CURRICULUM VITAE

STEVEN M. JULIO, Ph.D.

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EDUCATION

Ph.D., Biochemistry and Molecular Biology University of California, Santa Barbara	2001
B.S., Biology, Westmont College, Santa Barbara, CA	1992

EMPLOYMENT

Professor Department of Biology, Westmont College	2018-present
Associate Professor Department of Biology, Westmont College	2012 - 2018
Assistant Professor Department of Biology, Westmont College	2006 - 2012
Philip Morris Postdoctoral fellow University of California, Santa Barbara	2003-2006
Lecturer, Summer Sessions University of California, Santa Barbara	2003
Research Scientist I, Remedyne Corporation Santa Barbara, CA	2001-2003
Research/Teaching Assistant University of California, Santa Barbara	1992-2001

PROFESSIONAL RESPONSIBILITIES TO THE GUILD

Manuscript reviewer, *Molecular Microbiology*	2011-present
Manuscript reviewer, *Infection and Immunity*	2011-2013

PROFESSIONAL SOCIETIES

American Society for Microbiology	2001-present
American Scientific Affiliation	2002-present

AWARDS AND HONORS

Westmont College Bruce and Adaline Bare Teacher of the Year Award in Natural and Behavioral Sciences	2010, 2018
Westmont College Professional Development Grant	2006, 2010, 2015
Philip Morris External Research Program Postdoctoral Fellowship	2004
Graduate Student Seminar Series Senior Grad Student Award for best research seminar	2000
Graduate Student Fee Fellowship	1994

EXTRAMURAL FUNDING

National Institutes of Health, grant# R01 AI129541-01A1 "PlrSR-dependent Signal Transduction in *Bordetella* Virulence."

- Co-awarded to UNC Chapel Hill and Westmont College; 3/31/17 – 3/31/22
- Peggy A. Cotter (UNC) and Steve Julio (Westmont) co-Principal Investigators
- $1,625,000 in total direct costs; Westmont awarded $232,500 in direct costs and $116,000 in indirect costs

PUBLICATIONS (Westmont student co-authors underlined)

1. Bone, M., Wilk, A. J., Perault, A. I., Marlatt, S. A., Scheller, E. V., Anthouard, R., Chen, Q., Stibitz, S., Cotter, P. A., and **S. M. Julio**. 2017. *Bordetella* PlrSR regulatory system controls BvgAS activity and virulence in the lower respiratory tract. Proceedings of the National Academy of Sciences, **114**(8): 1519-1527.

2. Kaut, C. S., Duncan, M. D., Kim, J. Y., Maclaren, J., Cochran, K., and **S. M. Julio**. 2011. A novel sensor kinase is required for *Bordetella* to colonize the lower respiratory tract. Infect Immun, **79**(8): 3216-3228.

3. **Julio, S. M**., Inatsuka, C., Mazar, J., Dietrich, C., Relman, D., and P. Cotter. 2009. Natural-host animal models indicate functional interchangeability between the

filamentous hemagglutinins of *Bordetella pertussis* and *Bordetella bronchiseptica* and reveal a role for the mature C-terminal domain, but not the RGD, during infection Mol. Microbiol. **71**(6):1574-1590

4. Heithoff, D. M., G. Badie, **S. M. Julio**, E. Y. Enioutina, R. A. Daynes, R. L. Sinsheimer, and M. J. Mahan. 2007. In vivo selected mutations in methyl-directed mismatch repair suppress the virulence attenuation of *Salmonella* dam mutant strains following intraperitioneal, but not oral infection of naïve mice. J. Bacteriol. 189: 4708-4717.

5. Inatsuka, C. S., **S. M. Julio**. and P. A. Cotter. 2005. *Bordetella* filamentous hemagglutinin plays a critical role in immunomodulation, suggesting a mechanism for host specificity. Proc. Natl. Acad. Sci. USA. **102**:18578-18583.

6. **Julio, S. M**. and P. A. Cotter. 2005. Characterization of the filamentous hemagglutinin-like protein FhaS in *Bordetella bronchiseptica*. Infect Immun. **73**(8):4960-4971.

7. **Julio, S. M**., D. M. Heithoff, and M. J. Mahan. 2002. DNA adenine methylase overproduction in *Yersinia pseudotuberculosis* alters YopE expression and secretion and host immune responses to infection. Infect Immun. **70**(2):1006-1009.

8. **Julio, S. M**., D. M. Heithoff, D. Provenzano, K. E. Klose, R. L. Sinsheimer, D. A. Low, and M. J. Mahan. 2001. DNA adenine methylase is essential for viability and plays a role in the pathogenesis of *Yersinia pseudotuberculosis* and *Vibrio cholerae*. Infect Immun. **69**:7610-7615.

9. **Julio, S. M**., D. M. Heithoff, and M. J. Mahan. 2000. *ssrA* (tmRNA) plays a role in *Salmonella enterica* serovar Typhimurium pathogenesis. J. Bacteriol. **182**:1558-1563.

10. Conner, C. P., D. M. Heithoff, **S. M. Julio**, R. L. Sinsheimer, and M. J. Mahan. 1998. Differential patterns of acquired virulence genes distinguish Salmonella strains. Proc. Natl. Acad. Sci. USA. **95**:4641-4645.

11. **Julio, S. M**., C. P. Conner, D. M. Heithoff, and M. J. Mahan. 1998. Directed chromosomal deletions of *Salmonella typhimurium*- specific genes induced during infection. Mol. Gen. Genet. **258**:178-181.

12. Heithoff, D. M., C. P. Conner, P. C. Hanna, **S. M. Julio**, U. Hentschel, and M. J. Mahan. 1997. Bacterial infection as assessed by *in vivo* gene expression. Proc. Natl. Acad. Sci. USA. **94**:934-939.

INVITED ORAL PRESENTATIONS

Julio, S.M. "BvgAS activity in the lower respiratory tract requires the PlrSR two-component regulatory system" 11th International *Bordetella* Symposium, Buenos Aires, Argentina, 2016

Julio, S. M. "New kid on the block: a role for the sensor kinase PlrS in *Bordetella* pathogenesis" University of North Carolina, Chapel Hill Research Colloquium, 2014

Julio, S. M. "*Bordetella* pathogens and the immune system: the great balancing act" UCSB Undergraduate Research Colloquium, 2006

Julio, S. M. "How *Bordetella* Cause Respiratory Infections" UCSB Undergraduate Research Colloquium, 2005

Julio, S. M. "Vaccine development using *Salmonella typhimurium* DNA adenine methylase mutants" In: Westmont College NBS Seminar Series, 2000

PRESENTATIONS: ACCEPTED ABSTRACTS AT REGIONAL/NATIONAL CONFERENCES (Westmont research student co-authors underlined)

Wilk, A., McHargue, B., Bonenfant, G., Nicholson, T., Ramirez, J., and **S.M. Julio. "**A Role for the Sensor Kinase PlrS in Controlling the Response of *Bordetella bronchiseptica* to Elevated CO_2 Levels" In: American Society for Microbiology, General Meeting, Spring 2014.

Kaut, C. S., Duncan, M. D., Kim, J. Y., Maclaren, J., Cochran, K., and **S. M. Julio**. 2011. "A novel sensor kinase is required for *Bordetella* to colonize the lower respiratory tract" In: The American Society for Microbiology General Meeting, Spring 2011.

Julio, S. M., C.S. Inatsuka, and P. A. Cotter. "The C-terminal Domain of Filamentous Hemagglutinin (FHA) is Required for Lower Respiratory Tract Colonization and Immunomodulation" In: Eighth International Symposium: Saga of the Genus Bordetella, Institut Pasteur, 2006.

Julio, S. M., and P. A. Cotter. "Characterization of the FHA-like Protein FhaS in *Bordetella bronchiseptica*" In: American Society for Microbiology, General Meeting 2005.

Inatsuka, C. S., **S. M. Julio**, and P. A. Cotter. "*Bordetella bronchiseptica* Expressing Filamentous Hemagglutinin (FHA) from *Bordetella pertussis* Reveals a Critical Role for FHA in the Induction of an Inflammatory Response" In: American Society for Microbiology, General Meeting 2004.

Xiang, R., K. S. Cooke, **S. M. Julio**, A. J. Dahlsten, R. Ballester, R. A. Reisfeld, and K. M. Zsebo. "Single Dose of Remestim-CEA Oral Vaccine Protects Against Pulmonary Metastases" In: Gene-Based Vaccines: Mechanisms, Delivery Systems and Efficacy (Keystone Symposia) 2002.

Heithoff, D. M., **S. M. Julio**, and M. J. Mahan. "The Role of DNA Methylation in Controlling Bacterial Virulence" In: American Society for Microbiology, General Meeting 2001.

PRESENTATIONS GIVEN BY RESEARCH STUDENTS: ACCEPTED ABSTRACTS (presenters with an asterisk; contributors underlined)

*Fetters, K., and **S. M. Julio**. "Functional interaction between two-component regulators required for virulence in *Bordetella*" In: West Coast Biological Sciences Undergraduate Research Conference, Spring 2015 (oral presentation).

*McHargue, B., and **S. M. Julio**. "Analysis of the role of plrS in CO2 sensing in multiple Bordetella bronchiseptica strains" In: West Coast Biological Sciences Undergraduate Research Conference, Spring 2014 (oral presentation).

*Wilk, A., McHargue, B., Bonenfant, G., Nicholson, T., Ramirez, J., and **S.M. Julio**. "A role for the PlrS sensor kinase in controlling the response to CO_2 in *B. bronchiseptica*" In: West Coast Biological Sciences Undergraduate Research Conference, Spring 2014.

*****Midgley, J., *LaBarba D., *Wheeler, M., and **S. M. Julio.** "Examining the role of *plrS* in *Bordetella bronchiseptica* virulence gene expression" In: The West Coast Biological Sciences Undergraduate Research Conference, Spring 2013.

*Duncan, M., Williams, S., Cochran, K., and **S.M. Julio**. "Disruption of the BB0264/BB0265 genes in *Bordetella* affects virulence" In: West Coast Biological Sciences Undergraduate Research Conference, Spring 2010.

*****Pritchett, J.C., and **S. M. Julio**. "FhaL from *B. bronchiseptica* plays a role in colonization of the mouse respiratory tract" In: Southern California Conference for Undergraduate Research, Fall 2009

*****Kaut, C. S. and **S. M. Julio**. "Analysis of *Bordetella bronchiseptica* Two-Component Regulators in Respiratory Tract Infection" In: Southern California Conference for Undergraduate Research, Fall 2007

PRESENTATION GIVEN BY RESEARCH STUDENTS: UNDERGRADUATE SYMPOSIA

Spandrio, A., Bartlett, A., Ikeda, J., and **S.M. Julio**. "Identification of *Bordetella bronchiseptica* Virulence Genes Active Only During Infection." In: Westmont College Undergraduate Research Symposium, Spring 2019.

Doane, K., Gipson, M., Olson, A., and **S.M. Julio**. "Evaluation of cytochrome oxidase expression in *Bordetella* in increased CO_2 concentrations and micro-aerobic conditions." In: Westmont College Undergraduate Research Symposium, Spring 2017.

Schaefer, C., Maragliano, R., and **S.M. Julio.** "Growth of *Bordetella* in microaerobic conditions." In: Westmont College Undergraduate Research Symposium, Spring 2016.

Wilk, A., Fetters, K., Maragliano, R., Nicholson, T.L., Bone, M.A., Cotter, P.A., and **S.M. Julio**. "The role of the CO_2-responsive sensor kinase PlrS in *Bordetella* virulence." In: Westmont College Undergraduate Research Symposium, Fall 2016.

Wilk, A., Fetters, K., Webber, M., Smith, N., Nicholson, T., Bone, M., Cotter, P., and **S.M. Julio**. "CO_2-responsive sensor kinase PlrS is required for BvgAS activity in *Bordetella bronchiseptica*." In: Westmont College Undergraduate Research Symposium, Spring 2015.

McHargue, B. and S.M. Julio. "*plrS*-dependent CO_2 sensing in *Bordetella bronchiseptica*" In: Westmont College Undergraduate Research Symposium, Fall, 2013.

Midgley, J., Gardner, S., McHargue, B., West, J., Iba, W., and **S. M. Julio**. "Analysis of microarray-identified genes that are regulated by PlrS in *Bordetella bronchiseptica*" In Westmont College Undergraduate Research Symposium, Spring 2013.

Midgley, J., LaBarba D., Wheeler, M., and **S. M. Julio.** "Examining the role of *plrS* in *Bordetella bronchiseptica* virulence gene expression" In: Westmont College Undergraduate Research Symposium, Fall 2012.

Beard, M., Bond, A., Burks, A., Ramirez, J., and **S. M. Julio**. "Microarray-based analysis of the PlrAS two-component regulator of *Bordetella bronchiseptica*" In: Westmont College Undergraduate Research Symposium, Spring 2012.

Burks, A., Kleen, S., Ramirez, J., and **S. M. Julio**. "Evaluating the role of PlrS as a regulator of gene and protein expression in *Bordetella bronchiseptica*" In: Westmont College Undergraduate Research Symposium, Fall 2011

Burks, A., Kleen, S., Ramirez, J., and **S. M. Julio**. "Evaluating the role of the sensor kinase PlrS from *B. bronchiseptica* in response to innate and adaptive immunity" In: Westmont College Undergraduate Research Symposium, Fall 2011.

Cochran, K., Conley, Z., Ramirez, J., Roberts, S., and **S. M. Julio**. "Phenotypes associated with PlrS-mediated virulence in *Bordetella bronchiseptica*" In: Westmont College Undergraduate Research Symposium, Spring 2011

Kim, J., and **S. M. Julio**. "Characterization of the virulence phenotype of BB0264 in Bordetella bronchiseptica" In: Westmont College Undergraduate Research Symposium, Fall 2010

Duncan, M., Williams, S., Cochran, K., and **S.M. Julio**. "Disruption of the BB0264/BB0265 genes in *Bordetella* affects virulence" In: Westmont College Undergraduate Research Symposium, Spring 2010

Pritchett, J.C., and **S. M. Julio**. "FhaL from *B. bronchiseptica* plays a role in colonization of the mouse respiratory tract" In: Westmont College Undergraduate Research Symposium, Fall 2009

Maclaren, J., and **S. M. Julio**. "A filamentous hemagglutinin-like C-terminal domain is required for FhaS to function as an adhesin in *Bordetella bronchiseptica*" In: Westmont College Undergraduate Research Symposium, Fall 2008

Duncan, M., Maclaren, J., Kaut. S., and **S. M. Julio**. "Analysis of the virulence properties of the *Bordetella bronchiseptica* two-component regulator 0264/0265" In: Westmont College Undergraduate Research Symposium, Fall 2008

Downend, N., Nannepaga, S., Grieco, E., and **S. M. Julio**. "Characterization of the Surface-Expressed FhaS Protein in *Bordetella* Infection" In: Westmont College Undergraduate Research Symposium, Spring 2008

Kaut, C. Hoesterey, K., Downend, N., and **S. M. Julio**. "Analysis of a *Bordetella bronchiseptica* Two-Component Regulator Required for Virulence" In: Westmont College Undergraduate Research Symposium, Spring 2008

Hammer, B., Zirschky, K., Valladares, C., Johnson, J., Newton, T., Ashley, J., Nannepaga, S., **Julio, S. M**., and M. N. Masuno. "Investigating Pacific Coast Sponges for Novel Marine Natural Products with Anti-bacterial Activity" In: Westmont College Undergraduate Research Symposium, Spring 2008

FORMAL TEACHING EXPERIENCE

University of California, Santa Barbara
Department of Molecular, Cellular, and Developmental Biology

MCDB 1A – *Introduction to biochemistry, cell biology, development, and genetics*	2003
MCDB 1B – *Introduction to animal and plant physiology*	2003

Westmont College, Department of Biology

BIO-006 *General Biology II (Animal physiology)*	2006-present
BIO-102 *Physiology, with laboratory*	2006-present
BIO-132 *Molecular Biology, with laboratory*	2007-present
BIO-195 *Seminar in Biological Literature*	2007-present
BIO-196 *Seminar in Bioethics*	2007-2015
BIO-155 *Infectious Disease and Immune Response*	2008-present
BIO-114L *Laboratory in Genetics*	2009-2019

SUPERVISED RESEARCH WITH UNDERGRADUATES – Westmont College

Alina Logerquist	Fall 2006 – Spring 2007
Callan Kaut (***Major honors, 2008***)	Summer 2007 – Summer 2008
Shreya Nannepaga	Fall 2007 – Spring 2008
Roberto Valladares	Fall 2007
Nathan Downend	Spring 2008
Elisa Grieco	Spring 2008
Kyle Hoesterey	Spring 2008
Mark Duncan	Summer 2008 – Fall 2009
Josh Maclaren	Summer 2008 – Fall 2009
Preston Angell	Fall 2008 – Spring 2009
Jenna Stephens	Spring 2009
Josh Pritchett	Summer 2009 – Fall 2010
Stefanie Williams	Fall 2009
Zack Conley	Fall 2009 – Spring 2011
Keith Cochran	Fall 2009 – Spring 2011
Je Yei Kim	Summer 2010
Sarah Roberts	Fall 2010 – Spring 2011
Samantha Kleen	Summer 2011
Amanda Burks	Fall 2010 – Spring 2012
Jose Ramirez	Fall 2010 – Spring 2012
Megan Beard	Fall 2011 – Spring 2012
Aleah Bond	Fall 2011 – Spring 2012
Michelle Wheeler	Spring 2012 – Summer 2012
Dean LaBarba	Summer 2012
Jeff Midgley	Summer 2012 – Spring 2013
Jacob West	Fall 2012
Brittany McHargue (***Major honors, 2013***)	Fall 2012 – Fall 2013
Samantha Gardner	Spring 2013
Gaston Bonenfant	Fall 2013
Aaron Wilk (***Major honors, 2016***)	Fall 2013 – Spring 2016
Madeleine Webber	Fall 2014 – Spring 2014
Natalie Smith	Fall 2014 – Spring 2014
Kirk Fetters	Spring 2015 – Fall 2016
Rachel Maragliano	Fall 2015 – Summer 2016
Coleman Schaefer	Summer 2016 – Fall 2016
Andrew Olson	Fall 2016
Macy Gipson	Fall 2016 – Spring 2017
Kayla Doane	Fall 2016 – Spring 2017
Sydney Peauroi	Fall 2017 – Spring 2017
Samantha Masyr	Fall 2017 – Spring 2017
Alexa Spandrio (***Major Honors, 2020***)	Fall 2017 – present
Maya Roberts	Summer 2018 – Fall 2018
Ashlyn Bartlett	Fall 2018 – Spring 2019
Jennifer Ikeda	Fall 2018 – present
Ashton Kelly	Fall 2019 – present
Alexander Rothman	Fall 2019 – present

Dylan Lourenco	Fall 2019 – present
Brennan Confer	Fall 2019 – present
Brandon Bolton	Spring 2019 – present