

## DOUGLAS B. LUCKIE, Ph.D.

Curriculum Vitae (May 2017)

### Residential College Address:

Lyman Briggs College  
W-26D Holmes Hall  
Michigan State University  
East Lansing, MI 48825-1107  
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### MSU CF Research Laboratory & MSU STEM Learning Laboratory

Department of Physiology  
Biomedical Physical Sciences  
567 Wilson Road, Room 2100  
Michigan State University  
East Lansing, MI 48824-3320  
Tel. (517) 884-5011  
Fax. (517) 355-5125

### PERSONAL:

Date and Place of Birth: November 24, 1964, State College, PA  
Marital Status: Married, 1989, Dorothy Jean Luckie

### PRESENT POSITIONS AT MICHIGAN STATE UNIVERSITY:

Associate Professor, Lyman Briggs Residential College (tenured)

- Principal Investigator: MSU *STEM Learning Laboratory* (2002-present)

Associate Professor, Department of Physiology (tenured)

- Principal Investigator: MSU *Cystic Fibrosis Research Laboratory* (1996-present)

### EDUCATION:

Sabbatical, Pedagogy study, Dr. Christopher Paradise, Davidson College, NC, 2016  
Sabbatical, DBER research, Dr. Malcolm Campbell, Davidson College, NC, 2015  
Certificats, *Université Paris Sorbonne-Paris IV*, Cours Civilisation Française, 2007, 2008  
Postdoctoral Fellow, *Stanford University*, CF Laboratory (PI: Dr. Jeffrey Wine), 1996  
Ph.D., *University of Virginia*, Molecular Physiology (PI: Dr. Kunio Takeyasu), 1992  
B.S., *Pennsylvania State University*, Biology (Advisor: Dr. Theodore Hollis), 1987

### RESEARCH / PROFESSIONAL EXPERIENCE:

2002-present: **Associate Professor**, Department of Physiology, *Michigan State University*. Research Program: Ion flux, pH studies of membrane transporters with a focus on the CFTR channel and pathogens present in the disease cystic fibrosis.

2007-present: **Associate Professor**, Lyman Briggs Residential College, *Michigan State University*. Research Programs: *C-TOOLS* study on visual modeling techniques and assessment tools in education; *BRAID* study of a new interdisciplinary undergraduate STEM curricula and *Teams & Streams* research on gains in learning of science-majors.

2007-present: **Study Abroad Program Faculty Leader**, Lyman Briggs Residential College Study Abroad Program: History of Science in Europe (2007, 2010, 2015). MSU International Studies & Programs, a collaboration between *Michigan State University*, *Université Paris Sorbonne-Paris IV*, and *Cité Internationale Universitaire De Paris*.

2015-2016: **Sabbatical**, DBER research collaboration with Drs. A. Malcolm Campbell and Christopher Paradise at Davidson College, Biology Department, Davidson NC.

2002-2007: **Associate Professor**, Lyman Briggs School of Science, *Michigan State University*. Project(s): C-TOOLS and BRAID research in science education/pedagogy.

1996-2002: **Assistant Professor**, Lyman Briggs School and Department of Physiology, *Michigan State University*. Project(s): Research into pedagogy and ABC transporters

1992-1996: **Postdoctoral Research Fellow**, Cystic Fibrosis Research Laboratory, *Stanford University*. Mentor: Dr. Jeffrey J. Wine. Project: Elucidation of novel functions of the cystic fibrosis channel (CFTR) and of the cancer protein P-glycoprotein (PGP).

1991(1/2yr): **Graduate Research Fellow**, Department of Biological Chemistry, *University of Maryland at Baltimore*. Mentor: Dr. Guiseppe Inesi, Project:  $\text{Ca}^{2+}$  binding site localization in the sarcoplasmic reticulum  $\text{Ca}^{2+}$ -ATPase and chimeric constructs.

1989-1992: **Graduate Studies**, Department of Physiology, *University of Virginia*. Mentors: Dr. Kunio Takeyasu/Dr. Howard C. Kutchai. Thesis Project: Ligand and ionic binding site localization in chimeric constructs of the  $\text{Na}^+$ , $\text{K}^+$ -ATPase and  $\text{Ca}^{2+}$ -ATPase.

#### **AWARDS:**

2017: ASMSU Senior Class Council “Outstanding Faculty Award” (honor awarded to five faculty at MSU) by The Associated Students of Michigan State University.

2017: Lyman Briggs Faculty Teaching Award (Honorable Mention). Lyman Briggs College, Michigan State University.

2015: Mid Michigan “Quality in Undergraduate Teaching” Award (honor awarded to one faculty at MSU for teaching efforts) by MSU Alumni Club of Mid Michigan.

2011: Michigan State University Curricular Service-Learning and Engagement Award

2005: Lyman Briggs Honorary Member of the Graduating Class, Teaching Award. Lyman Briggs College, Michigan State University.

2002: Mimi M.A. Sayed Faculty Mentoring Award,” Briggs Students of Color (BSC), Lyman Briggs College, Michigan State University.

2002: Lyman Briggs Honorary Member of the Graduating Class, Teaching Award. Lyman Briggs College, Michigan State University.

2001: Golden Key Honorary Faculty Award,” Golden Key Honour Society, MSU.

2001: Lyman Briggs Honorary Member of the Graduating Class, Teaching Award. Lyman Briggs College, Michigan State University.

2001: MSU Teacher-Scholar Award” Michigan State University.

2001: Outstanding Faculty Member Award”, Department of Athletics, MSU

2000: CNS Teacher-Scholar Award, College of Natural Science, MSU.

2000: Lyman Briggs Honorary Member of the Graduating Class, Teaching Award. Lyman Briggs College, Michigan State University.

1999-2000: Michigan State University Lilly Teaching Fellowship for 1999-2000, Office of the Provost, Michigan State University.

1999: Lyman Briggs Honorary Member of the Graduating Class, Teaching Award. Lyman Briggs College, Michigan State University.

**HONORS:**

2014-2016: Mentor to Dr. Kendra Cheruvellil during Gateway Fellow Program at MSU.  
2006-2007: Mentor to Dr. Cori Fata-Hartley during Lilly Teaching Fellowship at MSU.  
2007, 2003: “Graduation Faculty Speaker” Lyman Briggs College, MSU.  
2007, 2006, 2005, 2001, 2000: Faculty Mentor in ‘Drew Fellow’ and the ‘Johnson Scholars’ Undergraduate Research Program, Michigan State University.  
2005, 2004, 2003: Chosen by Alpha Phi Omega to be recipient of American Cancer Society “Ugly Man on Campus” faculty representative in fund raising drive.  
2007, 2006, 2005, 2004, 2003, 2002, 2001, 2000: Mentor Howard Hughes Medical Institute ‘Undergraduate Research Scholars’ & ‘Professorial Assistants’ program.  
2000: Lead instructor, with Alice Dreger, for inaugural course of President McPherson’s Endowment for the “Understanding of Science.” Michigan State University.

**PROFESSIONAL SERVICE:**

Reviewer, *CBE-Life Science Education*, 2013-2015  
Reviewer, *The International Journal of Pedagogy & Curriculum*, Vol. 19, 2013  
Associate Editor, *The International Journal of Pedagogy & Curriculum*, 2013  
Reviewer, Knowledge Project Series, *Nature Education*, 4 modules, 2011.  
Panelist for National Science Foundation Grant Review Committee to evaluate research proposals for CCLI Initiatives, 2002, 2003, 2005, 2006, 2008, 2009  
Reviewer, *BIOLOGY, 7th edition, by Campbell & Reese*, 10 chapters, 2005.  
Reviewer, MSU IRGP proposals Office the VP for Research 1999-2002, 2005  
Panelist for National Science Foundation GK-12 Initiative, 2000.  
Planning Committee 14th North American Cystic Fibrosis Conference, 2000.  
Reviewer, *Advances in Physiology Education*, 2007, 2010.  
Reviewer, *Journal of Membrane Biology*, 1997-2002.  
Reviewer, *Journal of Clinical Investigation*, 1997.  
Reviewer, *American Journal of Physiology*, 1995-1999.  
Reviewer, *Journal of Physiology*, 1995-1996.  
Reviewer, National Science Foundation Grants Program (MCBCB); 1996, 2000.  
Biophysical Society Meetings Contributor, 1990-1998

**SERVICE AT MICHIGAN STATE UNIVERSITY:**

**Service on Standing School/College/University Committees:**

MSU University Committee on Liberal Learning (UCLL) 2011-2014  
MSU University Committee on Faculty Tenure, 2011  
MSU Faculty Organizational Development Advisory & SoTL Board 2006-2012  
Lyman Briggs Educational Policies Committee, 2002-2004 (secretary)  
Lyman Briggs Advisory Committee (BAC), 1998-02, 04-05, 06-07, 2012-2014.  
Lyman Briggs School TA Workshop Committee, 1997-2001 (Co-Chair)  
Lyman Briggs College 2-person Annual Review committees 1997-present  
Lyman Briggs College Mentoring Committees 2004-present  
Department of Physiology Curriculum Committee, 1999-2002, 2013-2015  
PSL Grad Committees (Igert, Wright, Haenisch, Krha, Li) 2001-2010, 2013-2014.  
Department of Physiology Animal Use Committee, 1998-2005

**Service on Ad Hoc Committees (Including Search Committees):**

Chair, Biology Search Committee 2013 -> Peter White & Stanley Lo  
Briggs Advisory Committee (BAC) Green Ribbon group 2013-2014  
MSU AAU grant initiative committee 2013  
MSU WIDER grant initiative committee 2013  
MSU STEM Alliance initiative committee 2013-present  
MSU HHMI grant initiative committee 2013  
RPT-Promotion and Tenure Committees: Robert Bell (2011-chair), Rich Bellon  
(2010), Jerry Urquhart (2011-chair), Michael Nelson (2009).  
Briggs ad hoc committee on RPT documents/communication 2010  
MSU Honors College Review Committee of the ADS examination 2002, 2010  
Lilly Mentor, Dr. Cori Fata-Hartley, MSU Lilly Program 2006-2007  
Lyman Briggs Biology Group co-coordinator 2005-present  
LBC Sociology of Medicine Search Committee 2007-2008  
LBS Biology Search Committee(s) 2003 (Chair), 2004, 2005 (Chair)  
College of Natural Science, Faculty Advisory Council (FAC), 2003-2007

**ADVISING:**

**Graduate Students:**

Candace Igert 2012-2014  
Michael Haenisch 2006-2009  
Angela Wright 2006-2007  
Marija Krha 2002-2005  
John Wilterding 1997-2000

**Undergraduate Students:**

2015-2016: Andrea Hess, Katrina Price, Samantha Thacker, Alex Tawa, Caleigh Griffin  
2014: Kathryn Kesler, Ahmad Tahawi, Greg Ribble, Caleigh Griffin & Andrew Van Alst  
2013: Hillary Albert, Lauren Lendzion, Anthony Dimovski, Nicole Patel, Paul Singh, Nick  
Fernandez, Lauren Kustasz, Leah Brynaert, Chuck Ternes, Eric Kontowicz, Nicole Rando,  
Elizabeth DeCesare, Eli Guttman, Jake Aubry and Aaron Rivkin  
2012: Ben Marengo, Aaron Rivkin, Jake Aubry, Bo Parsons, and Lauren Kustacz  
2011: Lindsey Foos, Benjamin Marengo, Jake Aubry, and Aaron Rivkin  
2010: Katie Oleski and Rupal Patel  
2009: Jayme Olsen, Vincent Cracolici, David Maison, Mitchel Wood, Olivia Shull  
2008: Aaron Lewandowski, Katie Carpenter, Brian Wlosinski, Khaled Hammoud  
2003-2007: Aaron Walls, Pratima Nayak, Lauren Gamble and Matt Lincoln  
2005-2006: Angela Wright, Tristin Holton and Joey O'Connor  
2004: Jim Howard, Luke Kane, Mary Riblett, Katie Sowle, A. Jabonowski, Jamey Hardesty  
2003: Dan Gutteridge, Katie Kruse, Andy McCoy, Andy Luea, John Lambrix, Erin Fedak,  
and Katie Wentland  
2000: Robert Flood, Brad Kozel, Keith Eaton, Haley Jo Jenema, and Paul Fornetti  
2000-2003: Vishal Malhotra, Aashish Shah, Chi Lim, and Stephen Cahill  
1998-2001: Errett Hobbs, Joseph Maleszewski, Sarah Loznak, and Indra Neil Sarkar  
1998: Jennifer Nichols and Christopher Singh, 1997: David Chapman

## **TEACHING EXPERIENCE:**

### **• Cité Internationale Universitaire, Paris, France**

Summer 2007, 2010, 2015, 2017: Lecturer for *Michigan State University*

LB-492: Arguments And Evidence in Paris: Examining Controversies in Science and the Media from an International Perspective. This senior seminar was designed to engage the student in the process of “debunking” controversial issues in science.

Summer 2010: Course Coordinator with Dr. Joseph Maleszewski (in 290B) from the Minnesota Mayo Clinic and Kathryn Diller (in 490E) from the University of Dayton.

LB-290B: Science of Art & Art of Science: This international course built upon LB145 laboratory projects proposed by student groups to further the students’ understanding.

LB-490E: Paris: The Intersection of Culture, Religion & Art: This course examined cultural and political issues in Paris through the lens of religion and art.

Summer 2007: Course Coordinator for Michigan State University with Dr. Joseph Maleszewski from Johns Hopkins University and Kathryn Diller from Yale University.

LB-290B: Science of Art vs. Art of Science: This international course built upon LBC145 laboratory projects proposed by student groups to further the students’ understanding.

### **• Michigan State University, East Lansing, MI**

F2014-S2015 & F2016-S2017: “BioCore I&II” a new experimental year-long Introductory Biology lecture/lab course that braids together “big” (organismal) and “little” biology (molecular & cellular) topics using a constructivist textbook dominated by scientific data and figures from publications (*Integrating Concepts in Biology*).

Spring 2014 [and a total of 20+ semesters starting in 1996]: Lecturer

LB/LBS-145: Biology II- Introduction to Cellular and Molecular Biology- Large undergraduate lecture, recitation and laboratory course in cellular and molecular biology. The lecture & laboratory uses novel modern group “inquiry” approaches.

Fall 2013, Spring 2012, Spring 2011, Spring 2009: Lecturer

LB-290: Interdisciplinary "BRAID Seminars" where 3 faculty from different disciplines lead a seminar course that examines societal problems from multiple perspectives. [Luckie, Bellon and Sweeder 2009 & 2011, Luckie, Oshea and Westfall/Davis 2012-3]

Fall 2012, 2005, 2004, 2001, 2000: Lecturer

LB/LBS-492: Science Biology and Society- Senior Seminar- Advanced undergraduate seminar course that engaged students in exploring, documenting and analyzing modern controversies in science and the media. Techniques such as: ‘Academic Controversy’ and documentary film-making were used in the course to stimulate critical thinking.

Fall 2012, 2005, 2004, 2003, 2001: Lecturer

LB/LBS-347: Advances in Applied Biology- Advanced undergraduate laboratory “internship” course that engaged students in evaluating scientific literature and performing independent research into pH abnormalities associated with cystic fibrosis. Students mastered techniques of: cell culture, ion flux, microphysiometry & composition.

Fall 2000: NSC-491: Science Changing Society- Lead instructor with Alice Dreger in course for the 'McPherson Endowment for the Understanding of Science' with experts Stephen J. Gould, Daniel Kleppner, Ruth Hubbard, Anne McLaren and Ira Flatow.

Fall 2014, Spring 1999: Lecturer

LBS-144: Biology I- Introduction to Cellular and Organismal Biology- Freshman undergraduate lecture, recitation and laboratory overview of plant and animal biology.

Fall 1997: Lecturer

LBS-492: Human Gene Therapy- Senior Seminar- Created advanced undergraduate seminar course that surveys the status of current research efforts in Gene Therapy.

Spring 1997: Lecturer

LBS-125: Biological Applications of C++ programming- Co-taught with Frank Dolinar and Bill Simpson 5 weeks of this advanced undergraduate computer programming class applied C++ programming language to write software to solve biological problems.

• **Stanford University, Stanford, CA**

Summer 1996: Lecturer

Bio 21: The Science, Ethics and Politics of Human Gene Therapy- Created introductory survey-course concerning the status of current research efforts in the field of gene therapy. Students were adult professionals in an evening education class. Continuing Studies Program, Stanford University.

Spring 1996: Lecturer

HUM 163: Human Gene Therapy- Created advanced undergraduate course that examined current research and ethics in the field of human gene therapy. Inaugural lecture of course was given by international expert and nobel laureate, Dr. Paul Berg. Human Biology Program, Stanford University.

1993-1996: Guest Lecturer

PSY 114/228: Across the Membrane: The Biology of Ion Transport- Was a guest lecturer in several class meetings of undergraduate course in cellular biology of membrane transporters. Lead Instructor Jeffrey J. Wine. Dept. of Psychology, Stanford University.

• **University of California at Berkeley, Berkeley, CA**

Spring 1993: Guest Lecturer

Mechanisms of Molecular Transport- Was a guest lecturer in this advanced undergraduate course in current research on genomic mutations in membrane transporter genes. Lead Instructor was Dr. Kimberly L. Boyd. Department of Molecular and Cell Biology, University of California, Berkeley.

• **University of Virginia, Charlottesville, VA**

1991-1992: Teaching Assistant

Human Medical Physiology- Laboratory in Vertebrate Physiology Served as a graduate instructor in the laboratory portion of this medical school course team taught by faculty in Physiology. My topic of instruction involved didactic instruction to first year medical students of a 'dog' catheter experimental laboratory with a cardiovascular emphasis. Department of Physiology, University of Virginia School of Medicine.

**GRANTS / FELLOWSHIPS:**

2016-2024 “CF treatments in the Cytosensor” Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$10,000.

2015-2023 "Do new drug treatments also correct the abnormal pH exhibited in CF?" Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$5,000

2015-2016 “BioCore sabbatical studies” Trajectory Grant Program, Lyman Briggs College Michigan State University, East Lansing, MI., \$10,000

2015-2016 “Davidson College collaborative research” Pilot Funds Grant Program, Lyman Briggs College, Michigan State University, East Lansing, MI., \$2,500.

2014-2021 “Testing FDA-approved CF treatments in the Cytosensor” Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$12,000.

2013-2020 “Cause-effect relationship between the mutation and acidification” Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$12,000.

2012-2019 “Corrector studies of CFTR function” Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$10,000.

2011-2017 “Chemical chaperone studies of CFTR function 2.0” Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$9,000.

2010-2014: “*BRAID 2.0: Bringing Relationships Alive through Interdisciplinary Discourse*,” PI: Ryan Sweeder, Co-PIs: Douglas Luckie, Rich Bellon, Elizabeth Simmons, Transforming Education (TUES) Phase II, National Science Foundation, Bethesda, MD. \$249,974.

2010-2016 “Chemical chaperone studies of CFTR function in airway epithelia” Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$8,000.

2009-2014 “LPS stimulated CFTR function in airway pathogen *pseudomonas*” Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$5,500.

2008: Undergraduate Research Grant, PI: Douglas Luckie, Student: Jayme Olsen, *Lyman Briggs* Research Program, Michigan State University, East Lansing, MI. \$3,000

2008-2013 “Evolution of airway pathogen *pseudomonas aureginosa*” Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$13,000.

2008-2009 “Host Specificity and Evolution of Pathogenesis in *Burkholderia* II,” MSU REF Center for Microbial Pathogenesis, Michigan State University, East Lansing, MI. \$4,000.

2007-2011 “Evolution of *burkholderia* in the disease cystic fibrosis,” Cystic Fibrosis Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$4,000.

2007-2010: “*BRAID: Bridging the Disciplines with Authentic Inquiry & Discourse*,” PI: Ryan Sweeder, Co-PIs: Douglas Luckie, Elizabeth Simmons, Course Curriculum Laboratory Improvement (CCLI) Phase I, National Science Foundation, Bethesda, MD. \$149,904.

2007-2009 “Host specificity and evolution of pathogenesis in *burkholderia cenocepacia*,” MSU REF Center for Microbial Pathogenesis, Michigan State University, East Lansing, MI. \$4,000.

2006-2010 “Characterizing chemical chaperones as treatments for cystic fibrosis,” CF Research Grant Program, Pennsylvania Cystic Fibrosis Inc. Foundation (PACFI), Mifflinburg, PA. \$7,000.

2006-2007 “*GUIDE*: Guidance for Undergraduates in Developing Exemplars of Systems,” PI: Douglas Luckie, Co-PIs: Diane Ebert-May and Duncan Sibley, Course Curriculum Laboratory Improvement (CCLI) Supplement, National Science Foundation, Bethesda, MD. \$32,172

2005-2008: “*BRAID*: Bridging the Disciplines with Authentic Inquiry & Discourse” PI: Douglas Luckie, Co-PIs: Ryan Sweeder, Elizabeth Simmons, Jim Smith, Sabrina Keller. Quality Grant, Michigan State University, East Lansing, MI. \$131,761.

2005-2006: Undergraduate Research Grant, PI: Douglas Luckie, Student: Aaron Walls, *Drew Fellows* Program, Michigan State University, East Lansing, MI. \$1000

2002-2006: “*C-TOOLS*: Concept-Connector Tools for Online Learning in Science.” PI: Douglas Luckie, Co-PIs: Janet Batzli, Diane Ebert-May, National Science Foundation, DUE, Assessment of Student Achievement (ASA), Bethesda, MD. \$356,434.

2003-2004: Pedagogy and Technology Grant Recipient, “Scaling up: Creating the LBS Media Lab,” PI: Douglas Luckie, College of Natural Science, Michigan State University, \$8,356.

2002-2004: Undergraduate CF Research Grant, PI: Douglas Luckie, Student: Vishal Malhotra; College of Natural Science, Michigan State University, East Lansing, MI. \$1200

1999-2000: *Lilly* Teaching Research Fellowship, “Bridging the Disciplines with Critical Thinking,” Office of the Provost, Michigan State University, East Lansing, MI. \$7,000.

1999-2000: Pedagogy Grant Recipient, “Creating the iLab: A Proposal for Upgrading the Lyman Briggs School (LBS) Biology Laboratories (Rooms C-4, C-5 Holmes Hall) at Michigan State University,” Michigan State University Technology Guarantee Fund, East Lansing, MI. \$20,356.

1998-2000: Research Grant Recipient, “Microphysiometry: An Assay for the Correction of CF.” Cystic Fibrosis Foundation, Pilot and Feasibility Award, Bethesda, MD. \$48,000

1998-1999: Research Fund Recipient, “Microphysiometry Technology.” Michigan State University, Technology Guarantee Fund, East Lansing, MI. \$14,400

1997-1998: Research Grant Recipient, “Microphysiometry: A New Assay for the Correction of Cystic Fibrosis.” Michigan State Biotechnology Research Center, East Lansing, MI. \$25,000

1997-1998: Research Grant Recipient, “Microphysiometry studies of Cystic Fibrosis.” Academic Grant Award, Molecular Devices Corporation, Sunnyvale, CA. \$29,750

1994-1996: Research Grant Recipient, “Bifunctional Studies of ABC Transporters” Individual National Research Service Award, Public Health Service National Institute of Health, NIDDK, Bethesda, MD. \$58,500

1992-1993, 1993-1994: Postdoctoral Research Fellowship(s) Recipient, Cystic Fibrosis Foundation Research Development Program, Stanford University, Cystic Fibrosis Foundation, Bethesda, MD. Two fellowships at \$20,500 and \$33,500.

1987-1992: Predoctoral Fellowship Recipient, National Institute of Health, Cardiovascular Research Training Grant, Department of Physiology, University of Virginia, Charlottesville, VA. Stipend: \$10,000/yr for five years.



## COMPLETED PUBLICATIONS, PRESENTATIONS, PAPERS, AND WORKS

### Book Chapters

1. D. Ebert-May, K. Williams, D. Luckie, and J. Hodder. 2008. Climate change: confronting student ideas. Pp. 21-22 in D. Ebert-May and J. Hodder, eds., Pathways to Scientific Teaching. Sinauer Associates, Inc. Sunderland, MA.
2. J. Hodder, D. Ebert-May, K. Williams, and D. Luckie. 2008. Marine Pathology: revealing the ocean's etiology to earthbound students. Pp. 31-32 in D. Ebert-May and J. Hodder, eds., Pathways to Scientific Teaching. Sinauer Assoc., Inc. Sunderland, MA.
3. D. Ebert-May, K.S. Williams, E.P. Weber, J. Hodder, and D. Luckie. 2008. Practicing scientific inquiry: what are the rules? Pp. 47-48 in D. Ebert-May and J. Hodder, eds., Pathways to Scientific Teaching. Sinauer Associates, Inc. Sunderland, MA.
4. K.S. Williams, D. Ebert-May, D. Luckie, and J. Hodder. 2008. Ecological controversy: analysis to synthesis. Pp. 59-60 in D. Ebert-May and J. Hodder, eds., Pathways to Scientific Teaching. Sinauer Associates, Inc. Sunderland, MA.
5. K.S. Williams, D. Ebert-May, D. Luckie, J. Hodder, and S. Koptur. 2008. Novel assessments: detecting success in student learning. Pp. 115-116 in D. Ebert-May and J. Hodder, eds., Pathways to Scientific Teaching. Sinauer Associates, Inc. Sunderland, MA.
6. D. Ebert-May, J. Hodder, E. Weber, and D. Luckie. 2008. Unleashing problem solvers: from assessment to designing research. Pp. 133-134 in D. Ebert-May and J. Hodder, eds., Pathways to Scientific Teaching. Sinauer Associates, Inc. Sunderland, MA.
7. D.B. Luckie, K.L. Boyd, A. Mizushima, Z. Shao, A. Somlyo and K. Takeyasu (1991) Identification of ouabain-binding and Ca-stimulation domains in Na- and Ca-pump chimeric molecules. in "The Sodium Pump: Recent Developments", Rockefeller Univ. Press NY, p.237-242.

### Articles published or in preparation/press:

0. W.H. Newell and D.B. Luckie (2017) Pedagogy for Interdisciplinary Habits of Mind, *Issues in Interdisciplinary Studies* (submitted 12/2016).
1. D.B. Luckie, A.M. Hoskinson, C.E. Griffin A.L. Hess K.J. Price, A. Tawa, S.M. Thacker (2017) Integrating Concepts in Biology textbook increases learning: Assessment triangulation using concept inventory, card sorting, and MCAT instruments, followed by longitudinal tracking. *CBE-Life Science Education*, 16:ar20, Summer 2017, 1–10.
2. C.R. Marquette, D.B. Luckie (2016) Dissection of a Mechanistic Controversy in Cystic Fibrosis, *JSM Genet Genomics* 3(2): December 2016, 1-11.
3. S.A. Valles, D.B. Luckie, G.M. Montgomery, E.H. Simmons, R.D. Sweeder and A. Zeleke (2016) Updating the Two Cultures: How Structures Can Promote Interdisciplinary Cultures, Change: The Magazine of Higher Learning, December 2016, 48:6, 28-35.

4. D.B. Luckie, Van Alst AJ, Massey MK, Flood RD, Shah AA, Malhotra V, Kozel BJ. (2014) Chemical rescue of  $\Delta F508$ -CFTR in C127 epithelial cells reverses aberrant extracellular pH acidification to wild-type alkalization as monitored by microphysiometry. *Biochem Biophys Res Commun.* 451(4): 535-40.
5. D.B. Luckie, A.M. Rivkin, J.R. Aubry, B.J. Marengo, L.R. Creech, R.D. Sweeder (2013) Verbal final exam in introductory biology yields gains in student content knowledge and longitudinal performance. *CBE-Life Sciences Educ*, 12(3): 515-529.
6. D.B. Luckie, J.J. Smith, K.S. Cheruvilil, C. Fata-Hartley, C.A. Murphy, G.R. Urquhart (2013) The “Anti-Cookbook Laboratory”: Converting “Canned” Introductory Biology Laboratories to Multi-week Independent Investigations. *Studies for Laboratory Teaching: Proceedings of the Assn for Biology Laboratory Educ.* Vol. 34, pp. 196-213.
7. D.B. Luckie, R. Bellon, and R. Sweeder (2013) Bringing Relationships Alive through Interdisciplinary Discourse (BRAID). *International Journal of Pedagogy and Curriculum* Vol. 19, Issue 3, pp. 133-144.
8. \*D.B. Luckie, J.R. Aubry, A.M. Rivkin, B.J. Marengo, L.A. Foos and J.J. Maleszewski (2012) Less teaching, more learning: A 10-year study supports increases in inquiry alongside decreases in “coverage” yield steady gains in student learning of science. *Advances in Physiology Education* 36: 325–335. \*Selected as “Editor’s Pick”
9. D.B. Luckie, M.E. Krouse (2012) Cystic Fibrosis: Does CFTR Malfunction Alter pH Malfunction? *Genetic Disorders* (12): 319-344.
10. D.B. Luckie, R. Bellon, and R.D. Sweeder (2012) The “BRAID”: Experiments in Stitching Together Disciplines at a Big 10 University, *Journal of STEM Education* 13(2): 6-14.
11. D.B. Luckie (2012) A faculty cocktail as treatment: Unearthing pedagogies that promote interdisciplinary learning and habits of mind. *Invited paper for the CITL Conference* at Michigan State University, East Lansing, MI.
12. W.H. Newell and D.B. Luckie (2012) Pedagogy for Interdisciplinary Habits of Mind, *Proceedings of CITL Conference*, Michigan State University, East Lansing, MI.
13. D.B. Luckie, S.H. Harrison and D. Ebert-May (2011) Model Based Reasoning: Creating Visual Tools to Reveal Student Learning, *Advances in Physiology Education*, 35(1): 59-67.
14. M.D. Haenisch, T.A. Ciche and D.B. Luckie (2010) *Pseudomonas* or LPS exposure alters CFTR iodide efflux in 2WT2 epithelial cells with time and dose dependence. *Biochem Biophys Res Commun.*, 394: 4, 1087-1092.

15. M.D. Haenisch and D.B. Luckie (2009) Exposure to *P. aeruginosa* and purified LPS alter CFTR-dependent ion conductance in cultured 2WT2 epithelial cells in a time and dose dependent fashion. *Pediatric Pulmonology*, S32, 258-259.
16. D.B. Luckie, S.H. Harrison, J.L. Wallace and D. Ebert-May (2008) Studying C-TOOLS: Automated Grading For Online Concept Maps. *Conference Proceedings from Conceptual Assessment in Biology II*, 2(6): 101-110.
17. D. Luckie and D. Ebert-May (2007) C-TOOLS: Concept-Connector Tools for Online Learning in Science. *Conference Proceedings from Conceptual Assessment in Biology* 1(6): 1-4.
18. S.R. Hootman E.C. Hobbs, and D.B. Luckie (2005) Direct measurement of acid efflux from isolated guinea pig pancreatic ducts. *Pancreas* 30(4): 363-368.
19. J. Hodder, D. Ebert-May, K. Williams, and D. Luckie (2005) Unraveling complexity: building an understanding of Everglades restoration. *Frontiers in Ecology and the Environment* 3 (3): 170-171.
20. D. Ebert-May, J. Hodder, E. Weber, and D. Luckie (2005) Unleashing problem solvers: from assessment to designing research. *Frontiers in Ecology and the Environment*, March Issue, 3(2): 101-102.
21. D.B. Luckie, M. Krha, S.D. Loznak and J.J. Maleszewski (2004) The infusion of collaborative inquiry throughout a biology curriculum increases student learning: A four-year study of Teams & Streams. *Advances in Physiology Education*, December 2004, 28(1-4): 199-209.
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25. D. Luckie, S. Harrison and D. Ebert-May (2004) Introduction to C-TOOLS: concept mapping tools for online learning. *Concept Maps: Theory, Methodology, Technology (Proceedings of the First International Conference on Concept Mapping, A.J. Canas, J.D. Novak and F.M. Gonzalez Eds), Vol. 2: 261-264*
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Environment*, September Issue 7(2): 383-384.
28. D. Ebert-May, J. Hodder, K. Williams, and D. Luckie (2004) Pathways to scientific  
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29. D. Ebert-May, K. Williams, D. Luckie, and J. Hodder (2004) Climate change:  
confronting student ideas, *Frontiers in Ecology and the Environment*, 6(2): 324-325.
30. (Abstract) Luckie D.B. and J.J. Maleszewski (2004) The Infusion of Collaborative  
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Inquiry.” (The 89th Annual Meeting of the Ecology Society of America - held in  
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32. D.B. Luckie, J.H. Wilterding, M. Krha, and M.E. Krouse (2003) CFTR and MDR:  
ABC transporters with homologous structure but divergent function. *Current Genomics*  
4 (3): 109-121.
33. (Abstract) D.B. Luckie (2003) C-TOOLS: Concept-Connector Tools for Online  
Learning in Science. (The Learning Conference -The 10th International Literacy &  
Education Research Conference on Learning held in London, July 15–18, 2003)
34. (Abstract) J.J. Maleszewski and D.B. Luckie, (2003) Streaming through a freshman  
biology laboratory: Converting short individual “cookbook” lab exercises into long  
group inquiry “streams.” (AAAS Annual Meeting, February 13-18, 2003, Denver, CO).
35. (Abstract) M. Krha, R.D. Flood, B.J. Kozel, A.A. Shah, V. Malhotra, and D.B.  
Luckie, (2002) CFTR expression and function at the cell surface decreases extracellular  
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24: 205A (16th North American Cystic Fibrosis Conference, October 3-6, 2002).
36. D.B. Luckie, J.H. Wilterding, J.J. Maleszewski, E.C. Hobbs, and L.K. Olson (2002)  
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37. J.H. Wilterding and D.B. Luckie (2002) Increasing Student-Initiated Active Learning with Investigative 'Streams:' A Molecular Biology Example. *Journal of College Science Teaching* Vol 31(5): 303-307.
38. (Abstract) S.R. Hootman and D.B. Luckie (2001) Mitogen-activated protein kinases in the pancreatic duct system. *Pancreas* 8:331A
39. D.B. Luckie, C.N. Singh, J.J. Wine and J.H. Wilterding (2001) CFTR activation raises extracellular pH of NIH/3T3 mouse fibroblasts and C127 epithelial cells. *Journal of Membrane Biology* 179:275-284.
40. (Abstract) S.R. Hootman, E.C. Hobbs, and D.B. Luckie (1999) Direct measurement of proton efflux from isolated guinea pig pancreatic ducts. *Pancreas* 19:424A
41. (Abstract) D.B. Luckie, J.J. Maleszewski, E.C. Hobbs, J.H. Wilterding, and L.K. Olson (1999) Extracellular acidification parallels insulin secretion in pancreatic beta cell lines (INS-1 and HIT). *Pediatric Pulmonology* Sept. Suppl. 19: 255A.
42. (Abstract) D.B. Luckie and J.J. Wine (1998) CFTR expression can change extracellular pH. *Pediatric Pulmonology* Sept. Suppl. 16: 226A.
43. (Abstract) L.K. Olson, J.J. Wine, and D.B. Luckie (1998) pH-based detection of defects in cystic fibrosis and diabetes. *International Cell Analysis Products Conference Report* 2:112A.
44. D.B. Luckie, M.E. Krouse, T.C. Law, B.I. Sikic, and J.J. Wine. (1996) Doxorubicin selection for MDR1/P-glycoprotein reduces swelling-activated K<sup>+</sup> and Cl<sup>-</sup> currents in MES-SA cells. *Am. J. Physiol. (Cell. Physiol)* C1029-C1036.
45. (Abstract) D.B. Luckie, S. Pitchford, and J.J. Wine (1995) CFTR may alter extracellular pH by inhibition of the Na/H exchanger, a cytosensor study. *Pediatric Pulmonology* Sept. Suppl. 12: 181A.
46. (Abstract) D.B. Luckie, and J.J. Wine (1995) Epithelial cells expressing wild type CFTR have lower steady state and stimulated acid efflux rates than cells expressing mutant CFTR. *Biophys. J.*, 68 (2):A272.
47. (Abstract) D.B. Luckie, K.L. Harper, M.E. Krouse, T.C. Law, B. Sikic, and J.J. Wine (1995) MDR/P-glycoprotein expression is associated with reduced swelling-activated K<sup>+</sup> and Cl<sup>-</sup> efflux in Messa and DX5 cells. *Biophys. J.*, 68 (2):A273.
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49. (Abstract) M.E. Krouse, D.B. Luckie, K.L. Harper, T.C. Law, B.I. Sikic, and J.J. Wine (1993) MDR/P-glycoprotein expression facilitates swelling Cl<sup>-</sup> current activation but is probably not the channel. *Pediatric Pulmonology*, January Appendix. 1: 5A.
50. D.B. Luckie, V. Lemas, K.L. Boyd, D.M. Fambrough, and K. Takeyasu (1992) Molecular dissection of functional domains of the E1E2ATPases using sodium and calcium pump chimeric molecules. *Biophys. J.*, 62:227-234.
51. (Abstract) D.B. Luckie, K.L. Boyd, G. Inesi, and K. Takeyasu (1992) Calcium sensitive regions of Na<sup>-</sup> and Ca-pump chimeric molecules. *Biophys. J.*, 61:119A.
52. D.B. Luckie, K.L. Boyd, and K. Takeyasu (1991) Ouabain and Ca<sup>2+</sup>-sensitive ATPase activity of chimeric Na<sup>-</sup> and Ca-pump molecules. *FEBS letters*, 281:231-234.
53. (Abstract) V.M. Lemas, J. Garg, D.M. Fambrough, D.B. Luckie, and K. Takeyasu (1991) Carboxyl terminus of the alpha subunit of the Na,K-ATPase is required for assembly with the beta-subunit. *J. Cell Biol.*, 115:201A.
54. (Abstract) D.B. Luckie, K.L. Boyd, A. Mizushima, A. Shao, A.P. Somlyo and K. Takeyasu (1990) Functional expression of Na<sup>-</sup> and Ca-Pump chimeric molecules. *J. Gen. Physiol.*, 96:22A.
55. (Abstract) K. Takeyasu, A. Mizushima, D.B. Luckie and K.L. Boyd (1990) Stable expression of the mutant Na,K-ATPase. *Biophys. J.*, 57:352A.

Review Papers (published):

1. D.B. Luckie, J.H. Wilterding M. Krha, and M.E. Krouse (2003) CFTR and MDR: ABC transporters with homologous structure but divergent function. *Current Genomics* 4 (3): 109-121.
2. D.B. Luckie and J.J. Wine. (1996) Cell volume regulation: P-glycoprotein- a cautionary tale. *Current Biology* 6 (11): 1410-1412.

Presentations (Research Seminar if not otherwise indicated):

1. "Integrating concepts in biology (ICB) approach increases learning: Assessment triangulation using concept inventory, card-sorting task, and MCAT, followed by longitudinal tracking." Society for Advancement of Biology Education Research (SABER) conference, Minneapolis, MN, July 14-17th, 2016.
2. "Inquiry-in-lecture increases learning" Ontario Consortium of Undergraduate Biology Educators Conference (oCUBE), Port Carling, Ontario, Canada, May 24-27th, 2016.
3. Panelist (led by Deborah Dezure with Ryan Sweeder, Karin Zitzewitz , Natalie Phillips Gerd Kortemeyer & Catherine Westfall) of Lilly Workshop "Interdisciplinary Teaching and Learning at MSU" MSU Union, Lake Huron Room, November 9, 2015.

4. "Active and Cooperative Learning" Active learning workshop was presented as a seminar to MSU faculty in the Teaching Essentials workshop series, East Lansing, MI; March 18, 2015 (presenter: Luckie).
5. "Assessing Student Learning after Converting to Inquiry", 2014 APS Intersociety Meeting: Comparative Approaches to Grand Challenges in Physiology, San Diego, CA, October 7, 2014.
6. "Student Content Knowledge in Biology and Longitudinal Performance in STEM courses increase in response to higher level oral assessments." Society for Advancement of Biology Education Research (SABER) conference, Minneapolis, MN, July 18th, 2014.
7. "Less teaching, more learning: Authentic inquiry and verbal exams raise student performance on MCAT questions as well as in upper-level science courses", College Seminar Series, Ryerson University, Toronto, Ontario, CA, April 10, 2014.
8. "Less teaching, more learning: 10-yr study supports increasing student learning through less coverage and more inquiry", Department Seminar Series, Biology Department, Grand Valley State University, Grand Rapids, MI, March 14, 2014.
9. "Verbal Final Exam in Introductory Biology Yields Gains in Student Content Knowledge and Longitudinal Performance ", CREATE Mini-Conference, Wharton Center, Michigan State University, East Lansing MI, February 20, 2014.
10. "Less Teaching, More Learning: 10-year Study Supports Increasing Student Learning Through Less Coverage and More Inquiry", College Seminar Series, York University, Toronto, Ontario, CA, April 15, 2013 (presenter: Luckie).
11. "Teaching Forum: Putting Theory into Practice". Teaching Essentials Workshop for College of Natural Science, 1425 BPS, Michigan State University, East Lansing, MI, April 17, 2013 (presenters: Luckie, Campa, Briedis, Hoag, Long, Marks & Soranno).
12. "Less Teaching, More Learning: 10-year Study Supports Increasing Student Learning Through Less Coverage and More Inquiry", CREATE Mini-Conference, Wharton Center, Michigan State University, East Lansing MI, May 7-8, 2013 (presenter: Luckie).
13. "Verbal Final Exam in Introductory Biology Yields Gains in Student Content Knowledge and Longitudinal Performance." Society for Advancement of Biology Education Research conference (SABER), Minneapolis, MN, July 12th, 2013 (presenter: Luckie).
14. "Engaging Students to Actively Learn: A Panel Discussion on Active Learning, the Flipped Classroom Method and REAL Spaces at MSU". Michigan State University, November 14, 2012 (presenters: Luckie, Freidhoff, Guenther, Grabski, Sticklen).

15. "Active and Cooperative Learning" Active learning workshop was presented as a seminar to MSU faculty in the Teaching Essentials workshop series, East Lansing, MI; October 8, 2012 (presenter: Luckie).
16. "Bringing Relationships Alive through Interdisciplinary Discourse (BRAID)" A research talk presented at the International Learning Conference, London, England, August 15, 2012 (presenter: Luckie).
17. "Less Teaching, More Learning: A 10-year study supports greater inquiry in labs even alongside less coverage yields steady gains in learning." Society for Advancement of Biology Education Research (SABER), Minneapolis, MN, July 13th, 2012 (presenters: Luckie and Maleszewski).
18. "The Anti-Cookbook Laboratory Model: Teams, Streams and Inquiry. Association of Biology Laboratory Education (ABLE) Conference, Major Workshop Presentation (presenters: Luckie, Murphy, Smith, Fata-Hartley, and Cheruvellil). University of North Carolina-Chapel Hill, NC, June 16, 2012.
19. (poster) "Less Teaching, More Learning: A 10-year study supports greater inquiry in labs even alongside less coverage yields steady gains in learning." Association of Biology Laboratory Education (ABLE) Conference, Poster Presentation (presenter: Luckie,). University of North Carolina-Chapel Hill, NC, June 17, 2012.
20. "Pedagogies for Interdisciplinary Teaching and Learning" Conference on Interdisciplinary Learning (CITL) Keynote Presentation, Kellogg Convention Center, East Lansing, MI May 14, 2012.
21. "Active and Cooperative Learning (teaching = translating)" Active learning workshop was presented as a seminar to visiting faculty from Duhok University in Duhok, Iraq as a part of the MSU IREX grant, East Lansing, MI; April 23, 2012 (presenter: Luckie).
22. "Socratic "verbal final" exam yields significant gains in student learning and engagement in large introductory science courses." Research talk presented at Erickson Hall, Michigan State University, East Lansing, MI, April 3, 2012.
23. "Active and Cooperative Learning" Active learning workshop was presented as a seminar to MSU faculty in the Teaching Essentials workshop series, East Lansing, MI; February 13, 2012 (presenter: Luckie).
24. (roundtable) Our BRAID research efforts were presented at informal roundtables at the AAC&U/PKAL Conference "Engaged Stem Learning: From Promising to Pervasive Practices" in Miami FL; March 24-26, 2011 (presenting authors: Luckie, Bellon, Sweeder).



25. “Active and Cooperative Learning” Active learning workshop was presented as a seminar to the teaching assistants of Lyman Briggs College, East Lansing, MI; August 25, 2011 (presenter: Luckie).
26. (roundtable) Our CF research findings, “Chemical chaperone studies of CFTR function in airway epithelia,” were presented at an informal roundtable at the 25<sup>th</sup> Annual North American Cystic Fibrosis Conference (NACFC) in Anaheim CA; November 3-5, 2011 (presenting author: Luckie).
27. “What Do Grades Mean?” Seminar was presented to the teaching assistants of Lyman Briggs College, East Lansing, MI; August 25, 2010 (presenter: Luckie).
28. (roundtable) Our CF research findings, “LPS stimulated CFTR function in airway pathogen pseudomonas,” were presented at an informal roundtable at the 23<sup>rd</sup> Annual North American Cystic Fibrosis Conference (NACFC) in Minneapolis MN; October 15-19, 2009 (presenting author: Haenisch).
29. (poster) M.D. Haenisch and D.B. Luckie (2009) Exposure to *P. aeruginosa* and purified LPS alter CFTR-dependent ion conductance in cultured 2WT2 epithelial cells in a time and dose dependent fashion. The 23<sup>rd</sup> Annual North American Cystic Fibrosis Conference, Minneapolis, MN, October 15-19, 2009
30. (roundtable) Our CF research findings, “Development of an assay for bacterial pathogenesis in cystic fibrosis,” were presented at an informal roundtable at the 22<sup>nd</sup> Annual North American Cystic Fibrosis Conference (NACFC) in Orlando FL; October 24, 2008 (presenting author: Luckie).
31. (poster) C-TOOLS: Concept Connector Tools for Online Learning in Science. CCLI Principal Investigator’s Conference, National Science Foundation. Washington, DC, August 13-15, 2008 (presenting author: Luckie).
32. (poster) "C-TOOLS automated grading for online concept maps works well with a little help from WordNet,” CCLI Principal Investigator’s Conference, National Science Foundation. Washington, DC, August 13-15, 2008 (presenting author: Luckie).
33. (workshop) “Diagnosing Student Learning in the Biological Sciences.” CCLI Principal Investigators Conference, National Science Foundation. Washington, DC, August 14, 2008 (presenting authors: Douglas Luckie and Charlene D’Avanzo).
34. “Studying C-TOOLS: Automated Grading For Online Concept Maps” National Science Foundation Conference on Conceptual Assessment in Biology (CABII) Hosted by California Polytechnic State University, Asilomar, CA, January 3-6, 2008 (presenting author: Luckie).

35. "C-TOOLS: Concept-Connector Tools for Online Learning in Science" National Science Foundation Conference on Conceptual Assessment in Biology (CABII) Hosted by University of Colorado-Boulder, CO, March 2-4, 2007 (presenting author: Luckie).
36. "Less Teaching, More Learning 4.0." Annual Meeting for the National Science Foundation FIRST II project, Kellogg Biological Station, Michigan State University, Hickory Corners, MI; August 16-18, 2006 (presenting author: Luckie).
37. "C-TOOLS: Concept-Connector Tools for Online Learning in Science." National Science Foundation ASA (Assessment Conference), Drury University, Washington, DC; October 19-21, 2006 (presenting author: Luckie).
38. "Cooperative Learning in the Classroom Laboratory" Our research results of curricular innovations in undergraduate biology classroom laboratories were presented as a seminar to the faculty of the College of Science and Technology, Central Michigan University, Mount Pleasant, MI; September 23, 2005 (presenter: Luckie).
39. (roundtable) Our CF research findings were presented at an informal roundtable at the 19th Annual North American Cystic Fibrosis Conference (NACFC) in Baltimore MD; October 21, 2005 (presenting author: Luckie).
40. (workshop) "C-TOOLS 2005" Presentation on concept map pedagogy research during a workshop at the 90th Annual Meeting of the Ecology Society of America - held in Montreal, Canada; August 7, 2005 (presenting authors: Luckie, Batzli, Ebert-May).
41. (workshop) "Less Teaching, More Learning 3.0." I served as a presenter/facilitator of curriculum designs at the first National Meeting for the National Science Foundation FIRST II project, Kellogg Biological Station, Michigan State University, Hickory Corners, MI; May 13-15, 2005 (presenting authors: Luckie, Ebert-May, Long, Sibley).
42. (workshop) "LabLINC" As part of the BRAID, I developed and presented curriculum designs at a 10-day workshop by the National Science Foundation BioQUEST, Beloit College, Beloit, WI; June 11-19, 2005 (MSU LBS reps: Luckie, Sweeder).
43. (poster) Introduction to C-TOOLS: concept mapping tools for online learning. First International Conference on Concept Mapping, Pamplona, Spain, September 14-17, 2004 (presenting authors: Harrison, Ebert-May and Luckie)
44. (poster) C-TOOLS automated grading for online concept maps works well with a little help from "WordNet," First International Conference on Concept Mapping, Pamplona, Spain, September 14-17, 2004 (presenting authors: Harrison, Ebert-May and Luckie)
45. "The infusion of collaborative inquiry throughout a biology curriculum increases student learning: A four-year study of *Teams & Streams*." Our studies of curricular innovations in undergraduate biology classroom laboratories were presented as a paper

- at the 89th Annual Meeting of the Ecology Society of America - held in Portland, Oregon; August 3, 2004 (presenting author: Luckie).
46. (workshop) Presentation on inquiry laboratory pedagogy research during a workshop at the 89th Annual Meeting of the Ecology Society of America - held in Portland, Oregon; August 1, 2004 (presenting authors: Luckie, Hoddar, Ebert-May, Batzli).
  47. (poster) "Streaming Through a Freshman Biology Laboratory: Converting short individual 'cookbook' lab exercises into long group inquiry 'streams'." AAAS Annual Meeting 2003; Denver, Colorado, February 16, 2003 (presenting authors: Maleszewski and Luckie).
  48. "Less Teaching, More Learning 2.0." My curricular studies of concept map pedagogy research were presented at the National Science Foundation FIRST II conference, Kellogg Biological Station, Michigan State University, Hickory Corners, MI; June 27-29, 2004 (presenting author: Luckie).
  49. (workshop) "C-TOOLS 2-Day Workshop." Conducted training sessions concerning concept map pedagogy research for the National Science Foundation C-TOOLS research project, Michigan State University, East Lansing, MI; May 7-8, 2003 (presenting authors: Luckie, Harrison, and Ebert-May).
  50. "Less Teaching, More Learning." My curricular studies of concept map pedagogy research were presented at the National Science Foundation FIRST II conference, Kellogg Biological Station, Michigan State University, Hickory Corners, MI; July 11, 2003 (presenting author: Luckie).
  51. "C-TOOLS: Concept-Connector Tools for Online Learning in Science." This research was presented at The Learning Conference (Tenth International Literacy & Education Research Network Conference on Learning), Institute of Education, University of London, London, UK, July 17, 2003 (presenting author: Luckie).
  52. (workshop) "C-TOOLS 1-Day Workshop." Training sessions conducted concerning concept map pedagogy research for the National Science Foundation C-TOOLS grant, Michigan State University, East Lansing, MI; December 12, 2003 (presenting authors: Luckie, Harrison, and Ebert-May).
  53. "Teaching with Technology: Desktop Movies Help Diffuse Science Friction." Technology Seminars of MSU Libraries and Computing, MSU Union, Michigan State University, East Lansing, MI; December 17, 2002.
  54. "CFTR expression and function at the cell surface decreases extracellular acidification of pH as monitored by Microphysiometry." Invited for research presentation at 16th Annual North American Cystic Fibrosis Conference, New Orleans, LA; October 5, 2002 (postponed until 10/2003 after cancellation due to Hurricane Lili).

55. (workshop) "C-TOOLS Workshop." Training sessions conducted concerning concept map pedagogy research for the C-TOOLS grant, National Science Foundation, Michigan State University, East Lansing, MI; December 12-13, 2002 (presenting authors: Luckie, Bagley, Harrison, and Ebert-May).
56. (workshop) "Teaching with Technology." Our curricular experiences with technology presented in a Lilly workshop, Kellogg Center, Michigan State University, East Lansing, MI; August 13, 2002 (presenting authors: Luckie, Smith, Sibley, and Riffel).
57. "Fundamental Concept, Group Inquiry and C-TOOLS." My curricular experiments in Introductory Biology and Concept Map pedagogy research were presented at the FIRST II conference, National Science Foundation, Kellogg Biological Station, Michigan State University, Hickory Corners, MI; May 23-25th, 2002.
58. "The role of pH, glycerol and concept maps in research of cystic fibrosis and undergraduate learning." Invited Research Presentation/Faculty Seminar Department of Physiology, Michigan State University, East Lansing, MI, April 19, 2002 (presenting authors: Luckie, Krha, Kozel and Flood).
59. "Cooperative learning in the classroom laboratory." My curricular innovations in Introductory Biology were presented at the FIRST conference, National Science Foundation, Kellogg Biological Station, Michigan State University, Hickory Corners, MI; January 17-20th, 2002.
60. "Research and Teaching at MSU." Invited Research Presentation/Faculty Seminar Lyman Briggs School, Michigan State University, East Lansing, MI, November 27, 2001 (presenting author: Luckie).
61. (Poster) "Mitogen-activated protein kinases in the pancreatic duct system." Our research was presented in the form of a poster at the American Pancreatic Association Meeting, Chicago, IL; November 1-2, 2001 (presenting author: Hootman).
62. "Web-based concept maps: a study of a novel application to increase students' higher-level thinking skills in science." Our research was presented in a seminar, Meeting of the Ecological Society of America, Madison, WI; August 8, 2001 (presenting author: Batzli).
63. (workshop) "Assessment of student learning: Strategies and tools for evidence that counts." Our research was presented in a workshop, Meeting of the Ecological Society of America, Madison, WI; August 5, 2001 (authors: Luckie, Batzli, Ebert-May).
64. "Cooperative learning in the classroom laboratory." Our curricular experiences were presented in a Lilly seminar, Kellogg Center, Michigan State University, East Lansing, MI; March 16, 2001 (presenting authors: Luckie, Smith, Maleszewski).
65. (poster) "Fundamentals of biocomputing in the undergraduate classroom." Our laboratory presented bioinformatics pedagogy research findings in the form of a poster

- at the 2001 American Association for the Advancement of Science (AAAS) Meeting in San Francisco, CA; January 11, 2001 (presenting author: Maleszewski).
66. Our laboratory presented our CF pH research findings at an informal “HCO<sub>3</sub> and CF” subcommittee meeting roundtable at the 14th Annual North American Cystic Fibrosis Conference (NACFC) in Baltimore MD; November 9, 2000 (presenting author: Luckie).
  67. (poster) “Extracellular acidification parallels insulin secretion in pancreatic beta cell lines (INS-1 and HIT).” Our laboratory presented research findings in the form of a poster at the 13th Annual North American Cystic Fibrosis Conference in Seattle WA; October 7-10, 1999 (presenting author: Luckie).
  68. “Characterizing pancreatic function with microphysiometry.” Invited Research Presentation/Faculty Seminar Department of Physiology, Michigan State University, East Lansing, MI, April 9, 1999 (presenting authors: Luckie, Hobbs, Maleszewski).
  69. “CFTR expression can change extracellular pH.” Invited research presentation, 12th Annual North American Cystic Fibrosis Meeting, Montreal, Ontario, October 23, 1998.
  70. “pH-based detection of defects in cystic fibrosis and diabetes.” Seminar, International Cell Analysis Products Users Meeting, Hilton Head Island, SC; June 7, 1998.
  71. “Biocomputing: learning how to write programs to solve biological problems.” Teaching/pedagogy seminar at the 1998 6th Annual College of Natural Science Undergraduate Research Forum, National Superconducting Cyclotron, Michigan State University, March 28, 1998 (presenting author: Sarkar).
  72. “CF & Cytosensor Research.” at Lyman Briggs School Faculty Colloquium at Michigan State University, East Lansing, MI; November 13, 1997.
  73. “pH-based detection of cystic fibrosis.” Seminar, Department of Pharmacology & Toxicology, Michigan State University, East Lansing, MI; November 4, 1997.
  74. “Cytosensor findings for CF.” Our laboratory presented research findings at a roundtable meeting at 12th Annual North American Cystic Fibrosis Conference, Nashville, TN; October 22-26, 1997 (presenting author: Luckie).
  75. “Extracellular pH: A new index of correction in cystic fibrosis.” Invited Research Presentation/Faculty Seminar, Department of Physiology, Michigan State University, East Lansing, MI; October 24, 1996.
  76. “A new assay for the correction of cystic fibrosis.” Invited Research Seminar, Department of Biology, Temple University, Philadelphia, PA; May 15, 1996.

77. "Microphysiometry for the correction of cystic fibrosis." Invited Research Seminar, Department of Biology, Monmouth College, Monmouth, NJ; May 2, 1996.
78. "Microphysiometry: pH and cystic fibrosis." Invited Research Seminar, Lyman Briggs School, Michigan State University, East Lansing, MI; April 1, 1996.
79. "A pH assay for the correction of cystic fibrosis." Invited Research Seminar, Department of Biology, Tennessee State University, Nashville, TN; April 19, 1996.
80. "Developing a pH assay for the diagnosis of cystic fibrosis." Research Seminar, Medical Sciences Program, Indiana University, Bloomfield, IN. February 29, 1996.
81. "Microphysiometry: A new assay for the correction of cystic fibrosis." Invited Research Seminar, Department of Biology, Santa Clara University, Santa Clara, CA. February 16, 1996.
82. "CFTR may alter extracellular pH by inhibition of the Na/H exchanger, a cytosensor study." Invited Research Seminar, 9th Annual North American Cystic Fibrosis Conference, Dallas, TX, October 13, 1995.
83. (poster) "MDR/P-glycoprotein expression facilitates swelling Cl<sup>-</sup> current activation but is probably not the channel." Our laboratory presented research findings in the form of a poster at the 7th Annual North American Cystic Fibrosis Conference, Dallas, TX, October 12-15, 1993 (presenting author: Krouse).
84. "Dissection of ligand binding domains of the P-type ATPases using chimeric constructs." Research Seminar, Cystic Fibrosis Research Laboratory at Stanford, Stanford University, Stanford, CA. January 11 1993.
85. "Dissection of ligand binding domains of the P-type ATPases using chimeric constructs." Research Seminar, Department of Physiology, University of Virginia, Charlottesville, VA; June 5, 1992.
86. "Molecular dissection of functional domains of the E1E2-ATPases using sodium and calcium pump chimeric molecules." Invited Research Seminar at 4th Annual Biophysical Society Discussions Meeting; Airlie House, Airlie, VA; October 25, 1991.
87. "Ca<sup>2+</sup> binding activity of Na/K-ATPase and Ca-ATPase chimeric constructs expressed in COS-1 cells." Invited Research Presentation, Department of Biological Chemistry, University of Maryland at Baltimore, Baltimore, MD; August 16, 1991.
88. (poster) "Functional expression of Na- and Ca-pump chimeric molecules." Our laboratory presented research findings in the form of a poster at the 44th Annual Symposium of the Society of General Physiologists. 6th International Conference on Na,K-ATPase. Woods Hole, MA, September 13-15, 1990 (presenting author: Luckie).
89. (poster) "Stable Expression of the Mutant Na,K-ATPase." Our laboratory presented research findings in the form of a poster at the Biophysics Society, Baltimore MD, February 18-22, 1990 (presenting author: Takeyasu).