LEA VACCA MICHEL

ASSOCIATE PROFESSOR
SCHOOL OF CHEMISTRY AND MATERIALS SCIENCE
ROCHESTER INSTITUTE OF TECHNOLOGY
GOS-2278 • 85 LOMB MEMORIAL DRIVE • ROCHESTER, NEW YORK 14623
(585) 507-8204 • LVMSCH@RIT.EDU

EDUCATION

University of Rochester School of Medicine and Dentistry, Rochester, NY
M.S., Biophysics (2005)
Ph.D., Biophysics (2007)
Research Advisor: Dr. Kara L. Bren

Colgate University, Hamilton, NY
B.A. *Magna cum laude*, Physics and Mathematics (2002)
Research Advisor: Dr. M. Beth Parks

PROFESSIONAL EXPERIENCE

Rochester Institute of Technology, Associate Professor of Chemistry (July 2015-present)

Rochester Institute of Technology, Assistant Professor of Chemistry (Sept 2009-June 2015)

Ortho-Clinical Diagnostics R& D, Contract Scientist (May 2008-June 2009)

Cornell University, Postdoctoral Research Scientist (August 2007-May 2008)
Research Advisor: Dr. Linda K. Nicholson

Colgate University, Adjunct Lecturer, Department of Physics and Astronomy (Spring 2007)

The College at Brockport (SUNY), Adjunct Lecturer, Department of Chemistry (Spring 2007)

AWARDS AND HONORS

Rochester Museum and Science Center STEM Education Award, presented to WISe (2018)
Travel Award, 2018 Annual Biomedical Research Conference for Minority Students (2018)
Received the COS Outstanding Contributions to the Community award, RIT (2018)
Selected for the COS Leadership Development Program, RIT (2018)
2017 Edwina Award, RIT, Center for Women and Gender (2017)
Salutes to Excellence Award, from the Rochester Section American Chemical Society (2016)
Travel Award, 2016 Annual Biomedical Research Conference for Minority Students (2016)
Nominated for Eisenhart Award for Outstanding Teaching, RIT (2015, 2016, 2017)
COS Advancing Diversity Award, RIT (May 2016)
Invited panelist; Diplomacy Summit: Women's Empowerment, Albany, NY (June 2016)
Received INSIGHT Into Diversity's Inspiring Women in STEM national award (June 2015)
Eisenhart Award for Outstanding Teaching Finalist, RIT (2015-2016)
Nominated for Isaac L. Jordan Faculty Pluralism Award, RIT (2015, 2018)
Nominated for Eisenhart Provost's Award for Excellence in Teaching, RIT (June 2014)
College of Science Outstanding Student Mentor Award, RIT (May 2014)
Nominated for Trustees Scholarship, RIT (Fall 2013)

College of Science Leadership Award, for service as Chair of WISe, RIT (May 2013)
Featured College of Science faculty member highlighted in the Provost's Annual Faculty Scholarship Report, RIT (2012-2013)
College of Science Helpful Citizen Award, RIT (May 2012)
Appointed to the National Institutes of Health Early Career Reviewer Program run by the Center for Scientific Review (August 2011)
Nominated for Provost Teaching Award, RIT (Fall 2010)
Invited to attend the NIH National Graduate Student Research Festival (October 2006)
William F. Neuman Award, University of Rochester (May 2006)
Nominated to Sigma Pi Sigma, National Physics Honor Society, Colgate University (April 2006)
Elon Huntington Hooker Graduate Fellowship, University of Rochester (2005-2006)
ACS Women Chemists Committee Travel Award, sponsored by Eli Lilly & Company (2005)
The Leon L. Miller Graduate Fellowship, University of Rochester (2002)
Nominated to Phi Eta Sigma, Colgate University (1999)

PUBLICATIONS/PATENTS

Research Articles/Patents published since faculty appointment:

Patent Pending: Michel LV, Hellman J (November 8, 2018) Diagnosing sepsis by detecting peptidoglycan associated lipoprotein (Pal) in urine (Application No. 62/757211).

Michel LV, Kaur R, Zavorin M*, Pryharski K, Khan MN, LaClair C*, O'Neil M*, Xu Q, Pichichero ME (2018) Intranasal coinfection model allows for assessment of protein vaccines against nontypeable *Haemophilus influenzae* in mice, *Journal of Medical Microbiology* 67: 1527-1532.

Sgheiza V*, Novick B*, Stanton S*, Pierce J*, Kalmeta B*, Holmquist MF*, Grimaldi K*, Bren KL, **Michel LV** (2017) Covalent bonding of heme to protein prevents heme capture by nontypeable *Haemophilus influenzae*, *FEBS Open Bio* 7: 1778-1783.

Gehret AU, Trussell JW, **Michel LV** (2017) Approaching Undergraduate Research with Students who are Deaf and Hard-of-Hearing, *Journal of Science Education for Students with Disabilities* 20 (1): Article 4.

Pichichero M, Khan MN, Kaur R, Sharma S, Casey J, **Michel L** (Accepted August 11, 2015) US Patent 9101568: Compositions and methods related to P6.

**Michel LV, ***Shaw J, *MacPherson V, *Barnard D, *Bettinger J, *D'Arcy B, Surendran N, Hellman J, Pichichero ME (2015) Dual orientation of the outer membrane lipoprotein Pal in *Escherichia coli*, *Microbiology* 161: 1251-1259.

Michel LV, *Snyder J, *Schmidt R, *Milillo J, *Grimaldi K, *Kalmeta B, Khan N, Sharma S, Wright LK, Pichichero ME (2013) Dual orientation of the outer membrane lipoprotein P6 of nontypeable *Haemophilus influenzae*, *J Bacteriology* 195: 3252-3259.

Craig PA, **Michel LV**, Bateman RC (2013) A Survey of Educational Uses of Molecular Visualization Freeware, *Biochemistry and Molecular Biology Education* 41: 193-205.

Peterson JE, Zurakowski D, Italiano JE, **Michel LV**, Connors S, Oenick M, D'Amato RJ, Klement GL, Folkman MJ (2012) VEGF, PF4 and PDGF are elevated in platelets of colorectal cancer patients, *Angiogenesis* 15: 265-273.

Michel LV, *Kalmeta B, *McCreary M, *Snyder J, Craig P, Pichichero ME (2011) Vaccine candidate P6 of nontypable *Haemophilus influenzae* is not a transmembrane protein based on protein structural analysis, *Vaccine* 29: 1624-1627.

Chang A, Kaur R, **Michel LV**, Casey JR, Pichichero ME (2011) *Haemophilus influenzae* vaccine candidate outer membrane protein P6 is not conserved in all strains, *Hum Vaccines* 7: 102-105.

Peterson JE, Zurakowski D, Italiano JE, **Michel LV**, Fox L, Klement GL, Folkman J (2010) Normal ranges of angiogenesis regulatory proteins in human platelets, *Am J Hematology* 85: 487-493.

***Featured in*:** Gewin V (2018) What does it take to make an institution more diverse? *Nature* 558: 149-151. https://www.nature.com/articles/d41586-018-05317-4

Undergraduate/Graduate Research Student Authors

Research Articles published prior to faculty appointment:

Michel LV, Bren KL (2008) Submolecular unfolding units of *Pseudomonas aeruginosa* cytochrome c_{551}, *J Biol Inorg Chem* 13: 837-845.

Ye T, Kaur R, Senguin FT, **Michel LV**, Bren KL, Elliott SJ (2008) Methionine ligand lability of type I cytochromes *c*: Detection of ligand loss using protein film voltammetry, *J Am Chem Soc*. 130: 6682-6683.

Michel LV, Ye T, Bowman, SEJ, Levin BD, Hahn MA, Russell BS, Elliott SJ, Bren KL (2007) Heme attachment motif mobility tunes cytochrome *c* redox potential, *Biochemistry* 46: 11753-11760.

Parks B, **Vacca L**, Rumberger E, Hendrickson D, Christou G (2003) Effect of mechanical stress on the line width of single photon absorptions in Mn_{12}-acetate, *Physica B* 329: 1181-1182.

Condensation/Commentary:

Vacca LR, Bren KL (2005) Condensation article: A redox-controlled molecular switch revealed by the crystal structure of a bacterial heme PAS sensor and Insights into signal transduction involving PAS domain oxygen-sensing heme proteins from the x-ray crystal structure of *Escherichia coli* Dos heme domain (*Ec* DosH), *Chemtracts- Inorganic Chemistry* 18(2): 105-111.

PRESENTATIONS (SINCE 2009)

Invited Keynote Presentation, Science Teachers Association of New York State Annual Conference Chemistry Luncheon (October 2018)
Invited Presentation, RIT Summer Math Institute (June 2018)
Invited Keynote Presentation, Rochester ACS Undergraduate Symposium (April 2017)
ASBMB 2016 Annual Meeting, Chicago, Il (April 2017) Gehret AU, Trussell, JW, Michel LV; Approaching undergraduate research with students who are deaf and hard of hearing.
Invited Presentation, Lehigh University (September 2016)
Invited Presentation, Hobart William Smith College (February 2016)
Invited Presentation, American Associate of Physics Teachers, College Park, MD (July 2015)
Invited to present at Collaborative Conversations, Seneca Park Zoo (June 2014)
Invited Presentation, University of Rochester (January 2014)
Invited Presentation, SUNY Buffalo (October 2013)

Invited Presentation, Roberts Wesleyan College (April 2013)
Invited Presentation, Nazareth College (March 2013)
Invited Presentation, SUNY at Geneseo (October 2012)
University of Rochester Biophysics Retreat, Poster session (October 2012)
Invited Presentation, SUNY at Brockport (September 2012)
Podium Presentation, 10th International Symposium on the Recent Advances in Otitis Media, New Orleans, Louisiana (June 2011)
ASBMB 2011 Annual Meeting, Washington, DC (April 2011) Craig PA, Michel LV, Bateman RC; Educational uses of molecular visualization: A survey of the community.
RIT & RGHS Alliance Research Poster Session, Rochester General Hospital (March 2011)
Invited Presentation, Colgate University (January 2011)
Interscience Conference on Antimicrobial Agents and Chemotherapy, Boston, MA (September 2010) Chang A, Kaur R, Michel LV, Casey JR, Pichichero ME;
Invited Presentation, University at Buffalo SUNY (October 2009)
Invited Presentation, Rochester General Research Institute (September 2009)

ACTIVITIES/SERVICE

WCC/Merck Research Award, **Reviewer** (January 2019)
Virulence, **Invited Manuscript Peer Reviewer** (November 2018)
RIT, **McNair Program Advisory Board** (Sep 2018-present)
RIT, *Elected*, **Tenure Committee** (May 2018-April 2020)
RIT, **Leadership Workshop Series** (March 2018-April 2018)
Skype-a-Scientist (February 2018, May 2018, May 2018)
NIH Invited Grant Reviewer, *NIH BST-80 Bioengineering Review Panel* (January 2018)
RIT, **NIH Grant Writing Bootcamp** (January 2018)
National Conference for Undergraduate Women in Physics, *Workshop leader* (January 2018)
RIT, *Elected*, ***Faculty Affairs Committee*** (2017-2018)
RIT, **Women and Gender Advisory Committee** (2016-present)
RIT, **Advocates and Allies Advisory Committee** (2015-2017)
RIT, **Engineering senior project customer/advisor** (2015-2017)
RIT, **Chemistry faculty search committee** (2015-2016)
RIT, **Undergraduate Research Symposium,** *COS rep. on the program committee* (2015)
Democrat and Chronicle, *Science advisor* (January 2015-present)
RIT, **SMASH camp for middle school girls,** *Director of Experiments* (one week; July 2014, July 2015; July 2016; July 2018)
Molecular Biotechnology, **Invited Manuscript Peer Reviewer** (January 2014)
RIT, **Chair of Women in Science Program** (Sept 2012- present)
RIT, **Research Scholars Committee** (2011-present)
Project SEED (American Chemical Society), *Rochester Program Director* (2011-present)
RIT, **Women in Science Executive Committee** (2010-present)
RIT, **Department Honors Advocate** (2009-present)
RIT, **Department Instrumentation Committee** (2009-2013)
RIT, **Platinum Team** (2010)
Hilton High School, **Breakfast with a Scientist Volunteer presenter** ('09, '10, '11, '12, '13, '14, '16, '17, '18)
American Chemical Society Rochester Section, *Member-at-Large* (2009-2010)
RIT, **Grant Writing Boot Camp** (2009)
Upstate NY NMR Symposium, *Organizing committee member* (2008)
Cornell University, **Postdoctoral Association Member** (2007-2008)

GRANT/AWARD APPLICATIONS

External/Funded:

Personal donation to Rochester Project SEED (Director) (*$54,000*) June 2017-August 2019.

HHMI Undergraduate Science Education – Inclusive Excellence Grants 2017 (Co-PI) (*$1,000,000*) September 2017 – August 2022.

NIH R15. Phase Boundaries and Liquid Structure of Concentrated Eye Lens Protein Mixtures **(Co-PI)** *($361,036)* September 2013 – August 2017.

The Camille and Henry Dreyfus Foundation: Special Grant Program in the Chemical Sciences. Quiet Chemistry: Working with Deaf Students in a Chemistry Research Laboratory **(PI)** *($31,600)* September 2013 – December 2016.

Internal/Funded:

RIT: NIH Grant Writing Bootcamp. Implicating Pal in Gram-Negative Sepsis **(PI)**. May 1, 2018 – August 31, 2019 *($10,000)*.

RIT: FEAD grant. Probing the Pal-Peptidoglycan Interactions and their Role in Pal Release **(PI)**. September 1, 2017 – March 31, 2018 *($5,500)*.

RIT: ADVANCE Connect Grants Program. Formal Evaluation of WISe **(PI)**. May 2017 – March 2018 *($5,000)*.

RIT: Ronald D. Dodge Memorial Faculty Grant. Funding to support a student research assistant on the Dreyfus Quiet Chemistry project **(PI)**. 2016-2017 ($1000)

RIT: ADVANCE Connect Grants Program. Crouching Tiger, Hidden Bias **(PI)**. June 1, 2016 – May 31, 2017 *($1,950)*.

RIT: ADVANCE Connect Grants Program. WISe Distinguished Speaker Series **(Co-PI)**. June 1, 2016 – May 31, 2018 *($6,800)*.

RIT: FEAD grant. Implicating Dual oriented Pal in Gram-negative sepsis **(PI)**. July 1, 2015 – January 31, 2016 *($6,000)*.

RIT: ADVANCE Connect Grants Program. From WISe to WISE: Networking for Women in Science and Engineering **(Co-PI)**. June 1, 2015 – May 31, 2016 *($8,100)*.

RIT: ADVANCE Connect Grants Program. WISe Networking and Leadership Initiatives **(PI)**. June 2014 – December 2014 *($10,200)*.

RIT: Provost's Faculty Mentoring Grant. Series of Women Faculty Lunches/Discussions **(PI)**. January – December 2012 *($1900)*.

RIT: Dean's Research Initiation Grant. Testing for Lipoprotein Dual Orientation in the Outer Membrane of Gram-Negative Bacteria **(PI).** May 2012 – April 2013 *($15,000).*

RIT/RGH SEED grant. Searching for an alternative vaccine candidate for nontypable *Haemophilus influenzae* **(PI)**. February 2011 – January 2012 *($20,000).*

RIT Grant Writing Boot Camp. Evaluating P6 as one of the leading vaccine candidates for Nontypable *Haemophilus influenzae* **(PI)**. March 2010 – February 2011 *($5,000).*

PROFESSIONAL ASSOCIATIONS

American Chemical Society
American Society for Biochemistry and Molecular Biology

COURSES TAUGHT (FALL=F, WINTER=W, SPRING =S)

Biochemistry: Metabolism (W-2009, S-2010, W-2010, W-2012 (double section), S-2013)
Biochemistry: Conformation and Dynamics (F-2010, S-2011, F-2011, S-2012, F-2012)
Biochemistry: Laboratory Techniques (W-2011, S-2015, S-2016, F-2017, S-2019)
Biochemistry Freshman Symposium (F-2010, F-2011)
Circular Dichroism lecture series (for Ortho-Clinical Diagnostics, Summer 2010)
NMR spectroscopy independent study (S-2011)
Chemical Literature (S-2013 (2 sections))
Biochemistry I (F-2013, S-2014, F-2014, F-2016, S-2018, F-2018)
Chemical Connections (F-2013, F-2014, F-2017, F-2018)
Biochemistry II (S-2014 (2/3), F-2014, S-2015 (1/3), F-2015, F-2016)
Biochemistry for Health Sciences (F-2015)
Advanced Proteins (S-2018)
General Analytical Chemistry Lab (S-2019)

UNDERGRADUATE AND M.S. RESEARCH STUDENTS

MS students in italics

CURRENT STUDENTS

1. Meghan O'Neil (2015-present)
2. Ciara LaClair (2015-present)
3. Julia Faraone (2016-present)
4. Morgan Bauer (2016-present)
5. Sean Lewis (2016-present)
6. Xinbei Liu (2016-present)
7. *Leslie Gallardo* (2017-present)
8. *Aaron Fadden* (2017-present)
9. Niaya Jackson (2018-present)
10. Symeon Bushunow (2018-present)
11. Zachary Ward (2018-present)
12. Maha Khokar (2018-present)
13. *Kara Farquharso*n (2018-present)
14. *Olivia Fraser* (2018-present)
15. Grace McGinnity (2018-present)
16. Kanoa Ayau (2019-present)
17. Aleea Wrightstone (2019-present)
18. Eva Earnest (2019-present)

FORMER STUDENTS

1. Dr. Jennifer Milillo (2009-2011) (Medical School- SUNY Buffalo; Ped. Resident at Mt. Sinai Hospital, NYC; Critical Care Fellowship, Cohen Children's Medical Center, NYC; Pediatric Intensive Care Doctor at Long Island Jewish Medical Center)
2. Nathaniel Huddleston (Summer 2010, Clinical Laboratory Science program, U of Illinois)

3. Arooj Iqbal (2010-2011) (MS program in Biomedical Science, New Jersey Medical School; Medical School- Lake Erie College of Medicine at Seton Hill)
4. Dr. Danielle Weekes (2010-2011) (Medical School-Meharry Medical College; Orthopedic Research at Rothman Institute)
5. Dr. Breanna Kalmeta (2009-2012) (Neuroscience PhD program- Duke University)
6. Dr. Kyle Grimaldi (2010-2012) (Med School- SUNY Buffalo; Emergency Med resident at UNC)
7. Dr. Anthony Mangan (2010-2012) (Biochemistry PhD program- U of Colorado Denver; HHMI Fellow; Postdoc at UNC Chapel Hill- IRACDA fellow)
8. Melody Frink (2011-2012) (Biochemistry PhD program- Ohio State University)
9. Dr. Joy Snyder (2009-2013) (PharmD program- St. John Fisher College; Wegmans Pharm residency)
10. Rachel Schmidt (2010-2013) (2 years of Physiology PhD program- Cornell University; Current- Lab technician III, U of Rochester)
11. Bethany Novick (2011-2014) (Chemistry MS Program- RIT)
12. John Bettinger (2011-2014) (Biochemistry PhD program- U of Rochester)
13. Victoria MacPherson (2013-2014) (Medical School- Philadelphia College of Osteopathic Med)
14. Valerie Sgheiza (2012-2015) (MA in Anthropology- California State U Chico; PhD in Anthropology- University of Illinois at Urbana-Champaign)
15. Juliana Shaw (2012-2015) (Biochemistry PhD program- Yale University)
16. Emily Newman (2012-2015) (Medical School- Cincinnati School of Medicine)
17. David Barnard (2012-2015) (Biochemistry PhD program- University of Rochester)
18. Jeff Shaul (2013-2015) (MS Bioinformatics Program, RIT)
19. *Casey Reulbach* (2013-2015) (Med School- Kansas City Univ. College of Osteopathic Medicine)
20. Sanjana Kumar (Summer 2014; Volunteer; Medical School- Case Western Reserve University)
21. Alexis Russell (Summer 2014; MPH program at U Albany)
22. Rushka Kallicharan (Summer 2015; Volunteer; Lab technician, U of Rochester; Clinical Research Coordinator at Roswell Park)
23. Kasey Morrow (2013-2016) (Pharmaceutical Sciences PhD program- SUNY Buffalo)
24. Angel Payan (2013-2016) (Post-Bac Research Program in Biomedical Sciences- U Penn; Biochemistry PhD program- U of California, San Diego)
25. Breanne Kisselstein (2014-2016) (Plant Pathology PhD program- Cornell University)
26. Kaylee Mathews (2014-2016) (Biochemistry/Biophysics PhD program- Brown University)
27. *Bethany Novick* (2014-2016) (Research Scientist III position, Meso Scale Diagnostics; Scientist I, Ortho-Clinical Diagnostics)
28. Brooke D'Arcy (2014-2017) (Cell and Molecular Biology PhD program- Duke University)
29. Katharine Umphred-Wilson (2014-2017) (Biomedical Sciences PhD program- Case Western)
30. John Zanet (2014-2017) (Applying for scientist positions)
31. Shivani Phadke (2014-2017) (Biotechnology MS program-Northeastern University)
32. Nicole Fernandez (2016-2017) (Post-baccalaureate Research Education Program, U of Rochester; Immunology/Microbiology PhD program, Albert Einstein College of Medicine)
33. Aaron Fadden (2016-2017) (MS Chemistry Program, RIT)
34. Kara Farquharson (2014-2018) (MS Chemistry Program, RIT)
35. Sarah Stanton (2014-2018) (Nursing program, U of Rochester)
36. Carlie McNamara (2014-2018) (Wegmans)
37. Jeanetta Pierce (2014-2018) (Hood College; Biomedical Science MS program)
38. *Mark Zavorin* (2016-2018) (Scientist I, Ortho-Clinical Diagnostics)

39. Grace McGinnity (2017-2018) Brockport High School Intern: 6 hours/week, Fall/Spring
40. *Victoria Popov* (2018, one semester) Rochester Bridges to Doctorate program
41. Emma Snyder (2015-2018) (Lake Erie College of Osteopathic Medicine)
42. Nicole Pannullo (2017-2018) (NIH post baccalaureate program)

Served on MS/PhD committee for:
Mark McCreary (2009-2010) *Bioinformatics M.S.* (Research Assistant, Stanford University)
Hongmei Yuan (2011) *Chemistry M.S.*
Peipei Zhu (2013-2015) *Chemistry M.S.*
Isreal Moreno (2014-2016) *Chemistry M.S.*
Courtney Kellogg (2014-2016) *Chemistry M.S.*
Martha Pickard (2016-2017) *Chemistry M.S.*
Makayla Foster (2017-present) *Chemistry M.S.*
Mandy Nevins (2017-present) *Physics and Astronomy Ph.D. (external committee member)*

STUDENT PRESENTATIONS

1. Kalmeta B, Huddleston NL, McCreary MA, Snyder JM, Michel LV (RIT Undergraduate Summer Research Symposium, 2010) Structural and immunological analysis of NTHi P6 for vaccine development; *poster*

2. Snyder J, Sharma S, Chang A, Khan N, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2010) Studies on a P6 knock-out to further progress on a protein vaccine against nontypable *Haemophilus Influenzae*; *poster*

3. Millilo J, Wright LK, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2010) Determination of the orientation of P6 in *Haemophilus influenzae*; *oral*

4. *Snyder J, Kalmeta B, Sharma S, Pichichero M, Michel LV (ASBMB 2011 Annual Meeting, Washington, DC) Structural studies on P6 protein suggest it may not be a good vaccine candidate against Nontypable *Haemophilus Influenzae*; *poster*

5. *Kalmeta B, Snyder J, McCreary M, Huddleston N, Pichichero M, Michel LV (ASBMB 2011 Annual Meeting, Washington, DC) Structural analysis of P6 from nontypable *Haemophilus influenzae* suggests that it is not a transmembrane protein; *poster*

6. Snyder J, Kalmeta B, Sharma S, Pichichero M, Michel LV (56th Annual ACS Rochester Section Undergraduate Research Symposium, 2011) Structural studies on P6 protein suggest it may not be a good vaccine candidate against Nontypable *Haemophilus Influenzae*; *poster*

7. Kalmeta B, Snyder J, McCreary M, Huddleston N, Pichichero M, Michel LV (56th Annual ACS Rochester Section Undergraduate Research Symposium, 2011) Structural analysis of P6 from nontypable *Haemophilus influenzae* suggests that it is not a transmembrane protein; *poster*

8. Iqbal A, Grimaldi K, Weekes D, Bren K, Michel LV (56th Annual ACS Rochester Section Undergraduate Research Symposium, 2011) Why c-type heme? Using site-directed mutagenesis to probe the biological function of the covalently attached heme; *poster*

9. Snyder J, Milillo J, Czup K, Sharma S, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2011) Furthering studies on NTHi to define the localization and orientation of P6; *oral*

10. Kalmeta B, Grimaldi K, Iqbal A, Weekes D, Bren K, Michel LV (RIT Undergraduate Summer Research Symposium, 2011) Results from NTHi growth studies help to elucidate the biological significance of c-heme covalent attachment; *oral*

11. Schmidt R, Milillo J, Kalmeta B, Snyder J, Wright LK, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2011) Proteinase K digestion experiment: Determining the orientation of P6; *poster*

12. *Kalmeta B, Grimaldi K, Iqbal A, Weekes D, Bren K, Michel LV (ASBMB 2012 Annual Meeting, San Diego, CA) Using NTHi growth studies to demonstrate the biological significance of *c*-heme covalent attachment; *poster*

13. *Snyder J, Czup K, Sharma S, Pichichero M, Michel LV (ASBMB 2012 Annual Meeting, San Diego, CA) Using flow cytometry to identify the orientations of P6 protein in Nontypable *Haemophilus influenzae* and *Escherichia coli*; *poster*

14. *Schmidt R, Milillo J, Sharma S, Pichichero M, Michel LV (ASBMB 2012 Annual Meeting, San Diego, CA) Protease digestion of P6: Demonstrating a novel dual orientation of P6 in Nontypable *Haemophilus influenzae*; *poster*

15. Mangan A, Michel LV (Master's Level Graduate Research Conference, SUNY Brockport, Brockport, NY, 2012) Using site-directed mutagenesis to identify the most immunogenic regions of protein vaccine candidate P6; *oral*

16. *Frink M, Kalmeta B, Grimaldi K, Iqbal A, Weekes D, Bren KL, Michel LV (26th Annual Symposium for the Protein Society, San Diego, CA) Using site-directed mutagenesis to elucidate the biological role of the *c*-type heme; *poster*

17. Sgheiza V, Frink M, Grimaldi K, Kalmeta B, Bren KL, Michel LV (RIT Undergraduate Summer Research Symposium, 2012) Investigation of hemophore activity in nontypable *Haemophilus influenzae*; *poster*

18. Newman E, Mangan A, Bettinger J, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2012) Using site-directed mutagenesis to identify the most immunogenic regions of vaccine candidate P6; *poster*

19. Shaw J, Schmidt R, Snyder J, Wright LK, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2012) Using biotinylation to determine the orientations of Pal in *Escherichia coli*; *poster*

20. Snyder J, Czup K, Sharma S, Pichichero M, Michel LV (ACS 38th Northeast Regional Meeting 2012, Rochester, NY) Confirming dual orientation of P6 in nontypable *Haemophilus influenzae*; *poster*

21. Sgheiza V, Frink M, Grimaldi K, Kalmeta B, Bren KL, Michel LV (ACS 38th Northeast Regional Meeting 2012, Rochester, NY) Investigation of hemophore activity in nontypable *Haemophilus influenzae*; *poster*

22. Newman E, Mangan A, Bettinger J, Pichichero M, Michel LV (ACS 38th Northeast Regional Meeting 2012, Rochester, NY) Using site-directed mutagenesis to identify the most immunogenic regions of vaccine candidate P6; *poster*

23. Shaw J, Schmidt R, Snyder J, Wright LK, Pichichero M, Michel LV (ACS 38th Northeast Regional Meeting 2012, Rochester, NY) Using biotinylation to determine the orientations of Pal in *Escherichia coli*; *poster*

24. Schmidt R, Novick B, Grimaldi K, Kalmeta B, Milillo J, Pichichero M, Michel LV (Undergraduate Research Day 2012, University of Rochester School of Medicine and Dentistry) Quantifying the two populations of dual oriented P6 in nontypable *Haemophilus influenzae*; *poster*

25. [#]*Shaw J, Schmidt R, Snyder J, Wright LK, Pichichero M, Michel LV (National Collegiate Research Conference, Harvard University, January 2013) Using biotinylation to determine the orientations of Pal in *Escherichia coli*; *poster*

26. [#]*Snyder J, Pichichero M, Michel LV (National Collegiate Research Conference, Harvard University, January 2013) Describing the dual orientation of vaccine candidate P6; *poster* (competitive selection)

27. *Newman E, Mangan A, Bettinger J, Pichichero M, Michel LV (National Collegiate Research Conference, Harvard University, January 2013) Using site-directed mutagenesis to identify the most immunogenic regions of vaccine candidate P6; *poster*

28. *Shaw J, Schmidt R, Snyder J, Pichichero M, Michel LV (ASBMB 2013 Annual Meeting, Boston, MA) Using biotinylation to determine the orientations of Pal in *Escherichia coli*; *poster*

29. *Snyder J, Pichichero M, Michel LV (ASBMB 2013 Annual Meeting, Boston, MA) Describing the dual orientation of vaccine candidate P6; *poster*

30. *Bettinger J, Newman E, Mangan A, Pichichero M, Michel LV (ASBMB 2013 Annual Meeting, Boston, MA) Using site-directed mutagenesis to identify the most immunogenic regions of vaccine candidate P6; *poster*

31. *Schmidt R, Shaw J, Novick B, Pichichero M, Michel LV (ASBMB 2013 Annual Meeting, Boston, MA) Quantifying the two populations of dual oriented P6 in nontypable *Haemophilus influenzae*; *poster*

32. *Novick B, Sgheiza V, Kalmeta B, Grimaldi K, Bren KL, Michel LV (ASBMB 2013 Annual Meeting, Boston, MA) Probing the biological significance of *c*-heme attachment in cytochrome *c*; *poster*

33. Shaw J, Michel LV (RIT Undergraduate Summer Research Symposium, 2013) Using Biochemical Techniques to Determine the Orientations of Pal in Escherichia coli; *oral*

34. Bettinger J, Michel LV (RIT Undergraduate Summer Research Symposium, 2013) Using site-directed mutagenesis to identify the most immunogenic regions of vaccine candidate P6; *oral*

35. MacPherson V, Shaw J, Surendran N, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2013) Dual Orientation of P6 in NTHi Also Found With Pal in *Escherichia coli*; *poster*

36. Barnard D, Bettinger J, Shaw J, Xu Q, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2013) Dual Orientation of Vaccine Candidate P6 in HH13 Strain of Nontypable *Haemophilus influenza*; *poster*

37. Bettinger J, Michel LV (Undergraduate Research Day 2013, University of Rochester School of Medicine and Dentistry) Using site-directed mutagenesis to identify the most immunogenic regions of vaccine candidate P6; *poster*

38. Novick B, Sgheiza V, Kalmeta B, Grimaldi K, Bren KL, Michel LV (Undergraduate Research Day 2013, University of Rochester School of Medicine and Dentistry) Probing the biological significance of *c*-heme attachment in cytochrome *c*; *poster*

39. Bettinger J, Michel LV (Rochester Academy of Science Annual Fall Paper Session, 2013) Using site-directed mutagenesis to identify the most immunogenic regions of vaccine candidate P6; *poster*

40. Barnard D, Bettinger J, Shaw J, Xu Q, Pichichero M, Michel LV (Rochester Academy of Science Annual Fall Paper Session, 2013) Dual Orientation of Vaccine Candidate P6 in HH13 Strain of Nontypable *Haemophilus influenza*; *poster*

41. #*Shaw J, Michel LV (National Collegiate Research Conference, Harvard University, January 2014) Using Biochemical Techniques to Determine the Orientations of Pal in Escherichia coli; *poster* (competitive selection)

42. Reulbach C, Michel LV (RIT 6th Annual Graduate Research and Creativity Symposium, 2014) Biologic significance of dual oriented NTHi vaccine candidate P6; *oral*.

43. *MacPherson V, Shaw J, Pichichero M, Michel LV (ASBMB 2014 Annual Meeting, San Diego, CA) Assessing the orientations of lipoprotein Pal in the outer membrane of *Escherichia coli*; *poster*

44. *Shaw J, Schmidt R, MacPherson V, Pichichero ME, Michel LV (ASBMB 2014 Annual Meeting, San Diego, CA) Quantifying the two populations of dual oriented P6 in Nontypable *Haemophilus influenzae* and Pal in *Escherichia coli*; *poster*

45. *Barnard D, Bettinger J, Shaw J, Pichichero M, Michel LV (ASBMB 2014 Annual Meeting, San Diego, CA) Assessing the dual orientations of vaccine candidate P6 in nontypable *Haemophilus influenzae*; *poster*

46. *Bettinger J, Newman E, Mangan A, Pichichero M, Michel LV (ASBMB 2014 Annual Meeting, San Diego, CA) Identification of the most immunogenic regions in vaccine candidate P6; *poster*

47. Newman E, Bettinger J, Mangan A, Pichichero M, Michel LV (Annual ACS Rochester Section Undergraduate Research Symposium, 2014) Using Site-Directed Mutagenesis to Identify the Most Immunogenic Regions of Vaccine Candidate P6; *poster*

48. Sgheiza V, Novick B, Frink M, Grimaldi K, Kalmeta B, Bren KL, Michel LV (Annual ACS Rochester Section Undergraduate Research Symposium, 2014) Probing the biological significance of the covalent attachments to *c*-type heme; *poster*

49. Shaul JA, MacPherson V, Michel LV (Annual ACS Rochester Section Undergraduate Research Symposium, 2014) Probing the two orientations of P6 in nontypeable *Haemophilus influenzae*; *poster*

50. Barnard D, Michel LV, Thurston G (RIT Undergraduate Summer Research Symposium, 2014) Working towards the elucidation of interactions between bovine gamma-B crystallins; *oral*

51. Shaw J, Michel LV (RIT Undergraduate Summer Research Symposium, 2014) Dual orientation of the outer membrane lipoprotein Pal in *Escherichia coli*; *oral*

52. Shaul J, Michel LV (RIT Undergraduate Summer Research Symposium, 2014) Dual orientation of P6 in various strains of nontypeable *Haemophilus influenzae*; *oral*

53. Morrow K, Kumar S, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2014) The effect of P6 dual orientation and anti-p6 antibodies on bactericidal activity against nontypable Haemophilus influenzae; *poster*

54. Payan A, Barnard D, Russell A, Thurston G, Michel LV (RIT Undergraduate Summer Research Symposium, 2014) Probing the molecular interactions of bovine gamma B crystallins with NMR spectroscopy; *poster*

55. Kumar S, Morrow K, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2014) Elucidating the effect of pH on P6 surface exposure in NTHi; *poster*

56. Russell A, Thurston G, Michel LV (RIT Undergraduate Summer Research Symposium, 2014) Investigating crystallin-crystallin interactions in the eye lens; *poster*

57. D'Arcy B, Shaw J, Michel LV, Pichichero M (RIT Undergraduate Summer Research Symposium, 2014) The two faces of Pal: Elucidating the two orientations of Pal protein in E. coli; *poster*

58. Barnard D, Payan A, Mills J, Thurston G, Michel LV (Undergraduate Research Day 2014, University of Rochester School of Medicine and Dentistry) Working towards the elucidation of interactions between bovine gamma-B crystallins; *poster*

59. Shaw J, Barnard D, D'Arcy B, Pichichero ME, Michel LV (Undergraduate Research Day 2014, University of Rochester School of Medicine and Dentistry) Dual orientation of the outer membrane lipoprotein Pal in *Escherichia coli*; *poster*

60. Shaul J, Reulbach C, Michel LV (Undergraduate Research Day 2014, University of Rochester School of Medicine and Dentistry) Probing the dual orientation of P6 in various strains of NTHi; *poster*

61. D'Arcy B, Shaw J, Michel LV, Pichichero M (Rochester Academy of Science Annual Fall Paper Session, 2014) The two faces of Pal: Elucidating the two orientations of Pal protein in *E. coli*; *poster*

62. Payan A, Barnard D, Mills J, Thurston G, Michel LV (Rochester Academy of Science Annual Fall Paper Session, 2014) Probing the molecular interactions of bovine gamma B crystallins through NMR spectroscopy; *poster*

63. Reulbach C, Michel LV (Rochester Academy of Science Annual Fall Paper Session, 2014) Biologic significance of dual oriented NTHi vaccine candidate P6; *poster*.

64. #*Payan A, Mills J, Thurston G, Michel LV (Emory University Laney Graduate School STEM Research and Career Symposium, 2015) Probing the molecular interactions of bovine gamma B crystallins with NMR spectroscopy; *chosen out of over one hundred applicants to given an oral presentation.*

65. *Payan A, Barnard D, Sgheiza V, Mills J, Thurston G, Michel LV (ASBMB 2015 Annual Meeting, Boston, MA) Probing the molecular interactions of bovine gamma B crystallins with NMR spectroscopy; *poster*

66. *D'Arcy B, Shaw J, Pichichero M, Michel LV (ASBMB 2015 Annual Meeting, Boston, MA) The two faces of Pal: Elucidating the two orientations of Pal protein in *E. coli*; *poster*

67. *Reulbach C, Shaul J, Pichichero M, Michel LV (ASBMB 2015 Annual Meeting, Boston, MA) Biological significance of dual oriented NTHi vaccine candidate P6; *poster*.

68. *Shaul J, Reulbach C, Kisselstein B, Pichichero M, Michel LV (ASBMB 2015 Annual Meeting, Boston, MA) Quantifying the two P6 populations in various strains of NTHi; *poster*

69. *Shaw J, MacPherson V, Barnard D, D'Arcy B, Pichichero M, Michel LV (ASBMB 2015 Annual Meeting, Boston, MA) All or nothing surface exposure of the lipoprotein Pal in *Escherichia coli*; *poster*

70. *Morrow K, Kumar S, Pichichero M, Michel LV (ASBMB 2014 Annual Meeting, Boston, MA) The effect of P6 dual orientation on anti-P6 bactericidal activity in NTHi; *poster*

71. D'Arcy B, Michel LV (Annual ACS Rochester Section Undergraduate Research Symposium, 2015) The two faces of Pal: Elucidating the two orientations of Pal protein in *E. coli*; *oral.*

72. Payan A, Mills J, Thurston G, Michel LV (Annual ACS Rochester Section Undergraduate Research Symposium, 2015) Probing the molecular interactions of bovine gamma B crystallins with NMR spectroscopy; *oral.*

73. Kisselstein B, Reulbach C, Shaul J, Pichichero M, Michel LV (Annual ACS Rochester Section Undergraduate Research Symposium, 2015) Elucidating the two orientation of vaccine candidate P6 from nontypeable *Haemophilus influenzae*; *poster*.

74. Mathews K, Payan A, Barnard D, Mills JL, Thurston G, Michel LV (Annual ACS Rochester Section Undergraduate Research Symposium, 2015) Probing the molecular interactions of bovine gamma B crystallins using NMR spectroscopy; *poster*.

75. Kallicharan R, Kisselstein B, Novick B, Phadke S, Reulbach C, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2015) The biological significance of two dual oriented Pal proteins from Gram-negative bacteria; *poster*.

76. Zanet J, Mathews K, Payan A, Mills J, Thurston G, Michel LV (RIT Undergraduate Summer Research Symposium, 2015) Employing NMR spectroscopy to elucidate the interactions of eye lens crystallins; *poster*.

77. Phadke S, Novick B, Snyder E, Michel LV (RIT Undergraduate Summer Research Symposium, 2015) Assessing the role of Pal in the pathogenesis of Gram-negative sepsis; *poster*.

78. Mathews K, Michel LV (RIT Undergraduate Summer Research Symposium, 2015) Probing the molecular interactions of bovine gamma B crystallins using NMR spectroscopy; *oral*.

79. *Mathews K, Payan A, Barnard D, Mills JL, Thurston G, Michel LV (National ACS meeting in Boston, 2015) Probing the molecular interactions of bovine gamma B crystallins using NMR spectroscopy; *poster*.

80. *Kisselstein B, Reulbach C, Shaul J, Pichichero M, Michel LV (National ACS meeting in Boston, 2015) Elucidating the two orientations of vaccine candidate P6 from nontypeable *Haemophilus influenzae*; *poster*.

81. *D'Arcy B, Shaw J, Pichichero M, Michel LV (National ACS meeting in Boston, 2015) The two faces of Pal: Elucidating the two orientations of Pal protein in *E. coli*; *poster*.

82. Kisselstein B, Reulbach C, Shaul J, Pichichero M, Michel LV (University of Rochester Undergraduate Research Day, 2015) Elucidating the two orientations of vaccine candidate P6 from nontypeable *Haemophilus influenzae*; *poster*.

83. Novick B, Michel LV (Biochemistry and Molecular Biology Retreat, University of Rochester, 2016) The study of the release of outer membrane proteins in Gram-Negative bacteria sepsis infections; *poster*.

84. *Mathews K, Zanet J, Payan A, Thurston G, Mills J, Michel LV (ASBMB 2016 Annual Meeting, San Diego, CA) Probing the molecular interactions of bovine gamma B crystallins using NMR spectroscopy; *poster*.

85. McNamara C, Fernandez N, Michel LV (RIT Undergraduate Summer Research Symposium, 2016) Elucidating Pal release from *Escherichia coli* using different antibiotics; *poster*.

86. Hall C, Stanton S, Phadke S, Michel LV (RIT Undergraduate Summer Research Symposium, 2016) Determining the effects of mutations on Pal-antibody interactions; *poster*.

87. Snyder E, Farquharson K, Shaw J, Michel LV (RIT Undergraduate Summer Research Symposium, 2016) Studies on the release of dual oriented Pal subpopulations; *poster*.

88. Farquharson K, Snyder E, Novick E, D'Arcy B, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2016) Detecting Pal in Gram-negative sepsis patients; *poster*.

89. Umphred-Wilson K, Fadden A, Mathews K, Zanet J, Mills J, Thurston G, Michel LV (RIT Undergraduate Summer Research Symposium, 2016) Thermodynamics and interactions of the gamma B crystallin protein; *poster*.

90. Fernandez N, McNamara C, Michel LV (RIT Undergraduate Summer Research Symposium, 2016) Determining the effects of antibiotics of the release of outer membrane protein P6 from nontypeable *Haemophilus influenzae*; *poster*.

91. Stanton S, Hall C, Phadke S, Pierce J, LaClair C, Pichichero M, Michel LV (RIT Undergraduate Summer Research Symposium, 2016) Probing the Pal-peptidoglycan interaction; *poster*.

92. Faraone J, Michel LV (Fast Forward Undergraduate Research Symposium, 2016) Probing the interactions of the gamma B crystallin proteins; *oral*.

93. Umphred-Wilson K, Fadden A, Mathews K, Zanet J, Mills J, Thurston G, Michel LV (Rochester Academy of Sciences Meeting, 2016) Thermodynamics and interactions of the gamma B crystallin protein; *poster*.

94. *Fernandez N, McNamara C, Pichichero M, Hellman J, Michel LV (Annual Biomedical Research Conference for Minority Students, Tampa, Fl, 2016) Elucidating the effects of antibiotics of the release of Pal from *Escherichia coli* and P6 from nontypeable *Haemophilus influenzae*; *poster*.

95. *Farquharson K, Novick B, Snyder E, Pichichero M, Hellman J, Michel LV (Annual Biomedical Research Conference for Minority Students, Tampa, Fl, 2016) Detecting Pal in Gram-negative sepsis patients; *poster*.

96. *Hall C, Stanton S, Phadke S, LaClair C, Pierce J, Michel LV (Annual Biomedical Research Conference for Minority Students, Tampa, Fl, 2016) Probing the Pal-peptidoglycan interaction; *poster*.

97. *Fernandez N, McNamara C, Pichichero M, Hellman J, Michel LV (McNair Research Conference, University of Maryland, 2017) Elucidating the effects of antibiotics of the release of Pal from *Escherichia coli* and P6 from nontypeable *Haemophilus influenzae*; *poster*.

98. *Farquharson K, Novick B, Snyder E, Pichichero M, Hellman J, Michel LV (ASBMB 2017 Annual Meeting, Chicago, Il) Detecting Pal Lipoprotein in Gram-negative sepsis patients; *poster*.

99. *Fernandez N, McNamara C, Pichichero M, Hellman J, Michel LV (ASBMB 2017 Annual Meeting, Chicago, Il) Elucidating the effects of antibiotics of the release of Pal from *Escherichia coli* and P6 from nontypeable *Haemophilus influenzae*; *poster*.

100. *Umphred-Wilson K, Fadden A, Zanet J, Mathews K, Mills J, Thurston G, Michel LV (ASBMB 2017 Annual Meeting, Chicago, Il) Thermodynamics of the gamma B crystallin protein demonstrated by T1/T2 NMR experiments; *poster*.

101. *Stanton S, Pierce J, Sgheiza V, Bren KL, Michel LV (ASBMB 2017 Annual Meeting, Chicago, Il) Testing *c*-type heme sources for nontypeable *Haemophilus influenzae*; *poster*.

102. *Phadke S, Stanton S, Pierce J, LaClair C, Hall C, Michel LV (ASBMB 2017 Annual Meeting, Chicago, Il) Probing the Pal-peptidoglycan interaction; *poster*.

103. D'Arcy B, Michel LV (Rochester ACS Undergraduate Symposium, 2017) Elucidating the role of peptidoglycan associated lipoprotein in the pathogenesis of Gram-negative sepsis; *oral*.

104. O'Neil M, Michel LV (Rochester ACS Undergraduate Symposium, 2017) Thermodynamics of the Gamma B Crystallin Protein Demonstrated by T1/T2 NMR Experiments; *poster*.

105. *Farquharson K, Novick B, Snyder E, Pichichero M, Hellman J, Michel LV (St. Jude Graduate School of Biomedical Sciences National Symposium for Undergraduate Research, 2017) Detecting Pal Lipoprotein in Gram-negative sepsis patients; *poster*.

106. O'Neil M, LaClair C, Zavorin M, Pryharski K, Khan N, Kaur R, Pichichero M, Michel, LV (RIT Undergraduate Summer Research Symposium, 2017) Developing an intranasal colonization model for NTHi in mice; *poster*.

107. LaClair C, O'Neil M, Zavorin M, Pryharski K, Khan N, Kaur R, Pichichero M, Michel, LV (RIT Undergraduate Summer Research Symposium, 2017) Assessing protein vaccines for protection against ear infections; *poster*.

108. *LaClair C, O'Neil M, Zavorin M, Pryharski K, Khan N, Kaur R, Pichichero M, Michel, LV (Annual Biomedical Research Conference for Minority Students, Phoenix, Az, 2017) Assessing protein vaccine candidates for protection against ear infections; *poster*

109. *O'Neil M, LaClair C, Zavorin M, Pryharski K, Khan N, Kaur R, Pichichero M, Michel, LV (ASBMB 2018 Annual Meeting, San Diego, CA, 2018) Developing an intranasal colonization model for NTHi in mice; *poster*.

110. *Snyder E, Zavorin M, Farquharson K, Pannullo N, Pichichero M, Hellman J, Michel LV (ASBMB 2018 Annual Meeting, San Diego, CA, 2018) Detecting released peptidoglycan associated lipoprotein (Pal) from *Escherichia coli*; poster.

111. *Pannullo N, Zavorin M, D'Arcy B, Farquharson K, Kaur R, Surendran N, Pichichero M, Hellman J, Michel LV (ASBMB 2018 Annual Meeting, San Diego, CA, 2018) Probing the two orientations of Pal in vesiculating *E. coli*; poster.

112. *Liu X, Lewis S, Stanton S, LaClair C, Phadke S, Michel LV (ACS national meeting, Boston, MA, 2018) Modulating the binding affinity of Pal to peptidoglycan; *poster*.

113. *Gallardo L, Zavorin M, McNamara C, Pierce J, Bauer M, Hellman J, Pichichero M, Michel LV (ACS national meeting, Boston, MA, 2018) Determining the role of Pal in Escherichia coli sepsis; *poster*.

114. *Fadden A, Umphred-Wilson K, O'Neil M, Faraone J, Mills J, Thurston G, Michel LV (ACS national meeting, Boston, MA, 2018) Using NMR to study the aggregation and diffusion of a phase separating eye lens protein; *poster*.

115. *Liu X, Lewis S, Stanton S, LaClair C, Phadke S, Michel LV (ABRCMS meeting, Indianapolis, IN, 2018) Using Site-Directed Mutagenesis to Probe the Pal-Peptidoglycan Interaction; *poster*.

***National meetings (48)**
#Competitive Selection (4)

STUDENT SUCCESSES

Jennifer Milillo: Received the John Wiley Jones Award in 2010
Jennifer Milillo: Received Honors Summer Undergraduate Research Fellowship 2010
Joy Snyder: Received Honors Summer Undergraduate Research Fellowship 2010
Jennifer Milillo: Received 2011 Undergraduate Senior Achievement in Chemistry Award: Biochemistry
Kyle Grimaldi: Received 2011 Undergraduate Senior Achievement in Chemistry Award: Chemistry
Joy Snyder: Received Honors Summer Undergraduate Research Fellowship 2011
Rachel Schmidt: Received COS Summer Undergraduate Research Fellowship 2011
Joy Snyder: Received 2011 2nd Year Chemistry Award

*_Breanna Kalmeta_: Received Honorable Mention for Undergraduate Student Research Achievement Poster Competition (ASBMB 2011 Annual Meeting)
Jennifer Milillo: Graduated as a Research Scholar
Jennifer Milillo: Granted membership into the Alpha Sigma Lambda Honorary Society (2011)
*_Joy Snyder_: Received American Society for Biochemistry and Molecular Biology UAN Undergraduate Research Award (2011)
#_Breanna Kalmeta_: Attended a two-day X-ray crystallography camp at Colgate University (2011)
*_Danielle Weekes_: Accepted to 2011 President's Summer Internship Program
*_Breanna Kalmeta_: Awarded the Rochester Chapter's Undergraduate Affiliate Network Travel Award to attend the ASBMB national meeting in San Diego, CA (April 2012)
Melody Frink: Received fellowship from NSF-funded Undergraduate Research and Mentoring for Deaf Students in Biological Sciences program (2011-2012)
Kyle Grimaldi: Received Daniel Pasto Fellowship to perform full-time research (Winter 2011-2012)
Joy Snyder: Received a Gilman Memorial Research Travel Award to attend the ASBMB national meeting in San Diego, CA (April 2012)
Kyle Grimaldi: Received Outstanding Undergraduate Scholar Award (2012)
#_Joy Snyder_: Received an American Chemical Society Undergraduate Travel Award to attend the ASBMB national meeting in San Diego, CA (April 2012)
*_Joy Snyder_: Inducted into the ASBMB Biochemistry and Molecular Biology Honor Society (2012)
*_Rachel Schmidt_: Inducted into the ASBMB Biochemistry and Molecular Biology Honor Society (2012)
Breanna Kalmeta: Graduated as a Research Scholar
Valeria Sgheiza: Received Honors Summer Undergraduate Research Fellowship 2012
Juliana Shaw: Received Honors Summer Undergraduate Research Fellowship 2012
Emily Newman: Received the Young Alumni Chemistry Award (Summer 2012)
*_Breanna Kalmeta_: Received Honorable Mention for Undergraduate Student Research Achievement Poster Competition (ASBMB 2012 Annual Meeting)
*_Juliana Shaw, Joy Snyder, and Emily Newman (Valerie Sgheiza: waitlist)_: Competitively selected to present at the National Collegiate Research Conference, Harvard University, January 2013
Emily Newman: Accepted into competitive RGH Research Institute Internship Program (Summer 2013)
Rachel Schmidt: Received a Gilman Memorial Research Travel Award to attend the ASBMB national meeting in Boston, MA (April 2013)
Joy Snyder: Received the John Wiley Jones Award (2013)
#_Joy Snyder:_ Received the ACS Chemistry Achievement Award for Seniors (2013)
David Barnard: Received COS Summer Undergraduate Research Fellowship 2013
John Bettinger: Received Honors Summer Undergraduate Research Fellowship 2013
Joy Snyder: Graduated as a Research Scholar
Rachel Schmidt: Graduated as a Research Scholar
Joy Snyder: Received COS Research Scholar Award
Juliana Shaw: Received Nathaniel Rochester Scholarship
Juliana Shaw: Received COS Alumni Endowed Scholarship
Emily Newman: Received Astellas USA Foundation Scholarship in Biological Sciences
Emily Newman: Received Nathaniel Rochester Scholarship
Emily Newman: Received Lillian Hickman Medical Scholarship
Angel Payan: Accepted into the Ronald E. McNair Post-Baccalaureate Achievement (McNair) Program
Angel Payan: Accepted into the Louis Stokes Alliance for Minority Participation (LSAMP) Program
Victoria MacPherson: Received Outstanding Undergraduate Scholar Award (2013)
Valerie Sgheiza: Received Outstanding Undergraduate Scholar Award (2013)
*_Juliana Shaw (Emily Newman, John Bettinger: waitlist)_: Competitively selected to present at the National Collegiate Research Conference, Harvard University, January 2014
*_John Bettinger_: Inducted into the ASBMB Biochemistry and Molecular Biology Honor Society (2014)
Brooke D'Arcy: Received Honors Summer Undergraduate Research Fellowship 2014
Juliana Shaw: Received Honors Summer Undergraduate Research Fellowship 2014
Kasey Morrow: Received School of Chemistry and Materials Science Summer Fellowship 2014
*_Emily Newman_: Competitively selected to present at the National Collegiate Research Conference, Harvard University, January 2015

Casey Reulbach: Received a Research and Creativity Grant ($500) from RIT, December 2014
Juliana Shaw: Received Daniel Pasto Fellowship to perform full-time research (Spring 2015)
Emily Newman: Received Outstanding Undergraduate Scholar Award (2014)
Juliana Shaw: Received Outstanding Undergraduate Scholar Award (2014)
#*Juliana Shaw*: Received a Rochester Academy of Science Student Research grant (2015)
Kasey Morrow: Accepted into the Ronald E. McNair Post-Baccalaureate Achievement (McNair) Program (2015)
**Kasey Morrow*: Received a competitive travel award from the ASBMB (2015)
**Angel Payan*: Selected to present at Emory STEM Symposium (one of ten selected for an oral presentation); received a travel award to attend the Emory STEM Symposium (2015)
Juliana Shaw: Received the John Wiley Jones Award (2015)
**Emily Newman*: Inducted into the ASBMB Biochemistry and Molecular Biology Honor Society (2015)
**Juliana Shaw*: Inducted into the ASBMB Biochemistry and Molecular Biology Honor Society (2015)
***Brooke D'Arcy:* Selected for the SUPERS Research program at U Penn (Summer 2015)
**Angel Payan*: Selected for the SURP Research program at the Albert Einstein College of Medicine (2015)
**Kasey Morrow*: Selected for the Chemistry REU program at SUNY at Buffalo (2015)
#*Emily Newman:* Received the ACS Chemistry Achievement Award for Seniors (2015)
Juliana Shaw: Received Outstanding Senior Achievement in Biochemistry Award (2015)
Shivani Phadke: Received 2015 1st Year Chemistry Award
Shivani Phadke: Received COS Honor Summer Research Fellowship (2015)
Emily Newman: Received 2015 Christopher Dudek Memorial Scholarship (2015)
Juliana Shaw: Inducted into Alpha Sigma Lambda Honor Society (2015)
Juliana Shaw: Received COS Research Scholar Award
**Kaylee Mathews*: Purdue University Big Ten+ Grad School Expo Travel Scholarship (2015)
Cianna Hall: Accepted into the Ronald E. McNair Post-Baccalaureate Achievement (McNair) Program (2015)
Nicole Fernandez: Received a Louis Stokes Alliance for Minority Participation (LSAMP) Summer fellowship (2016)
Cianna Hall: Received a McNair Summer fellowship (2016)
Emma Snyder: Received Honors Summer Undergraduate Research Fellowship 2016
***Brooke D'Arcy:* Selected for the Summer Research program at Duke U (Summer 2016)
***Brooke D'Arcy:* Received Honorable Mention for the Goldwater Scholarship (2016)
Katharine Umphred-Wilson: Received COS Summer Research Fellowship (2016)
Carlie McNamara: Received Joseph P. Vacca Summer Research Fellowship (2016)
Sarah Stanton: Received Joseph P. Vacca Summer Research Fellowship (2016)
Kaylee Mathews: Senior Biochemistry award
Bethany Novick: Craven award for teaching
Shivani Phadke: Second year Department award
Kasey Morrow: Outstanding Female Senior Award
Cianna Hall: McNair/CSTEP/CWAG Travel award for ABRCMS meeting in Tampa, Florida (2016)
Nicole Fernandez: McNair/CSTEP/CWAG Travel award for ABRCMS meeting in Tampa, Florida (2016)
**Kara Farquharson*: ABRCMS Travel award for meeting in Tampa, Florida (2016)
Brooke D'Arcy: Pasto Fellowship for full-time research (Spring 2016-2017)
**Kara Farquharson*: Competitive internship at Merck, West Point (Vaccine discovery) (2017)
Shivani Phadke: Received Outstanding Undergraduate Scholar Award (2017)
Nicole Fernandez: Received travel award from RIT's McNair/LSAMP/CSTEP program (2017).
#*Brooke D'Arcy*: Received a Rochester Academy of Science Student Research grant (2017)
Brooke D'Arcy: Received the John Wiley Jones Award (2017)
**Brooke D'Arcy*: Inducted into the ASBMB Biochemistry and Molecular Biology Honor Society (2017)
Meghan O'Neil: Received Honors Summer Undergraduate Research Fellowship (2017)
Ciara LaClair: Received Joseph P. Vacca Summer Research Fellowship (2017)
**Shivani Phadke*: Received competitive summer research fellowship at UC San Francisco (2017)
**Emma Snyder*: Received competitive summer research fellowship at U Pennsylvania (2017)
Shivani Phadke: Received Excellence in Student Life Award (2017)

**Kara Farquharson*: Accepted to present at 2nd Annual St. Jude Graduate School of Biomedical Sciences National Symposium for Undergraduate Research (full travel fellowship) (2017)
Brooke D'Arcy: Received COS Research Scholar Award (2017)
**Ciara LaClair*: ABRCMS Travel award for meeting in Phoenix, Arizona (2017)
Xinbei Liu: Received RIT RISE 3-year research fellowship (2017)
Meghan O'Neil: Received RIT Women in Science Travel award to attend ASBMB meeting (2018)
**Emma Snyder*: Received student chapter travel award to attend ASBMB meeting (2018)
Nicole Pannullo: Received travel award from NTID to attend ASBMB meeting (2018)
**Meghan O'Neil*: Selected for Ohio State University Molecular Biology REU program (2018)
**Shivani Phadke*: Inducted into the ASBMB Biochemistry and Molecular Biology Honor Society (2018)
**Nicole Pannullo*: Received the prestigious Goldwater Fellowship (2018)
**Brooke D'Arcy*: Received NSF Graduate Fellowship (2018)
Sean Lewis: Received Summer Undergraduate Research Fellowship (2018)
Julia Faraone: Received Summer Undergraduate Research Fellowship (2018)
Morgan Bauer: Received Joseph P. Vacca Summer Research Fellowship (2018)
Angel Payan: Received Graduate Competitive Edge Summer Fellowship at UCSD (2018)
Jeanetta Pierce: Outstanding Woman Senior Award (2018)
**Juliana Shaw*: Received NIH Graduate Research Fellowship at Yale (2018)
**Brooke D'Arcy:* Received NSF Graduate Research Fellowship at Duke (2018)
**Leslie Gallardo*: Received ACS Women Chemists Committee Eli Lilly Travel Award (2018)
Kara Farquharson: Received a Bridges to the Doctorate program Fellowship (2018)
Morgan Bauer: Received an NTID Travel award to attend ASBMB meeting (2019)
Julia Faraone: Receive RIT Women in Science Travel award to attend ASBMB meeting (2019)
**Leslie Gallardo*: Received a competitive ASBMB graduate student travel award (2019)

***National Awards/Fellowships (37)**
#Regional Awards/Fellowships (5)