JOHN M. AIKEN

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EDUCATION

PhD — **Department of Physics, Centre for Computing in Science Education**
University of Oslo — *2020*

M.S. — **Department of Physics and Astronomy**
Georgia State University — *2013*

B.S. — **Department of Physics and Astronomy**
Georgia State University — *2010*

PROFESSIONAL APPOINTMENTS

Researcher — **Department of Physics, Centre for Computing in Science Education**
University of Oslo — *September 2020 to present*

Data Scientist PhD Intern — **Data Science Group**
Domos — *August 2019 - December 2019*

Phd Candidate — **Department of Physics, Centre for Computing in Science Education**
University of Oslo — *September 2017 to September 2020*

Researcher, Software Developer — **Section 2.6 - Seismic Hazard and Risk Dynamics**
GFZ-Potsdam — *February 2016 - September 2017*

Software Developer — **JILA**
University of Colorado, Boulder — *June 2015 - January 2016*

Research Associate I — **School of Physics**
Georgia Institute of Technology — *December 2013 - June 2015*

GRANTS AWARDS

The Njord Centre Summer Award	2019
The Njord Centre Diversity Award	2018
Physics Education Research Topical Group Travel Grant (500 USD)	2018
Paper selected as Notable Paper of the Physics Education Research Conference Proceedings	2016
Physics Education Research Topical Group Travel Grant (500 USD)	2016
Physics Education Research Topical Group Travel Grant (500 USD)	2015
Best Graduate Student Poster, North Carolina Section of American Association of Physics Teachers	2013
Best Graduate Student Poster, North Carolina Section of American Association of Physics Teachers	2011

INVITED TALKS

A New Framework for Evaluating Statistical Models in Physics Education Research — 2020
University College Dublin

Investigating Physics Students Pathways — 2016
Georgia State University

From Physics to Data Science — 2016
Texas State University

Student Engagement with Video Course Content in Introductory Mechanics — 2015
American Association of Physics Teachers Meeting

Using the Tools of Online Analytics and Big Data in the On-Campus Classroom — 2014
Physics Education Research Conference

What Do We Learn From Students Watching Lecture Videos? — 2014
University of Colorado, Boulder

TEACHING EXPERIENCE

University of Potsdam	2016 - 2017
The Georgia Institute of Technology	2012 - 2014
Georgia State University	2010 - 2012

SERVICE

Workshop Facilitator — **Machine Learning in Physics Education Research**
American Association of Physics Teachers Meeting — *2019*

Internship Facilitator — **Educational Data Mining Summer Internship**
University of Oslo Centre for Computing in Science Education — *2018 - 2019*

Guest Editor — **Focused Collection on Quantitative Methods in PER: A Critical Examination**
Physical Review Physics Education Research — *2018 - 2019*

Peer Reviewer
Physical Review Physics Education Research — *2017 - present*

Peer Reviewer
The Physics Teacher — *2017 - present*

Research Track Committee Member
EMOOCS Conference — *2017*

Committee Member — **Committee on Educational Technologies**
American Association of Physics Teachers — *2013 - 2015*

PUBLICATIONS

[1] J. A. McBeck, J. M. Aiken, J. Mathiesen, Y. Ben-Zion, and F. Renard, "Deformation precursors to catastrophic failure in rocks," *Geophysical Research Letters*, vol. 47, no. 24, p. e2020GL090255.

[2] J. McBeck, J. Aiken, Y. Ben-Zion, and F. Renard, "Predicting the proximity to macroscopic failure using local strain populations from dynamic in situ x-ray tomography triaxial compression experiments on rocks," *Earth and Planetary Science Letters*, vol. 543, 2020.

[3] J. Aiken, R. de Bin, M. Hjorth-Jensen, and M. Caballero, "Predicting time to graduation at a large enrollment american university," *PLoS ONE*, vol. 15, no. 11 November, 2020.

[4] J. McBeck, J. M. Aiken, Y. Ben-Zion, and F. Renard, "Predicting the proximity to macroscopic failure using local strain populations from dynamic in situ x-ray tomography triaxial compression experiments on rocks," *Earth and Planetary Science Letters*, vol. 543, p. 116344, 2020.

[5] A. Knaub, J. Aiken, and M. Caballero, "Editorial: Focused collection: Quantitative methods in per: A critical examination," *Physical Review Physics Education Research*, vol. 15, no. 2, 2019.

[6] N. Young, G. Allen, J. Aiken, R. Henderson, and M. Caballero, "Identifying features predictive of faculty integrating computation into physics courses," *Physical Review Physics Education Research*, vol. 15, no. 1, 2019.

[7] J. McBeck, N. Kandula, J. Aiken, B. Cordonnier, and F. Renard, "Isolating the factors that govern fracture development in rocks throughout dynamic in situ x-ray tomography experiments," *Geophysical Research Letters*, vol. 46, no. 20, pp. 11127–11135, 2019.

[8] J. Aiken, R. Henderson, and M. Caballero, "Modeling student pathways in a physics bachelor's degree program," *Physical Review Physics Education Research*, vol. 15, no. 1, 2019.

[9] A. Knaub, J. Aiken, and L. Ding, "Two-phase study examining perspectives and use of quantitative methods in physics education research," *Physical Review Physics Education Research*, vol. 15, no. 2, 2019.

[10] J. Aiken, C. Aiken, and F. Cotton, "A python library for teaching computation to seismology students," *Seismological Research Letters*, vol. 89, no. 3, pp. 1165–1171, 2018.

[11] R. Solli, J. Aiken, R. Henderson, and M. Caballero, "Examining the relationship between student performance and video interactions," *Physics Education Research Conference Proceedings*, vol. 2018, 2018.

[12] S. Douglas, J. Aiken, E. Greco, M. Schatz, and S.-Y. Lin, "Do-it-yourself whiteboard-style physics video lectures," *Physics Teacher*, vol. 55, no. 1, pp. 22–24, 2017.

[13] S.-Y. Lin, J. Aiken, D. Seaton, S. Douglas, E. Greco, B. Thoms, and M. Schatz, "Exploring physics students' engagement with online instructional videos in an introductory mechanics course," *Physical Review Physics Education Research*, vol. 13, no. 2, 2017.

[14] S. Douglas, J. Aiken, S.-Y. Lin, E. Greco, E. Alicea-Muñoz, and M. Schatz, "Peer assessment of student-produced mechanics lab report videos," *Physical Review Physics Education Research*, vol. 13, no. 2, 2017.

[15] B. R. Wilcox, B. M. Zwickl, R. D. Hobbs, J. M. Aiken, N. M. Welch, and H. J. Lewandowski, "Alternative model for administration and analysis of research-based assessments," *Physical Review Physics Education Research*, vol. 12, p. 010139, Jun 2016.

[16] J. Aiken and M. Caballero, "Methods for analyzing pathways through a physics major," *Physics Education Research Conference Proceedings*, 2016.

[17] J. M. Aiken, S.-Y. Lin, S. S. Douglas, E. F. Greco, B. D. Thoms, M. D. Caballero, and M. F. Schatz, "Student use of a single lecture video in a flipped introductory mechanics course," *Physics Education Research Conference Proceedings*, 2014.

[18] S. S. Douglas, S.-Y. Lin, J. M. Aiken, B. D. Thoms, E. F. Greco, M. D. Caballero, and M. F. Schatz, "Peer evaluation of video lab reports in a blended introductory physics course," *Physics Education Research Conference Proceedings*, 2014.

[19] M. Caballero, J. Burk, J. Aiken, B. Thoms, S. Douglas, E. Scanlon, and M. Schatz, "Integrating numerical computation into the modeling instruction curriculum," *Physics Teacher*, vol. 52, no. 1, pp. 38–42, 2014.

[20] J. M. Aiken, S.-Y. Lin, S. S. Douglas, E. F. Greco, B. D. Thoms, M. F. Schatz, and M. D. Caballero, "The initial state of students taking an introductory physics mooc," *Physics Education Research Conference Proceedings*, 2013.

[21] J. Aiken, M. Caballero, S. Douglas, J. Burk, E. Scanlon, B. Thoms, and M. Schatz, "Understanding student computational thinking with computational modeling," *AIP Conference Proceedings*, vol. 1513, pp. 46–49, 2013.