Jeffrey Michael Boyd

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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 2025-	Director Microbial Biology Graduate Program	Rutgers University
July 2025-	Professor Microbiology and Biochemistry	Rutgers University
July 2018- July 2025	Associate Professor Microbiology and Biochemistry	Rutgers University
July 2010- June 2018	Assistant Professor Microbiology and Biochemistry	Rutgers University Dept. of Biochemistry and Microbiology New Brunswick, NJ
Jan. 2010-	Postdoctoral Research Fellow *Staphylococcus aureus* physiology and	University of Iowa Inflammation Program

June 2010	neutrophil interaction with Profs. W. Nauseef and A. Horswill	Iowa City, IA
	Postdoctoral Research Fellow	University of Wisconsin
Sept. 2005-Dec. 2009	Genetics and biochemistry of iron-sulfur cluster synthesis with Prof. Diana Downs	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): First-in-class covalent inhibitors of the SUF pathway of iron-sulfur cluster biosynthesis for the treatment of infections caused by *S. aureus* and other Gram-positive bacteria. Role: co-PI
$425,514; 4/2024-2026

National Institute of Allergy and Infectious Diseases (NIH): Nanospray treatment of biofilm infections in wounds. Role: co-PI
$344,530; 4/2024-2026

National Science Foundation: Iron-sulfur cluster assembly in *Bacillus subtilis.* Role: PI
$1,033,667; 7/2018-2023. Currently in no no-cost extension

USDA multistate Hatch research grant. NE2248: Mastitis Resistance to Enhance Dairy Food Safety, Milk Quality, and Animal Welfare. Role: Co-PI
$5,000-10,000 annually; 10/2022-2027

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

Rutgers Research Council Grant: Iron ion homeostasis in the bacterial pathogen *Staphylococcus aureus*. Role: PI
$15,000; 2024-2026

Completed:

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. Currently in no no-cost extension

Rutgers CORE grant: Metabolic and fitness of S. aureus when challenged with copper ions. Role: PI, $5,000. 2021.

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 Research Council, Research Fulcrum Award, 2024
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 who 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. 17 pages. PMID: 29150497 https://doi.org/10.1128/AEM.01931-17

***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

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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: Cbl 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***, 12/2019 PMID: 31882782

50. Norambuena J., Miller M., **Boyd J.M.***, Barkay T.*, Expression and regulation of the *mer* operon in *Thermus thermophilus.* ***Environmental Microbiology***, 2/2020 PMID: 32090420

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51. Rudra, P., **Boyd J.M.** Metabolic control of virulence factor production in *Staphylococcus aureus*. ***Current Opinion in Microbiology***, 5/2020 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*****,** 5/2020 PMID: 32354997.

53. Price E.E., **Boyd J.M.**, Genetic control of metal ion homeostasis in *Staphylococcus aureus*. ***Trends in Microbiology***, 5/2020 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. ***American Chemical Society Omega***, 4/2020 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,*** 4/2020 doi.10.1021/acs.cgd.0c00107

56. 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*****.** 4/2021 PMID: 33034093.

57. 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***. 10/2020 PMID: 33109764.

58. Kim G.L., Hooven T., Norambuena-Morales J., Li B. **Boyd J.M.**, Yang J., Parker D. Growth and stress tolerance comprise independent metabolic strategies critical for *Staphylococcus aureus* infection. ***mBio***. 3/2021 PMID: 34101490.

59. Ferrer-González E., Huh H., Al-Tameemi H.M., **Boyd J.M.**, Lee S.H., and Pilch D.S., Impact of FtsZ Inhibition on the Localization of the Penicillin Binding Proteins in Methicillin-Resistant *Staphylococcus aureus.* ***Journal of Bacteriology***. 7/2021 PMID: 34031040.

60. 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*****,** 2021 PMID: 34292543.

61. Patel J.S., Norambuena J., 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.* Bayesian Modeling and Intrabacterial Metabolism Applied to Drug-Resistant *Staphylococcus aureu*s. ***ACS Infectious Diseases.*** 8/2021 PMID: 34342426.

**** co-corresponding authors***

62. Price E.E., Román-Rodríguez F., **Boyd J.M.**, Bacterial approaches to sensing and responding to respiration and respiration metabolites. ***Molecular Microbiology***. 8/2021 PMID: 34387370.

63. Price E.E., Rudra P., Norambuena J., Román-Rodríguez F., **Boyd J.M.**, Tools, strains, and strategies to effectively conduct anaerobic and aerobic transcriptional reporter screens and assays in *Staphylococcus aureus.* ***Applied and Environmental Microbiology.*** 8/2021 PMID: 34406831.

64. Esquilin-Lebron K., Dubrac, S., Barras F., **Boyd J.M.** Bacterial approaches for assembling iron-sulfur proteins. ***mBio*** 12/2021 PMID 34781750.

65. Teoman T., Muneeswaran Z.P., Verma G., Chen D., Brinzari T.V., Almeda-Ahmadi A., Norambuena J., Xu S., Ma S., **Boyd J.M.,** Armenante P.M., Potanin A., Pan L., Asefa T., Dubovoy V., Cetylpyridinium Trichlorostannate: Synthesis, Antimicrobial Activity and Controlled-Release Properties via Electrical Resistance Tomography. ***American Chemical Society Omega*** 12/2021 PMID: 34984275

66. Andrews T.P., Hoyer J.S., Fahrenfeld N.L., **Boyd J.M.***, Duffy S.* Complete genome sequences of five Phietaviruses infecting *Staphylococcus aureus*. ***Microbiology Resource Announcements*** 10/2022 PMID: 36173192

**** co-corresponding authors***

67. Hudspeth, J.D., Boncella A.E., Sabo E.T., Andrews T., **Boyd J.M.**, Morrison C.N., Structural and Biochemical Characterization of *Staphylococcus aureus* Cysteine Desulfurase Complex SufSU. ***American Chemical Society Omega*.** 11/2022 PMID: 36506149

68. Andrews, T., Ficken K., Fey P.D., Duffy S., **Boyd J.M.**, Novel Transducing Bacteriophage Infecting *Staphylococcus epidermidis* Contributes to the Expansion of a Novel Siphovirus Genus and Implies Genus is Inappropriate for Phage Therapy. ***mSphere***. 2/2023 PMID: 37017574

69. Ramírez-Hernández M., Norambuena J., Hu H., Thomas B., Tang C., **Boyd J.M.***, Asefa T.* Repurposing Anthelmintics: Effects of Rafoxanide and Copper-Functionalized SBA-15 Carriers Against Methicillin-Resistant *Staphylococcus aureus* (MRSA). ***American Chemical Society Applied Materials & Interfaces*** 3/2023 PMID: 36975176

**** co-corresponding authors***

70. Norambuena J., Al-Tameemi H., Bovermann H., Kim J., Beavers W.N., Skaar E.P., Parker D., **Boyd J.M.** Copper ions inhibit pentose phosphate pathway function in *Staphylococcus aureus*. ***PLoS Pathogens***. 5/2023 PMID: 37235600

71. Kim G.L., Kim J., Norambuena J., **Boyd J.M.**, Parker D., Impact of the pentose phosphate pathway on metabolism and pathogenesis of *Staphylococcus aureus.* ***PLoS Pathogens****.* 6/2023 PMID: 37440594

72. Hossain S., Morey J.R., Neville S.L., Ganio K., Radin J.N., Norambuena J., **Boyd J.M.**, McDevitt C.A., Kehl-Fie T.E., Host subversion of bacterial metallophore usage drives copper intoxication. ***mBio*** 8/2023 PMID: 37737591

73. Leanse L.G., dos Anjos C., Ryan Kaler K., Hui J., **Boyd J.M.**, Hooper D.C., Anderson R.R., Dai T., Blue light potentiates antibiotic activity in bacteria via parallel pathways of hydroxyl radical production and enhanced antibiotic uptake. 8/2023 ***Advanced Science*** PMID: 37946633

74. Muneeswaran Z.P., Teoman B., Wang Y., Chaudhry H., Brinzari T.V., Verma G., Ranasinghe L., Ryan Kaler K.M., Huang K., He, X., Thomas B.L., Xu S., Cheng C.Y., **Boyd J.M.**, Chen D., Hao Z., Ma S., Asefa T., Pan L., Dubovoy V., Novel anionic surfactant-modified chlorhexidine and its potent antimicrobial properties. 12/2023 ***Dalton Transactions*** PMID: 38224288.

75. **Boyd J.M.**, Esquilín-Lebrón K., Campbell C.J., Ryan Kaler K., Norambuena J., Foley M.E., Stephens T.G., Rios G., Mereddy G., Zheng V., Bovermann H., Kim J., Yang J.H., Greco T.M., Cristea I.M., Carabetta V.J., Beavers W.N., Bhattacharya D., Skaar E.P., Parker D., Carroll R.K., Stemmler T.L., Fpa (YlaN) is an iron(II) binding protein that functions to alleviate Fur-mediated repression of gene expression in *Staphylococcus aureus*. 10/2024 ***mBio*** PMID: 39440976

76. Rios-Delgado G., McReynolds A.K.G., Pagella E.A., Norambuena J., Briaud P., Zheng V., Munneke M.J., Kim J., Racine H., Carroll R., Zelzion E., Skaar E., Bose J.L., Parker D., Lalaouna D., **Boyd J.M.** The *Staphylococcus aureus* non-coding RNA IsrR regulates TCA cycle activity and virulence. 2/2025 ***Nucleic Acids Research*** PMID: 39704109

77. Pederick J.L. Vandborg B.C., George A., Bovermann H., **Boyd J.M.**, Freundlich J.S., Bruning J.B. Identification of cysteine metabolism regulator (CymR)-derived pentapeptides as nanomolar inhibitors of *Staphylococcus aureus* O-acetyl-L-serine sulfhydrylase (CysK). 11/2024 ***ACS Infectious Disease*** PMID: 39705018

78. Sabo E., Nelson C., Tyagi N., Stark V., Aasman K., Morrison C., **Boyd, J.M.***, Holz R.C.*, Practical Spectrophotometric Assay for the Cysteine Desulfurase SufS from *Staphylococcus aureus,* a Potential Antibiotic Target. 1/2025 ***Antibiotics (Basel).*** PMID: 40001373

**** co-corresponding authors***

79. **Boyd J.M.**, Price E.E., Roman Rodriguez F., Burchat N., Norambuena J., DuMont A.L., Torres V.J., Sampath H., Treatment of *Staphylococcus aureus* with environmentally relevant concentrations of triclosan activates SaeRS-dependent virulence factor expression. 6/2025 ***Antimicrobial Agents and Chemotherapy.*** PMID: 40531055

82. Chen Y.T., Liu Z., Fucich D., Giulieri S.G., Liu Z., Wadhwa R., Rios G., Henschel H., Tyagi N., Olivier F.A.B., Monk I.R., Shaw S.S., Sridhar S.H., Drikic M., Bianco C., Lohia G., Beg A.Z., Planet P., Lewis I.A., Sebra R., Traven A., Hachani A., Stinear T.P., Howden B.P., **Boyd J.M.**, Riquelme S.A., Wang C., Prince A., and Wong Fok Lung T., Regulation of airway fumarate promotes *S. aureus* pneumonia. 8/2025 ***Nature Communications.*** PMID: 40745169

80. Roman-Rodriguez F., Tyagi N., Al-Tameemi H., Boyd J.M. ***Pseudomonas*** *aeruginosa* secreted respiratory toxin HQNO triggers fatty acid accumulation in respiring *Staphylococcus aureus,* decreasing SaeRS-dependent transcriptional regulation. 10/2025 ***Journal of Bacteriology****.* PMID: 41060081

81. Roman Rodriguez F., Tyagi N., Kim J., Parker D., **Boyd J.M.,** An effective response to respiratory inhibition by a *Pseudomonas aeruginosa* excreted quinoline promotes *Staphylococcus aureus* fitness and survival in co-culture. 10/2025 ***Journal of Bacteriology.*** PMID: 41114581

82. **Boyd J.M.**, Rios-Delgado G., Esquilín-Lebrón K., Ryan Kaler K., Mereddy G., Norambuena J., Zheng V., Beavers W.N., Kim J., Parker D., Skaar E.P., Carrol. R.K., Yang J.H. Fermentative growth decreases the iron demand of *Staphylococcus aureus*. 9/2025 ***Journal of Inorganic Biochemistry.*** PMID: 41032936

83. Rios-Delgado G., McFarlane R., Zheng V., Kim J., Parker D., Kehl-Fie T., Lalaouna D., **Boyd J.M.,** The iron-regulated small regulatory RNA IsrR modulates expression of genes utilized for dioxygen metabolism and heme synthesis in *Staphylococcus aureus*. 10/2025 ***mBio.*** PMID: 41042061

84. Sabo E., Nelson C., Huntoon D., Yang J., Kirk M., George S.J., Bennett B., **Boyd J.M.**, Holz R.C., Structural and Mechanistic Insights into the Sulfur Transfer Protein SufU from *Staphylococcus aureus.* ***Journal of Inorganic Biochemistry.*** 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.

3. Häggblom M., Eveleigh D., **Boyd J.M.**, Warhol J., Letter to the Editor: Mining for Microbes. ***Chemical & Engineering News***, 6/2019, vol. 97, issue 23, pages 4-5.

4. Sant D., Mateen A.I., Sullivan R., Boyd J.M., Carabetta V.J., Yadavalli S.S., Sun J.S., Emerging Themes in Microbial Stress Response and Mechanistic Insights: Key Findings from the Fall 2024 ASM Theobald Smith Society Meeting, 1/2025 ***mSphere****.*

5. Lumkong, L., Nyiro B., Russo S., Westervelt I., Sullivan R., **Boyd J.M.**, Carabetta V.J., Yadavalli S.S., Sun J.S., Challenges and innovations in resistance, remediation, and regulation: key findings from the spring 2025 ASM Theobald Smith Society meeting, 8/2025 ***mSphere***.

Publications in Revision

Desai P., Mohammed N., **Boyd J.M.**, Antibiotic-resistant *Propionibacterium acnes* are susceptible to low-intensity 449 nm blue light. ***Frontiers in Medicine***

Publications in Review

Stevens M., Doud E.H., Norambuena, J., Tepper K., Trindl C.A., Lander G.C., Carpenter R., Chapman E., **Boyd J.M.**, Wells C., Chen Q., Johnson S.M., Deciphering the unique mechanism whereby bis-sulfonamido-2-phenylbenzoxazole (PBZ) GroEL/ES inhibitors modulate chaperonin ATPase and client protein folding functions. ***Journal of the American Chemical Society.*** https://chemrxiv.org/engage/chemrxiv/article-details/677d8956fa469535b91e263e

Sabo E., Gerlich G., Nelson C., Stark V., Aasman K., Morrison C., **Boyd J.M.**, Holz R.C., Kinetic Analysis of Cysteine Desulfurase SufS from *Staphylococcus aureus*. ***Biochemistry.***

Charbonnier M., Probst S., Racine H., Radin J.N., Rios-Delgado G., Laster H.M., Mazgaj R., Kohl M., Blum M., Marchand V., Chicher J., Marzi S., Romby P., Tree J., Waldron K.J., **Boyd J.M.**, Dutheil J.Y., Kehl-Fie T.E., Lalaouna D., A Zur-dependent regulatory RNA involved in maintaining zinc homeostasis in *Staphylococcus aureus.* ***Nucleic Acids Research.***

Kim J., Bianco C., Ryan Kaler K., Giulieri S., Lyu L., **Boyd J.M.**, Planet P., Parker D., Oxidative phosphorylation in *Staphylococcus aureus* drives antibiotic tolerance through membrane charge remodeling. ***Science Advances***

F. Patents.

Benzalkonium-Embedded Mesostructured Silica Compositions and uses of the same. Provisional patent application US patent number 11,547,680 Assignors: Tewodros Asefa, Viktor Dubovoy, Anjani Ganti, Jeffrey M. Boyd.

Compositions and methods for treating wounds. Provisional patent application no.: 17/925,458, Assignors: Maricely Ramirez Hernadez, Javiera Norambuena-Morales, Jeffrey M. Boyd, Tewodros Asefa.

Nanoparticle (NP) Compositions and Methods of Use Thereof (ff). Provisional patent application no.: 63/386,024, Assignors: Maricely Ramirez Hernadez, Javiera Norambuena-Morales, Jeffrey M. Boyd, Tewodros Asefa.

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.* Waterville Valley, NH. 2017.

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.

Why New Jersey needs a State Microbe. Summerset Country Libraries. Summerset, New Jersey. Virtual 7/2020.

A role for YlaN in iron homeostasis in Gram-positive bacteria. International conference on iron-sulfur proteins—Biogenesis, Regulation, and Function. Virtual 4/2021.

Copper ion homeostasis in *Staphylococcus aureus*. Rutgers University Dept. of Biochemistry and Microbiology. Virtual 10/2021.

Studying Staphylococcus aureus physiology to decrease disease burden. Rutgers University Molecular Biology and Biochemistry club. Virtual 3/2022.

Metal ion homeostasis in Staphylococcus aureus. Chemistry Department, Fordham University. 10/2022.

Genetic regulation of iron homeostasis in *Staphylococcus aureus*. International conference on iron-sulfur proteins—Biogenesis, Regulation, and Function. Saint Tropez, FR 8/2022.

Mechanisms of copper ion intoxication and detoxification in *Staphylococcus aureus*. Louisiana State University, Dept of Pathobiological Sciences 11/2022.

Metal ion homeostasis in *Staphylococcus aureus*. Rutgers School of Dental Medicine. Newark, NJ 2/2023.

Copper ions and the *Staphylococcus aureus* host interface. International Conference of *Staphylococcus aureus* and Staphylococcal Infections. Virtual 2/2023.

Copper ions and the *Staphylococcus aureus* host interface. International Conference of *Staphylococcus aureus* and Staphylococcal Infections. Southern Illinois Medical School, Springfield, IL 2/2023.

Iron homeostasis in *Staphylococcus aureus*. University of Illinois, Urbana, IL 9/2023.

Iron ion homeostasis in *Staphylococcus aureus*. Arxada corporation, via zoom 3/2024.

Metal ion homeostasis and the Staphylococcal host interface. American Society of Microbiology Annual Meeting. Session Title: Impact of metabolism on microbial-host interactions. Atlanta, GA 6/2024.

Copper ion homeostasis in *Staphylococcus aureus*. Arxada corporation, via zoom 6/2024.

New models, tools, and strategies: Molecular Biology and Physiology Division highlights the next generation of microbiological innovators. American Society of Microbiology Annual Meeting. Session Title: Council on Microbial Sciences. Atlanta, GA 6/2024.

Genetic regulation of iron usage in the *Staphylococci*. International meeting on Iron-sulfur for life, Potsdam, Germany 9/2024.

Genetic regulation of iron usage in the *Staphylococci*. Department of Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ 11/2024.

Investigating Staphylococcal stress responses for antimicrobial development. Rutgers University Microbiome Program, Rutgers University, New Brunswick, NJ 11/2025.

Genetic regulation of iron homeostasis in *Staphylococcus aureus* and its impact on physiology and pathogenesis. University of Pittsburgh, Pittsburgh, PA 2/2026

Genetic regulation of iron usage in the *Staphylococci*. Keynote address, International Meeting on Gram Positive Pathogens, Omaha, NE 5/2026.

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 *Staphylococcoccus 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, 6/2017.

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 Society 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 of Microbiology 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 of Microbiology 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.

Paper. Esquilín-Lebrón K., Foley M., Carabetta V., Beavers W., Skaar E., and **J.M. Boyd**. A role for YlaN in iron homeostasis in *Staphylococcus aureus.* ***American Society of Microbiology*** **Junior Awards in Microbiology.** Virtual 12/2020.

Poster. Price E.E., Mashruwala A.A., and **Boyd J.M.** Examining activators of SaeRS in *Staphylococcus aureus* fermentative biofilm formation. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Virtual 2/2021.

Poster. Román-Rodríguez F. and **Boyd J.M.** Effects of Terminal Electron Acceptors on methicillin Resistant Staphylococcus aureus fermentative biofilm dispersal. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Virtual 2/2021.

Poster. Norambuena J., Al-Tameemi H. and **Boyd J.M.** Staphylococcus aureus Lacking a Functional MntABC Manganese Import System Have Increased Resistance to Copper ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Virtual 2/2021.

Poster. Esquilín-Lebrón K.J., Foley M., Carabetta V.J., Beavers W., Skaar E. and **Boyd J.M.** Investigating the role of YlaN in iron homeostasis in *Staphylococcus aureus.* ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Virtual 2/2021.

Poster. Román-Rodríguez F. and **Boyd J.M.** Effects of Terminal Electron Acceptors on Methicillin Resistant Staphylococcus aureus fermentative biofilm dispersal. ***Rutgers Microbial Biology Graduate Student Symposium***. Virtual 3/2021.

Paper. Esquilín-Lebrón K., Foley M., Carabetta V., Beavers W., Skaar E., and **J.M. Boyd**. YlaN functions in iron homeostasis in *Staphylococcus aureus.* ***New York Bacillus Interest Group (NYBIG) annual conference.*** Virtual 3/2021.

Poster. Norambuena J., Al-Tameemi H. Beavers, W., Parker D., Skaar E.P., **Boyd J.M.** Copper inhibits pentose phosphate pathway function in *Staphylococcus aureus*. ***National meeting American Society of Microbiology***. Virtual 6/2021.

Poster. Price E.E. Mashruwala A.A., and **Boyd J.M.** Regulation of SaeRS in *Staphylococcus aureus* fermentative biofilm formation. ***National meeting American Society of Microbiology***. Virtual 6/2021.

Poster. Esquilín-Lebrón K., Foley M., Carabetta V., Beavers W., Skaar E., and **Boyd J.M.** YlaN functions in iron homeostasis in *Staphylococcus aureus.* ***World Microbe Forum.*** Virtual 6/2021.

Paper. Esquilín-Lebrón K., Foley M., Carabetta V., Beavers W., Skaar E., and **Boyd J.M.** YlaN functions in iron homeostasis in *Staphylococcus aureus.* ***Society for Advancement of Chicanos/Hispanics and Native Americans in Science Annual Meeting.*** Virtual 10/2021.

Poster. Ficken K. and **Boyd J.M.** Investigating Bacteriophages as a Novel Therapeutic Approach against Common Skin-Infecting Bacteria. ***Aresty research symposium*****,** Rutgers University, New Brunswick, NJ 3/2022.

Poster. McGinley C.M. and **Boyd J.M.** Investigation into the roles of conserved amino acids for the function of the metal ion homeostasis protein YlaN. ***Aresty research symposium*****,** Rutgers University, New Brunswick, NJ 3/2022.

Paper. Rios-Delgado G., **Boyd J.M.** The role of the small RNA tsr25 in *Staphylococcus aureus* iron homeostasis ***Rutgers Initiative for Maximizing Student Development (IMSD) symposium***, New Brunswick, NJ 5/2022.

Poster. Rios-Delgado G., **Boyd J.M.** The role of the small RNA tsr25 in *Staphylococcus aureus* iron homeostasis ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 5/2022.

Poster. Román-Rodríguez F. and **Boyd J. M.** Examining the stimuli of the SrrAB regulatory system in *Staphylococcus aureus****. New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 5/2022.

Paper. Rios-Delgado G., **Boyd J.M.** The role of the small RNA tsr25 in *Staphylococcus aureus* iron homeostasis ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 5/2022.

Paper. Norambuena J. and **Boyd J.M.** Cu ion homeostasis in *Staphylococcus aureus* ***New York Bacillus Interest Group (NYBIG) annual conference***, New York, NY. 6/2022.

Poster. Ranainghe, L., Ryan Kaler K., **Boyd J.M.** Functional Assessment of the Regulon of the Ferric Uptake Regulator (Fur) in *Staphylococcus aureus* ***Aresty research symposium*****,** Rutgers University, New Brunswick, NJ 3/2023.

Poster. Ranainghe, L., Ryan Kaler K., **J.M. Boyd** Functional Assessment of the Regulon of the Ferric Uptake Regulator (Fur) in *Staphylococcus aureus* ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 4/2023.

Poster. Rios-Delgado G., Norambuena J., Ryan Kaler K., Briaud P., Mustor E., Shaw L., Parker D., Carrol R., **J.M. Boyd**. The role of Tsr25 in iron homeostasis in *Staphylococcus aureus*. ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 4/2023.

Poster. Roman Rodriguez F. and **Boyd J.M.** Examining the effects of *Pseudomonas aeruginosa* secondary metabolites on *Staphylococcus aureus* transcriptional networks. ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 4/2023.

Paper. Roman Rodriguez F. **J.M. Boyd.** Examining the effects of *Pseudomonas aeruginosa* secondary metabolites on *Staphylococcus aureus* transcriptional networks. ***New York Bacillus Interest Group (NYBIG) annual conference***, New York, NY. 6/2023.

Poster. Rios-Delgado G., Norambuena J., Ryan Kaler K., Briaud P., Mustor E., Shaw L., Parker D., Carrol R., **J.M. Boyd**. Genetic regulation of iron homeostasis in *Staphylococcus aureus*. ***Gordon Research Conference on Staphylococcal Diseases***. Waterville Valley, NH 7/2023.

Paper. Paola Garay Maris, Gustavo Rios, **J.M. Boyd.** Staphylococcus aureus iron usage: characterization of a novel antibiotic target. ***RISE at Rutgers annual conference***, New Brunswick, NJ. 8/2023.

Paper. Paola Garay Maris, Gustavo Rios, **J.M. Boyd.** Staphylococcus aureus iron usage: characterization of a novel antibiotic target. ***Intra-College Experience in Creative Research in Experimental and Applied Microbiomics****,* Rutgers University, New Brunswick, NJ. 8/2023.

Paper Gustavo Rios, **Boyd J.M.** Assessing the role of the Fur-regulated sRNA Tsr25 during *Staphylococcus aureus* response to iron scarcity. ***Initiative for maximizing student development***, Rutgers University, Piscataway, NJ 10/2023.

Poster. Paola Garay Maris, Gustavo Rios, **Boyd J.M.** *Staphylococcus aureus* iron usage: characterization of a novel antibiotic target. ***National meeting for the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science***. Portland OR. 10/2023.

Poster. Norambuena J. and **Boyd J.M.** Unravelling copper toxicity mechanisms in *Staphylococcus aureus*". ***Reunión anual de la Sociedad de Bioquímica y Biología Molecular de Chile***, Coquimbo, Chile. 10/2023.

Poster. Leon G. Leanse, **Boyd J.M.** et al., Unravelling the antimicrobial mechanisms of blue light***. Photonic Diagnosis, Monitoring, Prevention, and Treatment of Infections and Inflammatory Diseases***, San Francisco, CA. 2/2024.

Paper. Tyagi N., and **Boyd J.M.** Determining how itaconic acid modulates *Staphylococcus aureus* physiology. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 4/2024.

Poster. Tyagi N., Wong T., and **Boyd J.M.** Determining how itaconic acid modulates *Staphylococcus aureus* physiology. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 4/2024.

Poster. Naidu N., Chen S., Rios-Delgado G., **Boyd J.M.** Exploring Fur and IsrR genetic regulation in *Staphylococcus epidermidis.* ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 4/2024.

Poster. Bovermann H., **Boyd J.M.** Impact of Sulfur Metabolism on Copper and Silver homeostasis in *Staphylococcus aureus****. Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 4/2024.

Poster. Naidu N., Chen S., Rios-Delgado G., **Boyd J.M.** Exploring Fur and IsrR genetic regulation in *Staphylococcus epidermidis.* ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 4/2024.

Poster. Tyagi N., Wong T., and **Boyd J.M.** Determining how itaconic acid modulates *Staphylococcus aureus* physiology. ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 4/2024.

Poster. Vincent Zheng, Rios-Delgado G., and **Boyd J.M.** The Relationship Between Iron Homeostasis and Biofilm Formation in *S. epidermidis.* ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 4/2024.

Paper. Rios-Delgado G. and **Boyd J.M.** et al., Fur-regulated small RNA IsrR represses TCA cycle during iron limitation in *Staphylococcus aureus*. ***International meeting on Fe-S proteins: Function, Biogenesis, and Regulation.*** Wake Forest University, Winston-Salem, NC 6/2024.

Poster. Rios-Delgado G., **Boyd J.M.**, et al., Fur-regulated small RNA IsrR represses TCA cycle during iron limitation in *Staphylococcus aureus*. ***International meeting on Fe-S proteins: Function, Biogenesis, and Regulation.*** Wake Forest University, Winston-Salem, NC 6/2024.

Poster. Rios-Delgado G., **Boyd J.M.**, et al., Small RNA IsrR mediates the staphylococcal response to iron limitation. ***Molecular Biosciences Annual Graduate Student Research Symposium.*** Rutgers University, New Brunswick, NJ 3/2025

Paper. Rios-Delgado G., and **Boyd J.M.**, Insight into bacterial adaptation to the hostile host environment. ***Three-Minute Thesis Competition***. Rutgers University, New Brunswick, NJ 3/2025

Poster. Paluszek S. and **Boyd J.M.** Mapping interactions between Staphylococcus aureus SUF proteins using a bacterial two-hybrid system. ***Aresty Research Symposium***, Rutgers University, New Brunswick, NJ 4/2025.

Poster. Chen S. Naidu N., and **Boyd J.M.** Investigating interactions between *Cutibacterium acnes* and *Staphylococcus epidermidis* through spent media. ***Aresty Research Symposium***, Rutgers University, New Brunswick, NJ 4/2025.

Paper. Rios-Delgado G., and **Boyd J.M.**, Insight into bacterial adaptation to the hostile host environment. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 5/2025.

Poster. Zheng V., Rios-Delgado G., and **Boyd J.M.** Small RNA IsrR represses Fe using processes under Fe starvation in *Staphylococcus aureus.* ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 5/2025.

Poster. Paluszek S. and **Boyd J.M.** Mapping interactions between Staphylococcus aureus SUF proteins using a bacterial two-hybrid system. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 5/2025.

Poster. Tyagi N., Wong T., and **Boyd J.M.** Exploring the impact of itaconic acid on the physiology of *Staphylococcus aureus*. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 5/2025.

Poster. Chen S., Naidu N., and **Boyd J.M.** Investigating interactions between *Cutibacterium acnes* and *Staphylococcus epidermidis* through spent media. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 5/2025.

Poster. Bovermann H., and **Boyd J.M.** Decreasing rate of gene expression increases tolerance to copper ions in *Staphylococcus aureus*. ***New Jersey American Society of***

Microbiology Meeting in Miniature (Theobald Smith Society). New Brunswick, NJ 5/2025.

Poster. Rios-Delgado G., Zheng V., Ryan Kaler K., Kim J., Zelzion E., Parker D., Lalaouna D., **Boyd J.M.** Small RNA IsrR mediates the staphylococcal response to iron limitation. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). New Brunswick, NJ 5/2025.

Poster. Zheng V., Rios-Delgado G., and **Boyd J.M.** Small RNA IsrR represses Fe using processes under Fe starvation in *Staphylococcus aureus****. Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 5/2025.

Poster. Tyagi N., Wong T., and **Boyd J.M.** Exploring the impact of itaconic acid on the physiology of *Staphylococcus aureus*. ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 5/2025.

Poster. Paluszek S. and **Boyd J.M.** Mapping interactions between Staphylococcus aureus SUF proteins using a bacterial two-hybrid system. ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 5/2025.

Poster. Chen S., Naidu N., and **Boyd J.M.** Investigating interactions between *Cutibacterium acnes* and *Staphylococcus epidermidis* through spent media. ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 5/2025.

Poster. Bovermann H., and **Boyd J.M.** Decreasing rate of gene expression increases tolerance to copper ions in *Staphylococcus aureus*. ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 5/2025.

Poster. Rios-Delgado G., Zheng V., Ryan Kaler K., Kim J., Zelzion E., Parker D., Lalaouna D., **Boyd J.M.** Small RNA IsrR mediates the staphylococcal response to iron limitation. ***Rutgers Microbiology symposium*****,** Rutgers University, New Brunswick, NJ 5/2025.

Poster. Tyagi N., Wong T., and **Boyd J.M.** Exploring the impact of itaconic acid on the physiology of *Staphylococcus aureus*. ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Camden, NJ 11/2025.

Abera T., Bovermann H., **Boyd J.M.**, Changes in iron homeostasis leads to increased sensitivity to copper in *Staphylococcus aureus.* ***New Jersey American Society of Microbiology Meeting in Miniature*** (Theobald Smith Society). Camden, NJ 11/2025.

I. Teaching.

Rutgers University

2025

Instructor: Microbial Physiology 16:682:503
Instructor: Microbial Physiology 11:680:481
Instructor: Seminar in Microbial Biology 16:682:521

2024

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

2023
Instructor: Byrne seminar 11:090:101:15
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

2022
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

2021
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

2020
Instructor: Byrne seminar 11:090:101:15
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

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, 11:115:422

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

Course survey for courses where I was the primary instructor								Evaluation Responses	Teaching Effectiveness (Max=5)		Course Quality (Max=5)	
S/Yr	Course Title	Course ID	Credits	MOI	Aud	Responsibility	Enrl		Instructor	Dept Mean*	Instructor	Dept Mean*
Sp. 24	Microbial Physiology	11:680:481/503	3	lec	um/grad	100%[$]	34	34	4.68	4.32	4.76	3.97
Sp. 23	Microbial Physiology	11:680:481/503	3	lec	um/grad	100%[$]	29	28	4.71	4.25	4.57	4.14
Sp. 23	Byrne Seminar	090:101	1	lec	und	100%	4	4	5.00	4.64	5.00	4.53
Sp. 22	Microbial Physiology	11:680:481/503	3	lec	um/grad	95%[$]	37	35	4.54	4.34	4.5	4.28
Sp 21	Microbial Physiology	11:680:481/503	3	lec	um/grad	100%[$]	39	21	4.62	4.38	4.62	4.28
Sp 20	Microbial Physiology	11:680:481/503	3	lec	um/grad	100%[$]	25	13	4.92	4.38	4.92	4.26
Fa20	Byrne Seminar	090:101	1	lec	und	100%	3	3	5.00	4.68	4.67	4.53
Sp 19	Microbial Physiology	11:680:481/503	3	lec	um/grad	94%[$]	33	31	4.82	4.25	4.71	4.17
Sp 18	Microbial Physiology	11:680:481	3	lec	um	100%[$]	22	19	4.95	4.92	4.84	4.81
Sp 17	Microbial Physiology	11:680:481	3	lec	um	100%[$]	21	21	4.95	4.29	4.81	4.22
Sp 17	Microbial Physiology	16:682:503	3	lec	grad	100%[$]	11	10	4.70	4.83	4.70	4.68
Sp 16	Microbial Physiology	11:680:481	3	lec	um	100%[$]	30	27	4.88	4.37	4.81	4.32
Sp 16	Microbial Physiology	16:682:503	3	lec	grad	100%[$]	9	9	4.88	4.55	4.88	4.39
Sp 15	Microbial Physiology	11:680:481	3	lec	um	100%[$]	15	15	4.73	4.25	4.60	4.10
Sp 15	Microbial Physiology	16:682:503	3	lec	grad	100%[$]	11	11	4.91	4.82	4.90	4.68
Sp 14	Microbial Physiology	11:680:481	3	lec	um	100%[$]	17	8	4.38	4.09	4.38	4.01
Sp 14	Microbial Physiology	16:682:503	3	lec	grad	100%[$]	19	18	4.61	4.20	4.56	4.19
Sp 13	Microbial Physiology	11:680:481	3	lec	um	100%[$]	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
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
Sp 11	Microbial Physiology	16:682:503	3	lec	grad	50%	12	10	4.50	4.53	4.33	4.49

[$] Course was cross-listed. The students were co-taught and graduate students had to complete additional weekly assignments and a final research proposal.
Abbreviations: MOI; mode of instruction. Aud; audience. resp, responsibility. Enrl; enrolment.
* For crosslisted class the Dept. Mean was provided for the undergraduate curricula.

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, Ph.D., 9/2012-3/2013
Kerrie May, Ph.D., 11/2013-12/2014
Sharron Crane, Ph.D., 12/2014-3/2014
Karla Esquilin-Lebron, Ph.D., 2/2019-6/2021
Paulami Rudra, Ph.D., 4/2019-3/2021
Erin Price, Ph.D., 10/2019-5/2022
Javiera Norambuena Morales, Ph.D., 10/2019-2/2023
Kylie Ryan Kaler, Ph.D., 1/2022-4/2024
Jennifer Sun, Ph.D., 1/2023-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, Microbiology Molecular Genetics, 2020-present
Gustavo Rios Delgado, Microbiology Molecular Genetics, 2021-present
Hannah Bovermann, Microbial Biology, 2022-present
Nupur Tyagi, Microbial Biology 2023-present
Liangyu Lyu, Microbial Biology, 2023-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, 2017-2019 (did not finish)

Tushar Roy, Microbial Biology, 2018-2019
Alia Hassan, Microbial Biology, 2018-2019 (did not finish)
Helene Brochon, Microbial Biology, 2021-2024
Navitri Naidu, Microbial Biology, 2023-present
Matthew Pagoria, Microbial Biology, 2025-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, 2018-2021
Christopher McGinley 2019-2022
Princess Okai, 2019-2021
Taylor Andrews, 2020-2022
Patrick Rollin, 2020-2022
Karolyn Ficken, 2021-2022
Lomaani Ranasinghe, 2022-2023
Vincent Zheng, 2022-present
Stanley Paluszek, 2023-2025
*awarded Dept. of Biochemistry and Microbiology Research Excellence Award
Paola Garay Martis, 2023. Visiting student from the University of Puerto Rico-Mayagüez
Sherry Chen, 2023-present
Tedros Abera, 2024-present

High School Students:
Emily Milan-Rea, Wall High School, 2014
Rani Pai, Princeton High School, 2024-present
Madaly Uribe, Passaic County Technical-Vocational School, 2024
Madelyn Barros, Passaic County Technical-Vocational School, 2024
Stephanie Liao, Princeton High School, 2025

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
Eric Bryan, Molecular Biosciences Ph.D. student
Nicole Carroll, Molecular Biosciences Ph.D. student
Lailatou Bambara, Microbial Biology Ph.D. student
Taylor Andrews, Microbial Biology Ph.D. student
Timothy Sherrier, Microbial Biology Ph.D. student
Kylie Bond, Microbial Biology Ph.D. student
Charley Baker, Molecular Biosciences Ph.D. student
Katherine Duseau, Molecular Biosciences Ph.D. student
Paola Garay Martis, Molecular Biosciences Ph.D. student
Madison Cristinziano, Molecular Biosciences Ph.D. student
Lilith Kavalov, 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
Ananya Agarwal, Microbial Biology Ph.D. Program
Maricely Ramirez Hernadez, Chemical and Biological Engineering Ph.D. Program
Edwardo Arthur Troian, Microbiology Molecular Genetics Ph.D. program
Eric Bryan, Microbiology, Cellular and Molecular Pharmacology Ph.D. program
Yadiel Varela, Chemical and Biological Engineering Ph.D. Program
Marcelle Ferreira, Georgetown University, Biology Ph.D. program
Helene Brochon, Microbial Biology M.S. Program
Shrinivas Nandi, Microbial Biology Ph.D. Program
Zarja Miovic, Microbial Biology Ph.D. Program
Antonia Katz, Plant Biology Ph.D. Program
Avanthika Bharath, Microbial Biology 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, 2019 and 2020
Christopher McGinley, 2020 and 2021
Tayor Andrews, 2021
Karolyn Ficken, 2021
Lomaani Ranasinghe, 2023
Stanley Paluszek, 2024
Sherry Chen, 2024

I have served as an advisor for the following G.H. Cook Scholars Thesis 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, 2019
Primit Desai, 2020
Allison Almeda-Ahmadi, 2021
Taylor Andrews, 2021
Karolyn Ficken, 2022
Christopher McGinley 2022
Lomaani Ranasinghe, 2023

Stanley Paluszek, 2024
*Awarded 2025 Outstanding Thesis Award
Vincent Zhang, 2025
Tedros Abera, 2025

I have served as the primary advisor for the following Biology Thesis Students:

Allison Almeda-Ahmadi, 2021
Taylor Andrews, 2021

K. Related Work Experience Since My Arrival at Rutgers.

Service to my discipline

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

Vice-President of the New Jersey Chapter of the American Society of Microbiology (ASM), 2017.

Elected member of: Council on Microbial Sciences (COMS) for the American Society of Microbiology (ASM) 2020-2025.

Deputy community leader for: Molecular Biology and Physiology (MBP) division for the Council on Microbial Sciences American Society of Microbiology (ASM) 2023-2025.

Co-organizer for: International conference on iron-sulfur proteins—Biogenesis, Regulation, and Function. 2024, Winston-Salem, NC. Co-organizer Patricia Dos Santos, Ph.D. Wake Forest University.

Co-organizer for: 2023-24 American Society of Microbiology (ASM) national retreat for the molecular biology and physiology division. Five total organizers.

Organizer for: Spring 2017, Fall 2018, Spring 2019, and Fall 2019 New Jersey chapter of ASM meetings.

Co-organizer (with Max Hagblom) for: Rutgers Microbiology Symposium, annually 2016-present.

Co-organizer for: Symposium for 60th anniversary of Selman Waksman's Nobel Prize in Physiology or Medicine, 2012.

Session convener for: 2025 American Society of Microbiology (ASM) national meeting. Session Title: Molecular mechanisms of metal ion acquisition and utilization in bacteria.

Session convener for: 2024 American Society of Microbiology (ASM) national meeting. Session Title: Impact of metabolism on microbial-host interactions.

Session convener for: International Conference on Iron-Sulfur Proteins—Biogenesis, Regulation, and Function. 2024, Winston-Salem, NC.

Session convener for: online 2023 iron-sulfur biogenesis meeting. Session Title: Integration of bacterial FeS cluster synthesis with metabolism.

Session convener for: 2024 American Society of Microbiology (ASM) national retreat for the microbial molecular biology and physiology. Session Title: Perspectives of metabolic microbiology.

Session moderator for: International Conference on Iron-Sulfur Proteins—Biogenesis, Regulation, and Function. 2021-2022. Online because of COVID-19.

Session moderator for: Steenbock Symposium: International Conference on Iron-Sulfur Proteins—Biogenesis, Regulation, and Function. 5/2018.

Session moderator for: Gordon Research Conference on Staphylococcal Diseases, 8/2017.

Session moderator for: International Conference on Gram-Positive Pathogens, Omaha, NE, 2014.

Session moderator for: Rutgers Microbiology Symposium, 2012-present

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

Grant reviewer for US Army, 2023.

Invited ad hoc grant proposal reviewer for: National Science Foundation 2019, 2024.

Invited ad hoc grant reviewer for the Prokaryotic Cell and Molecular Biology study section of the National institutes of Health 2025.

Grant reviewer for Deutsche Forschungsgemeinschaft (DFG; German Research Council) priority program SPP on Multicellularity, 2025.

Invited ad hoc grant proposal reviewer for: National Institutes of Health (COBRE) 2018.

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

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

Editorial Board member of: *Frontiers in Cellular and Infection Microbiol*ogy, 2018-2021.

Associate Editor for: *Frontiers in Cellular and Infection Microbiol*ogy, 2021-present.

Review Editor for: Frontiers in Bacteriology, 2022-present.

Editor for special issue on Fe-S proteins: Journal of Inorganic Biochemistry 2024

Invited ad hoc manuscript reviewer for scientific journals including: eLife, mBio, Molecular Microbiology, Journal of Biological Chemistry, Biochemistry, Antioxidants & Redox Signaling, ACS infectious diseases, Proceedings of the National Academy of Sciences, PLoS Pathogens, Metallomics, Infection and Immunity, Microbiology and Molecular Biology reviews, Frontiers of Microbiology, 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.

Rutgers service

Appointments and Promotions Committee, School of Biological and Environmental Sciences, 2025-2027

Director, Microbial Biology Graduate Program, 2025-

Member of the mentoring Assistant Professor mentoring committees for Rohan Maddamsetti and Zachary Lonergan, 2025-

Chair of the metabolic health cluster Assistant Professor search committee for the School of Environmental and Biological Sciences, 2023-2024.

School of Environmental and Biological Sciences Excellence Awards Committee, 2023.

Representative for the School of Environmental and Biological Sciences for the Rutgers University Postdoctoral Advisory Council, 2019-2023

School of Environmental and Biological Sciences Promotion Grievance Committee, 2019.

Rutgers University Biological Safety Committee, 2016-present.

School of Environmental and Biological Sciences 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, 2014-2017, 2019-2022, 2024-2027.

Microbiology and Molecular Genetics Graduate Program Comprehensive Examination Committee, 2022-2024.

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.

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

Lipman Hall Safety Committee, 2012-present.