TEXAS STATE VITA

I. Academic/Professional Background

A. Name and Title

Name: Dr. Brandon R. Lunk Title: Senior Lecturer

B. Educational Background

Degree	*Year*	*University*	*Major*	*Thesis/Dissertation*
PHD	2012	North Carolina State University	Physics	
MS	2010	North Carolina State University	Physics	
BS	2004	Univ North Carolina - Chapel Hill	Physics	

C. University Experience

Position	*University*	*Comments*	*Dates*
Senior Lecturer, Physics	Texas State University. San Marcos, TX		August 2022 - Present
Lecturer, Department of Physics	Texas State University. San Marcos	I was promoted to Senior Lecturer in August 2022.	August 2015 - August 2022
Assistant Professor	Elon University		2012 - 2015
Graduate Research Assistant	North Carolina State Univesity		2009 - 2012
Instructor of Record	North Carolina State Univesity		2011
Graduate Teaching Assistant	North Carolina State Univesity		2006 - 2009

II. TEACHING

A. Teaching Honors and Awards:

Award / Honor Recipient: 2023 Presidential Distinction Award for Excellence in Teaching, College of Science and Engineering.
August 2023

Award / Honor Recipient: 2021 Presidential Distinction Award for Excellence in Teaching, College of Science and Engineering.

2021

Award / Honor Recipient: 2020 College Achievement Award for Excellence in Teaching, College of Science and Engineering.
2020

Award / Honor Recipient: Teaching Award of Honor, Texas State Alumni Association.
2020

B. Courses Taught:

Texas State University:

PHYS 1125 - GEN PHYS II LAB

PHYS 1125 - GENERAL PHYSICS II LAB

PHYS 1325 - GENERAL PHYSICS II

PHYS 1335 - GEN PHYS I FOR LIFE SCIENCES

PHYS 1345 - GEN PHYS II FOR LIFE SCIENCES

PHYS 2230 - INTRO COMP MOD PHYS

PHYS 2425 - ELCTRCTY & MAGNENT

PHYS 2425 - ELECTRICITY AND MAGNETISM

PHYS 4221 - UG RESEARCH

PHYS 4305 - STAT PHYS

PHYS 4320 - SEL STDS IN PHYS

PHYS 4350D - BIOPHYSICS

Elon University:

PHY 201 - College Physics I

PHY 202 - College Physics II

PHY 222 - University Physics II*

North Carolina State University:

PHY 131 - Laboratory Instruction for Conceptual Physics

PHY 201 - University Physics I*

PHY 201 - Laboratory Instruction for Introductory Physics for Scientists and Engineers*

PHY 202 - Laboratory Instruction for Introductory Physics for Scientists and Engineers*

University of North Carolina :

PHY 25 - Undergraduate Laboratory Instructor for College Physics II

PHY 26 - Supplemental Instructor for University Physics I

C. Directed Student Learning (i.e. theses, dissertations, exit committees, etc.):

Supervisor / Chair, Supervised honors course (Biophysics), "Understanding ATP synthesis", Status: Completed. (September 2018 - December 2018). Physics, Texas State Department of Physics.
Student(s): Clint Boldt, Undergraduate.

Supervisor / Chair, Supervised honors course (Biophysics), "Developing a Tutorial on Reynolds Number", Status: Completed. (September 2018 - December 2018). Physics, Texas State Department of Physics.
Student(s): Jessica Hobbs, Undergraduate.

Supervisor / Chair, Supervised honors course (Statistical Mechanics), "The development of a Chemical Potential Tutorial", Status: Completed. (January 2017 - May 2017). Physics, Texas State Department of Physics.
Student(s): Katrina Vermillion, Undergraduate.

Member, Undergraduate Research Mentor, Status: Completed. (May 2015). Physics, Elon University.
Student(s): Anna Lewis.

Additional Comments: No thesis was required for this project

D. Courses Prepared and Curriculum Development:

Computational Physics, Curriculum Development: 2012.
Additional Comments: I was part of a team at NCSU tasked with developing an upper-level, computational
physics course for majorS.

Essentially Science Physics Workshop, Curriculum Development: 2011.

Additional Comments: I Co-designed and Co-taught two week-long workshops designed to introduce local inservice
3rd-8th grade teachers to basic principles of physics and astronomy and to provide them with activities for use with their own students.

Conceptual Physics, Curriculum Development: 2010.
Additional Comments: I updated the NCSU conceptual physics lab.

Modern Physics, Curriculum Development: 2010.
Additional Comments: I helped develop material and activities for use in bringing Modern Physics into the
SCALE-UP classroom at NCSU

Physics for Life Science Majors, Curriculum Development, Elon University: 2012 - 2013.

Additional Comments: I began the process of restructuring the college-level physics sequence at Elon university
to be more inline with the needs of the life-science majors who typically take these
courses

PHYS 1125, Curriculum Development, Texas State University: August 2016 - 2022.

PHYS 4350B "Relativity", First Time Course Preparation, Texas State University. Taught: 2023 - 2024.

Additional Comments: While I am first teaching this course in S'24, prep work began in 2023.

PHYS 1345 General Physics II for Life Science Majors, New Course, Texas State University. Taught: 2023 - Present.

PHYS 1335 General Physics I for Life Science Majors, New Course, Texas State University. Taught: August 2022 - Present.

PHYS 4350D "Biophysics", New Course, Texas State University. Taught: August 2018 - December 2018.

PHYS 4305 "Statistical Physics", New Course, Texas State University. Taught: January 2017.

Additional Comments: Development and implementation of course materials for a new core-requirement course: Statistical Physics, PHYS4305

PHYS 2425, Revise Existing Course, Texas State University. Taught: August 2017 - 2019.

Additional Comments: Development of computational modeling activities for PHYS 2425 were initiated during the fall 2017 semester; The initial implementation of these activities are taking place during the spring '18 semester.

F. Other:

Student Accomplishments:

Presentation:

Mentor. "Designing a Tutorial on Reynolds Number," American Association of Physics Teachers (AAPT) Summer Meeting, Provo, UT. Status: Completed. (July 2019). Physics, Texas State University.
Student(s): Jessica Hobbs, Undergraduate, B.S.

Scholarship:

Mentor, Honors Project. "Inspection of Melanin's Role in Radiation Absorption of Fungi." Status: Completed. (2021). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate.

Mentor, Honors Project. "Ising Model of a Ferromagnet." Status: Completed. (2021). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate.

Mentor, Honors Project. "Understanding ATP synthesis." Status: Completed. (December 2018). Physics, Texas State UNiversity.
Student(s): Clint Boldt, Undergraduate, B.S.

Mentor, Honors Project. "Developing a Tutorial on Reynolds Number." Status: Completed. (December 2018). Physics, Texas State Univsersity.
Student(s): Jessica Hobbs, Undergraduate, B.S.

Mentor, Honors Project. "Designing a Tutorial on the Chemical Potential." Status: Completed. (May 2017). Physics, Texas State University.
Student(s): Katrina Vermillion, Undergraduate, B.S.

G. Teaching Professional Development Activities Attended

Conference Attendance, "2020 International Learning Assistant Alliance Virtual Conference," Learning Assistant Alliance. (2020 - Present).

Institute, "2023 STEM Communities Summer Institute." (2023).

Conference Attendance, "2023 AAPT Summer Meeting," American Association of Physics Teachers, Sacramento, CA. (July 2023).

Institute, "2022 STEM Communities Summer Institute," SAN MARCOS, TX, United States. (May 2022).

Workshop, "Partnership for Integrating Computation in Undergraduate Physics Summer Workshop," Partnership for Integrating Computation in Undergraduate Physics, River Falls, WI, United States. (July 2017).

III. SCHOLARLY/CREATIVE

A. Works in Print (including works accepted, forthcoming, in press):

2. Articles:

a. Refereed Journal Articles:

Lunk, B. R., & Beichner, R. (2011). "Exploring Magnetic Fields With a Compass." *The Physics Teacher*, *49*(1), 45–48.

b. Non-refereed Articles:

Cid, X., Samuels, N., Hinko,, K., Lunk, B. R., & Grupta, A. (2013). "FFPER: Working Group Report: Diversity Concerns in Physics." *APS Forum on Education, Fall 2013 Newslette*, 6–7.

3. Conference Proceedings:

a. Refereed Conference Proceedings:

Lunk, B. R. (2020). Using Conceptual Blending to model how we understand computational models. Retrieved from https://www.compadre.org/per/items/detail.cfm?ID=15300https://www.compadre.org/per/items/detail.cfm?ID=15300

Lunk, B., & Beichner, R. (2016). Attitudes of Life Science Majors Towards Computational Modeling. In *PERC Proceedings*.

5. Reports:

Caballero, M. D., Engelhardt, L., Hillborn, R., Kuchera, M., Knaub, A., Lopez del Puerto, M., … Zimmerman, T. (2022). *Partnership for Integrating Computation in Undergraduate Physics 2021 Virtual Capstone Conference Report*. AAPT.

10. Other Works in Print:

Instructional Materials:

Lunk, B. R. (2019). Einstein Solids: Equilibrium, Temperature and Heat Capacity. In *PICUP Exercise Collection*. AAPT. Retrieved from https://www.compadre.org/PICUP/exercises/exercise.cfm?A=StatMechTCEq https://www.compadre.org/PICUP/exercises/exercise.cfm?A=StatMechTCEq

Lunk, B. R. (2018). 2-State Systems: Statistical Mechanics in Sports and the Story of the Purple Pandas. In *PICUP Exercise Collection*. AAPT. Retrieved from https://www.compadre.org/PICUP/exercises/exercise.cfm?A=2StateSystemsht tps://www.compadre.org/PICUP/exercises/exercise.cfm?A=2StateSystems

Lunk, B. R. (2018). Einstein Solids: Statistical Mechanics for Systems in Contact. In *PICUP Exercise Collection*. AAPT. Retrieved from https://www.compadre.org/PICUP/exercises/exercise.cfm?A=EinsteinSolidsht tps://www.compadre.org/PICUP/exercises/exercise.cfm?A=EinsteinSolids

B. Works Not in Print:

1. Papers Presented at Professional Meetings:

Lunk, B. R., American Association of Physics Teachers 2020 Summer Conference, "Using conceptual blending to model how we understand computational models," AAPT, Virtual. (July 2020).

2. Invited Talks, Lectures, and Presentations:

Lunk, B. R., Chabay, R. W. (Primary Author), Weatherford, S., American Association of Physics Teachers, "Best Practices in Educational Technology," Sacramento, United States. (July 2016).

Lunk, B. R., Close, H., Donnelly, D., Das, K., American Association of Physics Teacher Summer Meeting, "An Holistic Integration of Computational Modeling in Undergraduate Physics," AAPT, Washington, DC. (July 2018).

Lunk, B. R., American Association of Physics Teachers, "The Influence of Analytic Procedures on Students' Computational Modeling Practices," College Park, MD, United States. (2015).

Lunk, B. R., American Association of Physics Teachers, "SCALE-UP, scaled down," Minneapolis, MN, United States. (2014).

Lunk, B. R., American Association of Physics Teachers, "Using Computational Modeling in the Introductory Physics Class," Philadelphia, PA, United States. (2012).

Lunk, B. R., North Carolina Section of the American Association of Physics Teacher, "Using Computational Modeling in the Introductory Physics Class," Hickory, NC, United States. (2012).

Lunk, B. R., South Eastern Section of the APS, "Learning Physics in the Introductory Physics Classroom through Computational Modeling," Roanoke, VA, United States. (2011).

4. Workshops:

Lunk, B. R., Gaffney, J., Foote, K., American Association of Physics Teachers, "SCALE-UP I," Minneapolis, MN, United States. (2014).
Additional Comments: 4-hour workshop conducted at the summer meeting of the American Association of Physics Teachers

5. Other Works not in Print:

a. Works "submitted" or "under review":

Journal Articles:

Lunk, B. R., & Chabay, R. (Submitted / Under Review). "A Framework for Understanding Physics Students' Computational Modeling Practices." *Physical Review, Special Topics: Physics Education Research*. (2018)

b. Works "in progress":

Journal Articles:

Lunk, B. R., & Close, H. G. (In Preparation; Not Yet Submitted). On the Value of Constraint-Based Reasoning in Computational Physics.

Lunk, B. R. (In Preparation; Not Yet Submitted). "How do batteries work? Some simple models." *The Physics Teacher*.

c. Other Works Not in Print:

Posters:

Lunk, B. R. (Author), Beichner, R. (Co-Author), Transforming Research in Undergraduate STEM Education, "Attitudes of Life Science Majors

towards Computational Modeling in Physics," TRUSE, St Paul, KY, United States. (July 2017).

Lunk, B. R., American Association of Physics Teachers 2023 Summer Meeting, "Designing a Reynolds Number Tutorial," American Association of Physics Teachers, Sacramento, CA. (July 2023).

Lunk, B. R., 2019 Physics Education Research Conference, "Conceptual Blending and Computational Models," Texas State University, Provo, UT. (July 2019).

Additional Comments: The poster was not peer-reviewed, but the associated conference proceedings was accepted to the pee

Lunk, B. R., Close, H. G., American Association of Physics Teachers Conference, "On the Value of Constraint-Based Reasoning in Computational Physics," AAPT, Covington, KY, United States. (July 2017).

Lunk, B. R., Beichner, R., American Association of Physics Teachers Conference, "Attitudes of Life Science Majors towards Computational Modeling in Physics," Sacramento, CA, United States. (2016).

Lewis, A., Lunk, B. R., Elon University's Spring Undergraduate Research Forum, "Attitudes of Life Science Majors towards Computational Modeling in Physics," Elon, NC, United States. (2015).

Lunk, B. R., Lewis, A., Beichner, R., Physics Education Research Conference, "Attitudes of Life Science Majors towards Computational Modeling in Physics," College Park, MD, United States. (2015).

Lunk, B. R., Lewis, A., Beichner, R., Physics Education Research Conference, "Attitudes of Life Science Majors towards Computational Modeling in Physics," College Park, MD, United States. (2015).

Lunk, B. R., Physics Education Research Conference, "Resources: A Framework for Understanding Physics Students' Computational Modeling Practices," Portland, OR, United States. (2013).

Lunk, B. R., Physics Education Research Conference, "Computationally Native Epistemic Games," Philadelphia, PA, United States. (2012).

Lunk, B. R., 2nd conference for Transforming Research in Undergraduate STEP Education (TRUSE II), "Resources: A Framework for Understanding Physics Students' Computational Modeling Practices," St. Paul, MN, United States. (2012).

Lunk, B. R., 2nd conference for Transforming Research in Undergraduate STEP Education (TRUSE II), "Resources: A Framework for Understanding Students' Computational Modeling Practices," St. Paul, MN, United States. (2012).

Lunk, B. R., Chabay, R. W., NCSU Teaching and Learning Symposium, "Student Conversations While Completing Minimally Working Programs," Raleigh, NC, United States. (2012).

Lunk, B. R., Chabay, R. W., Physics Education Research Conference, "Student Conversations While Completing Minimally Working Programs," Omaha, NE, United States. (2011).

Lunk, B. R., Chabay, R. W., Physics Education Research Conference, "Novice Implementation of the Impulse Momentum Theorem in VPython Simulations," Portland, OR, United States. (2010).

Lunk, B. R., Gaffney, J., Kustusch, M. B., Weatherford, S., Beichner, R., Physics Education Research Conference, "What's (at) the Point?," Edmonton, Canada. (2008).

D. Scholarly / Creative Fellowships, Awards, Honors:

Fellowship Recipient: Interdisciplinary Research Institute in STEM Education (I-RISE), Seattle Pacific University.
2012

Award / Honor Recipient: "Best Graduate Paper.", North Carolina Section of the American Association of Physics Teachers.
2012

Fellowship Recipient: Preparing The Professoriate, North Carolina State University.
2010

IV. SERVICE

A. Institutional

1. University:

Member, Non-Tenureline Faculty Committee. (August 2022 - Present).

3. Department/School:

Chair, Standing Committee on Non Tenure Line Promotion Policy. (September 2023 - Present).

Additional Comments: As part of this service, I was the primary author of our departmental policy on promotion expectations for our non tenure line physics colleagues.

Intro and Service Course Coordinator. (August 2019 - Present).

Member, Promoting the Undergraduate Physics Major Committee. (August 2016 - Present).

Course Coordinator, PHYS 2425. (August 2016 - 2022).

Course Coordinator, PHYS 1325. (August 2016 - 2018).

Member, Faculty Search Committee. (November 2017 - March 2018).

Past-President, NCSU Graduate Physics Student Association. (2009 - 2010).

President, NCSU Graduate Physics Student Association. (2008 - 2009).

B. Professional:

Editor, Partnership for the Integration of Computation in Undergraduate Physics (PICUP) Exercise Collection. (July 2018 - Present).

Coordinator / Organizer, Partnership for Integrating Computation in Undergraduate Physics; Virtual Capstone Conference. (2020 - August 2021).

Chair, AAPT area committee on Educational Technology. (January 2020 - January 2021).

Member, AAPT area committee on Educational Technology. (January 2018 - January 2021).

Officer, AAPT area committee on Educational Technology. (January 2019 - January 2020).

Coordinator / Organizer, Partnership for the Integration of Computation in Undergraduate Physics; Faculty Development Workshop. (July 9, 2019 - July 14, 2019).

Coordinator / Organizer, Partnership for the Integration of Computation in Undergraduate Physics; Faculty Development Workshop. (July 15, 2018 - July 20, 2018).

Reviewer / Referee, Physics Education Research Conference Proceeding. (2015).

Reviewer / Referee, The Physics Teacher. (2015).

Panelist, “Confessions of a First Year Faculty,” American Association of Physics Teachers summer conference, Minneapolis, MN, United States. (2014).

Editor, perjobs.blogspot.com. (2010 - 2012).

C. Community:

Organizer, 2014 Burlington Science Expo, Burlington, NC. (2014).

D. Organization Memberships:

American Association of Physics Teachers ((AAPT)). (2006 - Present).

North Carolina Section of the AAPT ((NCSAAPT)). (2006 - 2015).