

# Alexandra Martynova-Van Kley

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## PROFESSIONAL PREPARATION

<b>B.S. Biology, Biochemistry, &amp; Pedagogy of Chemistry &amp; Biology</b>	1984
<i>Bashkir State University Ufa, Russia</i>	
<b>Ph.D. in Plant Physiology</b>	1990
<i>Institute of Experimental Botany, Belorussian Academy of Science Minsk, Belorussia</i>	
<b>Received tenure</b>	2008
<i>Stephen F. Austin State University Nacogdoches, TX</i>	

## PROFESSIONAL EXPERIENCE

2013-present	Professor, Department of Biology Stephen F. Austin State University, Nacogdoches, TX
2011-2013	Associate Professor, Department of Biology <i>Stephen F. Austin State University, Nacogdoches, TX</i>
2008-2011	Associate Professor, Division of Biotechnology <i>Stephen F. Austin State University, Nacogdoches, TX</i>
May 2004	Visiting Professor, Biochemistry Department, <i>Bashkir State University Ufa, Russia</i>
2002-2008	Assistant Professor, Division of Biotechnology <i>Stephen F. Austin State University, Nacogdoches, TX</i>
Spring 2002	Adjunct Professor, Department of Biology <i>Stephen F. Austin State University, Nacogdoches, TX</i>
2001-2002	Research Assistant, Division of Biotechnology <i>Stephen F. Austin State University, Nacogdoches, TX</i>
2000-2001	Graduate Assistant, Biotechnology & Biology Departments <i>Stephen F. Austin State University, Nacogdoches, TX</i>
August-November 1995	Visiting Scientist, Biological Laboratories <i>Harvard University, Cambridge, MA</i>
July-August 1992	Exchange Scientist, Department of Botany & Plant Physiology, <i>University of Agricultural Sciences, Gödöllő, Hungary</i>
1990-1996	Research Scientist, Institute of Biology <i>Russian Academy of Science, Ufa, Russia</i>
1986-1990	Junior Research Scientist, Institute of Biology <i>Russian Academy of Science, Ufa, Russia</i>
1984-1986	Research Assistant, Institute of Biology <i>Russian Academy of Science, Ufa, Russia</i>

## FUNDED RESEARCH (GRANTS & PRIVATE SOURCES)

- Ed and Gwen Cole Private Donations, approximately **\$30,000**, 2004-2014. Research student development. A. Van Kley biotech lab.
- Faculty Development Leave-PROPOSAL-Granted SFA, January 2014 - May 2014
- \$3,000, Sponsored Research “Hydrolytic enzymes inhibitors and necrotic reactions in potato leaves reduces reproductive success of Colorado potato beetle” Bashkir State University, Ufa, Russia March 4, 2013 - June 16, 2013

- Sponsored Research Agreement, Decker Operating Company L.L.C., **\$200,600**, 2007-2009. Integration of dilute acid pretreatment and enzymatic hydrolysis of lignocellulosic feedstock using hyperthermophilic cellulases.
- National Science Foundation (NSF), Division of Biological Infrastructure (DBI), **\$151,565**, 2005. Acquisition of TYPHOON TRIO PLUS Imager Workstation.
- Research Development Funds (RDF), SFA, **\$116,000**, 2006-2007. *Eimeria* quantification and identification assays - as a complete vaccination/drug monitoring tool.
- RDF, SFA, **\$65,000**, 2005-2006. *Eimeria* Detection and Identification - Early Diagnosis.
- Decker Operating Company L.L.C., **\$53,000**, 2006-2007. Protein engineering of Endoglucanase from *Pyrococcus horikoshii* for biofuel production.
- Faculty Research Program (FRP), SFA, **\$19,225**, 2007-2008. Relating Arbuscular Mycorrhizal and Soil Microbial Diversity Patterns to East Texas Ecosystem Types.
- FRP, SFA, **\$21,550**, 2004-2005. Molecular Diversity of Arbuscular Mycorrhizal Fungi Colonizing Native Species in Contrasting Eastern Texas Habitats.
- Office of Research and Sponsored Programs (ORSP), SFA, Minigrants. **\$12,968**, 2004-2014.

## CONTRACTS

- USDA, ARS, SPARC, Non-monetary cooperative agreement, May 2007 – March 2009, *Eimeria* detection and identification with DGGE - Early diagnosis.
- Contract between SFASU and Bashkir State University, Russia. 2004-present. Contract for academic and cultural cooperation with Bashkir State University Russia with the possibility of graduate students exchange and PhD Program for Biotechnology, Biochemistry, and Plant Physiology for SFASU biotechnology post-graduate students.
- Contract between SFASU and University of St. Petersburg, Russia. Designed for graduate and post-graduate level student exchange. – Pending.

## NOMINATIONS

- Nominated for the Faculty Achievement Award for Research, 2007.
- Invited poster presentations twice at the prestigious International Gordon Research Conference “Biology of Host-Parasite Interactions”, 2006, 2012

## JOURNAL PUBLICATIONS

- Martynova-Van Kley A., J. L. Del Aguila, C. Rorex, A. Nalian. 2018. Catalytic Activities of *Pyrococcus horikoshii* Mutant Endoglucanase. **GSTF Journal of Chemical Sciences**, *in press*.
- Matyugina E., N. Belkova, S. Borzenko, P. Lukyanov, M. Kabilov, O. Baturina, A. M. Van Kley, A. Nalian, A. Ptitsyn. 2018. Structure and diversity dynamics of microbial communities at day and nighttime: investigation of meromictic Lake Doroninskoe, Transbaikalia, Russia. **Journal of Oceanology and Limnology**, *in press*.
- Jie Wu, Alexandra Martynova-Van Kley, Hadi Radnezhad, Masoumeh Sadeghid, Abdol Ghaffar Ebadi. 2018. Effect of Biofertilizers on the Morphological Characteristics of Burdock (*Arctium lappa*). **Applied Ecology and Environmental Research**, *in press*.
- Hassanvand, A., H. Radnezhad, A. Martynova-Van Kley, A. Loni, M. Sadeghi, H. Zaremanesh. 2018. Potential distribution of persian gazelle (*Gazella subgutturosa subgutturosa*) in Bamoo National park, Shiraz, Iran: a presence-only model approach. **Applied ecology and environmental research**, 16(1):305-319.

- Loni A., H. Radnezhad, A. Martynova-Van Kley, Hassanvand, A., M. Sadeghi, H. Zaremanesh. 2018. The role of Haloxylon plantations in improving carbon sequestration potential of sand dunes of Iran. **Applied ecology and environmental research**, 16(1):321-333.
- Martynova-Van Kley, A., R. Montez, A. Nalian, D. Saenz. 2016. Is rapid decay of invasive Chinese tallow (*Triadica sebifera*) leaf litter a threat to wetland microbial communities in east Texas? **The Karelia Journal of Science**, V5, №3 (16): 70-73.
- Martynova-Van Kley, A., J. Van Kley, & A. Nalian. 2015. Observing relationships between habitat, host, and populations of arbuscular mycorrhizal fungi. **Theoretical Problems of Ecology and Evolution**, Russian Academy of Science, Institute of Volga Ecology, Tolyatti, Russia, April 6-10, 2015, pp. 357-361.
- Betancourt, L., F. Rodriguez, V. Phandanavong, C. Ariza-Nieto, M. Hume, D. Nisbet, G. Afanador-Téllez, A. Martynova-Van Kley, A. Nalian. 2014. Effect of *Origanum* chemotypes on broiler intestinal bacteria. **Poultry Science**, 93:1-10.
- Martynova-Van Kley, A., M.S. Manoharan, J. Bray, M.E. Hume, S.E. Dowd and A. Nalian. 2013. Pyrosequencing Analysis of Salinomycin and *Eimeria* spp. Challenge-Induced Changes in Broiler Cecal Microbial Communities. **International Journal of Poultry Science**, 12 (12): 689-697.
- Martynova-Van Kley, A., E.O. Oviedo-Rondón, S.E. Dowd, M. Hume, A. Nalian. 2012. Effect of *Eimeria* Infection on Cecal Microbiome of Broilers Fed Essential Oils. **International Journal of Poultry Science**, 11 (12): 747-755.
- Hume, M., N. Barbosa, S. Dowd, N. Sakomura, A. Nalian, A. Martynova-Van Kley, E. Oviedo-Rondón. 2011. Use of pyrosequencing and denaturing gradient gel electrophoresis to examine the effects of probiotics and essential oil blends on digestive microflora in broilers under mixed *Eimeria* infection. **Foodborne Pathogens and Disease**, 8 (11): 1159-1167.
- Nalian A., J. Van Kley, K. Stroup, A. Martynova-Van Kley. 2010. Host preferences of arbuscular mycorrhizal along a soil nutrient and hydrological gradient. **Biotechnology (Ukraine)**, T. 3 (3): 78-83 (English)
- Nalian A., J. Van Kley, R. Ibragimov, A. Martynova-Van Kley. 2009. Level of Arbuscular Mycorrhizal Fungi species richness in rhizosphere of *Chasmanthium sessiliforum* (Poir.) Yates and *Callicarpa Americana* L. **Vestnik Orenburgskogo Universiteta**, 6:269-271 (Russian).
- Martyniuk O., A. Nalian, J. Van Kley, A. Martynova-Van Kley. 2009. Phylogenetic analysis of *Amaranthaceae* Juss. based on surface structure of pollen and sequences of maturase k and RBCL proteins. **Biotechnology (Ukraine)**, T. 2 (2): 94-100 (English)
- Bashirova R., R. Ibragimov, A. Martynova-Van Kley, O. Shooraliyova, N. Kudashkina. 2009. Effect of biotic and edaphic factors on flavonoid content in *Polygonum aviculare* L. **Vestnik Bashkir Universiteta**, T.14 (1): 72-75. (Russian)
- Martynova-Van Kley A., A. Syvyk, I. Teplova, M. Hume, A. Nalian. 2008. Rapid detection of avian *Eimeria* species using denaturing gradient gel electrophoresis. **Poultry Science**, 87:1707-1713.
- Hume M., C. Scanlan, R. Harvey, A. Andrews, J. Snodgrass, A. Nalian, A. Martynova-Van Kley, D. Nisbet. 2008. Denaturing Gradient Gel Electrophoresis as a Tool to Determine Batch Similarity of Porcine Cecal Bacteria Probiotic Cultures. **Applied and Environmental Microbiology**, 74(16):5241-3.
- Syvyk A., A. Martynova-Van Kley, A. Nalian. 2008. A positive control for detecting heteroduplexes in DGGE for microbial community fingerprinting. **The Texas Journal of Science**, 60(1):33-44.
- Martynova-Van Kley A., H. Wang, A. Nalian, J. Van Kley. August 2006. Detection of arbuscular mycorrhizal fungi in an east Texas forest by analysis of SSU rRNA gene sequence. **The Texas Journal of Science**, 58(3):231-242.

- Martynova A., I. Usmanov. 1991. Formation of the absorbing root system in plants of different types of adaptive strategies depending on the mineral nutritive regime. **Ukraine Botanical Journal**, vol. 48, # 4: 75-79.
- Usmanov I., A. Martynova, N. Usmanova, S. Ianturin. 1991. The plant strategy in South Urals saline soils: the resource distribution in cenopopulations. **Ecology (Russia)**, 1: 9-16.
- Usov V., I. Usmanov, V. Trapesnikov, A. Martynova. 1991. Formation of rhizoderm surface and radial H<sup>+</sup> flows in wheat roots under their isolated nutrition. **Physiology and Biochemistry of Culture Plants**, vol. 23, # 1: 38-45.
- Martynova A. 1990. Physiological Aspects of the Adaptive Strategies of Plants. Ph.D. dissertation. Institute of Experimental Botany, Belorussian Academy of Science, Minsk, Belorussia.
- Usmanov I., A. Martynova. 1990. Physiological reactions of plants with different types of ecological-cenotic strategies to changes in cultivation conditions. **News of Academy of Sciences of USSR, Series of Biology**, 3: 427-433.
- Usmanov I., G. Kudoyarova, A. Martynova, V. Gyuli-Zade, A. Mustafina. 1990. The ratio of indole acetic and abscisic acids in plants with different types of adaptive strategies. **Physiology and Biochemistry of Culture Plants**, vol. 22, #1: 65-68.
- Usmanov I., A. Martynova, S. Ianturin. 1989. Plant adaptive strategies in South Urals saline soils; the reaction to abiotic stress. **Ecology (Russia)**, 4: 20-27.
- Usmanov I., A. Martynova. 1988. Individual variety in cenopopulations of different adaptive strategies plants. **Ecology (Russia)**, 5: 21-27.
- Usmanov I., A. Martynova. 1987. The material-energetic resource distribution in the roots of plants with different adaptive strategies. **Doklady Akademii Nauk USSR**, vol. 297, #3: 754-757.

### ABSTRACT PUBLICATIONS (last three years)

- Rodriguez M., C. Rorex, M. Hume, A. Martynova-Van Kley. 2018. Human Intestinal Microbiota in Response to Antibiotics, Nicotine and Caffeine (Case Study). 1<sup>st</sup> Texas Medical Center Antimicrobial Resistance and Stewardship Conference, Gulf Coast Consortia, Houston, TX, Jan 17-19, 2018.
- Rorex C., Nalian A., Belkova N., Belikov S., Martynova–Van Kley A. 2017. Changes to the microbiome of the freshwater sponge *Lubomirskia baicalensis* affected by red sponge disease. The 3<sup>rd</sup> International Scientific Conference on Biodiversity and the Problems of Protection of Fauna, Yerevan, Armenia, 27-30 September 2017.
- Matyugina E., Belkova N., Borzenko L., Lukyanov P., Kabilov M., Baturina O., Van Kley A., Nalian A., Ptitsyn A. 2016. Effect of environmental factors on differentiation of microbial communities during day and night: study of meromictic Lake Doroninskoe, Zabaikalie, Russia. The 13th International Conference on Salt Lake Research (ICSLR2017), Ulan-Ude City, Republic of Buryatia, Russia, 21-25 August 2017.
- Rodriguez M, Rorex C.B., Hume M.E., Martynova-Van Kley A. 2017. Human Intestinal Microbiota in Response to Antibiotics, Nicotine and Caffeine (Case Study). Antimicrobial Resistance and Gut Health Symposium, Gulf Coast Consortia, Houston, TX, June 16, 2017.
- Rorex C., Martynova-Van Kley A. 2017. Primer selection and evaluation to assay the changes in microbiome composition of the freshwater sponge *Lubomirskia baicalensis* affected by Red Sponge Disease. Graduate research conference: SFASU, Nacogdoches, TX, April 20, 2017.
- Lewis, D., Saenz, D., Nalian, A., Kwiatkowski, M., VanKley, A. M. 2016. Land use determines composition of frog skin microbiome and occurrence of *Batrachochytrium dendrobatidis*. Joint Meetings of Ichthyologists and Herpetologists, American Society of Ichthyologists & Herpetologists,

Herpetologist's League, Society for the Study of Amphibians & Reptiles, etc., New Orleans, LA, July 9, 2016.

- Martynova-Van Kley, A. 2016. Massive parallel sequencing technology to study microbial communities. Abstract book of IV conference: Biodiversity: global and regional scale, Ulan -Ude, June 23-27, 2016, Biology Institute, BNC SO RAN, Ulan - Ude, BURATIA, Russia.
- Montez, R., VanKley, A. M. 2016. The influence of Chinese tallow leaf litter on aquatic chemistry and microbes. Graduate research conference: SFASU, Nacogdoches, TX, May 4, 2016.
- Martynova-Van Kley, A., J. Van Kley, & A. Nalian. 2015. Observing relationships between habitat, host, and populations of arbuscular mycohrizal fungi. Theoretical Problems of Ecology and Evolution: IV International Lubyshev's Seminar, Russian Academy of Science, Institute of Volga Ecology, Tolyatti, Russia, April 6-10, 2015, pp. 357-361.
- Martynova-Van Kley A., J. Van kley, and A. Nalian. 2015. Relationships between arbuscular mycohrizal fungi, hosts, plant communities and season, in eastern Texas, USA forests. Understanding broad – scale vegetation patterns: abstracts of 58th Annual Symposium of IAVS, Brno, Czech Republic, 19-24 July 2015, p. 253.
- Corona-Barrera, E., Van Kley, A., Rosales, M., Toledo, B., López, E., Ángel, C., Gutiérrez, A., Valencia, M., Martínez, R., López, A., Romo, R., Gómez, E. Thomson, J. 2015. *Brachyspira hyodysenteriae* BEYOND THE PIG, spirochetes BOWEL ISOLATED DOG compatible with the etiologic agent of swine dysentery (*B. hyodysenteriae*). (in Spanish). Proceedings of the AMVEC Congreso, Guanajuato University, Leon, Mexico, July 29-August 1, 2015. (*Brachyspira hyodysenteriae* MÁS ALLÁ DEL CERDO, AISLADOS DE ESPIROQUETAS INTESTINALES DE PERRO COMPATIBLES CON EL AGENTE ETIOLÓGICO DE LA DISENTERÍA PORCINA (*B. hyodysenteriae*)).
- Corona-Barrera E, González, J., Navarrete, A., López, E., Toledo, B., Hernández, M., Ángel, C., Gutiérrez, A., Valencia, M., VanKley, A. 2015. Isolation of intestinal spirochetes of the genus *Brachyspira* human inhabitants of rural communities in Irapuato. (in Spanish). Proceedings of the XV Meeting of Medical Sciences, Guanajuato University, Leon, Mexico, April 22-24, 2015. (AISLAMIENTO DE ESPIROQUETAS INTESTINALES DEL GÉNERO *Brachyspira* DE HABITANTES HUMANOS DE COMUNIDADES RURALES DE IRAPUATO, GTO.)
- Montez R., A. Martynova-Van Kley, D. Saenz. 2015. Decay rates of invasive Chinese tallow (*Triadica sebifera*) leaf litter and its potential for shaping wetland microbial communities. Book of abstracts for Big Thicket Science Conference, SFA State University, Nacogdoches, April 17-19, 2015, p.34.
- Lewis D., D. Saenz, A. Martynova-Van Kley. 2015. Urbanization may affect symbiotic microbiota and the fungal pathogen, *Batrachochytrium dendrobatidis*, on amphibian skin. Book of abstracts for Big Thicket Science Conference, SFA State University, Nacogdoches, April 17-19, 2015, p.32.
- Lewis D., D. Saenz, and A. Martynova-Van Kley. 2015. Land-use may affect incidence of *Batrachochytrium dendrobatidis* and other symbiotic microbiota on amphibian skin. Abstract for Bright Idea conference, April 29, 2015, ORSP, Stephen F. Austin State University, Nacogdoches, TX.
- Martynova-Van Kley A., J. Van Kley, A. Nalian. 2014. Observing relationship between habitat, host, and AMF communities utilizing massive parallel sequencing. In: Mucina ,L., Price, J.N. & Kalwij (eds.), Biodiversity and vegetation: pattern, process, conservation, p.144. Kwongan Foundation, Perth, AU.
- Nalian A., R. Ibragimov, J. Van Kley, A. Van Kley. 2014. Relationship between community structure of wild plants rhizosphere fungi and environmental factors utilizing DGGE using 16S rRNA genes. (in Russian). Materials of National Conference «Biotechnology – from science to industry», Bashkir State University, September 11-12, 2014, V.1, pp.49-52.

- Corona-Barrera, E., A. Van Kley, C. Ángel, A. Gutiérrez, M. Valencia, R. Martínez, P. Pradal-Roa, J. Thomson. 2014. Use of 23s rDNA PCR for detection of intestinal spirochaetes (*Brachyspira* spp.) from culture positive feces of pigs in México. Proceedings of the 23rd IPVS Congress, Cancun, Mexico – June 8-11, 2014, Volume II, p.465.
- Lewis D. and A. Van Kley. Association of *Batrachochytrium dendrobatidis* and Skin Microbiota and Habitat Loss of *Pseudacris Crucifer*. Abstract and presentation on the Bright Ideas Conference, May 1, 2014, ORSP, Stephen F. Austin State University, Nacogdoches, TX.

## SEQUENCES PUBLISHED

**245** nucleotide sequences were deposited from *Glomus*, *Corbicula* and *Diplocardia* spp. into National Center for Biotechnology Information GenBank database. 2003 - 2007.

## GRADUATE THESIS DIRECTED (completed)

- Colin Rorex. 2018. Changes in the microbial community of *Lubomirskia baicalensis* affected by Red Sponge Disease
- Ray Montez. 2016. The interactions between Chinese Tallow (*Tradica sebifera*) leaf litter and microbial community structure.
- Diane Lewis. 2015. Skin Microbiota and *Batrachochytrium dendrobatidis* of *Pseudacris crucifer* In East Texas Forest and Urban Habitat.
- Armen Nalian. 2011. The influence of environmental factors on the qualitative and quantitative composition of the microbiota in soils of different types of terrain. Ph. D. (Влияние экологических факторов на качественный и количественный состав микробиоты в почвах различных типов ландшафта.)
- Akash Kaushik. 2011. Dynamics of bacterial community analyzed in poultry litter treated with LitterGuard® using DGGE and pyrosequencing.
- Sikta Patnaik. 2010. Detecting seasonal changes in arbuscular mycorrhizal communities by denaturing gradient gel electrophoresis and pyrosequencing.
- Muthu Savaranan. 2010. Effect of coccidiostat and natustattm on intestinal microflora in caecum of broilers challenged with eimeria analyzed using bacterial 16s rdna tag-encoded flx amplicon pyrosequencing.
- Marina Maksimova. 2009. Monitoring of Eimeria in broilers using Real Time PCR.
- Jennifer Edwards. 2009. Bacterial Diversity in Soil Communities of East Texas Habitats.
- Elvira Kurmaeva. 2009. Profiling of Arbuscular Mycorrhizal communities by high-throughput sequencing.
- Darya Fakhretdinova. 2008. Analysis AMF in east Texas habitat types.
- Jorge Del Aguila. 2007. Comparison of the catalytic activities of the wild-type and mutant endoglucanases from *Pyrococcus horikoshii*.
- Andrew Syvyk. 2007. Strategy for detection and identification of Eimeria species infecting chickens. WILLIAM R. JOHNSON OUTSTANDING THESIS AWARD FOR 2007
- Yulia Leontieva. 2007. Identification and phylogenetic analysis of southeastern USA earthworm species using 16S rDNA and COI sequences.
- Jasmine Wong. 2007. Molecular modeling of thermostable endoglucanases.
- Alexander Fedotov. 2006. Spatial distribution and structural diversity of bacterial communities in oil-contaminated soils of east Texas.

- Kevin Stroup. 2006. Phylogenetic analysis of the partial 18S small subunit gene sequence of arbuscular mycorrhizal fungi in east Texas forest.

## **COLLABORATIONS AND OTHER AFFILIATIONS**

- George Damoff, SFASU, Nacogdoches, TX
- Dr. Kenneth Farrish, SFASU, Nacogdoches, TX
- Dr. Gary Kronrad, SFASU, Nacogdoches, TX
- Dr. Tim Cherry, SFASU, Nacogdoches, TX
- Dr. James Van Kley, SFASU, Nacogdoches, TX
- Dr. Don Pratt, SFASU, Nacogdoches, TX
- Dr. Jim Briggs, University of Houston, Houston, TX
- Dr. Michael Hume, USDA ASR SPARC, College Station, TX
- Dr. Edgar Oviedo, North Carolina State University, Raleigh, NC
- Dr. Owen Lind, Baylor University, Waco, TX