Jeffrey Michael Boyd

Associate Professor
Dept. of Biochemistry and Microbiology
Rutgers, the State University of New Jersey
School of Environmental and Biological Sciences
76 Lipman Drive
New Brunswick, NJ 08901
(848) 932-5604
jeffboyd@SEBS.rutgers.edu
http://dbm.rutgers.edu/pages/Jeff_Boyd.html

A. Professional Preparation

Iowa State University
B. S., Microbiology, Immunology, and Preventive Medicine
8/1995-5/1999

Utah State University
Ph.D., Biochemistry
5/2000-8/2005

University of Wisconsin-Madison
Postdoctoral Fellow
8/2005-12/2009

University of Iowa
Postdoctoral Fellow
1/2010-6/2010

B. Appointments

July 2018-	Associate Professor Microbiology and Biochemistry	Rutgers University Dept. of Biochemistry and Microbiology New Brunswick, NJ
July 2010- June 2018	Assistant Professor Microbiology and Biochemistry	Rutgers University Dept. of Biochemistry and Microbiology New Brunswick, NJ
Jan. 2010- June 2010	Postdoctoral Research Fellow *Staphylococcus aureus* physiology and neutrophil interaction with Profs. W. Nauseef and A. Horswill	University of Iowa Inflammation Program Iowa City, IA
Sept. 2005- Dec. 2009	Postdoctoral Research Fellow Genetics and biochemistry of iron-sulfur cluster synthesis with Prof. Diana Downs	University of Wisconsin Dept. of Bacteriology Madison, WI

	Ph.D. Candidate	Utah State University
Aug. 2000- Aug. 2005	Biochemistry and physiology of bacterial ketone/ hydrocarbon metabolism with Prof. Scott Ensign	Chem and Biochem Logan, UT
	Research Assistant	Iowa State University
Sept. 1999- June 2000	Biochemistry and physiology of bacterial formaldehyde oxidation with Prof. Alan DiSpirito	Dept. Microbiology Ames, IA
	Research Undergraduate	Iowa State University
Aug. 1997- May 1999	Biochemistry and physiology of bacterial methane metabolism with Prof. Alan DiSpirito	Dept. Microbiology Ames, IA
	Research Undergraduate	Iowa State University
Aug. 1996- May 1997	Physiology of magnetotactic bacteria with Prof. Dennis Bazylinski	Dept. Microbiology Ames, IA

C. Funding / Resources Secured:

Current:

National Institute of Allergy and Infectious Diseases (NIH): Mechanisms of cellular respiration-dependent cell lysis and its impact on biofilm formation and disassembly in *Staphylococcus aureus*. Role: PI
$1,880,575; 7/2018-2023

National Science Foundation: Iron-sulfur cluster assembly in *Bacillus subtilis.* Role: PI
$1,033,667; 7/2018-2023

USDA multistate Hatch research grant. Mechanisms of bovine mastitis. Role: Co-PI
$5,000-10,000 annually

Johnson and Johnson Foundation: Mechanism of blue light killing of *Propionibacterium acnes*. Role: PI
$60,000; 2017-present

Johnson and Johnson Foundation: Effect of blue light on antibiotic resistant strains of *Propionibacterium acnes*. Role: PI
$40,000; 2018-present

Completed:

Cystic Fibrosis Foundation: *Staphylococcus aureus* cell lysis and biofilm modulation
Role: PI
$125,000 4/2018-2020

National Institutes of Health, Ruth L. Kirschstein postdoctoral training fellowship. 2006-2009

Busch Biomedical Grant, Rutgers University internal research grant. Role: PI
$50,000; 2011-2012.

NJAES SEED DNA sequencing grant. Role: PI
$8,000; 2014

Research contract with consumer health products company. The role of tin and zinc in toxifying oral pathogenic bacteria. Role: PI
$145,740; 2015

Busch Biomedical Grant, Rutgers University internal research grant. Role: PI
$25,000; 2015-2016

Johnson and Johnson Foundation: Role of blue light on the survival of *Propionibacterium acnes*. Role: PI
$45,000; 2016

Rutgers University: Compound library of all FDA approved drugs. Role: PI
Approximate value $5,000; 2016

D. Honors and Awards:

Rutgers University, School of Environmental and Biological Sciences, Research Excellence Award, 2019
New Jersey Chapter of American Society of Microbiology, Young Investigator Award, 2018
Howard Hughes Teaching Fellow, 2007
Ruth L. Kirschstein postdoctoral training fellowship, NIH, 2007
Phi Kappa Phi honor society, 2006
Utah State University Graduate Student Senate travel grant, 2006
Young Investigator Travel Grant, Gordon Research Conferences, 2006
Best paper presentation, Utah State Graduate Research Symposium, 2005
Thomas F. Emery Research Scholar in Biochemistry Memorial Award, 2004
Young Investigator Travel Grant, Gordon Research Conferences, 2004
Utah State University Graduate Student Senate travel grant, 2004
D.A. Greenwood Memorial Award in Biochemistry, 2003

E. Peer Reviewed Publications (chronological order)

Manuscripts from #17 on were completed after joining the Rutgers faculty. I have underlined student/postdoctoral researchers that were under my tutelage at Rutgers.

1. Zahn J.A., Bergmann D.J., **Boyd J.M.**, Kunz R.C., and DiSpirito A.A. Membrane-associated quinoprotein formaldehyde dehydrogenase from *Methylococcus capsulatus* Bath. ***Journal of Bacteriology***. 2001 Dec;183(23):6832-40. PMID: 11698372

2. Choi D.W., Kunz R.C., Boyd E.S., Semrau J.D., Antholine W.E., Han J.I., Zahn J.A.**, Boyd J.M.**, de la Mora A.M., DiSpirito A.A. The membrane-associated methane monooxygenase (pMMO) and pMMO-NADH:quinone oxidoreductase complex from *Methylococcus capsulatus* Bath. ***Journal of Bacteriology***. 2003 Oct;185(19):5755-64. PMID: 13129946

3. Nocek B., **Boyd J.M.**, Ensign S.A., Peters J.W. Crystallization and preliminary X-ray analysis of an acetone carboxylase from *Xanthobacter autotrophicus* strain Py2. ***Acta. Crystallogr. D. Biol. Crystallogr***. 2004 Feb;60(Pt 2):385-7. PMID: 14747734

4. Clark D.A., **Boyd J.M**., and Ensign S.A. The stereoselectivity and catalytic properties of *Xanthobacter autotrophicus* 2-[(R)-2-Hydroxypropylthio]ethanesulfonate dehydrogenase are controlled by interactions between C-terminal arginine residues and the sulfonate of coenzyme M. ***Biochemistr****y*. 2004 Jun 1;43(21):6763-71. PMID: 15157110

5. **Boyd J.M.**, Ellsworth H., Ensign S.A. Bacterial acetone carboxylase is a manganese-dependent metalloenzyme. ***Journal of Biological Chemistry.*** 2004 Nov 5;279(45):46644-51. PMID: 15337755

6. **Boyd J.M***. and Ensign S.A. ATP Dependent enolization of acetone by acetone carboxylase from *Rhodobacter capsulatus*, ***Biochemistry***. 2005; 44(23): 8543-53. PMID: 15938645

**** Chosen as a faculty 1000 must-read.***

7. **Boyd J.M.** and Ensign S.A. Evidence for a metal-thiolate intermediate in alkyl group transfer from epoxypropane to coenzyme M and cooperative metal binding in epoxide-CoM transferase, ***Biochemistry***. 2005; 44(39): 13151-62. PMID: 16185083

8. **Boyd J.M**., Ellsworth A., and Ensign S.A. Characterization of 2-bromoethanesulfonate as a selective inhibitor of the coenzyme m-dependent pathway and enzymes of bacterial aliphatic epoxide metabolism. ***Journal of Bacteriology***. 2006 Dec;188(23):8062-9. PMID: 16997966

9. Dougherty M.J., **Boyd J.M.**, and Downs D.M. Inhibition of fructose-1,6-bisphosphatase by aminoimidazole carboxamide ribotide prevents growth of *Salmonella enterica* purH mutants on glycerol. ***Journal of Biological Chemistry*** 2006 Nov 10;281(45):33892-9. PMID: 16987812

10. **Boyd J.M.,** Lewis J.A, Escalante-Semerena J.C. and Downs D.M. *Salmonella enterica* requires ApbC function for growth on tricarballylate: Evidence of functional redundancy between ApbC and IscU. ***Journal of Bacteriology***. 2008 Jul; 190(13);4596-602. PMID: 18441067

11. **Boyd J.M.**, Pierik A.J., Netz D.J.A., Lill R., Downs D.M. Bacterial ApbC can bind and effectively transfer iron-sulfur clusters. ***Biochemistry***. 2008 Aug; 47(31):8195-202. PMID: 18616280

12. **Boyd J.M.** Sondelski J.L., Downs D.M., Bacterial ApbC has two biochemical activities that are required for *in vivo* function. ***Journal of Biological Chemistry*** 2009 Jan 2;284(1):110-8. PMID: 19001370

13. Lewis J.A., **Boyd J.M.**, Downs D.M., and Escalante-Semerena, J.C. Involvement of the Cra global regulatory protein in the expression of the *iscRSUA* operon revealed during studies of tricarballylate catabolism in *Salmonella enterica*. ***Journal of Bacteriology***. 2009 Apr; 191(7): 2069-2076. PMID: 19136587

14. **Boyd J.M.**, Drevland R.M., Downs D.M., and Graham D.E. Archael ApbC/Nbp35 homologs function as iron-sulfur cluster carrier proteins. ***Journal of Bacteriology***. 2009 Mar; 191(5): 1490-7. PMID: 19114487

15. **Boyd J.M.**, Clark D.D., Kofoed M.A. and Ensign S.A. Mechanism of inhibition of aliphatic epoxide carboxylation by the Coenzyme M analog 2-bromoethanesulfonate. ***Journal of Biological Chemistry.*** 2010 Aug; 285(33): 25232-42. PMID: 20551308

16. **Boyd J.M.**, Endrizzi J.A., Hamilton T.L., Christopherson, M.R., Downs, D.M., and Peters, J.W. FAD binding by ApbE protein from *Salmonella enterica*: a new class of FAD binding proteins. ***Journal of Bacteriology***. 2011 Feb;193(4):887-95. PMID: 21148731

17. **Boyd J.M.**, Teoh W.P., and Down, D.M., Decreased transport suppresses the growth defect of an *apbC* mutant on tricarballylate. ***Journal of Bacteriology***. 2012 Feb; 194(3):576-83. PMID: 22101844

18. Yu J., Madsen M.L., Carruthers M.D., Phillips G.J., Kavanaugh J.S., **Boyd J.M.**, Horswill A.R., Minion F.C. Analysis of autoinducer-2 quorum sensing in *Yersina pestis*. ***Infection and Immunity.*** 2013 Nov;81(11):4053-62. PMID: 24247266.

19. Price-Whelan A., Poon C.K., Benson M.A., Eidem T.T., Roux C.M., **Boyd J.M.**, Dunman P.M., Torres V.J., Krulwich T.A., Transcriptional profiling of *Staphylococcus aureus* during growth in 2 M NaCl leads to clarification of physiological roles for Kdp and Ktr K+ uptake systems. ***mBio*.** 2013 Aug 20; 4(4). PMID: 23963175.

20. Pang Y.Y., Schwartz J., **Boyd J.M.**, Horswill A.R., Nauseef W.M., Methionine sulfoxide reductases Protect against oxidative stress in *Staphylococcus aureus* encountering exogenous oxidants and human neutrophils. ***Journal of Innate Immunity.*** 2014;6(3):353-64. PMID: 24331053

21. Walker J.N., Spaulding A., Salgado-Pabón W., Schlievert P.M., **Boyd J.M.**, Horswill A.R., The *Staphylococcus aureus* ArlRS two-component system is a novel regulator of agglutination and pathogenesis. ***PLoS Pathogens***. 2013;9(12):e1003819. PMID: 24367264.

22. Perrineau M.M, Gross J., Zelzion E., Price D.C., **Boyd J.M.,** Bhattacharya D., Evolution of salt tolerance in a laboratory reared population of *Chlamydomonas reinhardtii*. ***Environmental Microbiology***. 2014 Jun;16(6):1755-66. PMID 24373049

23. Joska, T.M., Mashruwala A., **Boyd J.M.***, and Belden W.J.*, A universal cloning method based on yeast homologous recombination that is simple, efficient, and versatile. ***Journal of Microbial Methods*.** 2014 May;100:46-51. PMID: 2441681

**** co-corresponding authors***

24. White M.J., **Boyd J.M.**, Horswill A.R., Nauseef W.M., Phosphatidylinositol-specific phospholipase C contributes to survival of *Staphylococcus aureus* USA300 in human blood and neutrophils. ***Infection and Immunity.*** 2014 Apr;82(4):1559-71. PMID: 24452683

25. Perrineau M.M, Gross J., Zelzion E., Price D.C. Levitan O., **Boyd J.M.,** Bhattacharya D., Using natural selection to explore the adaptive potential of *Chlamydomonas reinharditii*. ***PLoS One*****.** 2014 Mar 21;9(3):e92533. PMID: 24658261.

26. Boyd E.S., Thomas K.M., Dai Y., **Boyd J.M.*,** Outten F.W.* Interplay between oxygen and Fe-S cluster biogenesis: Insights from the Suf pathway. ***Biochemistry*****.** 2014 Sep 23;53(37):5834-47. PMID: 25153801

**** co-corresponding authors***

27. Mashruwala A.A., Pang Y.Y., Rosario-Cruz Z., Chahal H.K., Benson M.A., Anzaldi-Mike L.L., Skaar E.P., Torres V.J., Nauseef W.M., **Boyd J.M**. Nfu facilitates that maturation of iron-sulfur proteins and participates in virulence in staphylococcus aureus. ***Molecular Microbiology.*** 2015 Feb;95(3):383-409. PMID: 25388433

28. Rosario-Cruz Z., Chahal H.K., Anzaldi-Mike L.L., Skaar E.P., and **Boyd J.M.** Bacillithiol has a role in Fe-S cluster biogenesis in *Staphylococcus aureus*. ***Molecular Microbiology.*** 2015 Oct;98(2):218-42. PMID: 26135358

29. Rosario-Cruz Z. and **Boyd J.M.** Physiological roles of bacillithiol in intracellular metal processing. ***Current Genet.*** 2016 Feb;62(1):59-65. PMID: 26259870

30. Mashruwala A.A., and **Boyd J.M.** *De novo* assembly of plasmids using yeast recombinational cloning. ***Methods in Molecular Biology.*** 2016; 1373:33-41. PMID: 26194707 Series editor Jeffery Bose.

31. Mashruwala A.A., Bhatt S., Poudel S., Boyd E.S., and **Boyd J.M.** The DUF59 containing protein SufT is involved in the maturation of iron-sulfur (FeS) proteins during conditions of high FeS cofactor demand in *Staphylococcus aureus*. ***PLoS Genetics***. 2016 Aug 12;12(8):e1006233. PMID: 27517714

32. Choby J.E., Mike L.A., Mashruwala A.A., Dutter B.F., Dunman P.M., Sulikowski G.A., **Boyd J.M.***, and Skaar E.P.* A small-molecule inhibitor of iron-sulfur cluster assembly uncovers a link between virulence regulation and metabolism in *Staphylococcus aureus*. ***Cell Chemical Biology.*** 2016 Nov 17;23(11):1351-1361. PMID:27773628

**** co-corresponding authors***

33. Mashruwala A.A., Roberts C., Bhatt S., May K.L., Carroll R.K., Shaw L.N., **Boyd J.M.** *Staphylococcus aureus* SufT: an essential iron-sulfur cluster assembly factor in cells experiencing a high-demand for lipoic acid. ***Molecular Microbiology.*** 2016 Dec;102(6):1099-1119. PMID: 27671355

34. Mashruwala, A. A., **Boyd J.M**. The *Staphylococcus aureus* SrrAB regulatory system modulates hydrogen peroxide resistance factors, which imparts protection to aconitase during aerobic growth. ***PLoS One.*** 2017 Jan 18;12(1):e0170283. PMID: 28099473

35. Mashruwala A.A., Van de Guchte A., **Boyd J.M.** Impaired respiration elicits SrrAB-dependent programmed cell lysis and biofilm formation in *Staphylococcus aureus*. ***eLife.*** 2017 Feb 21;6. PMID: 28221135

36. Roberts C., Al-Tameemi H.M., Mashruwala A.A., Rosario-Cruz Z., Chauhan U., Sause, W., Torres V.J., and **Boyd J.M**. The Suf iron-sulfur cluster biosynthetic system is essential

for *Staphylococcus aureus* viability and defective Fe-S cluster biosynthesis results in broad metabolic defects and decreased survival in neutrophils. ***Infection and Immunity.*** 2017 May 23;85(6). PMID: 28320837

37. Tanner A.W., Carabetta V.J., Martinie R.J., Mashruwala A.A., **Boyd J.M.**, Krebs C., Dubnau D., The RicAFT (YmcA-YlbF-YaaT) complex carries two $[4Fe\text{-}4S]^{2+}$ clusters and may respond to redox changes. ***Molecular Microbiology.*** 2017 Jun;104(5):837-850. PMID: 28295778

38. Mashruwala A.A., Gries, C.M., Scherr T.D., Kielian, T., **Boyd J.M.** SaeRS is responsive to the cellular respiratory status and regulates fermentative biofilm formation in *Staphylococcus aureus*. ***Infection and Immunity.*** 2017 Jun. PMID: 28507069

39. Mashruwala A.A., **Boyd J.M.** Investigating the role(s) of SufT and the domain of unknown function 59 (DUF59) in the maturation of iron-sulfur proteins. ***Current Genet.*** 2017 Jun. PMID: 28589301

40. Norambuena J., Wang Y., Hanson T., **Boyd J.M.**, Barkay T. Low molecular weight thiols and thioredoxins are important players in Hg(II) tolerance for *Thermus thermophilus* HB27. ***Applied and Environmental Microbiology.*** 2017 Nov. PMID: 29150497

***Chosen as a spotlight article by the editor**

41. Harper L., Balasubramania D., Ohneck E.A., Sause W.E., Chapman J., Mejia-Sosa B., Lhakhang T., Heguy A., Tsirigos A., Ueberheide B., **Boyd J.M.**, Lun D.S., Torres V.J., *Staphylococcus aureus* responds to the central metabolite pyruvate to regulate virulence and pathogenicity. ***mBio***. 2018 Jan. PMID: 29362239

42. Dubovoy V., Ganti A., Zhang T., Al-Tameemi H.M., Cerezo J., **Boyd J.M.***, Asefa T.* One-pot hydrothermal synthesis of benzalkonium-templated mesoporous silica antimicrobial agents. ***Journal of the American Chemical Society.*** 2018 Oct. PMID: 30260224

**** co-corresponding authors***

43. Rosario-Cruz Z., Eletsky A., Daigham N.S., Al-Tameemi H.M., Swapna G.V.T., Szyperski T., Montelione G.T., and **Boyd J.M.*** The *copBL* operon protects *Staphylococcus aureus* from copper toxicity: CbI is an extracellular membrane-associated copper-binding protein. ***Journal of Biological Chemistry.*** 2019 Jan. PMID: 30655293

**** Chosen by JBC as a must-read article***
**** Selected for a special virtual issue focusing on antibiotic activities and mechanisms of resistance.***
****Selected as one of the five must read JBC articles from 2019.***

44. Norambuena J., Hanson T., Barkay T., **Boyd J.M.**, Superoxide dismutase and pseudocatalase increase tolerance to Hg(II) in *Thermus thermophilus* HB27 by maintaining the reduced bacillithiol pool. accepted in ***mBio*.** 2019 Apr. PMID: 30940703

45. Bezar I.F., Mashruwala A.A., **Boyd J.M.**, Stock A.M., Drug-like Fragments Inhibit *agr*-Mediated Virulence Expression in *Staphylococcus aureus*. ***Nature Scientific Reports.*** 2019 May PMID: 31043623

46. **Boyd J.M.**, Dunn K., Mohammed N., Desai, P., Purdy M., Li W.H., Fourre T., Miksa D., Crane S., Southall M., Fassih A., *Propionibacterium acnes* Susceptibility to Low-Level 449 nm Blue Light. ***Lasers in Surgery & Medicine.*** 2019 March. PMID: 30919507

47. Austin C.M., Garabaglu S., Krute C.N., Ridder M.J., Seawell N.A., Markiewicz M.A., **Boyd J.M.**, Bose J.L. Contribution of YjbIH to virulence factor expression and host colonization in *Staphylococcus aureus*. ***Infection and Immunity.*** 2019 March. PMID: 30885928

48. Mashruwala A.A., Eilers B.J., Fuchs A., Earle C.A., Van De Guchte A., Copié V., **Boyd J.M.** The ClpCP complex modulates respiratory metabolism in *Staphylococcus aureus* and is regulated in a SrrAB-dependent manner. ***Journal of Bacteriology.*** 2019 July. PMID: 31109995

49. Ferrer-Gonzalez E., Fujita J., Yoshizawa T., Nelson J., Pilch A., Hillman E., Ozawa M., Kuroda N., Al-Tameemi H., **Boyd J.M.**, LaVoie E., Matsumura H., and Pilch D. Structure-Guided Design of a Fluorescent Probe for the Visualization of FtsZ in Clinically Important Gram-Positive and Gram-Negative Bacterial Pathogens. ***Nature Scientific Reports***, 2019 PMID: 31882782

50. Norambuena J., Miller M., **Boyd J.M.***, Barkay T.*, Expression and regulation of the *mer* operon in *Thermus thermophilus.* ***Environmental Microbiology***, 2020 PMID: 32090420

**** co-corresponding authors***

51. Rudra, P., **Boyd J.M.** Metabolic control of virulence factor production in *Staphylococcus aureus*. ***Current Opinion in Microbiology***, 2020 PMID: 32388086.

52. Tiwari N., López-Redondo M., Miguel-Romero L., Kulhankova K., Cahill M.P., Al-Tameemi H., Herfst C.A., Kirby J.R., **Boyd J.M.**, McCormick J.K., Salgado-Pabón W., Marina A., Schlievert P.M., Fuentes E.J., The SrrAB two-component system regulates *Staphylococcus aureus* pathogenicity through redox sensitive cysteines. ***Proceedings of the National Academy of Sciences*****,** 2020 PMID: 32354997.

53. Price E.E., **Boyd J.M.**, Genetic control of metal ion homeostasis in *Staphylococcus aureus*. ***Trends in Microbiology***, 2020 PMID: 32381454.

54. Dubovoy V., Nawrocki S., Verma G., Wojtas L., Desi P., Al-Tameemi H., Brinzari T.V., Stranick M., Chen D., Xu S., Ma S., **Boyd J.M.**, Asefa T., Pan L., Synthesis, characterization, and investigation of the antimicrobial activity of cetylpyridinium tetrachlorozincate. ***ACS Omega***, 2020 PMID: 32426592.

55. Dubovoy V., Desai P., Hao Z., Cheng C., Verma G., Wojtas L., Brinzari T.V., **Boyd J.M.**, Ma S., Asefa T., Pan L., Synthesis, Characterization, and Antimicrobial Investigation of a Novel Chlorhexidine Cyclamate Complex. ***ACS Crystal Design and Growth,*** 2020 doi.10.1021/acs.cgd.0c00107

56. Carabetta, V.J., Esquilin-Lebron K., Zelzion E., **Boyd J.M.,** Genetic approaches to uncover gene products involved in iron-sulfur protein maturation: High throughput genomic screening using transposon-sequencing. ***Methods in Molecular Biology*****,** 2020 accepted.

57. Al-Tameemi H., Beavers W.N., Norambuena-Morales J., Skaar E., **Boyd J.M.** *Staphylococcus aureus* lacking a functional MntABC manganese import system have increased resistance to copper. ***Molecular Microbiology*****.** 2020 accepted.

58. Juttukonda L.J., Beavers W.N., Horning K.J., Unsihuay D., Horvath D.J., Kim K., Weiss A., Pishchany G., Al-Tameemi H., **Boyd J.M.**, Sulikowski G., Bowman E.B., and Skaar E.P. A small molecule modulator of metal homeostasis is toxic to Gram-positive pathogens. ***mBio***. 2020 accepted.

Additional Publications

1. Chahal H.K., **Boyd J.M.***, and Outten F.W.* Iron-sulfur cluster biogenesis in Archaea and Bacteria. Book Chapter in ***Metals and Cells***. 2012. Series editors Robert Scott and Valerie Culotta.

**** co-corresponding authors***

2. Eveleigh D.E., Häggblom M., and **Boyd J.M.** The early challenges of antibiotic discovery. ***Microbe.*** 2015 Nov; 10 (11): 449-450.

Publications in Revision

Kaul M., Ferrer-González E., Mark L., Al-Tameemi H.M., Parhi A.K., **Boyd J.M.**, LaVoie E.J., Pilch D.S., Combination with the FtsZ-Targeting Prodrug TXA709 Repurposes Oxacillin for Use in the Treatment of MRSA Infections. In revision for ***ACS Chemical Biology.***

Patel J.S., Al-Temeemi H., Perryman A.L., Wang X., Occi J., Russo R., Park S., Zimmerman M., Ho H.P., Perlin D.S., Dartois V., Connell N., Ekins S., Kumar P., **Boyd J.M.***, Freundlich J.S.* The Platforms of Naïve Bayesian Modeling and Intrabacterial Metabolism Applied to Drug-Resistant *Staphylococcus aureu*s. In revision for ***eLife.***

**** co-corresponding authors***

Kim G.L., Hooven T., Norambuena-Morales J., **Boyd J.M.**, Parker D., Genome wide screen of *Staphylococcus aureus* using Tn-seq identifies genes important for causing pneumonia. In revision for ***Nature Microbiology.***

Publications in Review

Desai P., Mohammed N., **Boyd J.M.**, Antibiotic resistant *Propionibacterium acnes* are susceptible to low-intensity 449 nm blue light. ***Photobiomodulation, Photomedicine, and Laser Surgery.***

F. Patents

Benzalkonium-Embedded Mesostructured Silica Compositions and uses of the same. Provisional patent application no.: 62/665,146 filed: May 1, 2018, Assignors: Tewodros Asefa, Viktor Dubovoy, Anjani Ganti, Jeffrey M. Boyd.

G. Invited presentations (chronological order)

Evidence for ATP dependent acetone enolization by acetone carboxylase isolated from *Rhodobacter capsulatus* Strain B10. *American Chemical Society Northwest/Rocky mountain regional meeting,* Logan, Utah, 2004.

Hydrocarbon metabolism by *Xanthobacter autotrophicus*. Dept. of Bacteriology, University of Wisconsin-Madison. 2005.

Dissecting metabolic complexity using *Salmonella enterica* as a model system. Dept. of Bacteriology, University of Wisconsin-Madison. 2007.

Biochemical analysis of proteins involved in [Fe-S] cluster metabolism in *Salmonella enterica*. *International Conference on Fe-S Cluster Biogenesis and Regulation*. Grenoble, France. 2007.

Thiamine biosynthesis, iron-sulfur cluster biosynthesis, and ORFs of unknown function; addressing metabolic complexity in *Salmonella enterica*. Institut für Zytobiologie und Zytopathologie. Philipps Universität. Marburg, Germany. 2007.

Thiamine biosynthesis, iron-sulfur cluster biosynthesis, and ORFs of unknown function; addressing metabolic complexity in *Salmonella enterica*. Thermal Biology Institute. Montana State University. Bozeman, MT. 2008.

Thiamine, tricarballylate, iron-sulfur clusters, and ORFs of unknown function: using *Salmonella enterica* to dissect metabolic complexity. Dept. of Microbiology and Biochemistry. Rutgers University. New Brunswick, NJ. 2009.

Thiamine, tricarballylate, iron-sulfur clusters, and ORFs of unknown function: using *Salmonella enterica* to dissect metabolic complexity. Inflammation Program and Dept. of Internal Medicine, University of Iowa, Iowa City, IA. 2010.

An Enemy at the Gates: Investigating the *Staphylococcoccus aureus* human neutrophil interface. Rutgers University Microbiology Symposium. Rutgers University. New Brunswick, NJ. 2011.

Methicillin-Resistant *Staphylococcus aureus*. Biology Seminar Series. Fairleigh Dickinson University. Teaneck, NJ. 2011.

Intracellular iron metabolism in *Staphylococcus aureus*. *Eastern meeting on iron-sulfur proteins*. Blacksburg, VA. 2012.

Iron-sulfur cluster metabolism and *Staphylococcus aureus* virulence. *International Conference on Gram-Positive Pathogens*. Omaha, NE. 2012.

Intracellular iron metabolism as an antimicrobial target. Symposium for the 60th anniversary of Selman Waksman Nobel Prize. Rutgers University. 2012.

Iron-sulfur cluster metabolism in *Staphylococcus aureus. International Conference on Fe-S Cluster Biogenesis and Regulation*. University of South Carolina. Columbia, SC. 2013.

Investigating the mechanisms of intracellular iron metabolism in an environmental isolate. Fermentation Club seminar series. Dept. of Biochemistry and Microbiology. Rutgers University. 2013.

A role for bacillithiol in iron-sulfur cluster metabolism in *Staphylococcus aureus*. *Eastern meeting on iron-sulfur proteins*. Athens, GA. 2013.

Investigating the mechanisms of intracellular iron metabolism in *Staphylococcus aureus*. University of Wisconsin, Dept. of Bacteriology. Madison, WI. 2013.

Investigating the mechanisms of intracellular iron metabolism in *Staphylococcus aureus*. Public Heath Research Institute, New Jersey School of Medicine and Dentistry. Newark, NJ. 2013.

Cellular respiration as a trigger for multicellular behavior in *Staphylococcus aureus*. *Meeting on the Molecular Genetics of Bacteria and Phages*, Madison, WI. 2014.

Cellular respiration as a trigger for multicellular behavior in *Staphylococcus aureus*. *International Conference on Gram Positive Pathogens*, Omaha, NE. 2014.

Defective respiration as a trigger for programed cell death in *Staphylococcus aureus*. Dept. of Molecular Biology and Biochemistry. Rutgers University. Piscataway, NJ. 2015.

Cellular respiration as a trigger for multicellular behavior in *Staphylococcus aureus*. University of Delaware. Chemistry and Biology interface seminar series. Dept. of Chemistry and Biochemistry. Newark, DE. 2015.

Iron-sulfur cluster biogenesis in *Staphylococcus aureus*: a potential antimicrobial target? *International conference on Fe-S cluster biogenesis and regulation*, Bergamo, Italy. 2015.

Iron-sulfur cluster biogenesis in *Staphylococcus aureus*: a potential antimicrobial target? University of Kaiserslautern. Dept. of Biochemistry. Kaiserslautern, Germany. 2015.

Cellular respiration as a trigger for biofilm formation in *Staphylococcus aureus*. Montana State University. Dept. of Microbiology. Bozeman, MT. 2015.

Iron-sulfur cluster biogenesis as a potential antimicrobial target. Dept. of Chemistry. Wake Forest University. Winston-Salem, NC. 2015

Towards a holistic understanding of Fe-S cluster biogenesis in gram-positive bacteria. *Eastern meeting on iron-sulfur proteins*. Winston-Salem, NC. 2015.

Targeting essential cellular processes and behavior modification with antimicrobial therapy. *Meeting of the New Jersey Antimicrobial Resistance Working Group*. Piscataway, NJ. 2015.

Re-examining the mechanisms of copper detoxification in *Staphylococcus aureus. Rutgers Microbiology Symposium.* Rutgers University, New Brunswick, NJ. 2016.

Mechanisms of methicillin and metal resistance in *Staphylococcus aureus*. *Mechanisms of Antimicrobial Resistance workshop*. Center for Integrative Proteomics Research. Rutgers University, Piscataway, NJ. 2017.

Staphylococcal metabolism; Fueling the future of antimicrobial discovery. I served as the Discussion leader. *Gordon Research Conference on Staphylococcal diseases.* 2017. Waterville Valley, NH.

Adventures in staphylococcal biology: what we have discovered and where we are going. Dept. of Biochemistry and Microbiology. Rutgers University, New Brunswick, NJ 9/2017. Promotion seminar.

Targeting cellular respiration and metal ion homeostasis to prevent or control staphylococcal infections. Department of Microbiology and immunology. Dartmouth University, 10/2017.

Defective respiration as a trigger for programed cell lysis in *Staphylococcus aureus*. International conference on Microbial Respiration and its Regulation. Saint-Tropez, France, 3/2018.

Dissecting *Staphylococcus aureus* physiology to decrease disease burden. University of Wisconsin-Madison, Dept. of Bacteriology, Madison, WI 11/2018

Dissecting *Staphylococcus aureus* physiology to decrease disease burden. Biology department. Georgetown University, Washington, DC, 11/2018.

Dissecting *Staphylococcus aureus* physiology to decrease disease burden. Theobald smith society-New Jersey Branch of ASM. 11/2018.

Metal ion homeostasis in *Staphylococcus aureus*. Staphylococcal Diseases Gordon Conference, Castelldefels, Spain, 8/2019

The role of Bacillithiol in metal ion homeostasis. International meeting on: Thiol-based switches and redox regulation - from microbes to men Sant Feliu de Guixols Spain, 9/2019

Metal ion homeostasis in *Staphylococcus aureus*. Dept. of Cell Biology, Microbiology, and Molecular Biology, University of South Florida 11/2019.

Defective respiration as a trigger for programed cell lysis in *Staphylococcus aureus*. University of Kansas Medical Center, Dept of Microbiology, Molecular Genetics and Immunology, Kansas City, MO, 10/2019

Parenting as a faculty member: one perspective. General Meeting of the American Society of Microbiology, Chicago IL,. Virtual meeting 7/2020

Forthcoming Presentations

A role for YlaN in iron homeostasis in Gram-positive bacteria. International conference on iron-sulfur proteins—Biogenesis, Regulation, and Function. Sainte Maxime, France. Scheduled for 4/2020, but postponed to COVID-19.

H. Research Conference Presentations (chronological order) (Names of contributors that were under my tutelage at Rutgers are underlined.)

Poster. Boyd, J.M., Kunz, R. C., and DiSpirito, A. A. Membrane-associated formaldehyde dehydrogenase from *Methylococcus capsulatus* Bath. ***Regional Meeting of the American Society of Microbiology,*** Ames, IA*,* 1999.

Poster. Boyd, J.M., Larsen, R.A., and Ensign, S.A. Cloning and characterization of an aldehyde dehydrogenase required for growth on alkenes *from Xanthobacter autotrophicus*. ***General Meeting of the American Society of Microbiology,*** Salt Lake City, UT*,* 2002.

Poster. Boyd, J.M. and Ensign, S.A. Evidence for ATP dependent acetone enolization by acetone carboxylase isolated from *Rhodobacter capsulatus* Strain B10. ***Gordon Research Conference on the Molecular Basis of Microbial One-Carbon Metabolism,*** 2004*.*

Poster. **Boyd, J.M.** and Ensign, S.A. Evidence for ATP dependent acetone enolization by acetone carboxylase isolated from *Rhodobacter capsulatus* Strain B10. ***American Chemical Society Northwest/Rocky mountain regional meeting,*** Logan, Utah, 2004.

Paper. Boyd, J.M.* Evidence for a thiolate-Zn intermediate in alkyl group transfer to coenzyme M and cooperative metal binding in *Xanthobacter autotrophicus* Strain Py2 epoxide-CoM transferase. ***Utah State University Graduate Research Symposium***, Logan, Utah, 2005

**** Awarded best paper presentation.***

Poster. **Boyd, J.M.** Sondelski, J., and Downs, D.M. Biochemical analysis of proteins involved in Fe-S cluster metabolism in *Salmonella enterica*. ***Gordon Research Conference on Iron-Sulfur Enzymes,*** 2006*.*

Poster. **Boyd, J.M.** and Downs, D.M. Biochemical analysis of proteins involved in Fe-S cluster metabolism in *Salmonella enterica*. ***Kenneth Raper Symposium*** *on microbiological research,* Madison, WI, 2006*.*

Poster. Boyd, J.M. and Downs, D.M. Biochemical analysis of proteins involved in Fe-S cluster metabolism in *Salmonella enterica*. ***Iron-Sulfur cluster biogenesis and regulation meeting***, Grenoble, France, 2007.

Poster. **Boyd, J.M.** and Downs, D.M. Biochemical analysis of proteins involved in Fe-S cluster metabolism in *Salmonella enterica*. ***Kenneth Raper Symposium*** *on microbiological research,* Madison, WI, 2007*.*

Poster. Boyd, J.M., Teoh, W.P., and Downs, D.M. Tricarballylate metabolism as a tool to probe microbial iron-sulfur cluster metabolism. ***Gordon Research Conference on Iron-Sulfur Enzymes,*** 2008*.*

Poster. **Boyd, J.M.**, Teoh, W.P., and Downs, D.M. Tricarballylate metabolism as a tool to probe microbial iron-sulfur cluster metabolism. ***Kenneth Raper Symposium*** *on microbiological research,* Madison, WI, 2008.

Poster. **Boyd, J.M.**, and Downs, D.M. Investigating metabolic integration using a bacterial model system. ***Steenbock Symposium:*** *Synthetic Genes to Synthetic Life.* Madison, WI, 2009.

Poster. **Boyd, J.M.**, and Downs, D.M. Genetic and biochemical studies of proposed intermediate [Fe-S] cluster carriers. ***Iron-Sulfur cluster biogenesis and regulation*** *meeting*. University of Georgia, Athens, GA, 2009.

Poster. **Boyd, J.M.***, Pace, A.M. and Downs, D.M. Investigating metabolic integration using a bacterial model system. ***Kenneth Raper Symposium*** *on microbiological research,* Madison, WI, 2009.

Poster. Mashruwala A., and **Boyd, J.M.** Investigating two-component regulation in *Staphylococcus aureus*. ***Rutgers Microbiology Symposium.*** Rutgers University. New Brunswick, NJ, 2011.

Paper. Boyd, J.M., Mashruwala, A., Pang, Y.Y., Nauseef, W., Torres, V. An Enemy at the Gates: Investigating the *Staphylococococcus aureus* human neutrophil Interface. ***Rutgers Microbiology Symposium.*** Rutgers University. New Brunswick, NJ, 2011.

Paper. Boyd, J.M., Mashruwala, A., Pang, Y.Y., Nauseef, W., Torres, V. Iron-sulfur cluster metabolism and *Staphylococcus aureus* virulence. ***Wind River Conference on Prokaryotic Biology.*** Estes Park, CO, 2011.

Poster. Boyd, J.M., Mashruwala, A., Pang, Y.Y., Nauseef, W., Torres, V. Iron-sulfur cluster metabolism and *Staphylococcus aureus* virulence. ***International Conference on Iron-Sulfur Cluster Biogenesis and Regulation***. Cambridge, U.K., 2011.

Poster. Boyd, J.M., Mashruwala, A.A., Bhatt, S., Pang, Y.Y., Benson, M., Nauseef, W., Torres, V. Iron-sulfur cluster metabolism and *Staphylococcus aureus* virulence. ***Gordon Research Conference on Iron-Sulfur enzymes***. Mount Holyoke College, MA, 2012.

Paper. Boyd, J.M. Mashruwala, A.A., Bhatt, S. Intracellular iron metabolism in *Staphylococcus aureus*. ***Eastern Meeting on Iron-Sulfur Proteins*****.** Blacksburg, VA, 2012.

Paper. Boyd, J.M., Mashruwala, A.A., Pang, Y.Y., Benson M., Nauseef, W., Torres, V. Iron-sulfur cluster metabolism and *Staphylococcus aureus* virulence. ***International Conference on Gram-Positive Pathogens*****.** Omaha, NE, 2012.

Poster. Mashruwala A.A. and **Boyd, J.M.** Involvement of the staphylococcal respiratory regulatory system (SrrAB) in the oxidative stress response of *Staphylococcus aureus*. ***International Conference on Gram-Positive Pathogens*****.** Omaha, NE, 2012.

Poster. Walker JN, Meyer S., **Boyd J.M.**, Voyich J.M. Horswill A.R. ArlRS Regulation of Agglutination and Pathogenesis in Methicillin-resistant *Staphylococcus aureus.* ***International Conference on Gram-Positive Pathogens*****.** Omaha, NE, 2012

Poster. White M.J., **Boyd J.M.**, Horswill A.R., Nauseef W.M. The purative *Staphylococcus*

aureus virulence factor, PI-PLC, is responsive to oxidative stress. ***International Conference on Gram-Positive Pathogens*****.** Omaha, NE, 2012.

Poster. Bhatt S.K., **Boyd J.M.** The staphylococcus SufT protein is involved in iron-sulfur cluster metabolism**.** ***Rutgers Microbiology Symposium.*** Rutgers University. New Brunswick, NJ, 2013.

Poster. Mashruwala A.A. and **Boyd J.M.** The staphylococcal respiratory regulatory system (SrrAB) is involved in the *Staphylococcus aureus* oxidative stress response. ***Rutgers Microbiology Symposium.*** Rutgers University. New Brunswick, NJ, 2013.

Poster. Rosario-Cruz Z.E., Anzaldi-Mike L., Skaar E., and **Boyd J.M.** Studying the role of the low-molecular-weight thiol bacillithiol in trace metal metabolism in *Staphylococcus aureus.* ***Rutgers Microbiology Symposium.*** Rutgers University. New Brunswick, NJ, 2013.

Paper. Rosario-Cruz Z.E., Anzaldi-Mike L., Skaar E., and **Boyd J.M.** Studying the role of the low-molecular-weight thiol bacillithiol in trace metal metabolism in *Staphylococcus aureus.* ***Northeastern Microbiologists Meeting*** (NEMPET), Blue Mountain Lake, NY, 2013.

Poster. Rosario-Cruz Z.*, Anzaldi-Mike L., Skaar E., and **Boyd J.M.** Studying the role of the low-molecular-weight thiol bacillithiol in trace metal metabolism in *Staphylococcus aureus*. ***Rutgers Joint Molecular Biosciences Graduate Student Annual Symposium***. Rutgers University, Piscataway, NJ, 2013.

**** Awarded best student poster***

Poster. Mashruwala A.A. and **Boyd J.M.** The staphylococcal respiratory regulatory system (SrrAB) is involved in the *Staphylococcus aureus* oxidative stress response. ***Gordon Research Conference on Staphylococcal Diseases***. Waterville Valley, NH, 2013.

Poster. Boyd J.M. Mashruwala A.A., Pang Y.Y., Bhatt S., Rozario-Cruz Z., Benson M.A., Anzaldi A., Skaar E., Torres V.J., Nauseef W.M. Iron-sulfur cluster metabolism and *Staphylococcus aureus* virulence. ***Gordon Research Conference on Staphylococcal Diseases*****.** Waterville Valley, NH, 2013.

Paper. Boyd J.M., Mashruwala A.A. The staphylococcal respiratory regulatory system (SrrAB) is involved in the *Staphylococcus aureus* oxidative stress response. ***Molecular Genetics of Bacteria and Phage Meeting***. Madison, WI, 2013.

Poster. Mashruwala A.A., **Boyd J.M.** Cellular respiration as a trigger for multicellular behavior in *Staphylococcus aureus*. ***International Meeting on Gram-Positive Pathogens***. Omaha, NE, 2014.

Poster. Tanner A., Carabetta V., Mashruwala A.A., **Boyd J.M.**, and Dubnau D. Stimulating the Phosphorelay Through Redox: A Complex of Proteins That Control Development in *Bacillus subtilis.* ***General Meeting of the American Society of Microbiology*****.** Boston, MA, 2014.

Paper. Rosario-Cruz Z., Anzaldi-Mike, L., Skaar, E., and **Boyd J.M.** In vivo evidence suggesting a role for bacillithiol in iron-sulfur cluster metabolism in *Staphylococcus aureus.* ***Rutgers Joint Molecular Biosciences Graduate Student Symposium.*** New Brunswick,

NJ, 2014.

Poster. Rosario-Cruz Z.*, Anzaldi-Mike, L., Skaar, E., and **Boyd J.M.** Investigating the role of Bacillithiol in iron-sulfur cluster metabolism in *Staphylococcus aureus*. ***General Meeting of the American Society of Microbiology*****.** Boston, MA, 2014.

**** Awarded outstanding student poster (1 of 40 posters chosen out of approx. 3000 entries)***

Poster. Rosario-Cruz Z.*, Anzaldi-Mike, L., Skaar, E., and **Boyd J.M.** Investigating the role of Bacillithiol in iron-sulfur cluster metabolism in *Staphylococcus aureus*. ***American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society), New Brunswick, NJ, 2014.

**** Awarded best student poster***

Poster. Mashruwala A.A.*, **Boyd J.M.** Cellular respiration as a trigger for multicellular behavior in *Staphylococcus aureus*. ***Rutgers Microbiology Symposium***. Rutgers University. New Brunswick, NJ, 2015.

**** Awarded best student poster***

Poster. Mashruwala A.A., Jasim H., **Boyd J.M.** TsrKR is required for thermal homeostasis in *Staphylococcus aureus*. ***Rutgers Microbiology Symposium***. Rutgers University. New Brunswick, NJ, 2015.

Poster. Rosario-Cruz Z. and **Boyd J.M.** Copper homeostasis in *Staphylococcus aureus*. ***Rutgers Microbiology Symposium***. Rutgers University. New Brunswick, NJ, 2015.

Paper. Mashruwala A.A., and **Boyd J.M.** Cellular respiration as a trigger for programmed cell death and biofilm formation in *Staphylococcus aureus*. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Rutgers University. New Brunswick, NJ, 2015.

Poster. Mashruwala A.A., van de Guchte A.*, **Boyd J.M.** Cellular respiration as a trigger for multicellular behavior in *Staphylococcus aureus*. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Rutgers University. New Brunswick, NJ, 2015.

**** Awarded best undergraduate student poster.***

Poster. Rosario-Cruz Z.*, Gandhi S., **Boyd J.M.** Copper homeostasis in Staphylococcus aureus. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Rutgers University, New Brunswick, NJ, 2015.

****Awarded best graduate student poster.***

Poster. Bernhardt C., Crane S., Barkay T., **Boyd J.M.** Inhibiting the Oral Biofilm with Zinc and Tin Compounds. ***Douglass Project's STEM Summer Research Poster Session.*** Rutgers University, New Brunswick, NJ, 2015.

Poster. Gandhi S.*, Rosario-Cruz Z., **Boyd J.M.** Copper homeostasis in *Staphylococcus aureus*. ***Aresty Undergraduate Research Symposium.*** Rutgers University, New Brunswick, NJ, 2015.

**** Received honorable mention for best presentation award.***

Poster. Mashruwala A.A., Earle C., van de Guchte A., and **Boyd J.M.** Regulation of Clp proteases by SrrAB in *Staphylococcus aureus*. ***Aresty Undergraduate Research Symposium.*** Rutgers University, Piscataway, NJ, 2015.

Poster. Mashruwala A.A., Earle C., van de Guchte A., and **Boyd J.M.** Regulation of Clp proteases by SrrAB in Staphylococcus aureus. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Rutgers University, New Brunswick, NJ, 2015.

Poster. Kocur M., Norambuena Morales J., Crane S., Barkay T., and **Boyd J.M.** Examining the effects of fluoride, tin, zinc, and zinc oxide on *Streptococcus mutans.* ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Rutgers University, New Brunswick, NJ, 2015.

Poster. Mashruwala A.A., van de Guchte A.*, **Boyd J.M.** Cellular respiration as a trigger for multicellular behavior in *Staphylococcus aureus*. ***William Patterson Undergraduate Research Symposium.*** Wayne, NJ, 2015.

**** Received honorable mention for best presentation award.***

Poster. Gandhi S., Rosario-Cruz Z., **Boyd J.M.** Copper homeostasis in Staphylococcus aureus. ***University of São Paulo International Symposium of Scientific Initiation***. São Paulo, Brazil, 2015.

Poster. Earle C., Mashruwala, A.A., van de Guchte A., **Boyd J.M.** Regulation of the Clp proteases by SrrAB in Staphylococcus aureus. ***University of São Paulo International Symposium of Scientific Initiation.*** São Paulo, Brazil, 2015.

Poster. Rosario-Cruz Z., Gandhi S., **Boyd J.M.** Copper homeostasis in Staphylococcus aureus. ***General Meeting of the American Society of Microbiology***. New Orleans, LA, 2015.

Poster. Rosario-Cruz Z., Gandhi S., **Boyd J.M.** Copper homeostasis in *Staphylococcus aureus*. ***Meeting of the New Jersey Antimicrobial Resistance Working Group***. Rutgers University, Piscataway, NJ, 2015.

Poster. Mashruwala A.A., van de Guchte A., **Boyd J.M.** Cellular respiration as a trigger for multicellular behavior in *Staphylococcus aureus*. ***Meeting of the New Jersey Antimicrobial Resistance Working Group***. Rutgers University, Piscataway, NJ, 2015.

Poster. Mashruwala A.A., van de Guchte A., Roberts C., Eveleigh D.E., **Boyd J.M.** Microbes, Miracles, Medicine—A history of antibiotics at Rutgers. ***Meeting of the New Jersey Antimicrobial Resistance Working Group***. Rutgers University, Piscataway, NJ, 2015.

Poster. Bernhardt C. and **Boyd J.M.** investigating of how zinc and tin inhibit *Streptococcus mutans*. ***Aresty Undergraduate Research Symposium***. Rutgers University, Piscataway, NJ, 2016.

Poster. Mashruwala A., Earle C., van de Guchte A., **Boyd J.M.** Regulation of Clp proteases by SrrAB in *Staphylococcus aureus*. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Rutgers University, New Brunswick, NJ, 2016.

Poster. Norambuena-Morales J., Hanson T., Wang Y., **Boyd J.M.** Barkay T. The *mer* operon of *Thermus thermophilus*: evidence for a direct link between low-molecular weight thiol metabolism and mercury stress. ***General Meeting of the International Society for Microbial Ecology (ISME)***. Montreal, Canada, 2016.

Poster. Roberts C., Al-Tameemi H.M., Mashruwala A.A., Rosario-Cruz Z. Sause W., Torres V., **Boyd J.M.** The Suf iron-sulfur cluster biosynthetic system is essential for *Staphylococcus aureus* viability and decreased Suf function results in global metabolic defects and decreased survival in human neutrophils. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Rutgers University, New Brunswick, NJ, 2016.

Poster. Al-Tameemi H.M.*, Mashruwala A.A., Tanner A.W., Carabetta, V.J., Dubnau, D., **Boyd J.M.** The YaaT, YlbF, and YmcA proteins are necessary for sporulation in *Bacillus subtilis*, but what are their functions in the non-sporulating bacterium *Staphylococcus aureus*? ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Rutgers University, New Brunswick, NJ, 2016.

**** Awarded prize for best poster presentation.***

Poster. Mashruwala A.A., Earle C., van de Guchte A., **Boyd J.M.** Regulation of Clp proteases by SrrAB in *Staphylococcus aureus*. ***Joint Molecular Biosciences Graduate Student Association Meeting.*** Rutgers University, Piscataway, NJ, 2016.

Poster. Roberts C., Al-Tameemi H.M., Mashruwala A.A., Rosario-Cruz Z. Sause W., Torres V., **Boyd J.M.** The Suf iron-sulfur cluster biosynthetic system is essential for *Staphylococcus aureus* viability and decreased Suf function results in global metabolic defects and decreased survival in human neutrophils. ***Joint Molecular Biosciences Graduate Student Association Meeting.*** Rutgers University, Piscataway, NJ, 2016.

Poster. Al-Tameemi H.M., Mashruwala A.A., Tanner A.W., Carabetta, V.J., Dubnau, D., **Boyd J.M.** The YaaT, YlbF, and YmcA proteins are necessary for sporulation in *Bacillus subtilis*, but what are their functions in the non-sporulating bacterium *Staphylococcus aureus*? ***Joint Molecular Biosciences Graduate Student Association Meeting.*** Rutgers University, Piscataway, NJ, 2016.

Poster. Rosario-Cruz Z.*, Liu G., Montelione G., **Boyd J.M.** The ACME Encoded *copBcbl* operon protects Staphylococcus aureus from copper intoxication: Cbl is an extracellular membrane-associated copper-binding protein. ***Joint Molecular Biosciences Graduate Student Association Meeting.*** Rutgers University, Piscataway, NJ, 2016.

**** Awarded prize for best poster presentation.***

Poster. Mashruwala A.A., Earle C., van de Guchte A., **Boyd J.M.** Regulation of Clp proteases by SrrAB in *Staphylococcus aureus*. ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2016.

Poster. Rosario-Cruz Z., Liu G., Montelione G., **Boyd J.M.** The ACME Encoded *copBcbl* operon protects Staphylococcus aureus from copper intoxication: Cbl is an extracellular membrane-associated copper-binding protein. ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2016.

Poster. Al-Tameemi H.M., Mashruwala A.A., Tanner A.W., Carabetta, V.J., Dubnau, D., **Boyd J.M.** The YaaT, YlbF, and YmcA proteins are necessary for sporulation in *Bacillus subtilis*, but what are their functions in the non-sporulating bacterium *Staphylococcus aureus*? ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2016.

Poster. Roberts C., Al-Tameemi H.M., Mashruwala A.A., Rosario-Cruz Z., Sause W., Torres V., **Boyd J.M.** The Suf iron-sulfur cluster biosynthetic system is essential for *Staphylococcus aureus* viability and decreased Suf function results in global metabolic defects and decreased survival in human neutrophils. ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2016.

Poster. Mashruwala A.A., Bhatt S., **Boyd J.M.** The Duf59 containing protein SufT is required for the maturation of iron-sulfur (FeS) proteins during condictions of high FeS cofactor demand in *Staphylococcus aureus*. ***Rutgers Microbiology Symposium***. Rutgers University, New Brunswick, NJ, 2016.

Poster. Tanner, A., Carabetta, V.J., Martine R., Mashruwala, A.A., **Boyd J.M.** Krebs C., Dubnau D. 1 [4Fe-4S] protein complex that regulates sporulation in *Bacillus subtilis* in response to oxygen. ***Penn State Bioinorganic Chemistry Workshop.*** State College PA, 2016.

Poster. Boyd J.M., Crane S., Dunn K., Fourre T., Fassih A., Wen-Hwa Li, Miksa D., Purdy M., Villegas J., Southall M., Utilization of 440 nm Blue Light to Target *Propionibacterium acnes* for Treating Acne Vulgaris. ***American Academy of Dermatology Meeting.*** Orlando, FL, 2017.

Poster. Cerezo, J., Al-Tameemi, H.M., **Boyd J.M.** Screening the Library of FDA Approved Drugs for Inhibitors of Bacterial Iron-Sulfur Cluster Assembly. ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2017.

**** Awarded best student poster (5 awards out of 64 posters)***

Poster. Mashruwala A.A., Earle C., van de Guchte A., **Boyd J.M.** Regulation of Clp proteases by SrrAB in *Staphylococcus aureus*. ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2017.

Poster. Mashruwala A.A., van de Guchte A., **Boyd J.M.** Cellular respiration as a trigger for multicellular behavior in *Staphylococcus aureus*. ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2017.

Poster. Norambuena-Morales J.*, Wang Y., Hanson T., **Boyd J.M.**, and Barkay T., The *mer* operon of *Thermus thermophiles*: evidence for a direct link between low- molecular weight

thiol metabolism and mercury stress. ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2017.

**** Awarded best student poster (5 awards out of 64 posters)***

Poster. Al-Tameemi H.M., **Boyd J.M.** Copper Stress in *Staphylococcus aureus* involves Perturbing Iron Homeostasis. ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2017.

Poster. Purdy M.*, Mohammed N.*, Crane S., **Boyd J.M.** Effect of Blue Light on *Propionibacterium acnes*. ***Rutgers Microbiology Symposium.*** Rutgers University, New Brunswick, NJ, 2017.

**** Awarded top student poster (5 awards out of 64 posters)***

Poster. Cerezo J.*, Al-Tameemi H.M., **Boyd J.M.** *Screening the Library of FDA Approved Drugs for Inhibitors of Bacterial Iron-Sulfur Cluster Assembly.* ***Aresty Research Symposium.*** Rutgers University, Piscataway, NJ, 2017.

**** Awarded honorable mention for poster presentation.***

Poster. Purdy M., Mohammed N., Crane S., **Boyd J.M.** Effect of Blue Light on *Propionibacterium acnes*. ***Aresty Research Symposium.*** Rutgers University, Piscataway, NJ, 2017.

Poster. Mohammed, N., Purdy M., Crane S., **Boyd J.M.** Blue light selectively affects the survival of *Propionibacterium acnes*. ***Aresty Research Symposium****.* Rutgers University, Piscataway, NJ, 2017.

Poster. Al-Tameemi H.M., Roberts C., Mashruwala A.A., Rosario-Cruz Z., Sause W., Torres V.J., Belden W.J., **Boyd J.M.** Iron Sulfur Protein Assembly: A viable Target for Antimicrobial Therapy in *Staphylococcus aureus* ***American Society of Microbiology General Meeting.*** New Orleans, LA, 2017.

Poster. Mashruwala A.A., Gries C.M., Scherr T.D., van de Guchte, A., Kielian T., **Boyd J.M.** Cellular respiration as a signal for programed cell lysis in *Staphylococcus aureus*. ***Gordon Research Conference on Staphylococcal Biology.*** Waterville Valley, NH, 8/2017.

Poster. Rosario-Cruz Z., Eletsky, Nourhan A., Daigham S., Swapna G.V.T., Szyperski T., Montelione G.T., **Boyd J.M.** NMR Studies of the CopB Protein of the Arginine Catabolic Mobile Element from *Staphylococcus aureus and Bacillus subtilis*. ***Center for Advanced Biology and Medicine Meeting.*** Rutgers University, Piscataway, NJ, 2017.

Poster. Norambuena-Morales J., Hanson T., Wang Y., **Boyd J.M.**, Barkay T. Superoxide dismutase and pseudocatalase are responsible for Hg(II) tolerance in *Thermus thermophilus* HB27. ***NASA Astrobiology Meeting.*** Coyhaique, Chile, 2017.

Poster. Li W.W., Miller D., Fassih A., Dunn K., **Boyd J.M.**, Friscia D., Fitzgerald L., Southall M.D. Efficacy of a New Low-Level Blue and Red Light Therapy Face Mask for Acne. ***Annual meeting of the European Academy of Dermatology and Venerology***. Geneva, Switzerland 10/2017.

Poster. Foley M., Al-Tameemi H.M., Carebetta V., **Boyd J.M.** YlaN is essential in *Staphylococcus aureus* under low iron conditions. ***Rutgers Microbiology Symposium***, Rutgers University, New Brunswick, NJ, 2/2018.

Poster. Norambuena J., Barkay T., Hanson T., and **Boyd J.M.** Superoxide dismutase and pseudocatalase increase mercury resistance in *Thermus thermophilus* HB27 ***Rutgers Microbiology Symposium***, Rutgers University, New Brunswick, NJ, 2/2018

Poster. Al-Tameemi H.M. and **Boyd J.M.**, Copper stress in *Staphylococcus aureus* involves perturbing metal ion homeostasis. ***Rutgers Microbiology Symposium***, Rutgers University, New Brunswick, NJ, 2/2018

Poster. Boyd J.M., Foley M., Carabetta V., Iron-sulfur protein assembly in the bacterial pathogen Staphylococcus aureus. ***Steenbock Symposium: Iron-Sulfur Proteins—Biogenesis, Regulation and Function***, Madison, WI 5/2018

Poster. Norambuena J., Hanson T., Barkay T., **Boyd J.M.,** Superoxide dismutase and pseudocatalase promote Hg(II) resistance in Thermus thermophilus HB27 by maintaining the bacillithiol pool. ***American Socity of Microbiology National Meeting***. Altana GA, 6/2018

Paper. Austin C.M., Garabaglu S., Krute C.N., Ridder M.J., Markiewicz M.A., **Boyd J.M.**, Bose J.L., Contribution of YjbH to virulence factor regulation and host colonization in *Staphylococcus aureus* ***Wind River Conference of prokaryotic biology.*** 6/2018

Poster. Al-Temeemi H., **Boyd J.M.,** Interplay between copper and manganese homeostasis in *Staphylococcus aureus*. ***Gordon Research Conference on Microbial Control of Homeostasis in Extreme, Hostile, and Unpredictable Environments***, Mount Holyoke College, South Hadley, Massachusetts. 7/2018

Poster. Boyd J.M., Mashruwala A.A., Al-Tememmi H., Tiwari N., Miguel-Romero L., Marina A., Fuentes E.J. Respiration-dependent programed cell lysis drives biofilm formation in *Staphylococcus aureus*. ***International Symposium on Staphylococci and Staphylococcal Infections*****,** Copenhagen, Denmark. 8/2018.

Poster. Fuentes E.J., Tiwari N., Xu Z., Sun Y.J., López-Redondo M., Al-Temeemi H., Miguel-Romero L., Marina A., **Boyd J.M.**, Schlievert P.M., Kirby J.R. Redox regulation of the S. aureus SrrB histadine kinase. ***International Symposium on Staphylococci and Staphylococcal Infections*****,** Copenhagen, Denmark. 8/2018.

Poster. Bennett, J., **Boyd J.M.**, Eveleigh D., Haggblom M., Lisa J., Warhol J., Quest for a New Jersey State Microbe. ***Society for Industrial Microbiology Annual meeting***, Chicago IL, 8/2018.

Poster. Eveleigh D., **Boyd J.M.**, Häggblom M., Lisa J., Bennett J., Warhol J., The 75TH Anniversary of the Discovery of Streptomycin – 2019. ***New Jersey History Forum***, Monmouth university. 11/2018.

Poster. Eveleigh D., **Boyd J.M.**, Häggblom M., Lisa J., Bennett J., Warhol J., An Official New Jersey State Microbe? *Streptomyces griseus*. ***New Jersey History Forum***, Monmouth university. 11/2018.

Poster. Al-Tamemmi H., Beavers, W.N., Norambuena-Morales, J., Skaar E., **Boyd J.M.** Copper Stress in Staphylococcus aureus Involves Perturbed Metal Ion Homeostasis. ***Rutgers Microbiology Symposium***, Rutgers University, New Brunswick, NJ, 2/2019.

Poster. Desai, P., Mohammed N., **Boyd J.M.** Susceptibility of multidrug-resistant Propionibacterium acnes to low level 440 nm blue light. ***Rutgers Microbiology Symposium***, Rutgers University, New Brunswick, NJ, 2/2019.

Poster. Eveleigh D., **Boyd J.M.**, Häggblom M., Lisa J., Bennett J., Warhol J. An Official New Jersey State Microbe! *Streptomyces griseus*. ***Rutgers Microbiology Symposium***, Rutgers University, New Brunswick, NJ, 2/2019.

Poster. Eveleigh D., **Boyd J.M.**, Häggblom M., Lisa J., Bennett J., Warhol J. The 75th Anniversary of the Discovery of Streptomycin – 2019. ***Rutgers Microbiology Symposium***, Rutgers University, New Brunswick, NJ, 2/2019.

Poster. Boyd J.M., Dunn K., Fassih A., Miksa D., Mohammed N., Desai P., Southall M., Anti-Bacterial Effect of Low-Level Blue Light on *Propionibacterium acnes* and antibiotic resistant *P. Acnes*. ***American Academy of Dermatology Meeting,*** Washington D.C. 3/2019.

Poster. Desai, P., Mohammed N., **Boyd J.M.** Susceptibility of multidrug-resistant Propionibacterium acnes to low level 440 nm blue light. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Rutgers University, New Brunswick, NJ, 4/2019.

Poster. Esquilín-Lebrón K.J., Foley M., Carabetta V.J**., Boyd J.M.** Iron-sulfur protein assembly in *Staphylococcus aureus****. American Society of Microbiology national meeting.*** San Francisco CA. 6/2019.

Poster. Al-Tamemmi H., Beavers, W.N., Norambuena-Morales, J., Skaar E., **Boyd J.M.** *Staphylococcus aureus* lacking a functional MntABC manganese import system have increased resistance to copper. ***Gordon Research Conference on Staphylococcal Biology.*** Catelldefels Spain 8/2019.

Poster. **Boyd J.M.** Esquilin-Lebron K., Foley M., Carabetta V., Beavers W., Skaar E. Iron-sulfur protein assembly in Gram positive bacteria. ***Annual Conference for NSF CAREER awardees.*** Alexandria VA. 10/2019.

Poster. Schaeffer L.M., Begum-Gafur R., Zaidel L., Crane S., Norabuena-Morales J., **Boyd J.M.**, The effect of Zinc and tin of the growth and oxidative stress response of key oral bacteria. ***International Association for Dental Research Meeting.*** Washington D.C. 3/2020.

Poster. Norambuena J., **Boyd J.M.**, Aeration Influences Copper Toxicity in *Staphylococcus aureus. **Rutgers Microbiology Symposium.*** New Brunswick, NJ. 2/2020.

Poster. Esquilin-Lebron K., Foley M., Carabetta V., Beavers W., Skaar E., **Boyd J.M.,** Iron-Sulfur Protein Assembly in Gram Positive Bacteria. ***Rutgers Microbiology Symposium.*** New Brunswick, NJ. 2/2020.

Poster. Almeda-Ahmadi A., McGinley C.M., **Boyd J.M.**, The Effects of Varying Concentrations of Cetylpyridinium Tetrachloride with Tin on the Growth of Common Oral Cavity Bacteria. ***Rutgers Microbiology Symposium.*** New Brunswick, NJ. 2/2020.

Poster. Norambuena J., Al-Tameemi H., **Boyd J.M.** *Staphylococcus aureus* lacking a functional MntABC manganese import system have increased resistance to copper. ***American Society National Meeting.*** Virtual 7/2020.

Poster. Price, E.E. Mashruwala A.A., **Boyd J.M**. Examining Activators of SaeRS in S. aureus Fermentative Biofilm Formation ***American Society National Meeting.*** Virtual 7/2020.

Paper. Norambuena J., Al-Tameemi H., **Boyd J.M.** *Staphylococcus aureus* lacking a functional MntABC manganese import system have increased resistance to copper. ***Boston Bacteriology Meeting.*** Virtual 7/2020.

Poster. Esquilín-Lebrón K., Foley M., Carabetta V., Beavers W., Skaar E.P., **Boyd J.M.** Investigating the role of YlaN in iron homeostasis in *Staphylococcus aureus.* ***Boston Bacteriology Meeting.*** Virtual 7/2020.

I. Teaching

Rutgers University

2020
- Instructor: Byrne seminar 11:090:101:15
- Instructor: Microbial Physiology 16:682:503
- Instructor: Microbial Physiology 11:680:481

2019
- Instructor: Microbial Physiology 16:682:503
- Instructor: Microbial Physiology 11:680:481
- Guest lecturer in 16:682:501, 11:115:321, 16:682:521:01, 11:115:436, 11:115:42

2018
- Instructor: Microbial Physiology 16:682:503
- Instructor: Microbial Physiology 11:680:481
- Guest lecturer in 16:682:501, 11:115:321, 16:682:521:01, 11:115:436, 11:115:422

2017
- Instructor: Microbial Physiology 16:682:503
- Instructor: Microbial Physiology 11:680:481
- Guest lecturer in 16:682:501, 11:115:321, 16:682:521:01, 11:115:436, 11:115:422

2016
- Instructor: Microbial Physiology 16:682:503
- Instructor: Microbial Physiology 11:680:481
- Guest lecturer in 16:682:501, 11:115:321, 16:682:521:01

2015
- Instructor: Microbial Physiology 16:682:503
- Instructor: Microbial Physiology 11:680:481
- Guest lecturer in 16:682:501, 11:115:321, 16:682:521:01

2014

Instructor: Microbial Physiology 16:682:503
Instructor: Microbial Physiology 11:680:481
Guest lecturer in 16:682:501, 11:115:321, 16:682:521:01

2013

Instructor: Microbial Physiology 16:682:503
Instructor: Microbial Physiology 11:680:481
Guest lecturer in 16:682:501, 11:115:321, 16:682:521:01

2012

Instructor: Microbial Physiology 16:682:503
Instructor: Microbial Physiology 11:680:481

2011

Instructor: Bacterial Physiology 16:682:503

SIRS ONLINE SURVEY								Evaluation Responses	Teaching Effectiveness (Max=5)		Course Quality (Max=5)	
S/Yr	Course Title	Course ID	Credits	MOI	Aud	Resp	Enrl		Instructor	Dept Mean	Instructor	Dept Mean
Sp 19	Microbial Physiology	11:680:481	3	lec	um	94%	33	31	4.82		4.71	
Sp 19	Microbial Physiology	16:682:503	3	lec	grad							
Sp 18	Microbial Physiology	11:680:481	3	lec	um	100%$	22	19	4.95	4.92	4.84	4.81
Sp 18	Microbial Physiology	16:682:503	3	lec	grad	100%$	12	12	4.75	4.83	4.92	4.92
Fa 17	Biochemical mechanisms of Toxicology	11:115:422	3	lec	um	7%*		%				
Fa 17	Microbial life	16:682:501	3	lec	grad	4%*	12	%				
Fa 17	Contemporary Issues in Biochemistry	11:115:321	3	lec	um	4%*	25	%				
Sp 17	Microbial Physiology	11:680:481	3	lec	um	100%$	21	21	4.95	4.29	4.81	4.22
Sp 17	Microbial Physiology	16:682:503	3	lec	grad	100%$	11	10	4.70	4.83	4.70	4.68
Sp 17	Molecular Toxicology Lab	11:115:436	2.5	lab	um	7%*	12	%				
Fa 16	Microbial life	16:682:501	3	lec	grad	4%*	15	%				
Fa 16	Contemporary Issues in Biochemistry	11:115:321	3	lec	um	4%*	24	%				
Fa 16	Seminar in Microbial Biology	16:682:521	1	sem	grad	7%*	7	%				
Sp 16	Microbial Physiology	11:680:481	3	lec	um	100%$	30	27	4.88	4.37	4.81	4.32
Sp 16	Microbial Physiology	16:682:503	3	lec	grad	100%$	9	9	4.88	4.55	4.88	4.39
Fa 15	Microbial life	16:682:501	3	lec	grad	4%*	24	%				
Fa 15	Contemporary Issues in Biochemistry	11:115:321	3	lec	um	4%*	21	%				
Fa 15	Seminar in Microbial Biology	16:682:521	1	sem	grad	7%*	16	%				
Sp 15	Microbial Physiology	11:680:481	3	lec	um	100%$	15	15	4.73	4.25	4.60	4.10
Sp 15	Microbial Physiology	16:682:503	3	lec	grad	100%$	11	11	4.91	4.82	4.90	4.68
Fa 14	Microbial life	16:682:501	3	lec	grad	4%*	20	%				
Fa 14	Contemporary Issues in Biochemistry	11:115:321	3	lec	um	4%*	24	%				
Fa 14	Seminar in Microbial Biology	16:682:521	1	sem	grad	7%*	13	%				
Sp 14	Microbial Physiology	11:680:481	3	lec	um	100%$	17	8	4.38	4.09	4.38	4.01
Sp 14	Microbial Physiology	16:682:503	3	lec	grad	100%$	19	18	4.61	4.20	4.56	4.19
Fa 13	Microbial life	16:682:501	3	lec	grad	4%*	31	%				
Fa 13	Contemporary Issues in Biochemistry	11:115:321	3	lec	um	4%*	23	%				
Fa 13	Seminar in Microbial Biology	16:682:521	1	sem	grad	7%*	18	%				
Sp 13	Microbial Physiology	11:680:481	3	lec	um	100%$	19	16	4.69	3.96	4.44	3.81
Sp 13	Microbial Physiology	16:682:503	3	lec	grad	100%$	16	15	4.67	4.40	4.80	4.33

Fa 12	Microbial Life	16:682:501	1	lec	grad	4%*	36	%				
Fa 12	Seminar in Microbial Biology	16:682:521	1	sem	grad	7%*	20	%				
Sp 12	Microbial Physiology	11:680:481	3	lec	grad	50%	7	6	4.83	4.04	4.83	3.96
Sp 12	Microbial Physiology	16:682:503	3	lec	un	100%	9	7	4.71	4.33	4.57	4.36
Fa 11	Seminar in Microbial Biology	16:682:521	3	sem	grad	7%*	12	%				
Fa 11	Microbial Life	16:682:501	3	lec	grad	4%*	24	%				
Fa 11	Ethics Biochemistry Research	11:115:321	3	lec	un	7%	21	%				
Sp 11	Microbial Physiology	16:682:503	3	lec	grad	50%	12	10	4.50	4.53	4.33	4.49
Fa 10	Seminar in Microbial Biology	16:682:521	1	sem	grad	7%*	14	%				

* One Guest lecture
§ Course was cross-listed. The students were co-taught and graduate students had to complete additional weekly assignments and a final research proposal.
% I was not considered a primary faculty member teaching these classes; therefore, I was not provided access to the evaluation responses.
Abbreviations: MOI; mode of instruction. Aud; audience. resp, responsibility. Enrl; enrolment.

University of Wisconsin

2008

Co-instructor (with Michael Thomas): Bacterial Physiology (Bact 526) (Fall semester)

2007

Teaching Fellow: Howard Hughes Medical Institute (Fall-Spring semesters)

Utah State University

2004

Teaching Assistant: Recitations—General chemistry for science majors under teaching supervisor: Prof. Rick Hotz (Chem. 1210)(Fall semester)

Iowa State University

1999

Teaching Assistant: Laboratory—Microbial physiology for majors under teaching supervisor: Prof. Alan DiSpririto (Micro 430)(Spring semester)

J. Mentoring—Student and Postdoctoral Researchers Advised

Students for whom I have acted as the primary Advisor:

Postdoctoral fellows:
Harsimranjit K. Chahal, 9/2012-3/2013
Kerrie May, 11/2013-12/2014
Sharron Crane, 12/2014-3/2014
Karla Esquilin-Lebron 2/2019-present
Paulami Rudra 4/2019-present
Erin Price 10/2019-present
Javiera Norambuena Morales 10/2019-present

Ph.D. students:
Zuelay Rosario-Cruz, Microbial Biology, 2010-2016
Ameya Mashruwala, Microbial Biology, 2011-2017
Hassan Al-Tameemi (formerly Jasim), Microbial Biology, 2012-2019
Javiera Norambuena Morales, Microbial Biology (co-adviser Tamar Barkay), 2014-2018

Hu Shuangfang, visiting from South China University of Technology, 2016-2017
Franklin Roman Rodriquez, 2020-present

M.S. students:
Shiven Bhatt, Microbial Biology, 2011-2017
Josh Sumoski, Microbial Biology, 2012-2016
Shiming Tang, Microbial Biology, 2014-2015
Christina Roberts, Microbiology Molecular Genetics, 2014-2016
Adriana van de Guchte, Microbial Biology, 2015-2018
Mary Foley, Microbial Biology, 2016-2018
Siamak Garabaglu, Microbial Biology, 2017-did not finish
Tushar Roy 2018-2019
Alia Hassan, 2018-present

Undergraduate students:
Bhavana Narala, 2010-2012
Valarie Raziano, 2010-2014
Benjamin Nuta, 2011
Adriana van de Guchte, 2012-2015
Jeffrey Matthews, summer 2012
Carly Earle, 2013-2015
Sakshi Gandhi, 2013-2016
Mariusz Kocur, 2014-2015
Juan Cerezo, 2015-2018
Catherine Bernhardt, 2015-2016
Geunhye Hong, 2015-2016
Mackenzie Purdy, 2016-2017
Nisa Mohammed, 2016-2018
Juan Villegas, summer 2016
Srinivas Rajagopalan, 2017
Tarek Abdelazeez, 2016-2018
Tochi Unegbu-Ogbonna, 2017-2018
Primit Desai, 2017-2019
Allison Almeda-Ahmadi 2018-present
Christopher McGinley 2019-present
Princess Okai, 2019-present
Taylor Andrews, 2020-present

High School Students:
Emily Milan-Rea, Wall High School, 2014

Graduate students who have rotated in my lab, but are not listed above:

Arwa Gabr, Molecular Biosciences Ph.D. student
Atila Lima, Molecular Biosciences Ph.D. student
Unnati Chauhan, Molecular Biosciences Ph.D. student
Valdir Barth, Molecular Biosciences Ph.D. student
Eric Huselid, Molecular Biosciences Ph.D. student
Ibrahim Alsawaf, Microbial Biology Ph.D. student
Hamidah Raduwan, Microbial Biology Ph.D. Student
Alison Morel, Molecular Biosciences Ph.D. student
Xiao Qian, Microbial Biology Ph.D. student

Samuel Adeniyi Adeleye, Molecular Biosciences Ph.D. student
Sangeevan Vellappan, Molecular Biosciences Ph.D. student

I have served on the following graduate students' thesis committees:

Ameya Mashruwala, Microbial Biology Ph.D. program
Zuelay Rosario-Cruz, Microbial Biology Ph.D. program
Hassan Jasim, Microbial Biology Ph.D. program
Javiera Norambuena-Morales, Microbial Biology Ph.D. program
Anaya Agarwal, Microbial Biology Ph.D. program
Chengsheng Zhu, Microbial Biology Ph.D. program
Fatima Foflonker, Microbial Biology Ph.D. program
Xiao Qian, Microbial Biology Ph.D. program
Jose Ramon Planta, Microbiology and Molecular Genetics Ph.D. program
Ian Bezar, Microbiology, Molecular Genetics Ph.D. program
Yijun Zhou, Microbiology, Molecular Genetics Ph.D. program
David Santos, Microbial Biology M.S. program
Nick Rose, Microbial Biology M.S. program
Shiven Bhatt, Microbial Biology M.S. program
Josh Smoski, Microbiology and Molecular Genetics M.S. program
Christina Roberts, Microbiology and Molecular Genetics M.S. program
Austin Thekkumthala, Microbial Biology M.S. program
Veronica L. Cavera, Microbial Biology M.S. Program
Jennifer Goff, Microbial Biology Ph.D. program
Yuan Zhang, Microbial Biology M.S. program
Andrew Tanner, Biological Sciences Ph.D. program, Rutgers-Newark
David Shire, Biological Sciences Ph.D. program, Rutgers-Newark
Jillian Cortese, Microbiology and Molecular Genetics M.S. program
Ryan Rieder, Microbial Biology M.S. Program
Julia Greendyk, Microbial Biology M.S. Program
Edgar F. Ferrer-Gonzalez, Microbiology and Molecular Genetics Ph.D. program
Lamia Harper, NYU School of Medicine, Ph.D. Program in Microbiology
Adriana van de Guchte, Microbial Biology M.S. Program
Heather Weiland, Microbiology Molecular Genetics Ph.D. program
Arwa Gabr, Microbiology Molecular Genetics Ph.D. program
Amanda Williams, Microbial Biology Ph.D. Program
Yoliem S. Miranda Alarcon, Biomedical Engineering Ph.D. Program

I have acted as the primary Aresty research advisor for the following students:

Carle Earle, 2015
Sakshi Ghandi, 2015
Catherine Bernhardt, 2016
Mackenzie Purdy, 2017
Nisa Mohammed, 2017
Juan Cerezo, 2017
Primit Desai, 2018
Allison Almeda-Ahmadi, 2018-present
Christopher McGinley, 2019-present
Tayor Andrews, 2020-present

I have served as an advisor for the following G.H. Cook Scholars Honors Students:

Valarie Raziano, 2014
Carle Earle, 2015
Purandhri Pandya, 2015 (co-advisor with Bryce Nickels)
Sakshi Ghandi, 2016
Sangeevan Vellappan, 2016 (co-advisor with Huizhou Fan)
Aaron Wu, 2016 (co-advisor with Ruth Steward)
Nicholas Raffa, 2016 (reader)
Sai M. Guntaka, 2016 (co-advisor with Estela Jacinto)
Lauren Foy, 2017 (reader)
Mackenzie Purdy, 2017
Nisa Mohammed, 2018
Juan Cerezo, 2018
Primit Desai, 2019
Allison Almeda-Ahmadi, 2020
Tayor Andrews, 2020

K. Related Work Experience Since My Arrival at Rutgers

President of the New Jersey Chapter of the American Society of Microbiology (ASM) (Theobald Smith Society), 2018-2020 (two terms).

Grant reviewer for NJ Alliance for Clinical and Translational Science, 2020.

Organizer for the Fall 2018, Spring 2019, Fall 2020 New Jersey chapter of ASM meetings.

Co-organizer for Rutgers Microbiology Symposium, 2016-present (with Max Haggblom and Tamar Barkay).

Review Editor of the Editorial Board of *Frontiers in Cellular and Infection Microbiol*ogy, 2018-present.

Editorial Board member of the *Journal of Bacteriology*, 2019-present.

Invited ad hoc manuscript reviewer for: Molecular Microbiology, Biochemistry, Antioxidants & Redox Signaling, PLoS Pathogens, Metallomics, Infection and Immunity, Microbiology and Molecular Biology reviews, FEBS Journal, Applied and Environmental Microbiology, PLoS One, Journal of Bacteriology, Research in Microbiology, Biochemica et Biophysica Acta, Journal of Basic Microbiology, Journal of Applied Microbiology, Journal of Biological Inorganic Chemistry, and Antonie van Leeuwenhoek.

Representative for the School of Environmental and Biological Sciences for the Rutgers University Postdoctoral Advisory Council, 2019-

Invited ad hoc grant proposal reviewer for: National Science Foundation, National Institutes of Health (COBRE).

Rutgers University Promotion Grievance Committee, 2019.

Rutgers University Biological Safety Committee, 2016-present.

G.H. Cook Honors Program Committee, 2016-2021.

Section Chair (Microbiology) for G.H. Cook Honors presentations, 2014-present.

Microbial Biology Graduate Program Membership and Nominations Committee, 2019-2022.

Microbial Biology Graduate Program Membership and Nominations Committee, 2014-2017.

Microbial Biology Graduate Program Comprehensive Examination Committee, 2010-present.

Microbial Biology Graduate Program Bylaws committee, 2018-2021.

Microbial Biology Graduate Program Admissions and Academic Standards Committee, 2010-2014.

Chair of the Microbial Biology Admissions and Academic Standards Committee, 2013-2014.

Department of Biochemistry and Microbiology Robison Award Committee, 2011-present.

Reviewer for the Busch Biomedical Grant Program, 2013, 2016.

Rutgers (SEBS) Biology Curriculum Exploration Committee, 2014-2015.

Section Moderator, at the International Conference on Gram-Positive Pathogens, Omaha, NE, 2014.

Discussion leader, Gordon Research Conference on Staphylococcal Diseases, 8/2017.

Discussion leader, Steenbock Symposium: Iron-Sulfur Proteins—Biogenesis, Regulation and Function, 5/2018.

Organizing committee for symposium for 60th anniversary of Selman Waksman's Nobel Prize in Physiology or Medicine, 2012.

Lipman Hall Safety Committee, 2012-present.

Moderator, Rutgers Microbiology Symposium, 2012.

L. Professional Affiliations

Phi Kappa Phi
American Society of Microbiology
American Society of Biochemistry and Molecular Biology