

# Keith Veenhuizen

## Curriculum Vitae

Institutional address  
Lebanon Valley College  
Department of Physics  
101 N. College Avenue  
Annville, PA 17003  
Tel: 717-867-6154  
Email: [veenhuizen@lvc.edu](mailto:veenhuizen@lvc.edu)

Home address  
1703 Plaza Apartments  
Lebanon, PA 17042  
Tel: 862-268-4605

### PROFESSIONAL EXPERIENCE

08/2017 – present    Assistant Professor of Physics    Lebanon Valley College, Lebanon, PA

### EDUCATION

01/2014 – 05/2017    **Ph.D.**    Lehigh University, Bethlehem, PA  
Ph.D. in Physics  
Advisor: Volkmar Dierolf  
Title: “Lithium niobate in reduced dimensions and restricted environments”

09/2012 – 12/2013    **M.S.**    Lehigh University, Bethlehem, PA  
M.S. in Physics

09/2007 – 05/2011    **B.S.**    Ramapo College of New Jersey, Mahwah, NJ  
B.S., *summa cum laude*, in Mathematics and Engineering Physics

### TEACHING EXPERIENCE

#### Lebanon Valley College, Annville, PA

08/2017 – present    Assistant Professor of Physics

#### Research students supervised:

- Olivia Magneson (Summer 2021)
- Andrew Hearsey (Summer 2021)
- Jacob Marsh (Summer 2021)
- Mark Wittemann (Summer 2020)
- Jacob Layton (Summer 2020)

- Lauren Hagy (Summer 2019)
- Samantha Smith (Summer 2019)
- Jacob Franklin (Summer 2019, Summer 2021)
- Collin Barker (Summer 2018)
- Joshua Miller (Summer 2018)

Courses taught:

- Principles of Physics I and II (calculus-based introductory course for physics majors)
- Experimental Physics (advanced laboratory for physics majors)
- Introduction to the Science of Sound (general education course)
- Introduction to Electronics
- Quantum Mechanics
- Electricity and Magnetism (calculus-based course for physics majors)
- Solid-State Physics (calculus-based course for physics majors)
- Optics (calculus-based course for physics majors)
- General College Physics I and II (algebra-based course for non-physics majors)
- Principles of Physics I and II laboratory
- Introduction to Electronics laboratory
- General College Physics I and II laboratory
- Atomic and Nuclear Physics laboratory
- Independent studies in optics

**Lehigh University, Bethlehem, PA**

- |             |   |
|-------------|---|
| 2014 - 2016 | Research mentor in Research Experience for Undergraduates (REU) program<br>Students: Emanuel Casiano-Diaz, Chloe Gooditis, and Atsou Koudonou |
| 2012 – 2016 | Recitation instructor and lab instructor  |

## PUBLICATIONS (\*Lebanon Valley College student co-author)

- 2022                    **Keith Veenhuizen**, Collin Barker\*, Jacob Franklin\*, Sean McAnany, Bruce Aitken, Daniel Nolan, Volkmar Dierolf, and Himanshu Jain, The role of glass composition in the 3D laser fabrication of lithium niobate single crystal in lithium niobosilicate glass, *Optical Materials*, 128, 112380
- 2022                    Wei Sun, **Keith Veenhuizen**, Jacob Marsh\*, Volkmar Dierolf, and Himanshu Jain, Determination of the structure of lithium niobosilicate glasses by molecular dynamics simulation with a new Nb-O potential, *Computational Materials Science*, 207, 111307
- 2021                    Courtney Au-Yeung, Dmytro Savytskii, **Keith Veenhuizen**, Sean McAnany, Himanshu Jain, and Volkmar Dierolf, Polarization and surface effects on the seed orientation of laser-induced  $\text{Sb}_2\text{S}_3$  crystals on Sb-S-I glass, *Crystal Growth and Design*, 21, 4276
- 2021                    Courtney Au-Yeung, Dmytro Savytskii, **Keith Veenhuizen**, Volkmar Dierolf, Himanshu Jain, Effect of laser beam profile on rotating lattice single crystal grown in  $\text{Sb}_2\text{S}_3$  model glass, *Crystals*, 11, 36
- 2021                    Sean McAnany, **Keith Veenhuizen**, Andrew Kiss, Juergen Thieme, Daniel Nolan, Bruce Aitken, Volkmar Dierolf, and Himanshu Jain, Evolution of glass structure during femtosecond laser assisted crystallization of  $\text{LaBGeO}_5$  in glass, *Journal of Non-Crystalline Solids*, 551, 120396
- 2019                    Sean McAnany, **Keith Veenhuizen**, Daniel Nolan, Bruce Aitken, Volkmar Dierolf, and Himanshu Jain, Challenges of laser-induced single crystal growth in glass: incongruent matrix composition and laser scanning rate, *Crystal Growth and Design*, 19, 4489
- 2019                    **Keith Veenhuizen**, Sean McAnany, Rama Vasudevan, Daniel Nolan, Bruce Aitken, Stephen Jesse, Sergei V. Kalinin, Himanshu Jain, and Volkmar Dierolf, Ferroelectric domain engineering of lithium niobate single crystal confined in glass, *MRS Comm.* 9, 334

2017 Brian Knorr, **Keith Veenhuizen**, Adam Stone, Himanshu Jain, and Volkmar Dierolf, Optical properties and structure of Er:LaBGeO<sub>5</sub> laser-induced crystals-in-glass, *Opt. Mater. Express* 7, 4095

2017 **Keith Veenhuizen**, Sean McAnany, Bruce Aitken, Daniel Nolan, Volkmar Dierolf, and Himanshu Jain, Fabrication of graded index single crystal in glass, *Sci. Rep.* 7, 44327

#### ORAL CONFERENCE PRESENTATIONS

12/2021 Glass and Optical Materials Division Meeting, *Effect of Glass Composition on the Laser-Induced Nucleation and Growth of Lithium Niobate Crystals in Lithium Niobosilicate Glass*

06/2019 International Congress on Glass, Boston, MA, *Ferroelectric domain engineering of lithium niobate single crystal confined in glass*

05/2018 Glass and Optical Materials Division Meeting, San Antonio, TX, *Piezoelectric and ferroelectric properties of lithium niobate crystal lines laser-written deep inside glass* (Invited)

05/2018 Glass and Optical Materials Division Meeting, San Antonio, TX, *Fabrication of rotating lattice lithium niobate single crystal lines within lithium niobosilicate glass via femtosecond laser irradiation*

03/2017 APS March Meeting, New Orleans, LA, *Fabrication of graded index single crystal (GRISC) in glass*

01/2017 International Conference on Advanced Ceramics and Composites, Daytona Beach, Florida, *Single crystal architecture in glass (SCAG): New active metamaterials for photonics*

07/2016 International Conference on Defects in Insulating Materials, Lyon, France, *Dependence of stoichiometry of lithium niobate nanocrystals on initial lithium to niobium ratios in the synthesis step*

03/2016 APS March Meeting, Baltimore, MD, *Lithium niobate crystals in confined geometries*

10/2015 APS Mid-Atlantic Meeting, Morgantown, WV, *Raman spectroscopic investigation of lithium niobate nanocrystals*

## PROCEEDINGS

2017 **Keith Veenhuizen**, Gregory A. Stone, Bastian Knabe, Karsten Buse, and Volkmar Dierolf, Dependence of stoichiometry of lithium niobate nanocrystals on initial lithium to niobium ratios in the synthesis step, IOP Conf. Ser.: Mater. Sci. Eng. **169**, 012022

## STUDENT PRESENTATIONS

12/2021 Glass and Optical Materials Division Meeting, *Phase-selective laser-induced crystallization of lead bismuth gallate glass* (poster), presented by Olivia Magneson

12/2021 Glass and Optical Materials Division Meeting, *Formation of Continuous Lithium Niobate Single Crystals in Lithium Niobosilicate Glass Via Femtosecond Laser Irradiation* (poster), presented by Jacob Franklin

## INTERNAL FUNDING

2022 Lebanon Valley College faculty research grant proposal (\$1475) – *Phase-selective crystallization of the lead-bismuth-gallate glass system*

2021 Lebanon Valley College faculty research grant proposal (\$1500) – *Investigation of the Crystallization of Lead-Bismuth-Gallate Glasses via Glass-Ceramic Formation and Focused Laser Irradiation*

2019 Lebanon Valley College Edward H. Arnold and Jeanne Donlevy Arnold Student/Faculty Research Grant (\$5030) – *Laser-induced crystallization and reduction within copper-doped lithium niobosilicate glass for integrated optics applications*

## PATENTS

06/2019 Himanshu Jain, Volkmar Dierolf, and Keith J. Veenhuizen, "Graded index single crystal active waveguide in glass," U.S. Patent Number 10324313

## **AWARDS**

- 2014 Sherman Fairchild Fellowship at Lehigh University
- 2007 - 2011 Presidential Scholarship at Ramapo College of New Jersey (full tuition and room)

## **SERVICE**

- Spring 2022 Co-chair of session "Laser Interactions with Glasses" at the symposium "Glass and Interactions with Its Environment – Fundamentals and Applications" at the 2022 Annual Meeting of the Glass and Optical Materials Division
- Fall 2021 Introductory physics lab coordinator
- 2019 - present Assessment coordinator for physics program at Lebanon Valley College
- 2018 – present Director of Cooperative Engineering Programs at Lebanon Valley College
- 2018 – present Radiation safety officer at Lebanon Valley College
- 2018 – present Breakout session leader at It's Catalytic, an interactive science recruiting event at Lebanon Valley College
- 2017 - present Recruiting for Physics Department at Lebanon Valley College
- 2017 – present Sigma Pi Sigma and SPS Advisor at Lebanon Valley College
- 06/2019, 06/2020 Reader for AP Physics Exam
- 07/2019 Session leader at the Disappearing Boundaries Summer Research Meeting, a meeting of central Pennsylvania regional colleges where undergraduates present their research
- 2019 – present Peer reviewer for Japanese Journal of Applied Physics
- 2019 - present Peer reviewer for Science Advances
- 2017 – present Peer reviewer for Thin Solid Films

2016 – present      Peer reviewer for Optical Materials Express

10/2017 – 03/2018      Physics faculty search committee at Lebanon Valley College

### **PROFESSIONAL MEMBERSHIPS & HONOR SOCIETIES**

American Physical Society

The Optical Society

Sigma Xi

Pi Mu Epsilon

### **PROFESSIONAL DEVELOPMENT**

10/2018      Physics and Astronomy New Faculty Workshop hosted by the American Association of Physics Teachers

10/2018      Workshop on Undergraduate Research in Materials Science hosted at Coe College