

# DMITRIY KALANTAROV

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201.655.3208

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## WORK EXPERIENCE

### **Chairperson for METCS (Essex County College, Newark, NJ)**

**Sept. 2017 – Present**

- *Successfully unified the various departments under one division.*
- *Manage 26 fulltime faculty and 100+ adjuncts; responsible for scheduling, conflict resolution, observations, mentorship, budgeting, and program evaluation.*
- *Design innovative programs using data-informed decision-making for the evaluation and improvement current programs and streamlining of courses and delivery methods and the tracking of status and effectiveness of initiatives implemented.*
- *Revamped the divisional curriculum to utilize cutting-edge equipment in laboratories designed for training the next generation of engineers, technicians, and to be aligned with the needs of industry.*
- *Share best practices across the division and the university and inspire various teams to move with urgency by delivering programs which includes communication plan, change management. Share knowledge and personal experience with peers and Coach others when appropriate.*
- *Successfully reduced all program to 60- Credits and established strong articulations and dual admissions with the local 4-year colleges and universities.*
- *Championing diversity, equity, and inclusion across the university by implementing SWE, IEEE, NSBE and including key senior leaders as well as external stakeholders.*

### **Lecturer Physics (Stevens Institute of Technology, Hoboken, NJ)**

**June 2014 – Present**

*Physics (Optics) lecturer in the Exploring Career Options in Engineering and Science (ECOES) program for the Pre-College students.*

### **Research Scientist (Seton Hall University, South Orange, NJ)**

**Oct. 2013 – Present**

*Lead physicist in a chemistry laboratory for Functional Nanomaterials. Specializing in physical vapor deposition (PVD) and the surface physics of materials.*

### **Adjunct Physics Professor (Essex County College, Newark, NJ)**

**Sept. 2013 – Present**

*Ability to teach all levels of Algebra and Calculus Based Physics courses.*

*Developed the online physics course for Algebra based physics*

### **Adjunct Professor (Fairleigh Dickinson University, Teaneck, NJ)**

**Jan. 2010 – Dec. 2017**

*Taught all levels of undergraduate and graduate Electrical Engineering courses. Development of new course material and modernization of laboratory experiments.*

#### Courses Taught Included:

- *Algebra Skills (MATH 0298), Cross-Cultural Perspectives (CORE 2008)*
- *Budgeting and Finance (PADM 6602), Logic System Design (EENG7701)*
- *Digital Signal Processing (EENG6633), Logic System Design (EENG7701)*
- *Assembly Language Programming (CSCI5565)*
- *Microprocessors System Design I (EENG2287)*

### **Engineer (AirTech Inc., Rutherford, NJ)**

**Nov. 2007 – Dec. 2017**

- *Analyze data to identify and resolve exceptions aiming to minimize supply disruptions to our consumers.*
- *Working with multiple scenarios to identify costs/benefit trade-offs and provide recommendations supported by data and insights.*
- *Demonstrate leadership with the ability to influence others to engage in projects and to drive business deliverables.*
- *Apply project and personal leadership to successfully achieve projects, teams, and individual goals by build strong collaborative relationships, while considering diverse perspectives and styles.*
- *Challenging the status quo and evaluating processes to resolve if refinements would improve productivity and quality.*
- *Collaborate across multiple sectors; engineering, manufacturing, marketing, quality control, legal, and supply in order to build ad hoc project teams to meet the demands of our clients.*

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## EDUCATION

### **PhD. in Physics (GPA 3.98)**

**Aug 2017**

*Integrated Optics- For Delay Lines, Gyroscopic and Index Sensing  
Stevens Institute of Technology, Hoboken, NJ*

### **M.E. Engineering Physics (GPA 3.96)**

**May 2012**

*Concentration in Nanotechnology  
Stevens Institute of Technology, Hoboken, NJ*

### **MBA (GPA 3.99)**

**July 2010**

*Concentration in Global Business Management  
Fairleigh Dickinson University, Teaneck, NJ*

### **M.S. Electrical Engineering (GPA 4.0)**

**May 2009**

*Concentration in Devices and Systems  
Fairleigh Dickinson University, Teaneck, NJ*

### **B.S. Mathematics & B.S. Electrical Engineering (GPA 4.0)**

**May 2009**

*Summa Cum Laude, University Honors  
Fairleigh Dickinson University, Teaneck, NJ*

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## RESEARCH EXPERIENCE

- **Effectiveness of LSAMP Summer Research** *June 2014 – Present*  
*Conducted a longitudinal educational study on the effectiveness of the summer LSAMP research experience had on careers and educational success of STEM community college students over the past decade.*
- **Refractive Index Sensors and Delay Lines** *Nov. 2013 – Present*  
*Theoretical exploration and fabrication of a new type of refractive index sensors and delay lines using coupled optical micro-resonators*
- **Fabrication of Refractive Index Sensors** *May 2014 – April 2017*  
*Accepted User Proposal to Brookhaven National Laboratory's Center for Functional Nanomaterials Proposal ID: 33096*
- **Fabrication of CROW Gyroscopes** *May 2012 – April 2014*  
*Accepted User Proposal to Brookhaven National Laboratory's Center for Functional Nanomaterials Proposal ID: 31329*
- **Coupled Resonator Optical Waveguide (CROW)** *Nov. 2011 – April 2015*  
*Theoretical exploration and fabrication of a new type of integrated optical gyroscope using coupled arrays of optical micro-resonators*
- **Embedded Systems Course & Lab development** *Jan. 2009 – Aug. 2010*  
*Using PowerPC and VHDL through Xilinx on Virtex-II Pro Board To create a more robust hardware to software interface*
- **MicroMouse** *Sep. 2006 – Jan. 2009*  
*Design and fabrication of a fully autonomous maze solving robot*
- **Alternative Fuel Vehicles** *Mar. 2008 – Jan. 2008*  
*Study of propane fuel as an alternative to gasoline and the fabrication of a new and inexpensive propane delivery system to ICEs*

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## PUBLICATIONS

1. M. Silfies, D. Kalantarov and C. P. Search, "Robust highly stable multi-resonator refractive index sensor." *Optics Communications* 410 174-179, (2018)
2. D. Kalantarov and C. P. Search, "Highly sensitive label-free coupled resonator Fabry-Perot self-referencing photonic biosensor," *J. Opt. Soc. Am. B* 34, 968-975 (2017)
3. D. Kalantarov, C. P. Search, "Tunable low dispersion optical delay line using three coupled micro-resonators." *Journal of Optics* 19 (11) 115802 (2017)
4. D. Kalantarov and C. P. Search, "Sensitivity limits of coupled resonator optical waveguide (CROW) gyroscopes when subject to material losses," *Gyroscopy and Navigation* 6 (1), 33-40 (2015)
5. F. Florio, D. Kalantarov, and C. Search, "Effect of Static Disorder on Sensitivity of Coupled Resonator Optical Waveguide Gyroscopes," *J. Lightwave Technol.* 32, 3418-3426 (2014).
6. D. Kalantarov and C. P. Search, "Effect of resonator losses on the sensitivity of coupled resonator optical waveguide gyroscopes," *Opt. Lett.* 39, In Press (2014).
7. D. Kalantarov and C. P. Search, "Effect of input-output coupling on the sensitivity of coupled resonator optical waveguide gyroscopes," *J. Opt. Soc. Am. B* 30, 377-381 (2013)
8. D. Kalantarov and C. P. Search, "The Role of Waveguide Coupling on the Sensitivity of a Coupled Resonator Optical Waveguide Gyroscope," in *Frontiers in Optics* (2013)

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## EDUCATIONAL PRESENTATIONS

1. Featured Presentation, "A Decade of Programmatic Successes through Interactive Student Summer Research Experiences", Best Practices Conference, Union County College, Cranford, NJ, April 2017
2. Panelist, "A Follow-Up Study of Summer Research Program Participants", 2016 Louis Stokes Midwest Center of Excellence (LSMCE) conference, Lisle, IL, October 2016
3. Presenter, "Garden State LSAMP at a Community College", 2015 Best Practices Conference, Camden County College, Blackwood, NJ, April 2015

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## EDUCATIONAL GRANTS

- **Perkins Grant Coordinator** *July 2018 – Present*  
*Encourage and recruit students to Perkins programs. Create, plan, schedule, advertise and execute events including Workshop, and Information Sessions with cross-platform industry experts. Maintain and purchase new equipment*
  - **S-STEM** *July 2018 – Present*  
*Recruit, mentor, and select students for the scholarship as well as place a group of community college students in research laboratories;*
  - **Co-Coordinator of Garden State –LSAMP Summer Research** *June 2014 – Present*  
*Supervised and placed a group of community college students in research laboratories, held weekly meetings and progress reports.*
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## AWARDS/FELLOWSHIPS

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- Innovation & Entrepreneurship Doctoral Fellowship **Sep. 2012 – August 2017**
- Academic Director's Award **2009**  
Region 1 IEEE Competitions: Micro-Mouse 1<sup>st</sup> place, Paper Design 2<sup>nd</sup> place
- National Honors Society
- Radio Club of America Scholarship
- Region 1 IEEE Micro-Mouse Competition, 3<sup>rd</sup> **2008**
- Phi Omega Epsilon
- Radio Club of America Scholar

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## SELECTED PROFESSIONAL DEVELOPMENT

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1. **Equity and Access STEM Thought Leaders' Summit:** October 23-26, 2018 in Washington, DC. The summit is designed to broaden equity and access in NSF's Advanced Technological Education (ATE) program with a focus on strengthening STEM technician education programs at minority-serving institutions (MSIs), and community colleges.
2. **The Chair Academy Worldwide Leadership Development in Higher Education:** June 11-15, 2018 in Atlantic City, NJ. The academy facilitated a journey of discovery and development, inviting us to get to know ourselves, find our voice, and develop confidence as change agents and transformational leaders in our organizations by formulating and implementing approaches to leadership challenges, concepts, and practices.
3. **On Course National Conference:** April 12 – 14, 2018 in Anaheim, CA. The conference is designed to deliver best practices in student success by transforming their colleges into learner-centered institutions in order to increase retention and student academic success.

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## ADVISEMENT & OUTREACH

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- **Essex County College IEEE and SWE Faculty Advisor** **Oct. 2017 – Present**
  - Establish an affiliation with "The Women in STEM" club and the society from engineers (SWE)
  - Establish an affiliation with IEEE at ECCMentored/Advised ECC's IEEE & SWE at the 2017 R1 IEEE Conference.
  - Ethics Competition team (Second Place 2019), and Paper Design competitors
- **FDU IEEE and SWE Faculty Advisor** **May 2015 – Oct. 2017**  
Mentored FDU's IEEE at 2106 & 2017 R1 IEEE Conference.
  - Ethics Competition team (Second Place 2017),
  - Paper Design (First & second Place 2017),
  - Micromouse team (Honorable Mention 2016),
  - Ethics Competition team (First Place 2016),
  - Paper Design (First Place 2016)
- **FDU-Society of Women Engineers Student Vice President** **Sep. 2008 - May 2009**
- **FDU-IEEE Student President** **Sep. 2007 - May 2009**  
*FDU Hosted IEEE Region 1 Conference April 2008 & 2009  
Conference planning committee and Spearheaded a fundraising campaign*

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## ADVISEMENT OF STUDENT PROJECTS

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1. Delices, S., Amuzie, E., Dzirasa, S., Solano, B., DasMahapatra, S., and Kalantarov, D., *Interfacing a Motorized Wheelchair with a Gyroscope*, 10th Annual GS-LSAMP/NNJ-B2B STEM Research Conference, New Brunswick, NJ, Oct. 12, 2018.
2. Nwankwo, J., Honors Capstone Project: *Impact of Equity participation to Rural Electrification: Through Cryptocurrency*. (2018)
3. Ruales, L., Honors Capstone Project: *Luminosity in Earth-like Planets Orbiting a Binary System* (2018)

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## SKILLS PROFILE

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- Programming: C, C++, Visual Basic.net, VHDL
  - Regression and Correlation analysis, Statistical modeling, Data analysis
  - Excel, Tableau, MATLAB
  - Electron Beam Lithography Tool (EBL) - JEOL JBX6300FS, cleanroom fabrication, Plasma Asher, Suss Spin Coater, Scanning Electron Microscope (SEM) - Hitachi 4800, Deep Reactive Ion Etcher
  - prototyping, PCB design
  - Experience in teaching, grading, program, course and content development
  - Multilingual English, Russian, and Hebrew
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