Vanya Bistrekova, EIT

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Qualifications

- Leadership and collaboration in engineering industry, nonprofit funding, laboratory research, and education.
- Independent problem-solving on faculty and Professional Engineer-led projects.
- Technical writing for academic reports, industry work, and grant application.
- Proficiency in office, imaging, and CAD/engineering design and analysis software.
- Dissection, tissue sampling, literature review and biological data analysis from 2D and 3D imaging in anatomy lab settings.
- SOP development for fabrication methods and equipment
- Programming: Python, MATLAB, Java.
- Language: English, Bulgarian, French (reading), Spanish (reading).

Education and Certification

Certified Engineer In Training Mar. 2018
Kentucky Board of Engineers & Land Surveyors

Bachelor of Science, Biosystems Engineering Dec. 2016
University of Kentucky, Lexington, Kentucky.

Courses

- Land & Water Resources Engineering
- Structures & Environment Engineering
- Engineering Thermodynamics
- Fluid Mechanics
- Organic & Inorganic Chemistry
- Thermochemical Processing of Biomass
- Electrical Circuits/Electronics/Microelectronics
- Electric Power Generation Technologies

Experience

Newton's Attic May 2018-Jul. 2020

Program Development and Instruction

- Developed and led educational programs working with minority and under-served students.
- STEM education and classroom instruction in chemistry, electronics, programming, wood shop, and 3D printing.
- Created class, lesson plan, safety, and fabrication protocols for personal, staff, and student use.

Grant Writing

- Grant research, management, and coordination
- Grant application writing resulting in awards over $90,000.
- Communicated with clients, teachers, and administrators regarding student sponsorship.

Management, Fabrication, Social Media

- Administrative support in communication with clients, grantors, and community partners.
- Managed volunteers and assistant instructors in fabrication workshop and classroom environments.
- CAD modeling, 3D printed and wood fabrication for facility development.
- Social media management.

AFA Engineering, LLC Nov. 2014-May 2018

CAD Technician

- Assisted Professional Mechanical Engineers on AutoCAD drafting and review of plumbing, HVAC, and electrical design on projects in Kentucky.
- Collaborated with other interns to complete hot, cold, and waste plumbing draft work for residential and commercial structures.
- Field work visiting under-construction projects for identification of existing HVAC and gathering additional structure details.
- Load calculation, sizing and CAD of partially pre-designed HVAC and electrical layouts.
- Analysis of structure compliance with IECC, ASHRAE Standard 90.1, and Kentucky state energy codes.
- Analysis of site utility plans and structure connections to municipal utilities.

Environmental Product Development and Laboratory Research

Gas Sampler Development 2015-2016
College of Engineering, University of Kentucky

- Literature review on hyporheic zone studies and interventions, including dissolved gas sampling.
- Faculty-led collaboration with classmates to develop a hyporheic gas sampling device for manual use in rocky streambeds.
- Testing, statistical analysis, and reporting.

Primate Physical Anthropology Research Laboratory Seasonally 2011-2014
College of Medicine, University of Kentucky

- Faculty-led student research: management of undergraduate student team collecting primate musculature data, including

measurement and collection of numerical data for calculation of muscle physiological cross-sectional area and participation in faculty-led primate dissection and tissue sampling.
- Processing and analysis of gross project data following protocol established in field literature and comparison to existing data sets.
- 3-Dimensional scanning and digital modeling of primate collateral ligament fossae.

Awards and Speaking

Invited Speaker Nov. 2019

Garden Springs Elementary Digital Awareness Night, Lexington, Kentucky
- Garden Springs Elementary hosts after-school digital literacy clubs and events for students and parents.
- Invites speakers inform guests on topics related to digital safety, awareness, and literacy and facilitate conversations on Internet use between students and their families.

First Place Team Oral Presentation Jul. 2016

Gunlogson Undergraduate Environmental Design Competition, ASABE 2016 Annual International Meeting, Orlando, Florida
- First place in undergraduate student competition: "Development of a Hand-Held Hyporheic Gas Sampler," team entry.

Invited Speaker May 2015

Glendover Elementary School Girls' Science Club, Lexington, Kentucky
- Club provides after-school education and science-related activities encouraging female students to explore STEM education.
- Speakers discuss their experiences and work as women in technical fields and lead the students through an activity or discussion related to the topic.

Oral Presentation of Student Research Apr. 2014

National Conference on Undergraduate Research, Lexington, Kentucky
- Oral presentation: "The comparative and functional anatomy of the hindlimb musculature of Humboldt's woolly monkey (*Lagothrix lagotricha*) and why it matters to ape and human evolution."

First Place Oral Presentation Nov. 2013

Kentucky Academy of Science Annual Meeting, Morehead, Kentucky
- Individual presentation in student competition: "Preliminary results from analyses of the comparative and functional anatomy of the hindlimb musculature of Humboldt's woolly monkey (*Lagothrix lagotricha*)."

University of Kentucky Summer Research Grant Jun. 2013-Aug. 2013

Lexington, Kentucky
- Grant allowing students to live, work, and study in and around the University of Kentucky. Recipients work under a faculty mentor and submit two progress reports on their work, with the latter being published in *Kaleidoscope*, the University of Kentucky's Journal of Undergraduate Scholarship.

Memberships

GleanKY - Volunteer May 2016-Present

Newton's Attic – Volunteer to Employee May 2016-Jul. 2020

American Society of Agricultural and Biological Engineers Apr. 2016-2019

Kentucky Academy of Science Sep. 2013-2019

American Society of Heating, Refrigeration and Air-Conditioning Engineers 2018

Engineers Without Borders USA, University of Kentucky Chapter – Social Media Chair Fall 2016