

## CURRENT POSITION

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**Rutgers – New Jersey Medical School**, Newark, NJ. October 2021 - Present

- Assistant Professor – Department of Medicine, Division of Allergy & Immunology; Center for Immunity & Inflammation.

## EDUCATION

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**University of Wisconsin**, Madison, WI. October 2015 – September 2021

- Postdoctoral Fellow – Department of Pediatrics, Department of Medical Microbiology and Immunology
- Advisor: Bruce S Klein

**University of Minnesota**, Minneapolis, MN. July 2011 – September 2015

- Doctor of Philosophy – Microbiology, Immunology, and Cancer Biology
- Advisors: Kirsten Nielsen, Paul R Bohjanen
- Thesis Committee: Marc K Jenkins, David Masopust, Peter J Southern

**University of Wisconsin**, Madison, WI. May 2005

- Bachelor of Science – Biochemistry

## RELATED EXPERIENCE

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**Assistant Scientist**, U of Minnesota, Department of Microbiology. May 2008 – July 2011

- Conducted basic science research of post-transcriptional gene regulation in the lab of Paul Bohjanen
- Investigated Immune Reconstitution Inflammatory Syndrome (IRIS) in the lab of David Boulware

**Peace Corps Volunteer**, Mozambique, Africa, Sept. 2005 – Dec. 2007

- Taught Human Anatomy & Physiology to 1,000 secondary school students
- Initiated several projects, such as: community library, science fair, boys club, and guitar group

## GRANTS & AWARDS

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- **K22 AI153678-01**. “Mechanosensing and calcium signaling in epithelial cells drives allergic response to protease allergen”. National Institutes of Health. **Priority Score 18 – FUNDED 12/2020**
- Asthma Training Grant. T32 AI007635. National Institutes of Health. July 2019 – June 2020
- Hematology Training Grant. T32 HL07899. National Institutes of Health. July 2017 – July 2019
- Hartwell Foundation Postdoctoral Fellowship. October 2015 – June 2017
- Outstanding Student Service Award. University of Minnesota MICAB Graduate Program. May 2015
- Dennis W. Watson Fellowship. University of Minnesota Department of Microbiology. June 2015 – September 2015
- Student Travel Award. University of Minnesota MICAB Graduate Program. Fall 2014
- Doctoral Dissertation Fellowship. University of Minnesota Graduate School. September 2014 – May 2015
- Immunology Training Grant. T32 AI 007313. National Institutes of Health. July 2013 – August 2014
- Young Investigator Award. Conference on Retroviruses and Opportunistic Infections. 2013
- “Guitarras Contra” Gender Inequality, Adolescent Vulnerability, and HIV/AIDS. Fulbright-Hays Group Projects Abroad. US Department of Education. 2007

## PUBLICATIONS

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Stappers MHT, Nikolakapoulou C, **Wiesner DL**, Yuecel R, Klein BS, Willment JA, Brown GD. “Characterisation of antifungal C-type lectin receptor expression on murine epithelial and endothelial cells in mucosal tissues.” *European Journal of Immunology*. Eur J Immunol. 2021 Sep;51(9):2341-2344.

**Wiesner DL.** "Local Farming of Gut Fungi Protects Against Dangerous Imports." Preview – *Cell Host & Microbe*. 2021 Mar 10;29(3):311-312.

**Wiesner DL,** Merkhofer RM, Ober C, Kujoth GC, Niu M, Keller NP, Gern JE, Brockman-Schneider RA, Evans MD, Jackson DJ, Warner T, Jarjour NN, Esnault SJ, Feldman MB, Freeman M, Mou H, Vyas J, and Klein BS. "Club cell TRPV4 serves as a damage sensor driving lung allergic inflammation." *Cell Host & Microbe*. 2020 Apr 8;27(4):614-628.e6. \*\*\* **Editor's Choice – Science Signaling** \*\*\*

Dobson HE, Dias LDS, Kohn EM, Fites JS, **Wiesner DL,** Dileepan T, Kujoth GC, Abraham A, Ostroff GR, Klein BS, and Wüthrich M. "Antigen discovery unveils resident memory and migratory cell roles in antifungal resistance." *Mucosal Immunology*. 2020 May;13(3):518-529.

Skippe CP, Schleiss MR, Bangdiwala AS, Zabeli JC, Hernandez-Alvarado N, Taseera H, Nabeta HW, Musubire AK, Lofgren SM, **Wiesner DL,** Meintjes G, Muzoora C, Meya DB, Boulware DR on behalf of the COAT Team. "Cytomegalovirus viremia associated with increased mortality in cryptococcal meningitis in sub-Saharan Africa." *Clinical Infectious Diseases*. 2019 Sep 1. pii: ciz864.

Brandhorst TT, Kean IRL, Lawry SM, **Wiesner DL,** Klein BS. "Phenylpyrrole fungicides act on triosephosphate isomerase to induce methylglyoxal stress and alter hybrid histidine kinase activity". *Sci Rep*. 2019 Mar 25;9(1):5047.

Sui P, **Wiesner DL,** Xu J, Yu C, Deutsch G, Lee J, Locksley R, Klein BS, Sun X. "Pulmonary Neuroendocrine Cells are Essential for Allergic Asthma Responses." *Science*. 2018 Jun 8;360(6393).

Henandez-Santos N, **Wiesner DL,** Fites FS, McDermott A, Warner T, Wüthrich M, Klein BS. "Lung Epithelial Cell Regulation of Innate Antifungal Immunity." *Cell Host & Microbe*. 2018 Apr 11;23(4):511-522.

Mukaremera L, Lee KK, Wagener J, **Wiesner DL,** Gow NAR, Nielsen K. "Titan Cell Production in *Cryptococcus neoformans* Reshapes the Cell Wall and Capsule Composition During Infection." *The Cell Surface*. 2018 Mar;1:15-24.

Guo L, Sharma SD, Debes J, Beisang D, Rattenbacher B, Vlasova-St. Louis IA, **Wiesner DL,** Cameron CE, Bohjanen PR. "The Hepatitis C viral Nonstructural Protein 5A Stabilizes Growth-regulatory Human Transcripts." *Nucleic Acid Research*. 2018 March 16;46(5):2537-2547.

**Wiesner DL,** Klein BS. "Lung Epithelium: Barrier Immunity to Inhaled Fungi and Driver of Fungal-associated Allergic Asthma." *Current Opinion in Microbiology*. 2017 Dec 40:8-13.

**Wiesner DL,** Klein BS. "Perspective: The Balance Between Immunity and Inflammation." *Science*. 2017 Sep 8;357(6355):973-974.

**Wiesner DL,** Smith KD, Kashem SW, Bohjanen PR, Nielsen K. "Different Lymphocyte Populations Direct Dichotomous Eosinophil or Neutrophil Responses to Pulmonary *Cryptococcus* Infection." *The Journal of Immunology*. 2017 Feb 15;198(4):1627-1637.

Wang H, Li M, Hung CY, Sinha M, Lee L, **Wiesner DL,** LeBert V, Lerksuthirat T, Galles K, Suresh M, DeFranco A, Lowell C, Klein BS, Wüthrich M. "MyD88 Shapes Vaccine Immunity by Extrinsically Regulating Survival of CD4<sup>+</sup> T Cells During the Contraction Phase." *PLoS Pathogens*. 2016 Aug 19;12(8):e1005787.

Homer C, Summers D, Goranov A, Clarke S, **Wiesner DL,** Tofaletti D, Moresco J, Caradonna I, Petnic S, Yates J, Perfect J, Nielsen K, Craik C, Madhani H. "Intracellular Action of a Secreted Peptide Required for Fungal Virulence." *Cell Host & Microbe*. 2016 Jun 8;19(6):849-64.

May RL, Stone N, **Wiesner DL,** Bicanic T, Nielsen K. "*Cryptococcus*: from environmental saprophyte to global pathogen." *Nature Reviews Microbiology*. 2016 Feb 14;14(2):106-117.

**Wiesner DL,** Smith KD, Kotov DI, Nielsen JN, Bohjanen PR, Nielsen K. "Regulatory T Cell Induction and Retention in the Lungs Drives Suppression of Detrimental Type-2 Helper T Cells During Pulmonary Cryptococcal Infection." *The Journal of Immunology*. 2016 Jan 1;196(1):365-374.

**Wiesner DL**, Specht CA, Lee CK, Smith KD, Mukaremera L, Lee ST, Lee CG, Elias JA, Nielsen JN, Boulware DR, Bohjanen PR, Jenkins MK, Levitz SM, Nielsen K. "Chitin Promotes Type-2 Helper T Cell Responses During Pulmonary Cryptococcal Infection." *PLoS Pathogens*. 2015 Mar 12;11(3):e1004701. \*\*\* **PLOS Pathogens Top 10% Collection** \*\*\*

Nelson RW, Beisang D, Tubo NJ, Dileepan T, **Wiesner DL**, Nielsen K, Wüthrich M, Klein BS, Kotov DI, Spanier JA, Fife BT, Moon JJ, Jenkins MK. "TCR Cross-reactivity Between Similar Foreign and Self Peptides Influences Naïve Cell Population Size and Autoimmunity." *Immunity*. 2014 Jan 20;42(1):95-107.

Boulware DR, Meya DB, Muzoora C, Rolfes MA, Huppler Hullsiek K, Musubire A, Taseera K, Nabeta HW, Schutz C, Williams DA, Rajasingham R, Rhein J, Thienemann F, Lo MW, Nielsen K, Bergemann TL, Kambugu A, Manabe YC, Janoff EN, Bohjanen PR, Meintjes G; COAT Trial Team: Ndyetukira JF, Ahimbisibwe C, Kugonza F, Ndyatunga L, Noeme B, Memela B, Sigila Y, Scriven J, Fosslund N, Rani M, Carlson R, Birkenkamp K, Butler E, Sadiq A, Magwayi M, Noeme B, Kwizera R, Ninsiima E, Elbireer A, Lukande R, Akampurira A, Mwesigy J, Wagubi R, Kajumbula H, McDonald T, Strain A, **Wiesner DL**, Najjuka G, Bicanic T, Hassanally L, Nanteza C, Mushagara R, von Hohenberg M, Vogt A, Botker G, Bahr N, Yasukawa K, Namawejje M, Ssenono M, Kiragga A, Bicanic T, Haddow LJ, Baker JV. "Timing of Antiretroviral Therapy after Cryptococcal Meningitis." *N Engl J Med*. 2014 Jun 26;370(26):2487-98.

**Wiesner DL**, Moskalenko O, Corcoran JM, McDonald T, Rolfes MA, Meya DB, Kajumbula H, Kambugu A, Bohjanen PR, Knight JF, Boulware DR, Nielsen K. "Cryptococcal Genotype Influences Immunologic Response and Human Clinical Outcome after Meningitis." *mBio*. 2012 Sep 25;3(5). \*\*\* **Recognized at ICC 2014 as "Best Paper in the Field: 2011-2013"** \*\*\*

Crabtree JN, Okagaki LH, **Wiesner DL**, Strain AK, Nielsen JN, Nielsen K. "Titan Cell Production Enhances the Virulence of *Cryptococcus neoformans*." *Infection and Immunity*. 2012 Nov;80(11):3776-85.

McDonald T, **Wiesner DL**, Nielsen K. "Cryptococcus." *Current Biology*. 2012 Jul 24;22(14):R554-55.

**Wiesner DL**, Boulware DR. "Cryptococcus-Related Immune Reconstitution Inflammatory Syndrome (IRIS): Pathogenesis and Its Clinical Implications." *Current Fungal Infection Reports*. 2011 Dec 1;5(4):252-261.

Boulware DR, Meya DB, Bergemann TL, **Wiesner DL**, Rhein J, Musubire A, Lee SJ, Kambugu A, Janoff EN, Bohjanen PR. "Clinical Features and Serum Biomarkers in HIV Immune Reconstitution Inflammatory Syndrome after Cryptococcal Meningitis: A Prospective Cohort Study." *PLoS Medicine*. 2010 Dec 21;7:e1000384.

Boulware DR, Bonham SC, Meya DB, **Wiesner DL**, Park GS, Kambugu A, Janoff EN, Bohjanen PR. "Paucity of Initial Cerebrospinal Fluid Inflammation in Cryptococcal Meningitis Is Associated with Subsequent Immune Reconstitution Inflammatory Syndrome." *The Journal of Infectious Diseases*. 2010 Sep 15;202(6):962-70.

Rattenbacher B, Beisang D, **Wiesner DL**, Jeschke JC, von Hohenberg M, St Louis-Vlasova IA, Bohjanen PR. "Analysis of CUGBP1 targets identifies GU-repeat sequences that mediate rapid mRNA decay." *Molecular Cellular Biology*. 2010 Feb 15;30(16):3970-80.

## INVITED SEMINARS

- University of Pittsburgh – Department of Medicine. Hosted by Janet Lee. August 2020.
- University of Rochester – Department of Pediatrics. Hosted by David Dean. December 2016.
- National Institutes of Health – Laboratory of Parasitic Diseases. Hosted by Alan Sher. January 2015.

## ORAL PRESENTATIONS

"Club cell TRPV4 as a damage sensor driving lung allergic inflammation." Keystone Symposia – Asthma: Making New Discoveries into Better Therapies. Snowbird, UT. April 2020. Canceled due to COVID-19.

"Fungal Protease 'Clubs' the Airways to Instigate Allergic Asthma." International Congress of Mucosal Immunology 2019. Brisbane, Australia. July 2019.

"A Calcium Signaling Circuit in Club Cells Controls Allergic Response to Fungal Protease." Keystone Symposia on Origins of Allergic Disease: Microbial, Epithelial and Immune Interactions. Tahoe, CA. March 2019.

"Specialized Regulatory T Cells Suppress Pathologic Type-2 Helper T Cell Inflammation During Pulmonary Cryptococcosis." International Conference on *Cryptococcus* and Cryptococcosis. Amsterdam, The Netherlands. May 2014.

"Ex vivo Interferon-gamma Responses to Cryptococcal Capsule Antigen Predict Outcomes of Death and/or IRIS after Cryptococcal Meningitis." Conference on Retroviruses and Opportunistic Infections. Atlanta, GA. March 2013.

"*Cryptococcus neoformans* Titan Cells Influence the Pulmonary Immune Response." Gordon Research Seminar: Immunology of Fungal Infections. Galveston, TX. January 2013.

"Cryptococcal Capsule and Immune Reconstitution Inflammatory Syndrome." International AIDS Conference. Washington, D.C. July 2012.

## SCIENTIFIC MEETING ABSTRACTS

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**Wiesner DL**, Klein BK. "Epithelial Club Cell Response to Aspergillus Protease Triggers Lung Allergic Inflammation." Midwinter Conference of Immunologists. Asilomar, CA. January 2018.

**Wiesner DL**, Klein BK. "Fungal Protease Activates Pulmonary Epithelium and Instigates Allergic Asthma" Gordon Research Conference: Immunology of Fungal Infections. Galveston, TX. January 2017.

**Wiesner DL**, Bohjanen PR, Jenkins MK, Nielsen K. "Type-2 Helper T Cells Control Neutrophil-to-Eosinophil Transition with Pulmonary Fungal Infection." Multifaceted Roles of Type-2 Immunity. Bruges, Belgium. December 2014.

**Wiesner DL**, Achan B, Meya DB, Bohjanen PR, Nielsen KN, Boulware DR. "Ex Vivo Cytokine Responses to Cryptococcal Antigens Distinguish Cryptococcal Meningitis from Other Forms of AIDS-associated Meningitis." International Conference on *Cryptococcus* and Cryptococcosis. Charleston, SC. May 2011.

**Wiesner DL**, Tabah A, Meya DB, Jeschke J, Kajumbula H, Bohjanen PR, Nielsen KN, Boulware DR. "Ex Vivo Immune Responses to Cryptococcal Antigens Are Associated with Paradoxical HIV Immune Reconstitution Inflammatory Syndrome." Gordon Research Conference: Immunology of Fungal Infections. Galveston, TX. January 2011.

## WORKSHOPS/COURSES

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- Canadian Institute for Advanced Research – Fungal Kingdom: Threats and Opportunities. Served as moderator/organizer for "Trainee Day". January 2021.
- IntegSci 660 Research Mentor Training. UW Madison. Spring 2020.
- National Research Mentoring Network – Mentor Training. Chicago, IL. May 2017.
- Innovative Genomics Initiative – CRISPR Workshop. Berkeley, CA. July 2015.
- American Association of Immunologists – Advanced Course in Immunology. Minneapolis, MN. August 2009.

## SCIENTIFIC MEMBERSHIPS

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- Society for Mucosal Immunology. 2017-Present.
- American Association for the Advancement of Sciences. 2016-Present.
- American Association of Immunologists. 2016-Present.
- Genetics Society of America. 2015-Present.