

Seasson Phillips Vitiello, Ph.D.

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Education and Training

Postdoctoral Research Associate, March 2008 – July 2009

Mentor: David A. Pearce, Ph.D.

University of Rochester, School of Medicine and Dentistry, Rochester, NY

- Fellowship: Cystinosis Research Foundation, 2008-2011
- Mentored and directed several undergraduate students in the lab on projects related to fellowship

Ph.D. Biochemistry, April 2008

Advisor: David A. Pearce, Ph.D.

University of Rochester, School of Medicine and Dentistry, Rochester, NY

- Thesis: *The Yeast Model for Batten Disease: Genetic and Physical Interactions*
- Assisted in obtaining funding from the Shwachman-Diamond Foundation
- Directed several undergraduate and graduate students' projects related to thesis work

B.S., Biology, May 1999

Academic Advisor: Matthew J. Temple, O.Carm., Ph.D.

Nazareth College, Rochester, NY

- Minor: Computer and Information Systems
- Awards: Founders' Scholar, Alumni Regional Scholarship, 1st Presbyterian Church of Cazenovia Women's Association Scholarship, Marriot Corporation Memorial Scholarship, Swim Team Coaches Award, Chester C. Winn Memorial Scholarship, Elizabeth Remington Scholarship

Professional Positions

Tenured Associate Professor, 2016-present

Assistant Professor, 2010-2016

Augustana University Biology Department, Sioux Falls, SD

- **Teaching:** Responsible for curriculum and assessment and overseeing undergraduate teaching assistants for the following courses: BIOL 233 Genetics with the accompanying lab (2010-present), BIOL 358 Molecular Biology with the accompanying lab (2011-present), BIOL 212 Genetics and Society (2018), BIOL 332 Cell Signaling (Jan 2011, 2012, 2014, anticipated 2020), BIOL 234 Cell Biology with the accompanying lab (2011-2014), BIOL 211 Nature and Nurture (2015), BIOL 110 Biology of Human Concerns laboratory (2010-2011). Classes follow active learning formats.
- **Scholarship:** SD-BRIN (NIH INBRE) mentor (2010-present), Sanford Program for Undergraduate Research mentor (2010-present), SD-BRIN faculty fellow (2018-2019), principal investigator of molecular genetics research laboratory at Augustana, research interests are the molecular underpinnings of rare diseases
- **Service:** Director of AU Middle School STEM Camp (2019), Augustana Pathways Program for Native American Youth (2016-present), Chair of Vice-President of Academic Affairs and Academic Dean Search Committee (2017-2018), Augustana-Sanford Health Genetic Counseling Graduate Program Advisory Committee (2014-present), Be the Match On Campus faculty advisor (2014-present), Sanford Research SPUR-REU Selection and Advisory Board (2016-present), Academic Status Appeal Committee (2013-15), Benefits Committee (2015-2018), NSF-Noyce STEM Education Curriculum team (2015-2018), Director of SPUR-REU program (2010-2015; NSF REU grant#1262744 from 2012-2015)

- Teaching Awards: Vernon and Mildred Niebuhr Faculty Excellence Award Nominee (2018, 2019), Carole Bland Cultivating Faculty Excellence Awardee (2015)

Adjunct Faculty, 2010-present

Coordinator of Undergraduate Training, August 2010-2015

Sanford Research, Sioux Falls, SD

- Director and Co-PI of the National Science Foundation Research Experiences for Undergraduates in Cellular and Molecular Biology at Sanford Research and Augustana College (NSF REU grant#1262744)
- Director of the Sanford Program for Undergraduate Research, a 10-week training program that introduces Augustana undergraduate students to careers in cell and molecular biology, with a focus on socio-economically challenged individuals

Staff Scientist, August 2009-August 2010

Children's Health Research Center, Sanford Research/USD, Sioux Falls, SD

- Fellowship: Cystinosis Research Foundation, A Yeast Model of Cystinosis (2008-2011)
- Research interests: using genetics, cell biology, molecular biology, and biochemistry to characterize a *S. cerevisiae* *ERS1* deletion strain to understand how cystine availability affects cellular processes
- Mentored and directed undergraduates' and research technicians' projects related to fellowship

Adjunct Instructor, 2006 – 2008

Nazareth College, Biology Department, Rochester, NY

- Responsible for lecture lesson plans and laboratory overview and execution of lectures and activities, and designing and grading of exams, quizzes, assignments, and reports for lecture (2008) and laboratory (2006-08) of general biology course (BIO103 and BIO103L)

Scientist Instructor, Life Science Learning Center, 2007

University of Rochester, School of Medicine and Dentistry, Rochester, NY

- Responsible for teaching case study-based laboratory exercises to middle and high school students
- Development and presentation of original laboratory case-studies to area high school biology teachers
- Completed education course focused on college-level instruction

Laboratory Manager, 1999-2002

Supervisor: J. Scott Butler, Ph.D.

University of Rochester, School of Medicine and Dentistry, Department of Microbiology, Rochester, NY

- Responsible for ordering, maintaining equipment, management of radioactive isotopes, and supervision and training of student workers
- Worked on several research projects related to the molecular events of 3' end processing of RNA species in yeast

Peer-Reviewed Publications –undergraduates are italicized

Cucak A, **Vitiello SP**, Gakh O, May D, Ailts J, Aruai GN, Gnimpieba E, Isaya G, Roux K, and Vitiello PF. Discovery of a frataxin mitochondrial network reveals key regulators of Friedreich's ataxia. In preparation for Molecular Biology of the Cell.

Gubbels JA and **Vitiello SP**. Creating and teaching science lessons in K-12 schools increases undergraduate students' science identity. Journal of Microbiology and Biology Education 19(3): 19.3.96. PMID: 30377469.

Carlisle G, **Vitiello SP**, Matzner SL. Identification of water-related *cis*-regulatory elements in tomatoes. Proceedings of the South Dakota Academy of Science 97:145-153, 2018.

Simpkins JA, *Rickel KE*, *Madeo M*, *Ahlers BA*, *Carlisle GB*, *Nelson HJ*, *Cardillo AL*, *Weber EA*, Vitiello PF, Pearce DA, **Vitiello SP**. Disruption of a cystine transporter downregulates expression of genes involved in sulfur regulation and cellular respiration. Biology Open 5(6):689-97, 2016. PMID: 27142334

Surendran K, **Vitiello SP**, Pearce DA. Lysosome dysfunction in the pathogenesis of kidney disease. *Pediatric Nephrology* (12):2253-61, 2014. PMID: PMC4018427

Wolfe DM, Padilla-Lopez S, **Vitiello SP**, and Pearce DA. pH-dependent localization of Btn1p in the yeast model of Batten disease. *Disease Models and Mechanisms* 4(1):120-5, 2011. PMID: PMC3008966.

Vitiello SP, Benedict, JW, Padilla-Lopez S, and Pearce DA. Interaction between Sdo1p and Btn1p in the *Saccharomyces cerevisiae* model for Batten disease. *Human Molecular Genetics* 1;19(5):931-42, 2010. PMID: PMC2816617.

Vitiello SP, Wolfe, D, and Pearce, DA. Absence of Btn1p in the yeast model for juvenile Batten disease may cause arginine to become toxic to yeast cells. *Human Molecular Genetics* 1;16(9):1007-16, 2007. PMID: 17341489.

Phillips S, de Voer G, Taschner PEM, Korey C, Codlin S, Mole SE, and Pearce DA. Characterizing pathogenic processes in Batten disease: use of small eukaryotic model systems. *Biochimica Biophysica Acta* 1762(10):906-19, 2006. PMID: 17049819.

Phillips S, Benedict, JW, Weimer JM, and Pearce DA. CLN3, the Protein Associated with Batten Disease: Structure, Function, and Localization. *Journal of Neuroscience Research* 79:573-583, 2005. PMID: 15657902.

Fang F, **Phillips S**, and Butler JS. Rat1p and Rai1p function with the nuclear exosome in the processing and degradation of rRNA precursors. *RNA* 11(10):1571-8, 2005. PMID: PMC1370841.

Phillips S and Butler JS. Contribution of domain structure to the RNA 3' end processing and degradation functions of the nuclear exosome subunit Rrp6p. *RNA* 9:1098-1107, 2003. PMID: PMC1370474.

Seminars (past five years) Undergraduates are italicized, presenter(s) is bolded

Vitiello SP. Service-Learning and Science Identity. PULSE Workshop at the South Dakota 2019 Undergraduate Research Symposium, Ramkota Hotel, Sioux Falls, July (2019).

Vitiello SP. The Power of CRISPR-mediated Gene Editing. Augustana Senior Academy, Augustana University, Sioux Falls, SD (2018).

Vitiello SP. Balancing the Three-legged Stool: Teaching, Research, and Service at a Small Liberal Arts College. Sanford Research Graduate Student and Post-Doc Career Development Seminar Series, Sanford Research, Sioux Falls, SD (2018).

Krishna Kumar, K. and Vitiello SP. The epigenetics of Friedreich ataxia. Arthur Olsen Research Symposium, Augustana University, Sioux Falls, SD (2019).

Moore, M. and Vitiello SP. The Genetic Origin of a Rare Mitochondrial Disorder. Plenary talk at the Arthur Olsen Research Symposium, Augustana University, Sioux Falls, SD (2018).

Vitiello SP. Science Identity. Sanford PROMISE STEMwise Building Communities, Sanford Research, Sioux Falls, SD (2017).

Reider J, DeVries B, and Vitiello SP. Characterization of novel *TARS2* variants. Arthur Olsen Research Symposium, Augustana University, Sioux Falls, SD (2017).

Vitiello SP. Service-Learning in the Molecular Biology Curriculum at Augustana University. South Dakota Academy of Science 101st Annual Meeting, University of Sioux Falls, Sioux Falls, SD (2016).

Simpkins JA and Vitiello SP. Characterization of genetic interactions with *ERS1*; Sixteen genes are differentially expressed in *ers1-Δ*. Arthur Olsen Research Symposium, Augustana College, Sioux Falls, SD (2015).

Vitiello SP. A model of the pediatric disease cystinosis: monitoring differential gene expression in a cystine transport deficient yeast. Biology Department Seminar Series, Augustana College, Sioux Falls, SD (2013).

Vitiello SP. The responsibility of a mentor and their trainee. Sanford Research Ethics Seminar Series, Sanford Research, Sioux Falls, SD (2013).

Poster Presentations (past five years) – Undergraduates are italicized, presenter(s) is bolded

Boyens, A, Krishna Kumar K, Cucak A, Vitiello P, and Vitiello SP. The epigenetics of Friedreich ataxia. Eastern South Dakota Research Symposium. Sioux Falls, SD (2019).

Dahm C, Kelly F, Krishna Kumar K, and Vitiello SP. The molecular underpinnings of Friedreich ataxia. Sanford Summer Research Symposium (2018).

Bartl L, DeVries B, Reider J, Vitiello P, Landsverk M, and Vitiello SP. The genetic origin of a rare mitochondrial disorder. Experimental Biology. San Diego, CA (2018).

Moe M, Moore M, Bartl L, Reider J, DeVries B, Vitiello P, Landsverk M, and Vitiello SP. The genetic origin of a rare mitochondrial disorder. 2017 Sanford Summer Research Symposium. Sioux Falls, SD (2017).

Bartl L, Reider J, DeVries B, Vitiello P, Landsverk M, and **Vitiello SP**. Characterization of novel *TARS2* variants. Eastern SD Research Symposium. Sioux Falls, SD (2017).

Bartl L, Reider J, DeVries B, Vitiello P, Landsverk M, and Vitiello SP. Characterization of novel *TARS2* variants. 2017 South Dakota Student Research Poster Session. Capitol Rotunda, Pierre, SD (Legislative Session 2017).

***Bartl L, *Reider J, DeVries B**, Vitiello P, Landsverk M, and Vitiello SP. Characterization of novel *TARS2* variants. 2016 South Dakota Undergraduate Research Symposium. Pierre, SD (2016). *Students were awarded 2nd place in the poster competition.

Gubbels, JAA and **Vitiello SP**. Incorporating Service-learning into the Augustana University biology curriculum. Partnership for Undergraduate Life Sciences Education Midwest and Great Plains Regional Network Conference. St. Louis, MO (2016).

Walnofer A, Simpkins JA, Rickel KE, and Vitiello SP. Phenotype analysis and gene expression profiling in a yeast model of Cystinosis. Experimental Biology. San Diego, CA (2016).

Carlisle G, Matzner SL, and Vitiello SP. Identification of drought related regulatory elements in Tomato: A bioinformatics approach. Ecological Society of America Meeting. Baltimore, Maryland (2015).

Simpkins JA, Rickel KE, Ahlers BA, Nelson HJ, Madeo M, and Vitiello SP. Characterization of genetic interactions with *ERS1*; Sixteen genes are differentially expressed in *ers1-Δ*. South Dakota Undergraduate Research Symposium, Pierre, SD (2015).

Vitiello SP. Incorporating Service into the Augustana College Molecular Biology Course Curriculum. American Society for Biochemistry and Molecular Biology Special Symposium: Transforming Undergraduate Education in Molecular Life Sciences, Saint Joseph, MO (2015).

Simpkins JA, Rickel KE, Ahlers BA, Nelson HJ, Madeo M, and Vitiello SP. Characterization of genetic interactions with *ERS1*; Sixteen genes are differentially expressed in *ers1-Δ*. Experimental Biology Annual Meeting, Boston, MA (2015).

Simpkins JA, Rickel KE, Ahlers BA, Nelson HJ, Madeo M, and Vitiello SP. Characterization of genetic interactions with *ERS1*; Sixteen genes are differentially expressed in *ers1-Δ*. South Dakota Undergraduate Research Symposium, Pierre, SD (2014).

Mauro M, Carlisle G, Cole L, Matzner S, Vitiello SP. Characterization of differential gene expression in tomato plants under drought conditions. Poster presentation, South Dakota Undergraduate Research Symposium, Pierre, SD (2014).

Simpkins JA, Rickel KE, Ahlers BA, Nelson HJ, Madeo M, and Vitiello SP. Genetic interactions with *ERS1* in *Saccharomyces cerevisiae*. Poster Presentation, Experimental Biology Annual Meeting, San Diego, CA (2014).

Professional Memberships

American Society for Biochemistry and Molecular Biology, 2013-present

Member

Undergraduate Poster Competition Judge (2014, 2018)

Graduate Women in Science, January 2010-2015

Sigma-Delta Chapter of South Dakota

Vice-President of Programming (2010)

President (2011)