Collin M. Timm, Ph.D.

Post-Doctoral Associate
Oak Ridge National Laboratory, Oak Ridge, TN
(612) 205-9728 (cell) | (865) 574-5870 (office)
timmcm@ornl.gov

Education

2008-2013 Ph.D., Chemical and Biological Engineering
University of Wisconsin-Madison (GPA: 3.7/4.0)
Thesis: Kinetics of vesicular stomatitis virus mRNA and genomes during infection
Advisor: John Yin

2004-2008 B.S., Chemical Engineering
Colorado School of Mines (GPA: 3.9/4.0)
Undergraduate Research: Gas hydrate formation and modeling

Professional Experience

2013-present Post-Doctoral Associate, Plant Microbe Interfaces Project, Oak Ridge National Laboratory
Advisors: Dale A. Pelletier, David J Weston

2008 Summer Intern, Freescale Semiconductor, Austin, TX

Funding and Awards

2013-present Contributed to renewal of $6.5m scientific focus area at Oak Ridge National Laboratory. Contributed quarterly and annual updates to Department of Energy.

2009-2012 Computation and Informatics in Biology and Medicine Pre-doctoral Fellowship
Sponsor: National Library of Medicine. Campus-wide competition between students from computer science, engineering, biochemistry and molecular biology departments with maximum renewal of 3 years of tuition and stipend

2008 Faculty awarded graduation scholarship (1 awarded per graduating class of ~80 students), Colorado School of Mines

2004-2008 President's Scholarship, $4k per year tuition (4 years), Colorado School of Mines

Publications

Manuscripts in preparation

1. **Timm, CM,** Carter, K, Engle, Klingeman, D, N, Tuskan, GA, Tschaplinski, T, Pelletier, DA, Weston, DJ Abiotic stresses shift *Populus*-associated bacteria towards a core stress microbiome, *(in preparation)*

2. **Timm, CM,** Lu, T, Pelletier, DA, Weston, DJ, Assembly and performance of constructed communities of bacterial isolates on *Populus* hosts, *(in preparation)*

3. **Timm CM,** Henning, J, Jawdy, S, Gunter, L, Pelletier, DA, Weston, DJ, Unique bacterial isolates have synergistic effects on host plant productivity, *(in preparation)*

Manuscripts under review

4. Hansen, R**, Timm, CM**, Bible, AN, Morell-Falvey JL, Simpson, ML, Doktycz, MJ, Retterer, ST, "Stochastic assembly of bacteria in microwell arrays reveals the importance of confinement in community development", *(in review, Lab on a Chip)*

5. Jun S, Wassenar T, Nookaew I, Hauser LJ, Wanchai V, Land, M, **Timm CM**, Lu T, Schadt, CW, Doktycz, MJ, Pelletier, DA, Ussery, DW, "Comparative genome analysis of Pseudomonas genomes including Populus-associated isolates" (*in review, Applied and Environmental Microbiology)*

6. **Timm, CM,** Hansen, R, Retterer, S, Pelletier, D, "Bacterial patterning for quantitative interactions of natural isolates", *(in review, PLoS One)*

Peer-reviewed publications

7. **Timm CM**, Campbell, AG, Utturkar, SM, Jun, S, Parales, RE, Tan, WA, Robeson, M, Lu, T, Jawdy, S, Brown, SD, Ussery, D, Schadt, CW, Tuskan, GA, Doktycz, MJ, Weston, DJ, Pelletier, DA, "Metabolic functions of *Pseudomonas fluorescens* strains from *Populus deltoides* depend on rhizosphere or endosphere isolation compartment", (*accepted, Frontiers in Microbiology)*

8. **Timm, C**, Gupta, A, Yin, J "Robust kinetics of an RNA virus: Transcription rates are set by genome levels" *Biotechnology and Bioengineering*, 2015, Vol. 112, No. 8, p. 1655-1662

9. Weston DJ, **Timm CM,** Walker, AP, Gu, L, Muchero, W, Schmutz, J, Shaw, AJ, Tuskan, GA, Warren, JM, Wullschleger, SD "Sphagnum physiology in the context of changing climate: Emergent influences on genomics and host-microbiome interactions to ecosystem function" *Plant, Cell & Environment*, 2015, **38**, 1737-1751

10. Pesko K, Voigt EA, Swick A, Morley VJ, **Timm CM**, Yin J, Turner PE, "Genome rearrangement affects RNA virus adaptability on prostate cancer cells" *Frontiers in Genetics*, 2015, Vol. 6, No. 121

11. **Timm, C,** Akpinar, F, Yin, J "Quantitative characterization of defective virus emergence by deep sequencing" *Journal of Virology*, 2013, Vol. 88, No. 5, p. 2623-2632

Professional Service and Activities

2014 Siemens Teachers as Researchers
Organized 2 week program for hands-on lab experience for six middle/high school teachers to learn from working scientists at Oak Ridge National Laboratory

2014 Professional Development Organizer
Organized conference (Raleigh, NC) including tours of local laboratories for small study group of peers (10 members) to discuss our progress and challenges in obtaining faculty positions in science and engineering departments

2010-2011 "Virulent!"
Education game with 4/5 star rating. Consulted with Games Learning Society group at UW-Madison to develop mobile app game designed to teach middle-school children about virus infections.

Leadership Experience

2010-2011 Chemical Engineering Graduate Student President (U. Wisconsin)
Elected position which included organization of ~6 member graduate student committee, organization of graduate student recruitment, and contribution at monthly faculty meetings, with the goal of improving graduate student education and experience. Major accomplishments included development of a graduate student seminar series with monthly departmental funding ($200/month), and largest graduate recruitment class in recent years (30 students).

2009-2011 Chemical Engineering Student Seminar
Organized and promoted interest in a seminar series where graduate students shared research with their peers

2010-2011 Wisconsin Institutes for Discovery Seminar
Organized, established funding for ($200/month), and promoted interest in a seminar series where graduate students, post-docs, and staff scientists from multiple disciplines can share research and ideas

2003 Eagle Scout
Completed Boy Scout Eagle Scout requirements including warming house restoration project

Teaching and Mentoring

2009-present Mentoring (ongoing)
Mentored 6 undergraduate students including student from underrepresented minorities in science, and 5 graduate students to initiate projects.

2011 Teaching Assistant (Transport Processes), UW-Madison
Planned and delivered lectures for ~30 undergraduates with office hours for individual instruction

2010 Teaching Assistant (Process Control), UW-Madison
Upkeep and instruction of process control laboratory course with lecture

component for ~20 undergraduates and office hours for individuals

2005-2008 Tutoring (various courses)
Throughout my undergraduate education I enjoyed volunteering my time to help my peers succeed in general engineering and chemical engineering courses

Conference Presentations

1. Bacterial patterning at the micron scale for quantitative interactions, American Institute for Chemical Engineers National Meeting, 2014, Atlanta, GA
2. **Invited**: Modeling of bacterial induced changes in the root environment, Ecological Society of America 2014, Sacramento, CA
3. *In vivo* kinetic measures and modeling of VSV RNA, American Society for Virology 2012, Madison, WI
4. Toward a quantitative and predictive model of growth for an RNA virus, American Institute for Chemical Engineers National Meeting 2011, Minneapolis, MN
5. Genome-level quantification of the population dynamics of virus and virus-like defective interfering particles, American Institute for Chemical Engineers National Meeting 2011, Minneapolis, MN
6. Kinetics of viral growth during infection of host cells by an RNA virus, American Institute for Chemical Engineers National Meeting 2010, Salt Lake City, UT

References

John Yin, Professor, Department of Chemical and Biological Engineering, UW Madison
330 N Orchard St, Madison, WI 53713
yin@engr.wisc.edu, (608) 316-4323

Dale Pelletier, Senior Scientist, Biosciences Division, Oak Ridge National Laboratory
1 Bethel Valley Rd, Oak Ridge, TN 37831
pelletierda@ornl.gov, (865) 576-2857

Dave Weston, Staff Scientist, Biosciences Division, Oak Ridge National Laboratory
1 Bethel Valley Rd, Oak Ridge, TN 37831
westondj@ornl.gov, (865) 241-8323