

Science Honors Research Program

Student Authored Publications and Presentations

Note: SHRP **Student names** are bolded; SHRP *Mentor names* are italicized.

I) Student co-Authored, Peer- Reviewed Journal Papers published: 13 total

2012; 1 Paper published

Piacsek, A., **Abdul-Wahid, S** and Taylor, R., 2012. Resonance frequencies of a spherical aluminum shell subject to static internal pressure. *J. Acoust. Soc. Am.*, **131** (6), EL506-511.

2011; 2 Papers published

Felix, M. C., Parker, J. D., Lee, C., & *Gabriel, K. I.*, 2011. Real three-dimensional objects: Effects on mental rotation. *Perceptual and Motor Skills*, **113**, 38-50.

Trappmann, J. and *S.N. Hawk*, 2011, The Effects of n-3 Fatty Acids and Bexarotene on Breast Cancer Cell Progression. *Journal of Cancer Therapy*, **2**, 710-714.

2010; 2 Papers published

Gaulke, C., R.S. Wagner, J.E. Johnson, and *J.T. Irwin*. 2010. Northern leopard frogs (*Rana pipiens*) infected with *Batrachochytrium dendrobatidis* in the amphibian trade. *Herpetological Review* 41(3): 322-323.

Rabinovitz, R.L., Johnson, K. J., and *Diaz, A. L.*, 2010. Investigation of the Effect of Gd³⁺ on Host-to-Europium Transfer Efficiency in (Y,Gd)BO₃:Eu³⁺ Under VUV Excitation. *Journal of Physical Chemistry C*. **114**, 13884-13889.

2009; 2 Papers published

Andonie, R., *Levente Fabry-Asztalos*, **Christopher B. Abdul-Wahid**, Grant I. Barker, Lukas Magill, Sarah Abdul-Wahid, 2009. A Quantitative Structure-Activity Relationship Study of HIV-1 Protease Inhibitors Using a Small Molecular Dataset. *IEEE/ACM. Transactions on Computational Biology and Bioinformatics*.

Jackson, M., **Petersen, T.**, Zink, L.R., 2009. Frequencies and Wavelengths From a New Far-Infrared Lasing Gas: ¹³CHD₂OH. *IEEE Journal of Quantum Electronics* **45**, 830-832.

2008; 4 Papers published

Atkins, R. and *Anthony L. Diaz*, 2008. Investigation of host-to-activator energy transfer and surface losses in SrY₂O₄:Eu³⁺ under VUV excitation. *Journal of Luminescence* **128**, 1463 – 1470.

Cottrell, Tom R., Paul F. Hessburg, **Jonathan A. Betz**, 2008. Seed Invasion Filters and Forest Fire Intensity. *Fire Ecology* **4**, 87-100.

McCoy, S.R., Kuehl KV, Boore JL and *LA Raubeson*, 2008. The complete plastid genome sequence of *Welwitschia mirabilis*: an unusually compact plastome with accelerated divergence rates. *BMC Evolutionary Biology* **8**, 130, doi:10.1186/1471-2148-8-130.

Fabry-Asztalos, Levente, Razvan Andonie, Catharine J. Collar, Sarah Abdul-Wahid, **Nicholas Salim**, 2008. A Genetic Algorithm Optimized Fuzzy Neural Network Analysis of the Affinity of Inhibitors for HIV-1 Protease. *Bioorganic & Medicinal Chemistry*, 2903-2911.

2006; 1 Paper published

Andonie, R.; *Fabry-Asztalos, L.*; Abdul-Wahid, S.; Collar, C. J.; **Salim, N.**, 2006. An Integrated Soft Computing Approach for Predicting Biological Activity of Potential HIV-1 Protease Inhibitors, *Proceedings of the IEEE International Joint Conference on Neural Networks*, 7495-7502.

2005; 1 Paper published

Andonie, R.; *Fabry-Asztalos, L.*; Collar, C. J.; Abdul-Wahid, S.; **Salim, N.**, 2005. Neuro-fuzzy Prediction of Biological Activity and Rule Extraction for HIV-1 Protease Inhibitors, *Proceedings of the IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology*, San Diego, 113-120.

II) Student Presentations at International/National Meetings: 23 total

2012: 3 presentations at International/National meetings

Conn, S.J.; Vreeland, S.M.; Wexler, A.N.; *Chamberland, S.*, Studies toward the total synthesis of clavadinone A 243rd American Chemical Society National Meeting, San Diego, CA, United States, March 25-29, 2012, ORGN-240.

Keeney, J. and R. *Hickey*, 2012, Using High-Resolution Satellite Imagery and Vegetative Indices to Locate Potential Archaeological Sites; Lake Matcharak, Alaska. Poster presented at the 77th Annual Meeting of the Society for American Archaeology, Memphis, April 18-22.

Keeney, J. and R. *Hickey*, 2012, A Potential Method for Locating Archaeological Sites Using High-Resolution Satellite Imagery. Poster presented at the 39th Annual Meeting of the Alaska Anthropological Association, Seattle, WA, February 29-March 3.

2011: 3 presentations at International/National meetings

Pitcher B., *Bohrson WA*, and *Viccaro M*, 2011, Crustal Assimilation and Magma Recharge in the Recent Mt. Etna Magma Plumbing System: Evidence from In Situ Plagioclase Textural and Compositional Data

2010: 5 presentations at International/National meetings

Alman, A., and *D. Rivera*, 2010. Characterization Solar Cells Utilizing Zinc Sulfide Quantum Dots and TiO₂ Nanopowder. *National American Chemical Society Meeting*, San Francisco.

Felix, M.C., *Parker, J.*, *Lee, C.*, **Angell, K.*, **Ring, I.*, & *Gabriel, K.I.* (2010, April). *The role of spatial activities in mental rotation tasks: Correlational findings on the performance of two novel tasks.* Poster session presented at the meeting of the Rocky Mountain Psychological

Felix, M.C.*, *Parker, J.D.**, & *Gabriel, K.I.*, 2010. Actual three-dimensional objects improve performance on mental rotation *American Psychological Association Conference*, San Diego, CA

Ginn, L.; *Sheeran, L.K.*; *Matheson, M.D.*; *Li, J.H.*; *Wagner, R.S.*, 2010, The influence of affiliative relations on copulation strategies of Tibetan macaques (*Macaca thibetana*). 63rd Northwest Anthropology Conference, Ellensburg, WA 24-27 March

Rosario, S. and *Thomas, C.*, 2010. C₆₀ has opposing dose-dependent effects on electron transport chain function and oxidative stress in isolated bovine heart mitochondria. *Toxicological Sciences: The Toxicologist* 114(1):80.

2009: 7 presentations at International/National meetings

Andonie, R., *Levente Fabry-Asztalos*, *Bogdan Crivat*, *Sarah Abdul-Wahid*, **Christopher B. Abdul-Wahid**, 2009. IEEE International Joint Conference on Neural Networks, Atlanta, June 14-19, 157-163.

Chrisman, S. and *Carnell, L.* 2009. Analysis of Electrotaxis Behavior in *C. elegans*. The 17th International *C. elegans* Meeting, Los Angeles, CA Jun. 24th-28th

Diaz, A. L., *K. J. Warren* and **Rosa L. Rabinovitz**, 2009. Investigating the Function of Gd³⁺ in (Y,Gd)BO₃:Eu³⁺ Through Measurements of Host-to-Activator Transfer Efficiency," Society for Information Display Conference 2009, San Antonio, TX.

Durkee, H., and *D. Rivera*, 2009. Synthesis and Characterization of zinc based quantum dot materials with blue to green fluorescence from an aqueous based synthetic method. *National American Chemical Society Meeting* Salt Lake City, UT.

Gee, D. L., **Jessica D. Nye**, *Donna R. Parsons*, 2009. Validation of a bioelectrical impedance analysis equation predicting body composition using conductor length instead of height. *Cen-Tsong Lin. Med. Sci. Sports. Exer.* 41(5): S318

Rust, B., and *D. L. Gee*, 2009. Effects of epigallo catechin gallate in green tea extract on energy expenditure and respiratory quotient in females.. *Linus Pauling Institute's "Diet and Optimum Health" conference*, Portland, OR.

2009: con't

Warren, K. J., Rosa L. Rabinovitz and *A. L. Diaz*, 2009. Investigating the Function of Gd^{3+} in $(Y,Gd)BO_3:Eu^{3+}$ Through Measurements of Host-to-Activator Transfer Efficiency," *Proceedings of SID* 251 – 253. (Peer reviewed proceedings)

2008: 5 presentations at International/National meetings

Blackmore, A.C., *Levente Fabry-Asztalos*, 2008. Synthesis towards novel 1,3-azaborine heterocycles as potential dual-mode HIV-1 protease inhibitors. *235th American Chemical Society National Meeting*, New Orleans, LA.

Hase, M., and *D. Rivera*, 2008. Use of Attenuated Total Internal Reflection Fourier Transform Infrared Spectroscopy (ATR-FTIR) Coupled with Multivariate Least Squares Modeling to Understand the Fundamental Adsorption Properties of Polyelectrolyte/Surfactant Mixtures at the TiO_2 /Water Interface. *Pittcon*, New Orleans, LA

Matheson, M.D., Mack, H.M., *Sheeran, L.K.*, **Yenter, T. A.**, 2008. Captive ex-pet *Macaca fascicularis* use hair and dental floss to floss their teeth. *31st Annual Meeting of the American Society of Primatologists*, West Palm Beach, FL, 18-21 June.

Scott S.R., *Bohrson WA*, 2008. Processes Controlling Spessartite Generation beneath Mt. Rainier, Washington, *American Geophysical Union Annual Meeting*, San Francisco.

Yenter, T.A., *Matheson, M.D.*, *Sheeran, L.K.*, Li, J. Wagner, R.S., 2008. Self directed behaviors, tourist density and proximity in a free living population of Tibetan macaques (*Macaca thitetana*) at an ecotourism destination in Anhui Province, China. *31st Annual Meeting of the American Society of Primatologists*, West Palm Beach, FL.

2007: 3 presentations at International/National meetings

Abdul-Wahid, B., Sarah Abdul-Wahid, *Levente Fabry-Asztalos*, Razvan Andonie, 2007. *In silico* study of *Plasmodium falciparum* proteases Plasmeprin II and IV: Prediction of biological activity of newly designed inhibitors. *American Chemical Society National Meeting*, Chicago, IL.

Fernyhough, L., L. Wiseley, V. Bennett, E. Bergman, *D. Gee*, 2007. Dietary behaviors of Mexican women and second-generation Mexican-American women. *Food and Nutrition Conference and Expo, the annual meeting of the American Dietetic Association*.

Jia, Y., **Tajinder Heer**, David Nguyen, Tracy K. O'Connell, *Levente Fabry-Asztalos*, 2007. Synthesis of Novel Borinic Acids as Potential HIV-1 Protease Inhibitors. *233rd American Chemical Society National Meeting*, Chicago, IL.

2006: 3 presentations at International/National meetings

Andonie, R.; *Fabry-Asztalos, L.*; Abdul-Wahid, S.; Collar, C. J.; **Salim, N.**, 2006. An Integrated Soft Computing Approach for Predicting Biological Activity of Potential HIV-1 Protease Inhibitors, *Proceedings of the IEEE International Joint Conference on Neural Networks*, 7495-7502.

Gilliam, K. L., 2006. Acid drainage and metal ion transport at Holden Mine, Lake Chelan. , *Geological Society of America Annual Meeting*, Philadelphia PA

Salim, N., Sarah Abdul-Wahid, Catharine J. Collar, *Levente Fabry-Asztalos*, Razvan Andonie*. 2006. "Application of a Fuzzy-Neural Network to Predict IC_{50} Values for Potential HIV-1 Protease Inhibitors". *331th American Chemical Society National Meeting*, Atlanta, GA.

2005: 2 presentations at International/National meetings

Andonie, R.; *Fabry-Asztalos, L.*; Collar, C. J.; Abdul-Wahid, S.; **Salim, N.**, 2005. Neuro-fuzzy Prediction of Biological Activity and Rule Extraction for HIV-1 Protease Inhibitors, *Proceedings of the IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology*, San Diego.

Biles, H., Michael Ellis, Catharine J. Collar, *Levente Fabry-Asztalos*, 2005. Analyzing Force Field and Charge Conditions to Enhance Biological Activity Predictions of Cathepsin D Inhibitors. *331th American Chemical Society National Meeting*, Atlanta, GA.

III) Nationally competitive presentations:

Posters on the Hill, Washington DC

2009: C. Badi' Abdul-Wahid, Catharine J. Collar, Sarah Abdul-Wahid, Grant I. Barker, Nicholas Salim, Lukas Magill, *Levente Fabry-Asztalos*, Razvan Andonie. "Using Computational Intelligence as Predictive Tool for Biological Activities of Drug Candidates Targeted Towards Therapeutically Important Enzymes for Rapid Screening"

IV) Student Presentations at Regional Meetings of Science Associations: 20 total

2011: 2 presentations at Regional meetings

Beckstrom, R.A., & **Gabriel, K.I.**, 2011. *Maternal separation effects on initial alcohol responses in adult mice*. Poster session presented at the Western Psychological Association conference, Los Angeles, CA.

Pitcher B, *Bohrson WA*, and **Viccaro M**, 2011. *Crustal Assimilation in the Recent Mt. Etna Magma Plumbing System: Evidence from In Situ Plagioclase Textural and Compositional Data*, Geological Society of America Abstracts With Programs, Vol. 43, No. 4, p. 64

2010: 2 presentations at Regional meetings

Felix, M.C.*, **Parker, J.D.***, **Lee, C.***, **Angell, K.***, **Ring, I.***, & **Gabriel, K.I.** 2010. The role of spatial activities in mental rotation tasks: Correlational findings on the performance of two novel tasks. Poster submitted to Rocky Mountain Psychological Association Conference, Denver, CO.

Ginn, L., **Sheeran, LK**; **Matheson, MD**; **Li JH**, **Wagner, RS** 2010. *The Influence of Affiliative Relations on Copulation Strategies of Tibetan Macaques (Macaca thibetana)*. 63rd Northwest Anthropology Conference, Ellensburg, Washington

2009: 2 presentations at Regional meetings

Abdul-Wahid, C. B., *Levente Fabry-Asztalos*, Razvan, 2009. *Prediction of Biological Efficacy for Potential Plasmodium falciparum Plasmeprin IV Inhibitors* , poster Seattle Parasitology Conference, Seattle, WA.

Gaulke, C., and **J.T. Irwin**. 2009. *High infection rates of the fungus Batrachochytrium dendrobatidis in biological supply and wild-caught frogs in central Washington State, USA*. Society for Integrative and Comparative Biology, Boston, MA.

2008: 6 presentations at Regional meetings

Abdul-Wahid, C. B., **Grant I. Barker**, **Razvan Andonie**, *Levente Fabry-Asztalos* , 2008. *Ordered Fuzzy ARTMAP for Predicting HIV-1 Protease Inhibitor Activity*. *American Chemical Society Puget Sound Section Undergraduate Research Symposium*, Olympia, WA.

Atkins, R., 2008. *Investigation of host-to-activator transfer efficiency and surface losses in SrY₂O₄:Eu³⁺ under VUV excitation*. *1st Northwest Meeting in Materials and Physical Chemistry* Pullman, WA (*Anthony Diaz*, Mentor)

Blackmore, A.C., **Pei-Mien Chen**, **Lee Ream**, *Levente Fabry-Asztalos*, 2008. *Synthesis towards novel 1,3-azaborine heterocycles as potential dual-mode HIV-1 protease inhibitors*. *American Chemical Society Puget Sound Section Undergraduate Research Symposium*, Olympia, WA.

Nye, J., *Levente Fabry-Asztalos* 2008. *Synthesis Towards 5,6-Dihydropyran-2-ones as Potential Inhibitors of HIV-1 Protease* *Pacific Northwest Undergraduate Research Symposium on Organic Chemistry*, Corvallis, OR.

Nye, J., **Scott Palmer**, *Levente Fabry-Asztalos* 2008. *Synthesis of 5,6-Dihydropyran-2-ones as Potential Inhibitors of HIV-1 Protease*. *American Chemical Society Puget Sound Section Undergraduate Research Symposium*, Olympia, WA.

Warren, K., 2008. *Determination of host-to-activator energy transfer efficiency in YBO₃:Eu³⁺ and (Y,Gd)BO₃:Eu³⁺* *1st Northwest Meeting in Materials and Physical Chemistry* Pullman, WA (*Anthony Diaz*, Mentor)

2007: 6 presentations at Regional meetings

Abdul-Wahid, B., **Sarah Abdul-Wahid**, *Levente Fabry-Asztalos*, **Razvan Andonie** , 2007.

Generating novel potential inhibitors of Malarial Plasmeprin IV using computational methodologies American Chemical Society Puget Sound Section Undergraduate Research Symposium, Tacoma, WA.

Atkins, R., 2007. Synthesis and characterization of $\text{SrY}_2\text{O}_4:\text{Eu}^{3+}$. American Chemical Society Puget Sound Section Undergraduate Research Symposium Tacoma, WA. (Anthony Diaz, Mentor)

Gaulke, C.A., J.T. Irwin, J.R. Johnson, R.S. Wagner. 2007. Pathophysiology of *Batrochytrium dendrobatidis*. Society for Northwest Vertebrate Biology, Victoria, BC, Canada.

Heer, T. S., David V. Nguyen, Tracy K. O'Connell, Levente Fabry-Asztalos, 2007. Synthesis Towards Novel Straight Chain and Cyclic Borinic Acid Potential HIV-1 Protease Inhibitors. American Chemical Society Puget Sound Section Undergraduate Research Symposium, Tacoma, WA.

Lester, M., M. Matheson, L. Sheeran, J. Li., R. Steven Wagner, 2007. Population size estimates of Chinese paddle-tail salamanders using mark-recapture with spot pattern recognition. Society for Northwest Vertebrate Biology, Victoria, Canada.

Warren, K., 2007. Determination of host-to-activator energy transfer efficiency in $\text{YBO}_3:\text{Eu}^{3+}$ and $(\text{Y,Gd})\text{BO}_3:\text{Eu}^{3+}$. American Chemical Society Puget Sound Section Undergraduate Research Symposium Tacoma, WA. (Anthony Diaz, Mentor)

2006: 3 presentations at Regional meetings

Smith, A., 2006. Elastic properties of a regular tensegrity structure. 151st meeting of the Acoustical Society of America. (Mentor: Andy Piacsek).

Salim, N., Catharine J. Collar, Levente Fabry-Asztalos, 2006. Fuzzy-neural Network Predictions of IC_{50} Values for Potential HIV-1 Protease Inhibitors. American Chemical Society Puget Sound Section Undergraduate Research Symposium, Bellingham, WA.

Biles, H., Catharine J. Collar, Levente Fabry-Asztalos, 2006. Analyzing Force Field and Charge Conditions to Enhance Biological Activity Predictions of Cathepsin D Inhibitors. American Chemical Society Puget Sound Section Undergraduate Research Symposium, Bellingham, WA.

2005: 1 presentation at Regional meetings

Abdul-Wahid, S., **Nicholas Salim**, Catharine J. Collar, Razvan Andonie, *Levente Fabry-Asztalos*, 2005. Predicting Biological Affinity of HIV-1 Protease Inhibitors Using a Neuro-Fuzzy Network. *American Chemical Society Puget Sound Section Undergraduate Research Symposium*, Seattle, WA.

VI) Annual Regional Presentations

Murdock Conference:

Every year, the students of the Science Honors Research Program are invited to present their science at the annual Murdock Conference. While most students present posters, one CWU SHRP student is selected to give a 15 minute science talk to all conference attendees. Below is a listing of the oral presentations at recent conferences:

2013; **Will Ray**; Mentor: *Dr. Gil Belofski, Chemistry Dept.*

2012; **Kerry Olivier**; Mentor: *Dr. Mike Jackson, Physics Dept.*

2011; **Mark Weidenaar**; Mentor: *Dr. Karl Lillquist, Geography Dept.*

2010; **Amanda Berndt**; Mentor: *Dr. Blaise Dondji, Biology Dept.*

2009; **Chrisman, Steven**; Mentor: *Dr. Lucinda Carnell, Biology Dept.*

2008; **Ashley Dutton**; Mentor: *Dr. Linda Raubeson, Biology Dept.*

SOURCE Conference:

Every year, all senior students of the Science Honors Research Program present their science at the annual SOURCE Conference. Through the years the SHRP students have received recognition for their exemplary research, and have received the awards listed below

SOURCE Awards and Recognitions

2009: **Badi' Abdul-Wahid**, Oral presentation received Outstanding Student Presentation Award.

2008 **Amanda Blackmore**, Oral presentation received Outstanding Student Presentation Award.

2006 **Badi' Abdul-Wahid** Oral presentation received Outstanding Student Presentation Award.

2005 **Heather N. Biles** Poster received Honorary Mention.