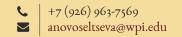
# Anna Novoseltseva



## **EDUCATION**

2016-2018 Master of Science

GPA: 3.9/4.0

Biomedical Engineering
Worcester Polytechnic Institute

2011 – 2015 **Bachelor of Science** 

GPA: 4.8/5.0

Biotechnical Systems and Technologies

Tomsk Polytechnic University

## RESEARCH EXPERIENCE

JAN 2017 - AUG 2018

Worcester Polytechnic Institute, Worcester, MA, USA *Master's thesis* 

Designed, prototyped, and tested a three-axis force measurement device for the da Vinci surgical system to provide haptic feedback to the operator based on forces applied to the instruments. Designed electronics and analog control circuits. Developed a ROS package to interface with the da Vinci Research Kit.

AUG 2014 - DEC 2016

Tomsk Polytechnic University, Tomsk, Russian Federation *Bachelor's thesis* 

Designed and developed electronic circuits of a device for determining the location of hematomas using infrared spectroscopy. Programmed microcontroller STM32 in C for device control. Created a program for data analysis and acquisition using LabVIEW. Implemented RS232 serial communications between PC and developed device.

## PROFESSIONAL EXPERIENCE

CURRENT, FROM SEPT 2018 (FT)

NTO IRE Polus, Fryazino, Russian Federation *Engineer* 

Designed and implemented the full-scale manufacturing process for a new medical laser treatment product. Responsible for component quality assurance, inventory database development, and design of assembly line process equipment.

SUMMER 2017, 2018 (FT)

IPG Medical, Marlborough, MA, USA *Internship* 

Research, development, and testing of new medical laser system for dermatology. Conducted laser-tissue interaction experiments with biological tissue samples and phantoms.

SUMMER 2014 (PT)

Medtekhnika, Ulan-Ude, Russian Federation *Internship* 

Assisted in technical support and repair of medical equipment in hospitals and clinics.

#### **AWARDS**

2016 - 2018 Fulbright Scholarship

2015 1<sup>st</sup> team place in All-Russian Student Competition on Electronics

2014 1<sup>st</sup> team place in the regional stage in All-Russian Student Competition on

Electronics

# COMMUNICATION SKILLS

conferences Oral Presentation at the Annual MIT

Theoretical Physics Conference - 1987

POSTERS Poster at the Meeting of the American

Physical Society – 1985

#### **SKILLS**

Programming Languages

C • Matlab • Python • ROS • LaTex • Visual Basic • C#

Physical Dexterity

Manual manipulation of experimental equipment and training within Black Mesa (e.g. the Hazard Course) have contributed to an enjoyment of working with my hands.

Passionate

I have been interested in theoretical physics such as quantum mechanics and relativity from an early age. My education and research have cemented this interest into a passion. I greatly enjoy carrying out fundamental physics research with potential practical applications.

# **PUBLICATIONS**

**Novoseltseva A.** (2018). "Force Feedback for the Patient Side Manipulator of the daVinci Research Kit", *Masters Theses (All Theses, All Years)*, https://digitalcommons.wpi.edu/etd-theses/312

Yaroslavsky I., Vinnichenko V., McNeill T., **Novoseltseva A.**, Perchuk I., Vybornov A., Altshuler G., Gapontsev V. (2018). "Optimization of a novel Tm fiber laser lithotripter in terms of stone ablation efficiency and retropulsion reduction" *Proc. SPIE 10468*, *Therapeutics and Diagnostics in Urology 2018*, 104680H doi: 10.1117/12.2291089;

**Novoseltseva A.**, Aristov A., Timchenko K. (2016). Experimental Facility Control System for Optical Studies in the Frame of Problem Solving of Brain Hematoma Diagnostics, *IOP Conference Series: Materials Science and Engineering*, Vol 93, No 012002, pp 1-5.

**Novoseltseva A.**, Aristov A., Timchenko K. (2016). Experimental Facility Control System for Optical Studies in the Frame of Problem Solving of Brain Hematoma Diagnostics, *IOP Conference Series: Materials Science and Engineering*, Vol 93, No 012002, pp 1-5.

**Novoseltseva A.**, Musorov I., Torgaev S., Aristov A., (2016). The Control System of the Opotoelectronic Sensor, *IV International Forum for Young Scientists "Space Engineering"*, pp 262-265.

Aristov A., Timchenko K., **Novoseltseva A.**, Kustov D., Larioshina I., (2016). Designing of Phantom Head Used in Optical Diagnostics of Brain Injury, *Journal of Physics: Conference Series*, Vol 671, No 012002, pp 1-5.

Timchenko K., **Novoseltseva A.**, Aristov A., (2016). Research of the Methods for Reading Optical Density on Different Parts of Human Head, *IV International Forum for Young Scientists "Space Engineering"*,pp 272-277

Timchenko K, Novoseltseva A, Aristov A, (2015). Designing of Phantom Head for Conducting Optical Researches, *Atomic and molecular pulsed lasers: The 12th International Conference*,pp 132

1996 doi:10.1021/jp951483+

1990 doi:10.1139/p90-097

1986 doi:10.1139/v86-297

1986 doi:10.1103/PhysRevA.34.2329

First author publications in **bold**