

# Alexander P. Becker

## Curriculum Vitae

Boston University  
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📄 [github.com/apbecker](https://github.com/apbecker)

### EDUCATION

- 2013–present **PhD Candidate in Physics**, *Boston University*, Boston, MA.  
Advisors: Prof. H. Eugene Stanley (physics) and Prof. Irena Vodenska (finance).  
Specializations: econophysics, quantitative finance, physics education research.
- 2006–2012 **Diplom-Physiker**, *University of Duisburg-Essen*, Duisburg, Germany.  
Advisors: Prof. Thomas Guhr and Dr. Rudi Schäfer.  
Thesis: “Empirical Evidence for the Structural Recovery Model”.

### TEACHING & MENTORING

- 2013–2017 **Teaching Fellow**, *Boston University, Department of Physics*, Boston, MA.  
— Waves and Modern Physics (Fall 2014, Spring 2015, Fall 2017)  
— Modern Physics I (Fall 2014, Fall 2017)  
— Elementary Physics (Fall 2013, Spring 2014, Summer 2014, Spring 2017)
- 2014–2015 **Teaching Fellow Peer Mentor**, *Boston University, Department of Physics*, Boston, MA.

### RESEARCH EXPERIENCE

- 2015–present **Research Assistant**, *Boston University, Department of Physics*, Boston, MA.
- 2017 **Scholar of Teaching and Learning**, *Boston University, Center for Teaching & Learning (CTL)*, Boston, MA.
- 2015–2016 **Teaching as Research Fellow**, *Boston University, Center for the Integration of Research, Teaching and Learning (CIRTL)*, Boston, MA.

### HONORS AND AWARDS

- 2014 **College of Arts and Sciences Outstanding Teaching Fellow**, *Boston University*, Boston, MA.

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## INVITED TALKS

- 2018 **Lustrum Symposium: Networks**, Leiden, Netherlands.  
— “How well can we reconstruct a bipartite network?”

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## PUBLICATIONS

- 2018 **Information Transmission Channels of the Foreign Exchange Network**, *AP Becker, I Vodenska, and HE Stanley*, (under preparation).
- 2018 **Interdependence, Vulnerability and Contagion in Financial and Economic Networks**, *I Vodenska, AP Becker*, (submitted to *New Economic Windows: New Perspectives and Challenges in Econophysics and Sociophysics*).
- 2017 **Understanding the Fragility of Financial Systems**, *I Vodenska, H Aoyama, AP Becker, Y Fujiwara, H Iyetomi, and E Lungu*, (submitted to *Journal of Financial Stability*).
- 2017 **Economic and Political Effects on Currency Clustering Dynamics**, *M Wollschläger, AP Becker, I Vodenska, HE Stanley, and R Schäfer*, (submitted to *Quantitative Finance*).
- 2016 **Self-Perception of Teaching Fellows and Learning Assistants in Introductory Physics Classes**, *AP Becker, B Goldberg, and M Jarivala*, 2016 Physics Education Research Conference Proceedings, pp. 48-51, doi:10.1119/perc.2016.pr.007.
- 2016 **Community Analysis of Global Financial Markets**, *I Vodenska, AP Becker, D Zhou, DY Kenett, HE Stanley, and S Havlin*, *Risk*, 4 (2), 13, doi:10.3390/risks4020013.

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## CONTRIBUTIONS TO CONFERENCES

- 2018 **Frühjahrstagung**, *Deutsche Physikalische Gesellschaft*, Berlin, Germany (Talk).  
— “Information Transmission Channels of the Foreign Exchange Network”
- 2017 **Second Conference on Network Models and Stress Testing for Financial Stability**, Mexico City, Mexico (Selected Paper Presentation).  
— “Systemic Risk and Vulnerabilities of Banking Networks”
- 2017 **Conference on Complex Systems, Satellite Workshop on Complex Financial Networks and Systemic Risk**, Cancún, Mexico (Talk).  
— “Systemic Risk and Vulnerabilities of Banking Networks”
- 2017 **Conference on Complex Systems**, Cancún, Mexico (Talk).  
— “Economic and Political Effects on Currency Clustering Dynamics”
- 2017 **Mathematization and Physics Education Research**, *Physics Education Research Conference*, Cincinnati (Poster).  
— “Investigating the Beliefs and Perceptions of Teaching Assistants and Learning Assistants within an Analytical Framework”

- 2017 **7th Annual Applied Finance Conference**, *Financial Management Association International*, New York City (Selected Paper Presentation).  
— “Economic and Political Effects on Currency Clustering Dynamics”
- 2016 **A Methodological Approach to PER**, *Physics Education Research Conference*, Sacramento (Poster).  
— “Self-Perception of Teaching Fellows and Learning Assistants in Introductory Physics Classes”
- 2016 **Summer Meeting**, *American Association of Physics Teachers*, Sacramento (Talk).  
— “Teaching and Research Training: A Graduate Student Perspective”

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## SERVICE TO PROFESSION

**Reviewer**, *Physica A*.

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## LANGUAGES

**German**, *native*.

**English**, *fluent*.

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## PROFESSIONAL MEMBERSHIPS

**Deutsche Physikalische Gesellschaft**, *DPG*.

**American Association of Physics Teachers**, *AAPT*.

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## REFERENCES

**H. Eugene Stanley**, *Boston University, Center for Polymer Studies, Department of Physics*, 590 Commonwealth Avenue, Boston, MA 02215.

Phone: (857) 891-1941, email: hes@bu.edu

**Irena Vodenska**, *Boston University, Department of Administrative Sciences, Metropolitan College*, 808 Commonwealth Avenue, Brookline, MA 02446.

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**Rudi Schäfer**, *Arago GmbH, Research and Prototyping*, Eschersheimer Landstraße 526-532, 60433 Frankfurt am Main, Germany.

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**Manher Jariwala**, *Boston University, Department of Physics*, 3 Cummington Mall, Boston, MA 02215.

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