planck, TT Glant, JT Rosenbaum. 2011. Exacerbated uveitis in the context of IFN-gamma deficiency is ameliorated by blockade of the Th17 response in a murine model of proteoglycan-induced arthritis and spondylitis. American College of Rheumatology Annual Scientific Meeting, Chicago, IL
11. **HL Rosenzweig**, JS Clowers, J Allensworth, EE Vance, SR Planck, MP Davey, JJ Chae, DL Kastner, JT Rosenbaum. 2011. Dysregulation of pyrin, the familial Mediterranean fever protein, exacerbates endotoxin-induced uveitis in mice. American College of Rheumatology Annual Scientific Meeting, Chicago, IL
12. **HL Rosenzweig**, JS Clowers, J Allensworth, EE Vance, SR Planck, JJ Chae, DL Kastner, JT Rosenbaum. 2011. Gene-environmental interaction: dysregulation of pyrin, the familial Mediterranean fever protein, exacerbates endotoxin-induced uveitis. **Oral presentation**. Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL
13. SR Planck, JJ Allensworth, JT Rosenbaum, **HL Rosenzweig**. 2011. Analysis of the differential potential of TLRs to elicit uveitis in mice. Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL
14. JT Rosenbaum, J Kezic, S Taylor, S Gupta, SR Planck, **HL Rosenzweig**. 2011. Endotoxin-induced uveitis is primarily independent of bone-marrow derived cells and dependent on Myd88 but not TRIF. **Oral presentation**. Association for Research in

Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL

15. JM Kezic, MP Davey, TT Glant, JT Rosenbaum, **HL Rosenzweig**. 2011. The exacerbation of uveitis in the context of IFN deficiency in proteoglycan-induced arthritis is prevented through the blockade of IL-17 and IL-23. **Oral presentation**. Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL
16. EJ Lee, H Kim, SR Planck, JT Rosenbaum, **HL Rosenzweig**. 2012. In vivo imaging of T cell trafficking in eyes during spondyloarthritis. **Oral presentation**. Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL
17. **HL Rosenzweig**, JS Clowers, M Lewinsohn, SR Planck, JJ Chae, DL Kastner, JT Rosenbaum. 2012. Mutation in pyrin predisposes to uveitis with clinical features akin to Behcet's disease. **Oral presentation**. Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL
18. EJ Lee, BR Brown, EE Vance, R Caspi, **HL Rosenzweig**. 2013. Discovery of a novel role for CARD9-singlaing in autoimmune uveitis. **Oral presentation**. American Academy of Optometry Annual Meeting, Seattle, WA.
19. TT Rauch, B Trynieszewska, A Vida, T Ocsko, S Szanto, **HL Rosenzweig**, MA Brown, GP Thomas, K Mikecz, TT Glant. 2013. Identification of genetic and epigenetic alterations in spondyloarthritis. American College of Rheumatology Annual Scientific Meeting, San Diego, CA
20. J Dugan, E Griffiths, P Snow, **HL Rosenzweig**, CD Rose, D Carr, JT Rosenbaum, M Davey. 2013. Blau syndrome-associated NOD2 mutations limits production of IL-1 and KC/IL-8 in knock-in mice and patients suggesting a loss of function disease mechanisms. American College of Rheumatology Annual Scientific Meeting, San Diego, CA
21. EJ Lee, JM Furtado, B Brown, EE Vance, JP Sacdal, V Bhargava, P Silver, RR Caspi, **HL Rosenzweig**. 2013. An unexpected role for the innate immune receptor NOD2 in suppression of experimental autoimmune uveitis. Association for Research in Vision and Ophthalmology Annual Meeting, Seattle, WA
22. EJ Lee, BR Brown, EE Vance, M Lewinsohn, P Sliver, RR Caspi, **HL Rosenzweig**. 2014. A role for the Syk-CARD9 pathway in the pathogenesis of autoimmune uveitis.

Association for Research in Vision and Ophthalmology Annual Meeting, Orlando, FL

23. EJ Lee, BR Brown, EE Vance, R Hazard, P Silver, RR Caspi, **HL Rosenzweig**. 2015. Identification of the vital role of the innate receptor Mincle in the pathogenesis of autoimmune uveitis. Association for Research in Vision and Ophthalmology Annual Meeting, Denver, CO
24. J Dugan, P Snow, JC Clowers, CL Coreless, B Wong, LR Basso MP Davey, **HL Rosenzweig**. 2015. Pathogenicity of *Candida albicans* is enhanced by NOD2. OHSU Research Week, Portland, OR
25. EJ Lee, BR Brown, EE Vance, R Hazard, P Silver, RR Caspi, **HL Rosenzweig**. 2015. Identification of the vital role of the innate receptor Mincle in the pathogenesis of autoimmune uveitis. OHSU Research Week, Portland, OR
26. BB Brown, EJ Lee, PE Snow, EE Vance, RR Caspi, **HL Rosenzweig**. 2016. Fungal components trigger induction of EAU through a Card9-dependent mechanism. Association for Research in Vision and Ophthalmology Annual Meeting, Seattle, WA
27. **HL Rosenzweig**, BB Brown, PE Snow, EE Vance P Silver, CA Wells, RR Caspi, EJ Lee. 2016. Mincle activation and Syk/Card9 signaling axis are central to the development of autoimmune disease of the eye. **Oral presentation**. Association for Research in Vision and Ophthalmology Annual Meeting, Seattle, WA
28. EE Vance, EJ Lee, BR Brown, PE Snow, A Truaz, J Ting, RR Caspi, **HL Rosenzweig**. 2016. The innate immune receptor Nlrp12 participates in protection against experimental autoimmune uveitis. Association for Research in Vision and Ophthalmology Annual Meeting, Seattle, WA
29. PE Snow, EJ lee, JM Furtado, BR Brown, EE Vance, J Dugan, P Silver, JR Smith, RR Caspi, **HL Rosenzweig**. 2016. Nod2 controls susceptibility to autoimmune uveitis through regulation of a Th17-driven response. Association for Research in Vision and Ophthalmology Annual Meeting, Seattle, WA
30. EJ Lee, BR Brown, PE Snow, EE Vance, P Silver, CA Wells, RR Caspi, **HL Rosenzweig**. 2016. Mincle activation and the Syk/Card9 signaling axis are central to development of autoimmune disease of the eye. American Association of Immunologists

Annual Meeting, Seattle, WA

31. RJ Napier, E Vance, P Snow, EJ Lee, S Sakaguchi, **HL Rosenzweig**. 2016. The innate immune receptor Nod2 is protective against autoimmune-induced arthritis in SKG mice. **Oral presentation ***AAI Abstract Award**. American Association of Immunologists Annual Meeting, Seattle, WA

32. RJ Napier, EJ Lee, EE Vance PE Snow, MP Davey, S Sakaguchi, **HL Rosenzweig**. 2017. Nod2 protects against autoimmune arthritis in SKG mice. Keystone Symposium: Pattern Recognition Signaling: From Innate Immunity to Inflammatory Disease. Banff, Canada. ****awarded Keystone Symposia Future of Science Fund Scholarship*.

33. EJ Lee, PE Snow, JM Furtado, RJ Napier, BR Brown, EE Vance, J Dugan, PB Silver, JR Smith, RR Caspi, **HL Rosenzweig**. 2017. Deficiency in Nod2 is associated with dysregulation of Th17-related response in the eye. Association for Research in Vision and Ophthalmology Annual Meeting, Baltimore, Maryland

Invited Speaking Engagements:

National/International

- 2008 "Anterior uveitis accompanies joint disease in a murine model resembling ankylosing spondylitis." International Ocular Immunology Society, Paris, France
- 2009 "Anterior uveitis accompanies joint disease in a murine ankylosing spondylitis." Ocular Autoimmunity & Inflammation Conference, Monterey, CA
- 2009 "Experimental Uveitis." Rush University, Chicago, IL
- 2010 "Nod1 Expression in the Eye and its Function in murine uveitis." World Ophthalmology Congress, Berlin, Germany
- 2011 "IFN regulates susceptibility to eye disease in a novel model of uveitis coinciding with axial and peripheral joint inflammation in mice." Amgen Co., Seattle, WA
- 2012 "Understanding the NLRs and Uveitis." 8th International Symposium on Uveitis, Thessaloniki, Greece
- 2012 "Unique mechanisms of uveitis coinciding in murine arthritis." Dean McGee Eye Institute, Oklahoma Health Sciences Center
- 2012 "Unique mechanisms of uveitis in murine model of ankylosing spondylitis." Elan Pharmaceuticals, San Francisco, CA
- 2013 "An essential role for Nod2 in experimental autoimmune uveitis." 3rd International Conference on Clinical & Experimental Ophthalmology, Chicago, IL
- 2013 "A novel role for Nod2 in host susceptibility to inflammatory disease of the eye." 11th World Congress on Inflammation, International Association of Inflammation,

Natal, Brazil

2014 “C-type lectin receptors: Dysfunction of host defense in the eye.” Ocular infection and host defense symposium; International Society for Eye Research Annual Meeting, San Francisco, CA

2014 “Innate immunity and its integration in autoimmune disease of the eye.” Ocular Immunity, Autoimmunity and Inflammation symposium, Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL

2016 “Eye Diseases and Eye Disorders;” 14th Annual Congress of International Drug Discovery Science & Technology, South Korea

2017 “Host-Immune Dysfunction and Uveitis;” Research to Prevent Blindness Foundation, New York, NY

2017 “Dysregulation of innate pathways in ocular autoimmunity;” Federation of Clinical Immunology Society Annual Meeting, Uveitis Symposium, Chicago, IL

2017 “Dysregulation of Innate Pathways in Autoimmune Uveitis;” Allied Academies Annual Ophthalmologists Meeting, The Science of the Eye Symposium, Atlanta, GA.

2018 International Conference on Immunology, Ocular Immunology symposium, Las Vegas, NV

Regional/Local

2009 Dept. of Rheumatology Grand Rounds, OHSU
Casey Eye Research Meeting, Portland, OR

2010 Retina Research Conference, Casey Eye Institute, OHSU
Dept. of Rheumatology Grand Rounds, OHSU
Casey Eye Research Meeting, Portland, OR

2011 Retina Research Meeting, Casey Eye Institute, OHSU
Dept. Rheumatology Grand Rounds, OHSU
Casey Eye Research Meeting, Portland, OR
Collaborative Casey-Devers Research Annual Meeting

2013 Retina Research Meeting, Casey Eye Institute, OHSU

2016 Microbiology Research Symposium, Oregon State University, Corvallis, OR

V. SERVICE

Membership in Professional Societies:

The American Association of Immunologists
Association of Rheumatology Health Professionals
Association for Research in Vision and Ophthalmology
International Society for Eye Research

Granting Agency Review Work:

- 2011-2012 Scientific Review Committee, Fight for Sight Foundation, New York, NY
- 2013-2014 Translational Research Intramural Grant Program, University of Alabama
Clinical & Translational Science Center, Birmingham, AL
- 02/2013 NIH/NEI, Ad Hoc Reviewer, Study Section Review Panel, Diseases &
Pathology of the Visual System
- 06/2015 NIH/NEI, Ad Hoc Reviewer, Study Section Review Panel, Diseases &
Pathology of the Visual System
- 11/2015 NIH, Special Emphasis Review Panel/Scientific Review Group ZRG1
BDCN-R(90), Brain Disorders & Clinical Neuroscience/Disease &
Pathology of the Visual System
- 10/2016 NIH, Special Emphasis Review Panel/Scientific Review Group ZRG1
BDCN-J(91), Ocular Surface, Cornea, and Refractive Error
- 04/2017 NIH/NEI, Special Emphasis Review Panel/Scientific Review Group Brain
Disorders & Clinical Neuroscience (ZRG1 BDCN-R(03))
- 07/2017 U.S. Dept. Veterans Affairs, Joint BLRD and CSRD Scientific Merit Review
Board, (SPLM 1) Special Emphasis Review Panel on Million Veteran
Program (MVP)
- 09/17-present Rheumatology Research Foundation, Scientific Review Board,
Study Section D Panel, Innovative Research Translational &
Clinical Awards
- 10/2017 NIH/NAIMS, Ad Hoc Reviewer, Study Section Review Panel, Arthritis,
Connective Tissue and Skin (ACTS)

Editorial Review Activities:

- 2017-current Associate Editor, *Frontiers in Cellular and Infection Microbiology*
- 2013-current Invited Reviewer: *Annals of Rheumatic Diseases, Journal of
Immunology, Scientific Reports, Immunology, Arthritis Research & Therapy,
Inflammation Research, Journal of Neuroinflammation, Investigative Ophthalmology &
Visual Science, Glia, PLOS Pathogens, Molecular Vision, Current Eye Research*

Committee Work:

International/National

- 2013-2015 Member, Internal Advisory Group to Advocacy Pillar, Association for
Research in Vision and Ophthalmology—an advisory group to the
Strategic Planning Group and the ARVO Board of Trustees. The two-year goal of
this advisory group was to formulate a strategic plan on how ARVO can better
advocate for vision research worldwide.

- 2013-2015 Scientific Board of Advisors, Rheumatology Research Foundation- Targeted Research Task Force—an advisory group to the Scientific Advisory Council and board of trustees of the Rheumatology Research Foundation. Our two-year charge was to assimilate data from private organizations and individuals on funding trends and scientific interests within the field of rheumatology. A report to the board was formulated on how to prioritize the future scientific focus areas within the field of rheumatology that would be supported by the “Targeted Research Grants” program (effective 2016).
- 2013, 2015 Cora VerHagen Memorial Scholarship Steering Committee—a scholarship program designed to recognize and support an individual post-doctoral research associate at the annual ARVO meeting whose work is of extraordinary talent.
- 2017-2018 Immunology Leadership and Organizing Committee Member, International Conference of Immunology—meeting organization, abstract review, award, & nominations for next yearly meeting.

Institutional [OHSU & VA]

- 2011, 2014 Interview Committees, SOM MD/PhD program, Graduate Program in Molecular & Cellular Biosciences, OHSU
- 2012-present Institutional Animal and Use Committee (IACUC); OHSU and VA Portland Health Care System
- 2015-present School of Medicine Student and Faculty Honors & Awards Committee, OHSU
- 2016-present VA Small Animal Multimodal Imaging Core (SAMMIC)-purchase of Perkin-Elmer IVIS Spectrum CT optical imaging instrument for Portland, VA. This technology was purchased through a collaborate effort of scientists at Portland VA (for which Dr. Rosenzweig was co-I) to be funded by Laboratory Animal Equipment (LAMb) Program and Shared Equipment Evaluations Program (ShEEP) for the purpose of non-invasive imaging of small animals

Other-Service:

Moderator/ session organizer at scientific meetings:

- 2011 Co-chair session organizer and moderator for symposium “Molecular Mechanisms of Ocular Inflammation” at American College of Rheumatology Annual Scientific Meeting, Atlanta, GA
- 2012 Moderator, Association for Research in Vision and Ophthalmology Annual Meeting, Ocular Immune Responses Session, Ft. Lauderdale, FL
- 2013 Moderator, Association for Research in Vision and Ophthalmology Annual Meeting, Ocular Immune Responses Session, Seattle, WA
- 2014 Moderator, Association for Research in Vision and Ophthalmology Annual Meeting Microbial Pathogenesis Session, Orlando, FL
- 2014 Co-chair session organizer and moderator, “Ocular Immunology Session”, International Society for Eye Research Annual Meeting, San Francisco, CA
- 2016 Co-chair session organizer and moderator Association for Research in Vision and Ophthalmology Annual Meeting, Autoimmunity/AMD, Seattle, WA

2018 Chair, symposium organizer and moderator “Ocular Immunology”
symposium, International Conference on Immunology, Las Vegas,
NV.

VI. TEACHING AND EDUCATION

Teaching Experience:

2009-2012, 2016 Course Instructor: Medical Immunology Course for Rheumatology
Fellows, OHSU School of Medicine— This 8-week annual course was designed to provide an
immunological basis for physicians in the rheumatology fellowship training program. The course was
based on the Garland edition of Janeway’s Immunobiology text book. I participated as an instructor for
this course for 4 consecutive summers.

2013 Lecturer: Autoimmunity II; Biological Basis for Disease, OHSU
School of Medicine

2014, 2016 Instructor: Advanced Immunology Course MBIM 612, Dept. MMI
graduate program, OHSU

2015, 2016 Instructor: Science/Clinical Medicine-Allergy & Immunity Course,
Physician Assistant Program, OHSU School of Medicine

2016 Instructor: Introduction to Immunology Course MBIM 610, Dept.
MMI graduate program, OHSU

Mentoring and Advising:

Mentorship of non-OHSU, Undergraduate Research Fellowships:

2010 Katie Dahlhausen (Lewis and Clark College)

2011 Stephanie Tarlow (Oregon State University); OSU-credited research program

- 2013 Maya Lewinsohn (University of Chicago); VA Summer Research Fellowship recipient
- 2014 Riley Hazard (University of Virginia)-VA Summer Research Fellowship recipient
- 2015 Iris Archer (Purdue University)-CDCB Science Education Internship Program, OHSU
- 2015 Ryan Lewinsohn (Oregon State University); VA Summer Research Fellowship recipient
- 2016 Sharon Osterbind (Appalachian State, Boone North Carolina); VA Summer Research Fellowship recipient
- 2017 Clare Dawson (Claremont, California); VA Summer Research Fellowship recipient

2012-2016 Non-OHSU student volunteer/interns: John Paul Sacadal (OSU), Varunikia Bhargava (OSU), Rose Chuong (PSU), Tommy Nguyen (OSU), Nellie Trenga-Schein (Lewis & Clark), Rachel Penchoen-Lind (Lewis & Clark)

Mentorship of Medical Student-Research Fellows:

- 2009 Kellen Galster (Albany Medical College), Fight for Sight mentored Research Award and Albany Medical College Mentored Research Program
- 2010 Jordan Allensworth (OHSU-School of Medicine), research fellowship
- 2010 Travis Behrend (OHSU-School of Medicine), OCTRI Research Scholarship Award recipient
- 2011 Alec Amram (OHSU-School of Medicine), Fight for Sight Research Award recipient
- 2014-*current* Brianna Brown (OHSU-School of Medicine), SOM-sponsored research fellowship

Mentorship of Post-doctoral trainees & visiting faculty:

- 2009-2010 Tatsushi Kawaguchi (MD), visiting faculty from Tokyo University for research fellowship.
- 2009-2011 Jelena M. Kezic (PhD)— *****(2011) VerHagen Memorial Scholarship Awardee under my mentorship
Current: Faculty, Dept. of Anatomy and Developmental Biology at Monash University, Australia
- 2013-2015 Jae Dugan, PhD, VA Career Development Awardee
Current: Microbiologist for US Navy Medical Service Corp.,

Washington DC

2015-present Ruth Napier, PhD, Post-Doctoral Fellow (NIH/NEI Translational Vision Science Research Training Grant, Dept. Ophthalmology, OHSU).

Institutional/Departmental Program Participation:

2009-2012 Research Mentor, Partnership for Scientific Inquire Program (an outreach class that provides didactic courses and hands on experience in the laboratory for high school students from Oregon and SW Washington). I participated as a mentor in this program for 4 consecutive spring-summer terms.

2013-present Portland VA Research Foundation—Summer Research Fellowship Program. This program fosters undergraduate students with keen interest in pursuit of a career in the research/health fields. As a mentor, our participation includes weekly lectures to the students in a lunch-seminar series format, mentoring the student in lab on a research project, and preparing the student for end-of-summer final presentation to the Portland VA.

2016-present K12 Clinician Scientist Training Program (NIH/NEI), primary mentor and advisory committee member; “Mentored Vision Clinician-Scientist Program at OHSU” /NEI-*application pending*.

Educational Leadership and Administration (includes Roles on Educational Committees)

2009 Pfizer Visiting Professorship Award—Designed and implemented basic science

lectureship for Dept. Rheumatology Grand Rounds (OHSU). Applied for and obtained funding to support visiting professors outside of OHSU to present as part of the basic science seminar series.

2013-2015 Member, Internal Advisory Group to Advocacy Pillar, Association for Research in Vision and Ophthalmology—an advisory group to the Strategic Planning Group and the ARVO Board of Trustees. The goal of this advisory group was to formulate a strategic plan on how ARVO can better advocate for vision research worldwide. Our objectives included: determination of ways in which we can enhance the ability/effectiveness of ARVO members to speak on behalf of global vision research, to serve as a source for issues/information to the ARVO membership; and to formulate ways in which we can increase public awareness for vision research. This was a 2-year commitment that was very involved in the development of a series of forums and training plans that would

be adopted at the ARVO annual meeting. We met to strategize on ways in which we can create and enhance partnerships with other organizations, and develop pro-active strategies for engaging the public in vision research and ARVO's advocacy efforts.

2016 Student Association Research Symposium, Oregon State University—

invitation by OSU Microbiology Student Association to participate with student-committee in organization of symposium & moderating talks and judging in poster session. The research symposium involved additional faculty from universities all over Oregon (outside of OSU) as well as over 300 attendees from the local community.