

ERIC PATRICK SKAAR
Curriculum Vitae

Personal

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Current Position

I am currently a Professor in the Department of Pathology, Microbiology, and Immunology at Vanderbilt University Medical Center where I hold the Ernest W. Goodpasture Chair in Pathology. I am the Vice Chair for Basic Research and the Chief of the Division of Molecular Pathogenesis within the Department of Pathology, Microbiology, and Immunology. My leadership responsibilities including serving as the administrative director of a Division of 36 faculty with interests including vascular biology, tumor biology, immunology, and microbiology. The Division of Molecular Pathogenesis has an annual budget of approximately \$13 million in direct costs, and houses two graduate programs with an enrollment of approximately 80 Ph.D. students. I am also the Associate Director of the Vanderbilt Institute of Chemical Biology where my efforts include providing strategic vision for the direction of the Institute, enabling translation of basic science discoveries, and helping to connect biomedical scientists within the medical center with chemists at Vanderbilt University to facilitate the launch of chemical biology projects across the two campuses. Finally, I am the founding Director of the Vanderbilt Institute for Infection, Immunology, and Inflammation (VI4) which is a trans-institutional initiative that coordinates and supports all research at Vanderbilt focused on these areas.

Academic Appointments

2005-2009	Assistant Professor Vanderbilt University School of Medicine Department of Microbiology and Immunology
2009- 2012	Associate Professor Vanderbilt University School of Medicine Department of Pathology, Microbiology and Immunology
2011-2015	Director, Program in Microbial Pathogenesis, Vanderbilt University
2013-2015	Chief, Division of Host-Pathogen Interactions
2015-2017	Director, Center for Microbial Pathogenesis
2010-Current	Associate Director for Translation and Therapeutic Development Vanderbilt Institute of Chemical Biology

2014-Current	Professor Vanderbilt University Medical Center Department of Pathology, Microbiology and Immunology
2015-Current	Vice Chair for Research, Department of Pathology, Microbiology and Immunology
2015-Current	Director, Division of Molecular Pathogenesis
2017-Current	Director, Vanderbilt Institute for Infection, Immunology, and Inflammation (VI4)
2006-Current	Member, Vanderbilt Institute of Chemical Biology
2008-Current	Member, Vanderbilt University Digestive Disease Research Center
2011-Current	Member, Vanderbilt University Center for Bone Biology
2012-Current	Member, Vanderbilt University Center for Toxicology

Education and Training

2002-2005	Postdoctoral Fellow University of Chicago, Chicago, Illinois Department of Microbiology Mentor: Dr. Olaf Schneewind
1997-2002	Doctor of Philosophy-Immunology and Microbial Pathogenesis Northwestern University, Evanston, Illinois Department of Microbiology and Immunology Mentor: Dr. Hank S. Seifert
1997-2002	Master of Public Health-Biostatistics and Epidemiology Northwestern University Medical School, Chicago, Illinois Department of Preventive Medicine Mentor: Dr. Susan M. Gapstur
1992-1996	Bachelor of Science-Bacteriology University of Wisconsin, Madison, Wisconsin Department of Bacteriology Mentor: Dr. Timothy J. Donohue

Formal Leadership Training

2017-2018 VUMC Academic Leadership Program

The School of Medicine's Academic Leadership Program (ALP) was established in 2004 as a mechanism for providing information and training to senior leaders in the School of Medicine. The ALP covers topics related both to fundamental leadership principles and to Vanderbilt-specific processes and systems. The fundamental goal of the ALP is to help academic leaders acquire and develop the skills necessary to succeed in their important leadership roles within the Vanderbilt environment.

2017 and 2018 Culturally Aware Mentoring Workshop

The Culturally Aware Mentoring Workshop offered in collaboration between the Howard Hughes Medical Institute and the Burroughs Wellcome Fund is an innovative initiative to enhance mentors' and

trainees' ability to effectively address cultural diversity matters in their research mentoring relationships. The CAM initiative and approach are supported by evidence which indicates that broader participation of culturally diverse groups enhances the quality of research and practice in the biomedical, behavioral, and clinical sciences.

Research Support-Completed

Greater Midwest Affiliate of the American Heart Association Postdoctoral Fellowship

Heme-iron acquisition in *Staphylococcus aureus*

Funding Period: 1/01/03 through 5/30/05

Primary Investigator: Eric P. Skaar

Total Costs: Approximately \$140,000

Southeast Regional Center for Excellence in Biodefense (SERCEB)

The adaptive response of *Bacillus anthracis* to vertebrate blood

Funding period 11/01/07 through 02/28/09

Primary Investigator: Eric P. Skaar

Total Costs: \$307,000

Searle Scholars Program

Pathogenesis of *Staphylococcus aureus* and *Bacillus anthracis* infections

Funding period: 07/01/06 through 06/30/09 (extended through 06/30/2010)

Primary Investigator: Eric P. Skaar

Total Costs: \$240,000

Pfizer ASPIRE Program

Imaging the impact of linezolid on bacterial abscess dynamics using magnetic resonance

Funding period 11/01/2009 through 10/31/2010

Primary Investigator: Eric P. Skaar

Total Costs: \$100,000

SERCEB (NIH RCE) U54 AI057157

Calprotectin-mediated metal chelation as a defense against bacterial infection

Funding period 4/01/09 through 3/30/11

Primary Investigator: Eric P. Skaar

Total Costs: \$307,000

National Institute of Health RO1 AI069233

Mechanism and function of heme-iron acquisition in staphylococcal pathogenesis

Funding period: 10/01/05 through 03/31/11

Primary Investigator: Eric P. Skaar

Total Costs: \$1,750,031

National Institutes of Health 1 R21 AI107233-01

Imaging the struggle for nutrient metal between host and pathogen

Funding Period: 7/1/2013-6/30/2015

Primary Investigator: Eric P. Skaar

Total Direct Costs: Approximately \$250,000

DARPA

Antibody-based therapeutics targeting antibiotic resistant pathogens

Funding Period: 12/2014 –12/2015
Primary Investigator: James Crowe
Total Costs: Approximately \$60,000 to Skaar laboratory

National Institutes of Health R01 AI101171-01A1
Host-mediated zinc sequestration during *Acinetobacter baumannii* infection
Funding Period: 1/1/2013-12/31/2018
Primary Investigator: Eric P. Skaar and Walter Chazin
Total Direct Costs: \$1,978,000

NRSA Postdoctoral Fellowship
Funding Period: 6/01/07 through 5/30/09
Primary Investigator: Victor Torres (postdoc in Skaar lab)
Total Costs: approximately \$100,000

NRSA Postdoctoral Fellowship
Funding Period: 12/01/07 through 11/30/09
Primary Investigator: Brian Corbin (postdoc in Skaar lab)
Total Costs: approximately \$100,000

AHA Graduate Student Fellowship
Funding Period 1/01/2010 through 12/30/2013
Primary Investigator: Gleb Pishchany (graduate student in Skaar lab)
Total Costs: \$43,540

Howard Hughes Medical Institute International Graduate Student Fellowship
Funding Period 9/1/2011-8/31/2013
Primary Investigator: Indriati Hood (graduate student in the Skaar lab)
Total Costs: approximately \$100,000

NRSA Postdoctoral Fellowship
Funding Period 7/01/2010 through 6/30/2012
Primary Investigator: Neal Hammer (postdoc in Skaar lab)
Total Costs: \$98,080

AHA Postdoctoral Fellowship
Funding Period 7/01/2010 through 6/30/2012
Primary Investigator: Thomas Kehl-Fie (postdoc in Skaar lab)
Total Costs: \$88,772

NRSA Postdoctoral Fellowship
Funding Period 7/01/2012 through 6/30/2014
Primary Investigator: Thomas Kehl-Fie (postdoc in Skaar lab)
Total Costs: approximately \$100,000

NRSA Postdoctoral Fellowship
Funding Period 1/01/2012 through 12/31/2014
Primary Investigator: Allison Farrand (postdoc in Skaar lab)
Total Costs: approximately \$100,000

NRSA Postdoctoral Fellowship

Funding Period 2/01/2012 through 1/31/2014

Primary Investigator: Catherine Wakeman (postdoc in Skaar lab)

Total Costs: approximately \$100,000

Cystic Fibrosis Foundation Fellowship

Funding Period 6/01/2013-5/31/2015

Primary Investigator: Neal D. Hammer (postdoc in Skaar lab)

Total Costs: approximately \$100,000

NRSA Postdoctoral Fellowship

Funding Period 08/01/13-7/31/2015

Primary Investigator: Brittany Mortensen (postdoc in Skaar lab)

Total Costs: approximately \$100,000

DARPA

Antibody-based therapeutics targeting antibiotic resistant pathogens

Funding Period: 12/01/14-12/01/16

Primary Investigator: James Crowe

Total Direct Costs for Skaar project: Approximately \$120,000

Veterans Health Administration

Immunotherapeutics for the treatment of *Acinetobacter baumannii* infection

Funding Period: 4/1/2014-3/31/2018

Primary Investigator: Eric P. Skaar

Total Direct Costs: \$1,137,133

National Institutes of Health T32 AI112541-01A1

Chemical Biology of Infectious Diseases (CBID) Training Program

Funding Period 7/1/2015-8/31/2020

Primary Investigator: Eric P. Skaar

Total Direct Costs approximately \$800,000

American Asthma Foundation

The role of dietary zinc and calprotectin in asthma pathogenesis

Funding Period 7/2015-7/2019

Primary Investigator: Eric P. Skaar

Total Direct Costs: \$450,000

NRSA Postdoctoral Fellowship

Funding Period 08/01/15-7/31/2017

Primary Investigator: Joseph Zackular (postdoc in Skaar lab)

Total Costs: approximately \$100,000

NRSA Postdoctoral Fellowship

Funding Period 08/01/15-7/31/2017

Primary Investigator: Lauren Palmer (postdoc in Skaar lab)

Total Costs: approximately \$100,000

NRSA Predoctoral Fellowship

Funding Period 08/01/15-7/31/2017

Primary Investigator: Lillian Johnson (graduate student in Skaar lab)

Total Costs: approximately \$100,000

NRSA Predoctoral Fellowship

Funding Period 08/01/16-7/31/2019

Primary Investigator: Jacob Choby (graduate student in Skaar lab)

Total Costs: approximately \$100,000

Research Support-Active

DARPA

Rapid Threat Assessment

Funding Period: 2/1/2014-12/1/2018 (NCE)

Primary Investigator: Richard Caprioli

Total Direct Costs: \$3,161,592

National Institute of Health R01 AI069233

Mechanism and function of heme-iron acquisition in staphylococcal pathogenesis

Funding period: 04/01/16 through 03/31/21

Primary Investigator: Eric P. Skaar

Total Direct Costs: \$1,750,031

National Institutes of Health T32 AI112541-01A1

Chemical Biology of Infectious Diseases (CBID) Training Program

Funding Period 9/1/2020-8/31/2025

Primary Investigator: Eric P. Skaar

Total Direct Costs approximately \$1,000,000

National Institutes of Health R01 AI073843-06A1

Pathobiology of heme inducible transporters in Gram positive pathogens

Funding Period 7/1/2015-6/30/2020

Primary Investigator: Eric P. Skaar

Total Direct Costs approximately \$1,250,000

National Institutes of Health R01

Therapeutic Transferrin

Funding Period 4/1/2016-3/31/2021

Primary Investigator: Brad Spellberg

Total Direct Costs: approximately \$190,000

National Institutes of Health R01 AI125363-01

Funding Period: 7/1/2018-6/30/2022

Investigating type IV secretion in *Acinetobacter baumannii* and its interplay with antibiotic resistance

Primary Investigator: Mario Feldman

Total Direct Costs: Approximately \$120,000

Department of Defense BA160565

Funding Period: 12/1/2016-9/30/2020

Photosensitization of Bacterial Pathogens through Small Molecule Activators of Heme Biosynthesis

Primary Investigator: Eric P. Skaar

Total Direct Costs: \$1,000,000

National Institutes of Health R01 AI101171-01A1

Host-mediated zinc sequestration during *Acinetobacter baumannii* infection

Funding Period: 1/1/2018-12/31/2023

Primary Investigator: Eric P. Skaar, Walter Chazin, and David Giedroc

Total Direct Costs: approximately \$2,000,000

National Institutes of Health R01 AI138581

Molecular mapping of microbial communities at the host-pathogen interface by multi-modal 3-dimensional imaging mass spectrometry.

Funding Period 09/01/2018-08/31/23

Primary Investigator: Eric P. Skaar, Richard Caprioli, and Jeffrey Spraggins

Total Direct Costs: approximately \$2,450,000

Incyte Pharmaceuticals

S100A9 in the pathogenesis of MDS

Funding Period 01/01/2018-12/31/2020

Primary Investigator: Eric P. Skaar

Total Direct Costs: \$200,000

NRSA Predoctoral Fellowship

Funding Period 01/01/2018-12/31/2019

Primary Investigator: Zach Lonergan (graduate student in Skaar lab)

Total Costs: approximately \$100,000

AHA Postdoctoral Fellowship

18POST33990262

07/01/2018-06/30/2020

Primary Investigator: Andy Weiss (postdoc in Skaar lab)

Total Costs: approximately \$100,000

NRSA Postdoctoral Fellowship

07/01/2018-10/30/2020

Primary Investigator: Andrew Monteith (postdoc in the Skaar lab)

Total Costs: approximately \$100,000

Jane Coffin Childs Postdoctoral Fellowship

11/1/2017 – 10/31/2020

Primary Investigator: Chris Lopez (postdoc in the Skaar lab)

Total Costs: approximately \$100,000

Parker B. Francis Fellowship

06/01/2019-05/31/2022

Primary Investigator: Lauren Palmer (postdoc in the Skaar lab)

Total costs: approximately \$180,000

Research Support-Pending

National Institutes of Health R01AI145992

Funding Period: 7/1/2019-6/30/2023

Defining the impact of host factors on the molecular architecture and bacterial physiology of

Staphylococcus aureus abscesses

Primary Investigator: James Cassat
Total Direct Costs: Approximately \$600,000
Scored at 4% (payline 12%)

National Institutes of Health R01 AI073843
Pathobiology of heme inducible transporters in Gram positive pathogens
Funding Period 6/30/2020-5/31/2025
Primary Investigator: Eric P. Skaar
Total Direct Costs approximately \$1,250,000

National Institutes of Health R01AI150701
The *Staphylococcus aureus* response to nutrient zinc restriction during infection
Funding Period 06/30/2020-05/31/2025
Primary Investigator: Eric P. Skaar
Total Direct Costs approximately \$1,250,000
Scored at 11% (payline 12%)

Academic Awards and Achievements

2020 Member, Host-Interactions with Bacterial Pathogens (HIBP) NIH Study Section
2019 Molecular Pathology and Immunology Graduate Program Teacher of the Year
2019 Commencement Speaker, Northwestern University School of Public Health
2019 Advisory Board Member, Burroughs Wellcome Fund PATH Program
2018 F. Peter Guengerich, Ph.D., Award - For Mentoring Postdoctoral Fellows or Residents in the Research Setting
2017 Fellow, American Association for the Advancement of Science
2016 Keynote Speaker, Gordon Conference on Microbial Toxins and Pathogenesis
2016 One of five most cited publications in the Vanderbilt Institute of Chemical Biology
2015 Fellow, American Academy of Microbiology
2015 American Asthma Foundation Scholar
2015 Chair, Bacterial Pathogenesis Study Section
2014 Stanley Cohen Award for Excellence in Research Bridging Disciplines, Vanderbilt University
2014 Vanderbilt University Medical Center Postdoc Mentor of the Year
2014 Scientific Committee Member, International Symposium on Staphylococci and Staphylococcal Infections (ISSSI).
2013 One of five most cited publications in the Vanderbilt Institute of Chemical Biology
2013 Co-Chair Elect, Gordon Research Conference on Staphylococcal Diseases
2013 Co-Chair, Ernst Strungmann Forum on Heavy Metals and Infection (Frankfurt, Germany)
2012 Target Selection Committee, NIAID CSGID
2012 Faculty Mentor of the Year, PMI Vanderbilt University Medical Center
2012 Recipient of Ernest W. Goodpasture Endowed Chair
2012-2016 Member, NIAID Bacterial Pathogenesis Study Section (BACP)
2010 Elected to the Faculty Senate
2010 Co-Chair, International Conference on Gram Positive Pathogens
2009 Pfizer ASPIRE Young Investigator Award
2009 The Chancellor's Award for Research, Vanderbilt University
2008 International Conference on Antimicrobial Agents and Chemotherapy (ICAAC) and Infectious Disease Society of America (IDSA) Young Investigator of the Year

- 2008-2012 American Heart Association Microbiology Study Section Member
2006 Burroughs Wellcome Investigator in the Pathogenesis of Infectious Disease
2006 Searle Scholar Award
2004 Collier Award for Outstanding Poster at the Gordon Conference on Microbial Toxins and Pathogenicity
2004 American Heart Association Postdoctoral Fellowship
2001 Gramm Travel Fellowship Award from the Robert H. Lurie Comprehensive Cancer Center
1999-2001 Molecular and Cellular Basis for Disease NIH Training Grant
2000 Dean's Scholarship for Preventive Medicine Education
1996 Karl Leemkuil Award for outstanding research by an undergraduate
1996 Research Experience for Undergraduates NSF Training Grant
1993-1996 Deans Honors List, University of Wisconsin-Madison

Memberships in Professional Societies

- 1997-Present American Society of Microbiology
1998-Present American Association for the Advancement of Science
2007-Present Infectious Disease Society of America

National and International Seminars

2019

- 2019, Nov University of Cincinnati Children's Hospital, Cincinnati, OH
2019, Oct University of California, Berkeley, Department of Microbiology, Berkeley, CA
2019, Oct University of California, San Francisco, Pathogenesis Program, San Francisco, CA
2019, Sep International Zinc Society Annual Meeting, Kyoto, Japan
**Keynote speaker*
2019, Aug Gordon Research Conference on Staphylococcal Diseases, Barcelona, Spain
2019, Jul FASEB Conference on Pathogenesis of Infectious Diseases, Snowmass, CO
2019, Jun Commencement Speaker, Northwestern University School of Public Health
**Keynote speaker*
2019, May Bullen Lecture, Uniformed Armed Services University, Washington, DC
**Keynote speaker*
2019, Apr International Symposium on Bacterial Respiration, Lund, Sweden
**Keynote speaker*
2019, Apr Brown University, Department of Microbiology and Immunology, Providence, RI
2019, Mar University of Maryland Medical Center, Center for Metallobiology, Baltimore, MD
2019, Mar Johns Hopkins Medical Center, Center for Imaging Infection, Baltimore, MD
2019, Feb Eastern Pennsylvania Regional ASM Meeting, Philadelphia, PA
**Keynote speaker*
2019, Feb Mid-Atlantic Pathogenesis Conference, Wintergreen, VA
**Keynote speaker*
2019, Jan Gordon Research Conference, Metals in Biology, Ventura, CA

2018

- 2018, Dec Memorial Sloan Kettering, Division of Infectious Diseases, New York, NY
2018, Nov NIH, Postdoc Research Associate Training (PRAT) mentoring talk, Bethesda, MD
2018, Nov FDA, Center for Biologics Evaluation and Research, Bethesda, MD
2018, Oct University of Arizona, Department of Immunobiology, Tucson, AZ

- 2018, Oct University of Georgia, Department of Chemistry, Athens, GA
2018, Aug University of Louisville, Department of Microbiology and Immunology, Louisville, KY
2018, Jun American Society of Microbiology, Plenary Lecture, Atlanta, Georgia
2018, Jun FASEB Trace Metals and Infectious Diseases*
**Keynote speaker*
- 2018, Apr American Society of Molecular Biology Annual Meeting, San Diego, CA
2018, Mar Penn State University, Department of Chemistry, State College, PA
2018, Feb Middle Tennessee State University, Department of Biology, Murfreesboro, TN
2018, Jan University of Tennessee, Department of Microbiology, Knoxville, TN
2018, Jan Michigan State University, Department of MMG, Lansing, Michigan
**Student invited speaker*
- 2017**
- 2017, Dec Frankfurt University, Department of Microbiology, Frankfurt, Germany
2017, Dec University of Western Ontario, Department of Microbiology, London, Ontario
2017, Oct UC Davis, Department of Microbiology and Molecular Genetics, Davis, California
**Keynote speaker at annual retreat*
- 2017, Oct Carnegie Mellon, Department of Biology, Philadelphia, Pennsylvania
2017, Sep Cold Spring Harbor Conference on Microbial Pathogenesis
2017, Apr Emory University Department of Microbiology and Molecular Genetics, Atlanta, GA
**Igor Stojiljkovich Memorial Lecture*
- 2017, Apr Rice University Department of BioSciences, Houston, Texas
2017, Mar University of Texas-Southwestern Department of Microbiology, Dallas, Texas
2017, Jan Imperial College London, Department of Bacteriology and Infection, London, England
- 2016**
- 2016, Dec Keystone Meeting on Cellular Stress and Infectious Diseases, Sante Fe, New Mexico
2016, Nov University of Pennsylvania, Department of Microbiology, Philadelphia, Pennsylvania
2016, Nov University of North Carolina, Department of Micro/Immuno, Chapel Hill, NC
**Keynote Speaker at Annual Postdoctoral Symposium*
- 2016, Oct Stanford University, Department of Pathology, Palo Alto, CA
2016, Sep George Washington University, Department of Biology, Washington, DC
2016, Mar New York University, Department of Microbiology, NY, NY
2016, Apr NATO Conference on Peace and Prosperity, Capitan, Italy
2016, June American Society of Microbiology General Meeting, Boston, MA
2016, Jul Gordon Conference on Microbial Toxins and Pathogenesis, Waterville Valley, NH
**Keynote Speaker*
- 2015**
- 2015, Dec University of Texas at Austin, Center for Infectious Diseases, Austin, TX
2015, Nov UCSF, Department of Microbiology and Immunology, San Francisco, CA
2015, Nov Genentech, San Francisco, CA
2015, Sep Ohio State University, Department of Microbiology, Columbus, OH
2015, May American Society of Microbiology General Meeting, New Orleans, LA
2015, Apr Montana State University, Department of Microbiology, Bozeman, MN
2015, Mar University of Minnesota, Department of Microbiology, Minneapolis, MN
2015, Jan University of Rochester, Department of Microbiology and Immunology, Rochester, NY
- 2014**
- 2014, Dec University of Wisconsin at Madison Department of Bacteriology, Madison, WI
**Distinguished alumni seminar series*

2014, Nov University of Southern Florida, Department of CMMB, Tampa, FL
2014, Sep University of Kansas, Department of Microbiology, Lawrence, KS
2014, Jul Gordon Research Conference on Tetrapyrroles, Newport, RI
2014, Jun Trace Elements in Man and Animals (TEMA), Orlando, FL
2014, May University of Arkansas for Medical Sciences, Little Rock, AR
**Invited by students*
2014, Apr Louisiana State University, Department of Pathobiology, Baton Rouge, LA
2014, Mar University of Cincinnati, Department of Chemistry
2014, Jan Ernst Strungmann Forum on Heavy Metals and Infection, Frankfurt, Germany
**Meeting Co-chair*

2013

2013, Dec University of Utah, Department of Pathology, Salt Lake City, Utah
2013, Oct Duke University, Department of Pharmacology and Cancer Biology, Durham, NC
2013, Sep University of Alabama, Birmingham, Department of Microbiology and Immunology
2013, Jul Gordon Research Conference on Staphylococcal Infections, Waterville Valley, NH
2013, Jul Gordon Research Seminar-presentation on mentoring, Waterville Valley, NH
**Invited by students and postdoctoral fellows*
2013, Apr University of Washington, Department of Microbiology
**Invited by Postdoctoral Association*
2013, Mar University of Massachusetts, Department of Microbiology
2013, Mar AstraZeneca External Speaker Program
2013, Jan Pfizer External Speaker Program

2012

2012, Nov University of Texas at San Antonio, Department of Microbiology
2012, Dec University of Kentucky, Department of Microbiology, Immunology and Molecular Genetics
2012, Sep University of Illinois UC, Department of Microbiology
2012, July Gordon Research Conference on Microbial Surfaces and Signal Transduction
2012, May Northwestern University Medical School, Department of Microbiology and Immunology
2012, Apr Harvard University, Department of Microbiology and Immunobiology
2012, Feb St. Jude's Pediatric Infectious Disease Society Annual Meeting
2012, Jan University of Florida, Department of Microbiology and Cell Science
**Student Invited Speaker*

2011

2011, Dec University of Michigan, Department of Microbiology and Immunology
**Student Invited Speaker*
2011, Nov Washington University School of Medicine, Department of Medical Microbiology
2011, Oct Oregon Health Sciences University, Department of Microbiology and Immunology
2011, Oct Lipscomb University, Department of Pharmacy
2011, Sep Medical College of Wisconsin, Department of Microbiology
2011, Jul Gordon Research Conference on Microbial Surfaces and Signal Transduction
2011, Jan UC-Los Angeles, Department of Microbiology
2011, Jan UC-Irvine, Department of Microbiology and Immunology
2011, Jan UC-Davis, Department of Microbiology and Immunology

2010

2010, Dec University of Virginia, Department of Microbiology
**Student Invited Speaker*

2010, Nov Baylor College of Medicine, Department of Microbiology
2010, June Gordon Research Conference on Tetrapyrroles, Speaker and Discussion Leader
2010, Oct SERCEB Annual Meeting, Chapel Hill, North Carolina
2010, Oct Co-Chair, International Conference on Gram Positive Pathogens
2010, May American Society for Microbiology General Meeting, Symposium on the interaction between bacterial pathogens and neutrophils.
2010, April Massachusetts Institute of Technology, Department of Chemistry
2010, Feb University of North Carolina at Chapel Hill, Department of Microbiology
2010, Feb Emory University, Department of Microbiology and Immunology, Atlanta, Georgia
2010, Jan USPHS, Bethesda, Maryland

2009

2009, Dec New York University Medical School, Department of Microbiology, NY, NY
2009, Nov University of Chicago, Department of Microbiology, Chicago, Illinois
2009, Oct International Meeting on Microbial Surfaces, Tuebingen, Germany
2009, Sept ICAAC Annual Meeting, San Francisco, California
2009, Aug Gordon Conference on Staphylococcal Infections, Waterville Valley Resort, NH
2009, July FASEB Conference on Infectious Diseases, Snowmass, Colorado
2009, June University of Iowa, Department of Microbiology, Iowa City, Iowa
**Student invited speaker for annual Sarah Pulvermacher Lecture*
2009, May Stanford University Department of Microbiology and Immunology, Palo Alto, California
2009, Mar University of California at Santa Cruz, Department of Microbiology and Environmental Toxicology, Santa Cruz, California
2009, Feb University of California at San Francisco, Department of Microbial Pathogenesis, San Francisco, California
2009, Jan Gordon Conference on Metals in Biology, Ventura, California
**Session leader for accompanying Graduate Research Council Meeting*

2008

2008, Dec East Carolina University, Department of Microbiology, Greenville, North Carolina
2008, Oct ICAAC/IDSA Annual Meeting, Washington, D.C.
2008, Nov Yale University, Department of Microbial Pathogenesis, New Haven, Connecticut
2008, July Gordon Conference on Microbial Pathogenesis, Proctor Academy, Rhode Island
2008, July Gordon Conference on Tetrapyrrole Biology, Newport, Rhode Island
2008, May Rocky Mountain National Laboratories, Division of Bacterial Diseases, Missoula, Montana
2008, Apr Meharry Medical College, Nashville, Tennessee
2008, Apr Searle Scholars Meeting, Chicago, Illinois
2008, Mar University of Indiana, Department of Microbiology, Bloomington, Indiana
2008, Mar University of Texas, Austin, Dept. of Microbiology, Austin, Texas
2008, Feb Wake Forest University, Dept. of Structural Biology, Winston-Salem, NC
2008, Jan University of Georgia, Department of Microbiology, Athens, Georgia

2007

2007, Dec University of Texas, Houston, Department of Microbiology, Houston, Texas
2007, Nov University of Texas, Southwestern, Department of Microbiology, Dallas, Texas
2007, Oct University of Nebraska, Department of Microbiology and Pathology, Omaha, Nebraska
2007, Sep Midwest Pathogenesis Conference, Chicago, Illinois
2007, Aug International Tetrapyrrole Discussion Group, Lund, Sweden
2007, June Argonne National Laboratories, Argonne, Illinois

- 2007, May Canadian Conference on Bioinorganic Chemistry (CANBIC), Ontario, Canada
2007, Mar Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARSA) annual Meeting, Reston, Virginia
2007, Feb University of Washington, Department of Pathobiology, Seattle, Washington

2006

- 2006, Oct. University of British Columbia, Department of Microbiology and Immunology
2006, Oct National Meeting on Gram Positive Pathogens, Omaha, Nebraska
**Speaker and Session moderator*
2006, Aug International Biometals Meeting, Portland, Oregon
2006, May American Society of Microbiology General Meeting, Colloquium on Bacterial Redundancy, Orlando, Florida

2005

- 2005, Mar University of Virginia, Department of Microbiology, Charlottesville, Virginia
2005, Feb University of Michigan, Biological Science Scholars' Program, Ann Arbor, Michigan.
2005, Jan Columbus Childrens' Research Institute, Columbus, Ohio

2004

- 2004, Oct Distinguished Seminar Series, UW MMI Department. Madison, Wisconsin.

2003

- 2003, Sep Gordon Conference on Staphylococcal Pathogenesis. Oxford, England
2003, Aug Cold Spring Harbor Phage and Genetics Meeting. Madison, Wisconsin
2003, July REU Seminar Series. Kenosha, Wisconsin
2003, May International BioIron Society Meeting. Bethesda, Maryland

Vanderbilt Seminars

2019

- 2019, Jan Center for Mucosal Immunology

2018

- 2018, Dec Flexner Discovery Lecture

2017

- 2017, Dec Biomedical Sciences Advisory Board
2017, Oct Vanderbilt University Institute for Imaging Sciences
2017, Jan Department of Pharmacology

2016

- 2016, Sep Department of Biomedical Engineering

2015

- 2015, Sep IGP Orientation Presentation: "Simple Beginnings"
2015, Aug Department of Medicine, Mini-Retreat: The Microbiome

2014

- 2014, Aug Presentation to the Board of Trust on trans-institutional programs, BOT Retreat

2013

- 2013, Oct Pediatric Infectious Disease Research Symposium
2013, Apr Imaging Infectious Diseases Mini-symposium
2013, Jan Department of Pharmacology

2012

2012, Apr Chemical Biology of Infectious Diseases Mini-symposium

2011

2011, Sep Department of Pathology, Microbiology and Immunology

2011, July Preparing Future Faculty, workshop on non-traditional funding sources

2010, June Guest lecturer for REU program

2010

2010, June Guest lecturer for REU program

2010, June Guest lecturer for summer undergraduate program

2010, May Department of Microbiology and Immunology

2010, Mar Department of Biological Engineering

2010, Feb Infectious Diseases Grand Rounds

2010, Jan Department of Biological Sciences

2009

2009, May Preparing Future Faculty panel discussant and small group leader

2009, Jan IGP interviewing weekend faculty seminar

2009, Mar MSTP recruitment symposium seminar

2008

2008, Jan IGP interviewing weekend faculty seminar

2008, April MSTP recruitment symposium seminar

2007

2007, Dec Vanderbilt Institute of Chemical Biology

2007, Aug IGP Departmental Orientation Seminar to prospective students

2007, Mar Vanderbilt Imaging Center Seminar Series

2007, Jan IGP interviewing weekend faculty seminar

2006

2006, Feb Pathology Department Seminar Series

2005

2005, Oct Infectious Disease Grand Rounds

2005, Oct Vascular Biology Training Grant Retreat

2005, Dec Proteomic Workshop for Primary Investigators

2005, Jan Research Explorers (high school students interested in research careers)

Teaching Experience-Vanderbilt University

2019-current Scientific Writing-Course Director and Lecturer

2019 Exploring science through art: Artist-in-residence (CSET 1001.1)

2018 Bacterial Pathogenesis, Spring Module

Course Director

2016-2017 The Nature and Function of American Higher Education, Lecturer (HEA 6020.1)

2015-2017 Overall Director-Microbiology and Immunology Graduate Curriculum

2016 Foundations I Lecturer

2016 Foundations III Lecturer

2010-2016 Microbial Diseases

Course Director and Lecturer

2010-2015	Cellular Microbiology Course Director and Lecturer
2006-2015	Advanced Immunology Lecturer and paper discussion leader
2007-2015	Foundations in Microbiology and Immunology Lecturer
2009-2010	Vanderbilt Institute for Science and Math (High School students) Lecturer: “Nutritional Immunity”
2008-2010	Medical School Capstone Lecture Series Lecturer: “ <i>Staphylococcus aureus</i> infections”
2007-2010	Foundations in Microbiology and Immunology Course Director and Lecturer
2007-2010	Microbial Topics, Medical School Curriculum Session leader
2006-2010	Vascular Biology Lecturer: “Bacterial Pathogens of the Vascular System”
2005-2010	IGP Core Course Lecturer: “ <i>Staphylococcus aureus</i> ”
2005-2010	Proteomics and Genomics of the Immune System Lecturer: “The impact of commensal flora on the host”

Teaching Experience-Outside Vanderbilt

2016-17	American Society for Microbiology Grant Writing Workshop Lecturer
2004	Medical Microbiology and Immunology 740 Guest Lecturer: “ <i>Staphylococcus aureus</i> pathogenesis” University of Wisconsin, Madison, Wisconsin
2003	Biogeochemistry and Global Change (Geoscience 23800) Instructor and Curriculum Designer University of Chicago, Chicago, Illinois
1999	Medical Microbiology Laboratory Course Teaching Assistant Northwestern University Medical School, Chicago, Illinois
1998	Graduate Level Molecular Biology Teaching Assistant Northwestern University, Evanston, Illinois

Trainees-Past

Undergraduates and Technicians

Name	Position	Period	Current Position
Gleb Pishchany	Research Technician	06/05-06/06	Harvard Postdoc
Brad Sabatini	Undergraduate	07/05-06/06	Physician
Marcella Luercio	Undergraduate	06/06-08/06	NIH researcher
Rose Joyce	Undergraduate	06/07-08/07	Dentist
Melissa Watts	Research Technician	06/07-07/07	Physician
Danielle Bagaley	Research Technician	06/07-07/07	Physician Assistant
Susan Dickey	VU Undergraduate	05/08-03/10	Pharmacy Resident, Vanderbilt

Lorenzo Olive	Research Technician	06/10-08/12	Physician
Amanda Hirsch	Undergraduate	12/10-05/13	Medical Student, Pittsburgh
Benjamin Gu	High School Student	12/10-05/12	Medical Student, U Penn

Graduate Students

Name	Position	Period	Current Position
Devin Stauff	IGP Student	06/06-05/09	Asst. Professor, Grove City College
Michelle Reniere	IGP Student	06/06-05/10	Asst. Professor, Univ Washington
Gleb Pishchany	IGP Student	06/07-05/11	Postdoc, Harvard Medical School
Indriati Hood	MSTP Student	05/08-08/12	Fellowship, Boston Children's
Laura Mike	IGP Student	05/09-04/14	Postdoc, U of Michigan
Kathryn Haley	IGP Student	05/09-04/14	Asst. Professor, Grand Valley State
Kaitlin Schroeder	Chemistry Student	12/11-12/13	Professor, Trident Tech. College
Brendan Dutter	CPB Student	07/11-08/16	Postdoc, Vanderbilt University
Matthew Surdel	MSTP student	08/12-10/16	Staff Scientist, MCOW
Jessica Moore	Chemistry Student	12/11-12/17	Postdoc, Vanderbilt University
Lillian Juttudonda	MSTP student	05/13-09/17	Medical School, Vanderbilt Univ.
Lisa Lojek	IGP Student	05/13-12/17	Postdoc, U of Massachusetts
Jacob Choby	IGP student	05/14-04/19	Postdoc, Emory University
Reece Knippel	IGP Student	05/15-12/19	Postdoc, Johns Hopkins

Postdoctoral Fellows

Name	Position	Period	Current Position
Victor Torres	NRSA Fellow	01/06-12/08	Assoc. Professor at NYU
Brian Corbin	NRSA Fellow	04/06-04/09	Senior Scientist, Dow Microbiology
W. Jeff Mason	Medical Fellow	07/07-04/09	Private practice physician
Ahmed Attia	Postdoctoral Fellow	10/08-10/10	Assoc. Professor, Cairo University
Thomas Kehl-Fie	Postdoctoral Fellow	01/09-09/13	Asst. Professor, U of Illinois
James Cassat	Peds ID Fellow	07/11-05/14	Asst. Professor, Vanderbilt
Yaofang Zhang	Postdoctoral Fellow	06/12-06/14	Analytical Chemist, Shionogi
Neal Hammer	Postdoctoral Fellow	06/09-08/15	Asst. Professor, Mich State Univ
Allison Farrand	Postdoctoral Fellow	12/10-08/15	Senior Scientist, Cytovance
Brittany Mortensen	Postdoctoral Fellow	01/11-08/15	Asst. Professor, Bethel University
Catherine Wakeman	Postdoctoral Fellow	07/11-07/16	Asst. Professor, Texas Tech
Michael Noto	Adult ID Fellow	07/12-07/16	Asst. Professor, Vanderbilt
Joe Zackular	Postdoctoral Fellow	07/14-08/18	Asst. Professor, U Pennsylvania
Caroline Grunenweld	Postdoctoral Fellow	03/16-12/19	Postdoc, Univ. of Wisconsin
Chris Lopez	Postdoctoral Fellow	09/16-12/19	Asst. Professor, Sacramento St.

Trainees-Current

Name	Position	Period
Lauren Palmer	Postdoctoral Fellow	07/14-present
Zach Lonergan	IGP Student	05/15-present
William Beavers	Postdoctoral Fellow	12/15-present
Jessica Sheldon	Postdoctoral Fellow	09/16-present
Chris Lopez	Postdoctoral Fellow	09/16-present
Erin Green	Postdoctoral Fellow	05/16-present
Clare Laut	IGP Student	05/16-present
Andy Weiss	Postdoctoral Fellow	08/17-present

Andrew Montieth	Postdoctoral Fellow	08/17-present
Laura Hesse	IGP Student	05/18-present
Catherine Leasure	IGP Student	05/18-present
Aaron Wexler	Postdoctoral Fellow	04/18-present
Huanliang Pi	Postdoctoral Fellow	10/18-present
Jeanette Miller	IGP Student	06/19-present

Trainees Co-mentored

Jessica Moore	Chemistry Student (co-mentor with Caprioli)	05/14-05/18
Brendan Dutter	Chemistry Student (co-mentor with Sulikowski)	05/14-05/18
Monique Bennett	IGP Student (co-mentor with Crowe)	05/15-present
William Perry	Chemistry Student (co-mentor with Caprioli)	05/16-present
Ben Fowler	MSTP Student (co-mentor with Crowe)	05/18-present
Emilio Rivera	Chemistry Student (co-mentor with Caprioli)	04/19-present
Emma Guiberson	Chemistry Student (co-mentor with Caprioli)	04/19-present

Service and Committees-Vanderbilt

Thesis Committees-Present

Thesis Committee Member (MSTP)-Conner Beebout (Maria Hadjifrangiskou's laboratory)
Thesis Committee Member (IGP)-Melanie Hurst (Maria Hadjifrangiskou's laboratory)
Thesis Committee Member (Chemistry)-Velia Garcia (Walter Chazin's laboratory)
Thesis Committee Member (IGP)-Sam Dooyema (Rick Peek's laboratory)
Thesis Committee Member (Chemistry)-Jade Williams (Gary Sulikowski's laboratory)
Thesis Committee Member (IGP)-Michael Doyle (Jim Crowe's laboratory)

Thesis Committees-Past

Thesis Committee Member (Chemistry)-Brett Covington (Brian Bachmann's laboratory)
Thesis Committee Chair (IGP)-Brett Case (Mark Denison's laboratory)
Thesis Committee Member (Chemistry)-David Earl (Brian Bachmann's laboratory)
Thesis Committee Member (IGP)-Arwen Frick-Cheng (Timothy Cover's laboratory)
Thesis Committee Member (IGP)-Dana Hardbower (Keith Wilson's laboratory)
Thesis Committee Member (IGP)-Kristen Guckes (Maria Hadjifrangiskou's laboratory)
Thesis Committee Member (IGP)-Ryan Craven (Borden Lacy's laboratory)
Thesis Committee Member (Biomedical Engineering)-Charleson Bell (Todd Giorgio laboratory)
Thesis Committee Chair (IGP)-Bradley Voss (Timothy Cover's laboratory)
Thesis Committee Member (Chemistry)-Travis Adams (Dr. Darryl Bornhop's laboratory)
Thesis Committee Member (IGP)-Peijun Ma (Dr. Carl Johnson's laboratory)
Thesis Committee Member (Chemistry)-Mika Meschievitz (David Cliffl's laboratory)
Thesis Committee Member (IGP)-Katie Aldred (Neil Osheroff's laboratory)
Thesis Committee Member (IGP)-Cierra Spencer (Alex Brown laboratory)
Thesis Committee Member (IGP)-Cassidy Cobbs (Patrick Abbot laboratory)
Thesis Committee Member (Chemistry)-Ian Olmstead (Darryl Bornhop's laboratory)
Thesis Committee Chair (IGP)-Christian Gonzalez (Dr. Timothy Cover's laboratory)
Thesis Committee Chair (MSTP)-Shobhana Gupta (Dr. Timothy Cover's laboratory)
Thesis Committee Member (IGP)-Susan Ivie (Dr. Timothy Cover's laboratory)
Thesis Committee Member (IGP)-Carrie Schafer (Dr. Timothy Cover's laboratory)
Thesis Committee Member (Chemistry)-Vanessa Scott (Dr. David Wright's laboratory)
Thesis Committee Member (Chemistry)-Reese Harry (Dr. David Wright's laboratory)

Thesis Committee Chair (IGP)-Megan Johnson (Dr. Richard D'Aquila's laboratory)
Thesis Committee Member (IGP)-Laura Johns (Dr. Douglas Kernodle's laboratory)
Thesis Committee Member (IGP)-Nuruddeen Lewis (Dr. Keith Wilson's laboratory)
Thesis Committee Member (IGP)-Karen Wiles (Dr. Paul Bock's laboratory)
Thesis Committee Member (Chemistry)-Andrew Morin (Dr. Jens Meiler's laboratory)
Thesis Committee Member (MLI)-Amanda Williams (Dr. Richard Peek's laboratory)
Thesis Committee Member (Mechanical Engineering)-Dustin House (Dr. Dongqing Li's laboratory)
Thesis Committee Member (IGP)-Srdjan Dragovic (Dr. Sebastian Joyce's laboratory)
Thesis Committee Member (IGP)-Rory Pruitt (Dr. Borden Lacy's laboratory)
Thesis Committee Member (IGP)-Katie Germaine (Dr. Ben Spiller's laboratory)
Thesis Committee Chair (IGP)-Johnna Allen (Dr. Terry Dermody's laboratory)
Thesis Committee Member (IGP)-Robert Bruker (Dr. Seth Bordenstein's laboratory)
Thesis Committee Member (Biomedical Engineering)-Charleson Bell (Todd Giorgio laboratory)
Thesis Committee Member (IGP)-Matt Varga (Richard Peek's laboratory)
Thesis Committee Member (Chemistry)-Kim Fong (David Wright's laboratory)
Thesis Committee Chair (IGP)-Nichole Putnam (James Cassat's laboratory)
Thesis Committee Member (IGP)-Aimee Wilde (James Cassat's laboratory)
Thesis Committee Member (IGP)-Maria Agostini (Mark Denison's laboratory)
Thesis Committee Member (IGP)-Kyle Horning (Aaron Bowman's laboratory)

Thesis Committees-External

Thesis Committee Member (University of Nebraska)-John Morrison (Dr. Paul Dunman's laboratory)
Thesis Committee Member (Nanyang Technological University, Singapore)-Bhone Myint Kyaw (Dr. Zhou Wei's laboratory)
Thesis Committee Member (University of Auckland, New Zealand), Stefan Hermans (Dr. John Fraser's laboratory)
Thesis Committee Member (UTHSC, San Antonio), Armand Brown (Dr. Carlos Orihuela's laboratory)
Thesis Committee Member (NYU School of Medicine), Kayan Tam (Dr. Victor Torres's laboratory)

University and Medical Center Committees

Institutional Review Entity for Dual Use Research Concerns (Chair) (2018-current)
VUMC Executive Committee of the Executive Faculty (2018-current)
VUMC Executive Faculty (2017-current)
Vanderbilt University Transinstitutional Programs (TIPs) Council (2017-current)
Vanderbilt University Medical Center Appointments and Promotions Committee (2016-2018)
Vanderbilt University Medical Center Fundamental Discovery Committee (2016)
Vanderbilt University Biomedical Sciences Advisory Board (2015-current)
VU-VUMC Joint Biomedical Sciences Advisory Board (2016-current)
DDRC Steering Committee (2012-current)
Mass Spectrometry Research Center (MSRC) Steering Committee (2012-current)
Center for Structural Biology (CSB) Steering Committee (2012-current)
Vanderbilt International Scholars Program (VISP)-Steering Committee Member (2011-2015)
Vascular Biology Training Grant, Internal Advisory Committee (2010-2015)
Vanderbilt University Strategy Planning Executive Committee (2013-2015)
Faculty Senate (2010-2013)
Chair, Academic Policies and Services (APS) committee of the Faculty Senate (2010-2012)
Institutional Biosafety Committee (2009-12)
Research Enterprise Communications Advisory Committee (2008-2011)
DDRC internal study section (2009 and 2010)
Vanderbilt Proteomics Users Group (2006-2009)

Departmental Committees

Appointment and Promotions Committee (2011-current)
Chair, Awards Committee (2012-2016)
Special Postdoctoral Fellowship Committee Member (2006-2011)
Shared Equipment Committee (2012-2013)
Sydney P. Colowick Award Committee (2007-2010)
Departmental Seminar Committee Member (2006-2010)
Chair, Departmental Retreat Committee (2008)

Search Committees

Member, Strategic Advisory Committee for the Search Committee for the Chancellor of Vanderbilt
Resulted in the hiring of Chancellor Daniel Diermeier
Chair, Microbial Pathogenesis Faculty Search Committee for Pathology, Microbiology and Immunology
Resulted in the hiring of Dr. Wenhan Zhu
Member, Microbiome Sciences Search Committee for Biological Sciences
Resulted in the hiring of Dr. Megan Behringer
Chair, Microbial Pathogenesis Faculty Search Committee for Pathology, Microbiology and Immunology
Resulted in the hiring of Dr. Mariana Byndloss
Chair, Microbial Pathogenesis Faculty Search Committee for Pathology, Microbiology and Immunology
Resulted in the hiring of Dr. John Karijovich
Chair, Bacteriology Faculty Search Committee for Pathology, Microbiology and Immunology (2011)
Resulted in the hiring of Dr. Maria Hadjifrangiskou
Chair, Bacteriology Faculty Search Committee for Pediatric Infectious Diseases (2010)
Resulted in the hiring of Dr. Oscar Gomez
Member, Immunology Search Committee, Department of Medicine
Resulted in the hirings of Dr. Henrique Serazani and Suman Das
Member, Search Committee for the Provost for Vanderbilt University (2014)
Resulted in the hiring of Dr. Susan Wentz
Member, Chief of the Division of Infectious Diseases Faculty Search Committee (2012)
Resulted in the hiring of Dr. David Aronoff
Member, Search Committee for Assistant Vice Chancellor for Technology Transfer (2010)
Resulted in the hiring of Mr. Alan Bentley

Service and Committees-External

Advisory Boards and National Committees:

Burroughs Wellcome Fund Advisory Board for the Pathogenesis of Infectious Diseases Program
(2019-current)
Target Selection Board for the NIAID Structural Genomics Centers for Infectious Diseases (2012-2016)
Chair Elect, Division D of the American Society of Microbiology (2015-2018)
ASM Nominating Committee for President-Elect (2015-2016)

Study Sections:

Burroughs Wellcome Fund Advisory Board for the Pathogenesis of Infectious Diseases Program
(2019-current)
NIAID, Host Interactions with Bacterial Pathogens (HIBP) Study Section Full Member (2019-current)
NIAID, Bacterial Pathogenesis Study Section Full Member (2012-2015)
NIAID, Bacterial Pathogenesis Study Section Chair (2015-2017)
American Heart Association, Microbiology Division, Full Member (2008-2012)

Ad hoc grant reviewer:

The Biotechnology and Biological Sciences Research Council (BBSRC) (United Kingdom)
The Health Research Board (Ireland)
CNRS Programme Emerging Infectious Diseases (CNRS, France)
Duke-National University of Singapore Academic Clinical Programme (Singapore)

Editorial Board:

Journal of Bacteriology (2013-current)
Metallomics (2013-current)
Cell Reports (2012-current)
Molecular Microbiology (2010-current)
Infection and Immunity (2010-current)
PLoS Pathogens-Section Editor (2013-2017)

Ad hoc journal reviewer:

Science, Nature, Science Translational Medicine, Nature Medicine, Nature Communications, Proceedings of the National Academy of Sciences, Cell Host and Microbe, Molecular Cell, Journal of Biological Chemistry, mBIO, Vaccine, FEMS Microbiology, Molecular Microbiology, Infection and Immunity, Microbiology, Journal of Bacteriology, BMC Microbiology, Cellular Microbiology, Journal of Infectious Diseases, Trends in Microbiology, Microbial Pathogenomics, Applied and Environmental Microbiology, Journal of Mass spectrometry, Metallomics

Patents

Screening methods for anti-virulence agents for Gram-positive, heme utilizing pathogens
Olaf Schneewind and **Eric Skaar** (University of Chicago)

Novel pathway for decreasing bacterial virulence
Eric Skaar and Devin Stauff (Vanderbilt University)

Pathogen hemoglobin receptor specificity for human hemoglobin
Eric Skaar and Gleb Pishchany (Vanderbilt University)

Compositions and methods for treating microbial infections
Eric Skaar and Brian Corbin (Vanderbilt University)

Treatment of *Acinetobacter baumannii* pneumonia using modified lipopolysaccharide
(Provisional patent filed)
Eric Skaar and Indriati Hood (Vanderbilt University)

Small molecule inhibitors of bacterial fermentation
(Provisional patent filed)
Eric Skaar, Gary Sulikowski, Paul Reid, Alex Watterson, and Laura Anzaldi

Small molecule activators of heme biosynthesis
(Provisional patent filed)
Eric Skaar, Gary Sulikowski, Matt Surdel

Research Articles-Published or In Press

1) Hickman, J, Barber, RD, **Skaar, EP**, Donohue, TJ. Link between the membrane-bound pyridine

nucleotide transhydrogenase and glutathione-dependent processes in *Rhodobacter sphaeroides*.
Journal of Bacteriology, 2002 184:400.

- 2) **Skaar, EP**, Lazio, M, Seifert, HS. Roles of the *recJ* and *recN* Genes in homologous recombination and DNA repair pathways of *Neisseria gonorrhoeae*. *Journal of Bacteriology*, 2002 184:919.
- 3) **Skaar, EP**, Seifert HS. The misidentification of bacterial genes as human cDNAs: was the human D-1 tumor antigen gene acquired from bacteria? *Genomics*, 2002 79:625.
- 4) **Skaar, EP**, Tobiasson, DM, Quick, J, Judd, RC, Weissbach, H, Etienne, F, Brot, N, Seifert, HS. The outer membrane localization of the *Neisseria gonorrhoeae* MsrA/B is involved in survival against reactive oxygen species. *Proceedings of the National Academy of Sciences*, 2002 99:10108.
- 5) Kline, KA, Sechman, EV, **Skaar, EP**, Seifert, HS. Recombination, repair, and replication in the genus *Neisseria*. *Molecular Microbiology*, 2003 50:3.
- 6) Mazmanian, SK*, **Skaar, EP***, Gaspar, AH, Humayun, M, Gornicki, P, Jelenska, J, Joachmiak, A, Missiakas, DM, Schneewind O. Passage of heme-iron across the envelope of *Staphylococcus aureus*. *Science*, 2003 299:906.
***Equal Authorship**
(Accompanying Feature in Feb 7, 2003 issue of *ScienceNow*)
- 7) **Skaar, EP**, and Schneewind, O. Iron-regulated surface determinants (Isd) of *Staphylococcus aureus*: Stealing iron from heme. *Microbes and Infection*, 2004 6:339.
- 8) **Skaar, EP**, Gaspar, AH, and Schneewind, O. IsdG and IsdI, heme degrading enzymes in the cytoplasm of *Staphylococcus aureus*. *Journal of Biological Chemistry*, 2004 279:436.
- 9) **Skaar, EP**, Humayun, M, Bae, T, Debord, KL, Schneewind, O. Iron source preference of *Staphylococcus aureus* pathogenesis. *Science*, 2004 305:1626.
Selected by *Faculty of 1000* as "Exceptional"
(Accompanying Feature in Sept 10, 2004 issue of *ScienceNow*)
(Accompanying Perspective in Sept 10, 2003 issue of *Science*)
- 10) **Skaar, EP**, LeCuyer, B, Lenich, AG, Lazio, MP, Perkins-Balding, D, Seifert, HS, Karls, AC. Analysis of the Piv Recombinase-Related gene family of *Neisseria gonorrhoeae*. *Journal of Bacteriology*, 2005 187(4):1276.
- 11) Wu, R-y*, **Skaar, EP***, Zhang, R-g*, Joachimiak, G, Gornicki, P, Schneewind, O, Joachimiak, A. *Staphylococcus aureus* IsdG and IsdI, heme degrading enzymes that display structural similarity with monooxygenases, *Journal of Biological Chemistry*, 2005 280(4):2840.
***Equal Contribution**
- 12) **Skaar, EP**, Gaspar AH, Schneewind, O. *Bacillus anthracis* IsdG, a heme degrading monooxygenase. *The Journal of Bacteriology*, 2006 188(3):1071.
- 13) Friedman DB, Stauff D, Pishchany G, Whitwell, CW, Torres VJ, **Skaar, EP**. *Staphylococcus aureus* redirects central metabolism to increase iron availability. *PLoS Pathogens*, 2006 Aug;2(8):e87.
- 14) Torres VJ, Pishchany, G, Humayun M, Schneewind, O, **Skaar EP**. *Staphylococcus aureus* IsdB is a hemoglobin receptor required for heme iron utilization. *The Journal of Bacteriology*, 2006 Dec;188(24):8421-9.
- 15) Reniere ML, Torres. VJ, **Skaar, EP**. Intracellular metalloporphyrin metabolism in

Staphylococcus aureus. **Biometals**. 2007 20(3-4):333.

- 16) Torres, VJ, Stauff, DL, Pishchany, G, Bezbradica, JS, Gordy, LE, Iturregui, J, Anderson, KL, Dunman, PM, Joyce, S, **Skaar, EP**. A *Staphylococcus aureus* regulatory system that responds to host heme and modulates virulence. **Cell Host and Microbe**. 2007, 1: 109-119.
- 17) Stauff, DL, Torres, VJ, **Skaar, EP**. Signaling and DNA binding activities of the *Staphylococcus aureus* HssR-HssS two-component system required for heme sensing. **The Journal of Biological Chemistry**. 2007, 7;282(36):26111-21.
- 18) Palazzolo-Balance, AM, Reniere, ML, Braughton, KR, Sturdevant, DE, Kreiswirth, BN, **Skaar, EP**, DeLeo, FR. Neutrophil microbicides induce a pathogen survival response in community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA). **The Journal of Immunology**. 2008 Jan 1;180(1):500-9.
- 19) Corbin BD, Miller MR, Seeley, EH, Dattilo, BM, Anderson, KL, Torres, VJ, Caprioli, RM, Dunman, PM, Nacken, W, Chazin, WJ, **Skaar, EP**. Metal chelation as a defense strategy to inhibit microbial growth in tissue abscesses. **Science**. 2008 Feb 15;319(5865):962-5.
Selected by *Faculty of 1000* as “must read
(Accompanying feature in the March, 2008 issue of *Cell Host and Microbe*)
(Accompanying feature in the February, 2008 issue of *Nature Medicine*)
(Accompanying feature in the March, 2008 issue of *Science*)
- 20) Stauff, DL, Bagaley, D, Torres, VJ, Joyce, R, Anderson, KA, Kuechenmeister, L, Dunman, PM, **Skaar, EP**. *Staphylococcus aureus* HrtA is an ATPase required for protection against heme-mediated toxicity. **The Journal of Bacteriology**, 2008 May;190(10):3588-96.
- 21) Reniere, ML, and **Skaar EP**. The heme oxygenases of *Staphylococcus aureus* are differentially regulated in response to iron and heme availability. **Molecular Microbiology**, 2008,Sep;69(5):1304-15.
- 22) Lee, Woo C, Reniere, ML, **Skaar, EP**, Murphy, MEP. Ruffling of metalloporphyrins bound to IsdG and IsdI, two heme degrading enzymes in *Staphylococcus aureus*. **The Journal of Biological Chemistry**, 2008 Nov 7;283(45):30957-63.
- 23) Stauff, DL, and **Skaar EP**. *Bacillus anthracis* HssRS signaling to HrtAB regulates heme resistance during infection, **Molecular Microbiology**. 2009 May;72(3):763-78.
- 24) **Skaar, EP**. A precious metal heist. **Cell Host and Microbe**, 2009 May 8;5(5):422-4.
- 25) Pishchany, G, and **Skaar, EP**. Subcellular localization of the *Staphylococcus aureus* heme-iron import components IsdA and IsdB. **Infection and Immunity**, 2009 Jul;77(7):2624-34.
- 26) Mason, WJ, and **Skaar EP**. Assessing the Contribution of Heme-Iron Acquisition to *Staphylococcus aureus* Pneumonia Using Computed Tomography, **PLoS One** 2009 Aug 18;4(8):e6668.
- 27) Hood, I, Jacobs, AC, Dunman PD, **Skaar, EP**. *Acinetobacter baumannii* regulates antibiotic resistance in response to extracellular NaCl. **Antimicrobial Agents and Chemotherapy**, 2010 Mar;54(3):1029-41
- 28) Torres, VJ, Corbin, BD, Mason, WJ, Beasley, FC, Anderson, KL, Stauff, DL, Zimmerman L., Friedman D.B., Heinrichs D.E., Dunman, P.M., **Skaar, E.P**. *Staphylococcus aureus* senses iron availability to regulate the expression of virulence factors. **Infection and Immunity**, 2010

Apr;78(4):1618-28.

- 29) House, DL, Chon, CH, Creech, CB, **Skaar, EP**, Li, D. Miniature on-chip detection of unpurified methicillin-resistant *Staphylococcus aureus* (MRSA) DNA using real-time polymerase chain reaction. *Journal of Biotechnology*. 2010 Apr 1;146(3):93-9.
- 30) Kehl-Fie, T, and **Skaar EP**. Nutritional Immunity Beyond Iron: A Role for Manganese and Zinc. *Current Opinion in Chemical Biology*, 2010 Apr;14(2):218-24.
- 31) Jacobs, AC, Hood, I, Olson, PD, Morrison, J, Carson, S, Sayood, K, Iwen, PC, **Skaar, EP**, Dunman, PM. Inactivation of Phospholipase D diminishes *Acinetobacter baumannii* pathogenesis. *Infection and Immunity*, 2010 May;78(5):1952-62.
- 32) Attia, AS, Torres, VJ, Stauff, DL, **Skaar, EP**. Membrane Damage Elicits an Immunomodulatory Program in *Staphylococcus aureus*. *PLoS Pathogens*, 2010 Mar 12;6(3):e1000802.
- 33) Reniere, ML, Harry, R, Stec, D, Wright, D, Bachmann, B, **Skaar, EP**. A conserved heme oxygenase in pathogenic bacteria degrades heme to a novel chromophore. *Molecular Microbiology*, 2010 Mar;75(6):1529-38.
- 34) **Skaar, EP**. The battle for iron between bacterial pathogens and their vertebrate hosts. *PLoS Pathogens*, 2010 Aug 12;6(8). pii: e1000949.
- 35) Anzaldi, LL, and **Skaar, EP**. Overcoming the heme paradox: Heme toxicity and tolerance in bacterial pathogens. *Infection and Immunity*, 2010 Dec;78(12):4977-89.
- 36) Pishchany, G, Torres, VJ, Krauss, J, Crowe, J, McCoy, A, **Skaar, EP**. Specificity for human hemoglobin enhances *Staphylococcus aureus* virulence. *Cell Host and Microbe*, 2010 Dec 16;8(6):544-50.
- 37) Olson, P, Morrison, J, Anderson, KL, Reniere, ML, **Skaar EP**. Dunman P, Small molecule inhibitors of *Staphylococcus aureus* RnpA mediated RNA degradation exhibit antimicrobial activity and attenuate pathogenesis. *PLoS Pathogens*, 2011 Feb 10;7(2):e1001287.
- 38) Grosseohme N, Kehl-Fie TE, Ma Z, Adams KW, Cowart DM, Scott RA, **Skaar EP***, Geidroc DP*. Control of copper resistance and inorganic sulfur metabolism by paralogous regulators in *Staphylococcus aureus*. *The Journal of Biological Chemistry*, 2011 Feb 21 epub.
***Co-corresponding authors**
- 39) Reniere, ML, Haley, KP, **Skaar, EP**. The flexible loop of *Staphylococcus aureus* IsdG is required for its degradation in the absence of heme. *Biochemistry*, 2011 Aug 9;50(31):6730-7.
- 40) Haley KT, Janson, EM, Heilbronner, S, Foster, TJ, **Skaar, EP**. *Staphylococcus lugdunensis* IsdG liberates iron from host heme. *Journal of Bacteriology*, 2011 Sep;193(18):4749-57.
- 41) Hammer, ND, and **Skaar, EP**. Iron acquisition in the pathogenic staphylococci. *Annual Reviews of Microbiology*, 2011 Oct 13;65:129-47.
- 42) Anzaldi, LL, and **Skaar, EP**. The evolution of a superbug: how *Staphylococcus aureus* overcomes its unique susceptibility to polyamines. *Molecular Microbiology*. 2011 Oct;82(1):1-3.
- 43) Wakeman CA, **Skaar EP**. Metalloregulation of Gram-positive pathogen physiology. *Current Opinions in Microbiology*. 2012 Apr;15(2):169-74.

- 44) Kehl-Fie T, Chityat, S, Hood, MI, Damo, S, Restrepo, N, Garcia, C, Munro, KA, Chazin WJ, **Skaar, EP**. Nutrient metal sequestration by calprotectin inhibits bacterial superoxide defense, enhancing neutrophil killing of *Staphylococcus aureus*. *Cell Host and Microbe*, 2011 Aug 18;10(2):158-64.
- 45) Krishna Kumar, K, Jacques, DA, Pishchany, G, Caradoc-Davies, T, Spirig, T, Malmirchegini, GR, Langley, DB, Dickson, CF, Mackay, JP, Clubb, RT, **Skaar, EP**, Guss, JM, Gell, DA. The structural basis for hemoglobin capture by the *Staphylococcus aureus* cell-surface protein IsdH. *Journal of Biological Chemistry*. 2011 Nov 4;286(44):38439-47.
- 46) Attia AS, Schroeder KA, Seeley EH, Wilson KJ, Hammer ND, Colvin DC, Manier ML, Nicklay JJ, Rose KL, Gore JC, Caprioli RM, **Skaar EP**. Monitoring the inflammatory response to infection through the integration of MALDI IMS and MRI. *Cell Host and Microbe*. 2012, Jun 14;11(6):664-73.
- 47) Liu JZ, Jellbauer S, Poe AJ, Ton V, Pesciaroli M, Kehl-Fie TE, Restrepo NA, Hosking MP, Edwards RA, Battistoni A, Pasquali P, Lane TE, Chazin WJ, Vogl T, Roth J, **Skaar EP**, Raffatellu M. Zinc sequestration by the neutrophil protein calprotectin enhances *Salmonella* growth the inflamed gut. *Cell Host and Microbe*. 2012 Mar 15;11(3):227-39.
- 48) Schmitt J, Joost I, **Skaar EP**, Herrmann M, Bischoff M. Haemin represses the haemolytic activity of *Staphylococcus aureus* in an Sae-dependent manner. *Microbiology*. 2012 Oct;158(Pt 10):2619-31.
- 49) Hammer ND, **Skaar EP**. The impact of metal sequestration on *Staphylococcus aureus* metabolism. *Current Opinions in Microbiology*. 2012 Feb;15(1):10-4.
- 50) Haley KP, **Skaar EP**. A battle for iron: host sequestration and *Staphylococcus aureus* acquisition. *Microbes and Infection*. 2012 Mar;14(3):217-27.
- 51) Cassat JE, **Skaar EP**. Metal ion acquisition in *Staphylococcus aureus*: overcoming nutritional immunity. *Seminars in Immunopathology*. 2012 Mar;34(2):215-35.
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