

Distinctive Contributions and Achievements

Honors and Awards Recognizing Excellence in Teaching and Learning

- 2010—*Exemplary Department Award* recognizing the *Earth Sustainability (ES)* Program
- 2009—Recipient of the College of Science Certificate of Teaching Excellence
- 2004, 2005, 2006—CEUT Summer Faculty Fellow to design the *ES* curriculum and assess student learning
- 1998—Elected Fellow of the Geological Society of America based on contributions to teaching geoscience
- 1997—NSF-supported awardee to GeoSciEd II (Hilo, HA) and Geological Soc. of America in Salt Lake City, UT
- 1996—*Exemplary Department Award* to Geosciences for Bekken's innovative *Physical Geology Lab* curriculum
- 1993—Summer Faculty Fellow, CEUT, revised undergrad phys geol labs, wrote lab manual, and GTA handbook

Pedagogical and Curricular Innovations to the Undergraduate Teaching Mission

- 2004 to present—ES Program Director and Creator overseeing program development and assessment of 3 cohorts
 - 2008-2010—Offered scaled-up CLE-comprehensive *ES Program* to 150 students; initiated 3rd longitudinal study
 - 2006-2008—Offered scaled-up *ES Program* to 75 students; initiated 2nd longitudinal study
 - 2004-2006—Offered pilot *ES Program* to 25 students; initiated 1st longitudinal study
- 2008-present—Participant in 5-year I/NCEPR research on student learning using e-portfolios & VALUES RUBRICS
- 2006—Designed curriculum for undergraduate teaching assistant program available to ES “graduates”
- 2002-2004—Added writing and self-assessment to large lectures of *Resources and the Environment*
- 2002—Created course and writing intensive design for the *Geosciences Senior Seminar* capstone course
- 1999-present—Created/offered *GEOS Fundamentals*—comm., history, and philosophy of science for geoscientists
- 1995—Collaborated on SCHEV “writing across the curriculum” project for geosciences labs
- 1994—Redesigned non-majors *Physical Geology Labs*; wrote lab manual; received exemplary award.
- 1993—Created a majors-only section for the introductory *Physical Geology* course, including laboratory

Pedagogical and Curricular Innovations to Faculty Development and the Graduate Teaching Mission

- 2010—Created/facilitated graduate student workshops on effective reading and how to teach effective reading
- 2007-2009—Created/facilitated workshops for FDI and CEUT participants on learner-centered teaching
- 2006-2010—Created/facilitated faculty workshops/study groups on student cognitive/social development
- 2004—Advisor to Laura Lukes, MS: Comparing learning between model-driven and data-driven lab exercises
- 1995-2004—Created/facilitated GTA workshops on constructivist pedagogy to incoming GEOS graduate students

Scholarship of Teaching and Learning

- 4 papers published, 1 external grant funded, 16 conference/invited presentations, 1 lab manual, 1 pedagogy handbk

Education Grants Funded to Assess Student Learning, Course Delivery, and Faculty Development

- 2008-2010—VT Assessment grant funded to assess ES students' information literacy and quantitative reasoning
- 2005-2010—NSF-CCLI grant funded to assess student learning and cognitive/social development

Teaching-related Service and Outreach

- 2006-present—Coordinated assessment of undergraduate student learning outcomes in geosciences for the QEP
- 2000-present—Undergraduate advisor for all Geoscience Education Majors
- 2008-2009—Contributor to the QEP design for undergraduate learning
- 2003-2007—Developed writing-across-the-major program for geosciences and later revised to ViEWS program
- 1998-2000—Assessed areas 4 and 7 for introductory GEOS courses.

Distinctive Contributions and Achievements

I. Classroom Excellence:

- Certificate of Teaching Excellence (2009)
- Certificate of Teaching Excellence (2003)
- Panhellenic Council of Virginia Tech's Teaching Excellence Award (2003)
- SPOI overall rating of 3.93 since earning first CTE in 2003

II. Selected Teaching Contributions through Undergraduate Curriculum Innovation:

- Have taught 15 different courses at VT
- Created first and only online course for the department (2744) and also taught it for Humanities
- Re-designed the SPAN 3XXX curriculum to create 4 new literature and culture courses
- Re-designed the curriculum for the 2 Advanced Grammar courses (SPAN 3105 and 3106)
- Created and taught 5 new 4XXX Special Topics seminars for senior majors
- Currently overseeing new curricular innovation for diversification of geographic regions and content represented at the 3XXX level, as part of a move to revise the Spanish major requirements

III. Selected Teaching Contributions through Graduate Curriculum Innovation:

- Created and taught 2 classes via video distance learning for Area Studies M.A. and M.Ed. students
- Created and taught 5 other graduate level courses on campus for students from the Area Studies M.A., the M.Ed., and the new Spanish M.A. (taught as 4XXX for graduate credit before Spring 2010)
- Co-designed the evaluation criteria and the requirements for the new Spanish M.A. started two years ago, including researching and co-writing the Spanish M.A. Reading List

IV. Selected Teaching Contributions through Outreach:

- Director of the Intensive Second Language Institute at Virginia Tech (2010-present), a summer immersion graduate program on campus for high school teachers and grad students in Virginia and the Southeast
- Expanded ISLI staffing to create much greater diversification of course offerings
- Revising some and creating mostly new graduate course offerings for ISLI, tailored to student needs

V. Selected Teaching Contributions through Mentoring:

- Speaker on faculty mentoring in venues such as the AdvanceVT Diversity Workshop, the CLAHS Junior Faculty Mentoring series, the FLL Department faculty mentoring workshops (2005-present)
- Director of the Spanish Program (2007 – present)
- Chair of 9 Spanish search committees for upper level staffing in past five years; member of 3 Spanish Assistant Professor search committees this year; conducted searches and hired 5 instructors for lower levels
- Personnel Committee member involved in hiring 7 Assistant Professors in other languages in department
- Faculty mentor in Department of Foreign Languages and Literatures
- Spanish Advisor to 100+ majors and minors (1999 – present)
- Mentor to 14 VT students and alumni now in or applying to graduate school

I. Distinctive Contributions and Achievements

Teaching Excellence

- Taught 73 regular-credit courses since 1987 from introductory to graduate level (not counting team-taught, independent study, research study, dissertation, thesis or recitation courses).
- Average SPOT scores over past ten years for PHYS 3405, 3406, and 3324 (Dept average 3000-level scores excluding Piilonen shown in parentheses): *Knowledge* 3.98 (3.8), *Communication* 3.72 (3.3), *Stimulating* 3.66 (3.3), *Concern* 3.82 (3.6), *Overall* 3.84 (3.5).
- Average SPOT scores over past ten years for PHYS2305, 2306, and 2325 (Dept average 2000-level scores excluding Piilonen shown in parentheses): *Knowledge* 3.89 (3.7), *Communication* 3.35 (2.9), *Stimulating* 3.18 (2.9), *Concern* 3.53 (3.4), *Overall* 3.57 (3.2).
- Many superlative written comments on SPOT forms.

Contributions to Teaching Mission

- Worked with others in the Department to manage the successful transition of all engineering students from PHYS 2175-2176 Principles of Physics to PHYS 2305-2306 Foundations of Physics I.
- Assisted in the development of new course PHYS 2504 Mathematical Methods in Physics.
- Developed (with others) new course PHYS 3324 Modern Physics.
- Assisted in revision of syllabus for PHYS 3455-3456 Intermediate Mechanics.
- Oversaw submission and final approval for new courses PHYS 4574 Nanotechnology and PHYS 4674 Introduction to General Relativity.
- Managed the development and final approval of the Department's ViEWS policy.
- Managed the revision and final approval of the Department's undergraduate checksheets.
- Assisted in and/or supervised the preparation of physics majors for the GRE Physics test.
- Provided research opportunities to 25 undergraduates; supervised 2 senior thesis projects.
- Advisor or co-advisor to 8 Ph.D. students; committee member for 12 other M.S./Ph.D. students.
- Participant in ~20 VT workshops/conferences on teaching, including FDI.

Teaching Innovations

- Early adopter of WWW service for delivery of course materials to my students and departmental curriculum materials and catalogs to all students and faculty (as dept webmaster for three years).
- Development / improvement of lecture demonstrations for introductory physics courses.
- Trial run of online homework in PHYS2305, followed by adoption in all introductory physics courses.
- Trial run of new audience response system, followed by wider use by other physics faculty.
- Adobe Flash interactive animations of electromagnetic waves and quantum behaviour.
- Increasing use of active-learning and learner-oriented pedagogical methods in all of my courses.

Educational Grants

- Promoting Success in Calculus-Based Introductory Physics (with Prof. Dale Long, PI).

Teaching Service and Outreach

- Dept service: Undergraduate, UG Awards and Advising, Graduate, Grad Exams, Grad Council, Promotion and Tenure, and Executive Committees for multiple years, chaired the first two.
- College service: College of Science Curriculum Committee and Promotion and Tenure Committee for multiple years, with chairmanship of the former.