Ben Van Dusen
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Education

2010-present *Doctorate of Philosophy in Education*, Curriculum & Instruction, Science Education, University of Colorado at Boulder, Boulder, CO
Thesis: *Boundary Objects that Mediate Students' Motivation and Science Identity*

2003-2004 *Masters in Education*, Educational Leadership, Science and Math, University of Oregon, Eugene, OR
Thesis: *Student Centered Pedagogy*

1999-2003 *Bachelors of Arts*, Physics, University of California at Berkeley, Berkeley, CA

Professional Experience

2010-present **Research Assistant, University of Colorado Boulder, Boulder, CO**
Streamline to Mastery – Teacher led professional development (Otero Lab)

iPad Enhanced Active Learning – Using boundary objects to mediate students' intrinsic motivation, identity, and science (Otero Lab)

Learning Assistant Alliance – Studying local and nation replications of the Learning Assistant program (Otero Lab)

2009-2010 **Albert Einstein Distinguished Educator Fellow, National Science Foundation, Engineering Directorate, Arlington, VA**
Educational advisor

2005-2010 **Teacher Researcher, University of Oregon, Physics Department, Eugene, OR**
Quantum Chaos in Nano-Electronics – Chaotic system modeling (Taylor Lab)
Project leader for physical and digital simulation of nano-electronic gates.

2004-2009 **Science Teacher, South Eugene High School, Eugene, OR**
Taught (AP/IB) Physics, earth science, chemistry, and math; Department head; Faculty president; Apprenticed student teachers.

2001-2003 **Research Assistant, University of California at Berkeley, Physics Department, Berkeley, CA**
Bose-Einstein Condensate – Zeeman slower redesign (Stamper-Kurn Lab)

1999-2001 **Research Assistant, University of California at Berkeley, Biology Department, Berkeley, CA**
Epigenetic Research – Maize DNA mapping (Hollick Lab)

2000 **Research Assistant, University of Oregon, Biology Department, Eugene, OR**
Hox Cluster Research – Puffer fish DNA mapping (Postlethwait Lab)

Certifications

2004-2010 **Oregon State teaching certificate** – Physics, Chemistry, and Math endorsements

University Teaching Experience

2012 **Education and Practice** - University of Colorado at Boulder
Additional responsibilities included student teacher supervision.

Scholarlarly Publications

***Van Dusen, B.** & Otero, V. (in preparation) Using Boundary Objects to Mediate Students' Intrinsic Motivation, Identity, and Physics. *Proc. 2013 Physics Education Research Conference*. AIP Press.

*Barthelemy, R. & **Van Dusen, B.** (in preparation) The Demographics and Experiences of Graduate Students in PER. *Proc. 2013 Physics Education Research Conference*. AIP Press.

‡**Van Dusen**, **B.** & Taylor, R. (2013). The Art and Science of Hyperbolic Tessellations. *Nonlinear Dynamics, Psychology, and Life Sciences 17*(2), 317-323.

***Van Dusen, B.** & Otero, V. (2012). Influencing Students' Relationships With Physics Through Culturally Relevant Tools. *Proc. 2012 Physics Education Research Conference*. AIP Press.

‡**Van Dusen, B.** & Taylor, R.P. (2012). A Fractal Comparison of Escher and Koch Tesselations. *Fractals Research,* **1,** 1-16.

†**Van Dusen, B.**, Ross, M., & Otero, V. (2012). Changing Identities and Evolving Conceptions of Inquiry through Teacher-Driven Professional Development. *Proc. 2012 National Association of Research on Science Teaching Conference.* AIP Press.

***Van Dusen, B.** & Otero, V. (2011). Changing Roles and Identities in a Teacher-Driven Professional Development Community. *Proc. 2011 Physics Education Research Conference*. AIP Press.

*Ross, M., **Van Dusen, B.**, Sherman, S., & Otero, V. (2011) Teacher-Driven Professional Development and the Pursuit of a Sophisticated Understanding of Inquiry. *Proc. 2011 Physics Education Research Conference.* AIP Press.

Scannell, B., **Van Dusen, B.**, & Taylor, R. (2009). An optical demonstration of fractal geometry. *Proceedings of the Bridges banff: mathematics, music, art, architecture, culture* (pp. 349-350). Banff, Alberta, Canada: Tarquin Books.

*peer-reviewed publication
†peer-reviewed submission
‡Invited submission

Popular, Practitioner, and Policy Publications

‡**Van Dusen, B.** (2012). Energy for Future Presidents: book review. *Science in Focus*. Books & Culture, A Christian Review.

‡**Van Dusen, B.** (2011, April 18th). Sizzle or steak? iPads in Education. Retrieved from http://theactiveclass.com/

Van Dusen, B. National Science Foundation, Office of Legislative and Public Affairs. (2010). *New material discourages biofilm formation* Washington, DC: Office of Legislative and Public Affairs. Retrieved from http://www.nsf.gov/news/newsletter/aug_10/index.jsp

Van Dusen, B. National Science Foundation, Office of Legislative and Public Affairs. (2010). *New Materials for Medicine* Washington, DC: Office of Legislative and Public Affairs. Retrieved from http://www.nsf.gov/news/newsletter/jul_10/index.jsp

Van Dusen, B. National Science Foundation, Office of Legislative and Public Affairs. (2010). *NSF-Funded Research Leads to New Energy Innovations* Washington, DC: Office of Legislative and Public Affairs. Retrieved from http://www.nsf.gov/news/newsletter/jun_10/index.jsp

Van Dusen, B. National Science Foundation, Office of Legislative and Public Affairs. (2010). *New Research Leads to Energy-Efficient Solutions* Washington, DC: Office of Legislative and Public Affairs. Retrieved from http://www.nsf.gov/news/newsletter/may_10/index.jsp

‡Einstein fellows 20th anniversary policy recommendations. (2010). *Proceedings of the The Albert Einstein distinguished educator fellowship program 20th anniversary summit*.

Van Dusen, B. National Science Foundation, Engineering, Industrial Innovation and Partnerships. (2010). *IIP stars*. Arlington, VA: Government Printing Office.

Van Dusen, B. National Science Foundation, Engineering, Industrial Innovation and Partnerships. (2010). *IIP Programs*. Arlington, VA: Government Printing Office.

Van Dusen, B. National Science Foundation, Engineering, Industrial Innovation and Partnerships. (2010). *Research on digital gaming in education* (NSF solicitation No. 10-590). Washington, DC: National Science Foundation

*peer-reviewed publication
†peer-reviewed submission
‡Invited submission

Grants, Scholarships, and Fellowships

2014 **CU Boulder Graduate School Travel Grant** ($500)

2013 **PERLOC Scholar-in-Residence Grant** ($1,250)

2013 **CU Boulder Graduate School Travel Grant** ($500)

2013 **Chancellor's Award for Excellence in STEM Education** ($11,344)

The Chancellor's Awards for Excellence in STEM Education were established in 2009 to support faculty and graduate student engagement in innovative research on student learning and implementation of research-based STEM education programs and initiatives.

2012 **Forum on Graduate Student Affairs (FGSA) Travel Award for Excellence in Graduate Research** ($500)

2012 **Interdisciplinary Research Institute in STEM Education Scholar** ($1,200)

I-RISE pays for scholars to travel to Seattle Pacific University to collaborate in researching a teacher professional development program (Energy Project).

2011 **CU Boulder Graduate School Travel Grant** ($300)

2011 **PERLOC conference scholarship** ($500)

2011 **Chancellor's Award for Excellence in STEM Education** ($11,344)

2010 **Women Investing in the School of Education (CU Boulder) Grant** ($5,000)

WISE grants provide funding for innovative education research projects at CU Boulder.

2008-2009 **Pacific University Educational Technology Grant** ($2,000)

Pacific University funds teachers who have shown expertise in teaching with technology to purchase additional technological resources for their classroom.

2007-2009 **MJ Murdock Continuing Education Grant** ($9,000)

MJ Murdock's Continuing Education grants fund the purchase of equipment to bring new practices and activities to their science classrooms.

2005-2006 **MJ Murdock Partners in Science Grant** ($14,000)

MJ Murdock's Partners in Science grants fund teachers to engage in research within an established science university laboratory over two summers.

2002-2003 **Nathan and Violet David Scholar** ($16,500)

The Nathan and Violet David Scholarship funds undergraduates to engage in independent science research.

2000-2001 **Edward Frank Kraft Scholar** ($1,000)

2000 **Summer Program for Undergraduate Research (University of Oregon)** ($5,100)

Workshops and Presentations

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‡**Van Dusen, B.** Ross, M., Suarez, E., Cannava, A., & Grimes, A. (2013) *Talk Symposium: Stop Calling Me Stupid: Failure Avoidance Versus Empowerment in Physics Learning,* Physics Education Research Conference, July, Portland, OR.

‡Dykstra, D., Finkelstein, N., Hinko, K., Sabella, M., **Van Dusen, B.** & Vokos, S. (2013) *Roundtable: That is Cool: the Nature of Aesthetics in Physics,* Physics Education Research Conference, July, Portland, OR.

Van Dusen, B., Daane, A., Suarez, E., & Quan, G. (2013) *Crackerbarrel: Graduate Students,* American Association of Physics Teachers Summer Meeting, July, Portland, OR.

Van Dusen, B., Nicholson-Dykstra, S. & Cheversia, M.B. (2013) *Tablets in the Physics Classroom,* American Association of Physics Teachers Summer Meeting, July, Portland, OR.

Nicholson-Dykstra, S. & **Van Dusen, B.** (2013) *Teaching to Learn: Using iPads to Transform Physics Students' Roles,* American Association of Physics Teachers Summer Meeting, July, Portland, OR.

Van Dusen, B. & Otero, V. (2013) *Boundary Objects that Mediate Student Physics Motivation,* American Association of Physics Teachers Summer Meeting, July, Portland, OR.

Barthelemy, R. & **Van Dusen, B.** (2013) *The Demographics and Experiences of Graduate Students in PER,* American Association of Physics Teachers Summer Meeting, July, Portland, OR.

Van Dusen, B. (2013). *Transforming Students Relationships to Physics with iPads,* University of Maryland PER group meeting, January, College Park, MD.

Van Dusen, B. & Ross, M. (2013). *What STEM teachers can learn from cognitive science: Breakthroughs in learning science that can reach all students*, MJ Murdock Partners in Science conference, January, San Diego, CA.

Van Dusen, B., Nicholson-Dykstra, S., & Cheversia, M. (2012). *iPads in the Science Classroom,* Colorado Science Conference, November, Denver, CO.

Van Dusen, B. (2012). *Transforming Students Relationships to Physics with iPads,* American Association of Physics Teachers Summer Meeting, July, Philadelphia, PA.

Van Dusen, B. (2012), *Changing Identities and Evolving Conceptions of Inquiry through Teacher-Driven Professional Development,* National Association of Research in Science Teaching National Meeting, March, Indianapolis, IN.

‡Finkelstein, N. & **Van Dusen, B.** (2012) *A Model for Graduate Education in PER as a Subdiscipline of Physics*, American Association of Physics Teachers Winter Meeting, January, Ontario, CA.

Van Dusen, B. (2011), *iPad Enhanced Active Learning,* Discipline Based Education Research Meeting (CU Boulder), December, Boulder, CO.

Van Dusen, B. (2011). *Changing Roles and Identities in a Teacher-Driven Professional Development Community*, American Association of Physics Teachers Summer meeting, July, Omaha, NE.

Van Dusen, B. (2011), *Tablets in the classroom*, Physics Education Research Meeting (CU Boulder), March, Boulder, CO.

Van Dusen, B. (2011), *iPad - The technological tipping point*, Workshop at the Cyberlearning Tools for STEM Education Conference, March, Berkeley, CA.

Van Dusen, B. & et al. (2010), *Einstein Fellow 20th Anniversary education panel*, Einstein Fellow 20th anniversary conference, June, Washington, DC.

Van Dusen, B. & et al. (2010), *National Broadcasting Company (NBC) Roundtable on Education*, January, Washington, DC.

Van Dusen, B. (2009). *Einstein Fellowship*, Regional National Science Teachers Association Regional Conference, November, Ft. Lauderdale, FL.

Van Dusen, B. & et al. (2009), *American Physics Society education roundtable*, September, College Park, MD.

Van Dusen, B. & Tubman, A. (2009), *Technology in the Classroom*, MJ Murdock Partners in Science conference, January, San Diego, CA.

Van Dusen, B. (2008), *Quantum Chaos in Nano-Electronics*, MJ Murdock Partners in Science conference, January, San Diego, CA.

‡Invited Presentation

Scholarly Activities

3013-2014	*Using Tablets in the Physics Classroom* Session organizer – AAPT winter meeting
2013-2015	Inaugural member of the Physics Education Research Consortium of Graduate Students
2013	Tablets in the Classroom session organizer – AAPT Summer meeting
2012	Founding member of the Albert Einstein Fellowship Alumni Association
2012	CU Boulder Elementary Science Education Faculty Search Committee
2012	Founder of the Physics Education Research Consortium of Graduate Students
2012	Founder of the graduate student position on PERLOC
2012	Member of the Physics Education Research Graduate Representative Group
2012	National Science Bowl Question Reviewer (Physics)
2012	Interdisciplinary Research Institute in STEM Education Scholar

2012	Cofounder of Teachers of Physics in Training group – University of Colorado Boulder
2012	University supervisor for science student teachers
2011	Sandra K. Abell Institute for Doctoral Students
2010	Leader of the Committee of Visitors for NSF's Engineering Directorate's Industrial Innovation and Partnerships Division
2010	National Lab Day advisor
2010	Creation of an instillation at the Oregon Museum of Science and Industry demonstrating optical scattering on chaotic systems
2009-2010	Consultant on NSF's Education and Human Resources on their science education video series
2009	Creation of an instillation at the Jordan Schnizter Museum of Art to bridge the gap between the scientist and the larger population
1997	Co-designed, created, and installed the nationals largest three dimensional model of the solar system

Review Panels

2013	*Cradle to K-12 solicitation*– National Science Foundation, SBIR
2012	*Mobile Apps solicitation* – National Science Foundation, SBIR
2012	*Pre-College Educational Applications solicitation* – National Science Foundation, SBIR
2012	*Physics Education Research Conference Proceedings* – Physics Education Research Conference
2011	*Math and Art Special Issue*– IEEE Signal Processing
2011	*Physics Education Research Conference Proceedings* – Physics Education Research Conference
2010	*Digital Gaming in Education solicitations* – National Science Foundation, SBIR
2009	*Broadening Participation in Computing solicitation* – National Science Foundation, CISE

Poster Presentations

Langdon, L., Otero, V., Holzman, O., Oatley, M., & **Van Dusen, B.** (2013) *Progress Towards a Learning Assistant Alliance,* The CU Science Education Initiative and the CU Center for STEM Learning End of Year Event, May, Boulder, CO.

Van Dusen, B., Nicholson-Dykstra, S. & Otero, V. (2013) *Using Boundary Objects to Mediate Students' Motivation Toward Physics,* Physics Education Research Conference, July, Portland, OR.

Nicholson-Dykstra, S. & **Van Dusen, B.** (2013) *Teaching to Learn: Using iPads to Transform Physics Students' Roles,* American Association of Physics Teachers Summer Meeting, July, Portland, OR.

Barthelemy, R. & **Van Dusen, B.** (2013) *The Demographics and Experiences of Graduate Students in PER,* Physics Education Research Conference, July, Portland, OR.

‡**Van Dusen, B.** & Severance, S. (2012). *University School Collaborations, Transforming Students and Transforming Teachers,* STEM Learning Center Inaugural Celebration, September, Boulder, CO.

‡**Van Dusen, B.** & Severance, S. (2012). *University School Collaborations, Transforming Students and Transforming Teachers,* CU Boulder Annual Symposium on STEM Education, September, Boulder, CO.

Van Dusen, B. (2012), *Transforming Student Relationships to Physics with iPads*, Physics Education Research Conference, July, Philadelphia, PA.

Van Dusen, B. (2012), *Changing Classroom Norms of Discourse and Practice: iPad Enhanced Active Learning*, National Association of Research on Science Teaching Summer Conference, March, Indianapolis, IN.

Van Dusen, B., Otero, V. (2011), *Teacher Driven Professional Development: Colorado Streamline to Mastery*, Physics Education Research Conference, July, Omaha, NE.

Van Dusen, B. (2007), *Technology in the Classroom*, MJ Murdock Partners in Science Conference, January, San Diego, CA

Van Dusen, B. (2005), *Quantum Chaos in Nano-Electronics*, MJ Murdock Partners in Science Conference, January, San Diego, CA

‡Invited submission

Awards and Honors (non-monetary)

2013	National Center for Atmospheric Research selected artist
2013	Invited cover artist for the January, February, March, and April issues of Nonlinear Dynamics, Psychology, and Life Sciences
2011	Finalist in the PERC proceedings paper award
2009	A Champion in Education nominee
2009	Eugene Weekly Happening Person

Skills and Interests

2011-present	Artist – Circle Limit Designs
2005-present	Professional disc golfer - sponsored by Phenix Disc Sports (current) and Rogue Brewery (previous)