Cynthia J. Brame

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EDUCATION

Vanderbilt University, Nashville, TN, 1994-1999
Ph.D. in Pharmacology
Dissertation: Discovery of isolevuglandins, novel ketoaldehyde lipid peroxidation products, and characterization of their protein adducts.
Advisor: L. Jackson Roberts, II

Centre College, Danville, KY, 1990-1994
B.S. *magna cum laude* in Biochemistry and Molecular Biology
Minor in Chemistry

PROFESSIONAL EXPERIENCE

Associate director, April 2018-present
Center for Teaching
Vanderbilt University, Nashville, TN

- Leads Junior Faculty Teaching Fellows program
- Developed and leads BOLD program to guide graduate students in the design, development, and assessment of online modules for incorporation into faculty mentors' classes
- Leads faculty learning communities (e.g., active learning LC), workshops, and faculty panels
- Authored *Science Teaching Essentials : Short Guides to Good Practice* (Elsevier ; February 2019)
- Writes teaching guides : Writing good multiple choice items (>350,000 views); Flipping the classroom (>180,000 views); Group work : Using cooperative learning groups effectively (>40,000 views) ; Effective educational videos (>20,000 views) ; Blended and online learning (>10,000 views); Test-enhanced learning (>10,000 views) ; Active learning (>3500 views) ; Incorporating research into science classes (>3000 views)
- Facilitates departmental retreats and curriculum development initiatives
- Contributes to grant proposals
- Editorial Board of *CBE-Life Sciences Education*; co-editor for Evidence-Based Teaching Guides feature
- Editorial Board of *Journal of Visual Experiments* (JoVE) Video Textbook
- Developed module on Inquiry-Based Lab Instruction for NSF-funded, CIRTL-developed MOOC on Introduction to the College STEM Classroom

Assistant director, July 2012-March 2018
Center for Teaching
Vanderbilt University, Nashville, TN

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Senior lecturer, 2012-present
Department of Biological Sciences
Vanderbilt University, Nashville, TN

- Taught BSCI 2(5)20 Biochemistry, Fall 2013, Spring 2014, Fall 2014, Fall 2015, Fall 2016, Fall 2017, Fall 2018
- Taught BSCI 245 Biology of Cancer, Spring 2013
- Taught BSCI 1001 : Commons Seminar—So You Want to Find a Cure ?
- Served as secondary advisor for honors projects

Faculty member, 2003-2012
Department of Biology
Centenary College, Shreveport, LA

- Chair, July 2009-2012
  Managed budget ; set class schedule ; assigned teaching duties ; conducted faculty reviews ; compiled departmental reports
- Associate professor, Dec. 2008-2012
  Taught 12 contact hours per semester; served as academic adviser to ~30 Biology majors per year ; supervised 2-3 independent undergraduate research projects per year ; served on college committees as needed; initiated and oversaw CELLULAR program in collaboration with faculty at LSU-HSC-Shreveport
- Assistant professor, Sept. 2003-Dec. 2008
  Taught 12 contact hours per semester ; served as academic adviser to ~30 Biology majors per year ; supervised 2-3 independent undergraduate research projects per year ; served on college committees as needed

Assistant professor, gratis appointment
LSU-Health Science Center, Shreveport, LA

- Department of Biochemistry (2006-2012)
- Department of Pharmacology and Experimental Therapeutics (2004-2012)

Assistant professor (one-year appointment), Sept. 2002-Aug. 2003
Department of Biology
Mary Baldwin College, Staunton, VA

- Taught 27 contact hours in two semesters; served as supervisor for one undergraduate research project

Research scientist, Jan. 2001-Aug. 2002
MDS-Proteomics, Charlottesville, VA

Post-doctoral Fellow with Professor Donald F. Hunt, Sept. 1999-Dec. 2000
University of Virginia, Charlottesville, VA

BOOK

Science Teaching Essentials: Short Guides to Good Practice. In press: Elsevier, February 2019.

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ARTICLES

* undergraduate co-authors ** graduate co-authors

Knight JK and Brame CJ. Peer Instruction. *CBE Life Sciences Education*, doi: 10.1187/cbe.18-02-0025, 2018. An introduction to the Peer Instruction Evidence-Based Teaching guide, found at https://lse.ascb.org/evidence-based-teaching-guides/peer-instruction/.

Wilson KJ and Brame CJ. Helping practitioners and researchers identify and use education research literature. *CBE Life Sciences Education* doi: 10.1111/idh.12334, 2018. An introduction to the Evidence-Based Teaching Guides feature of *CBE Life Sciences Education*, found at https://lse.ascb.org/.

Wilson KJ, Brickman P, and Brame CJ. Group Work. *CBE Life Sciences Education* doi: 10.1187/cbe.17-12-0258, 2018. An introduction to the Group Work Evidence-Based Teaching guide, found at https://lse.ascb.org/evidence-based-teaching-guides/group-work/.

Bowen RS**, Picard DR**, Verberne-Sutton S and **Brame CJ**. Incorporating student design in an HPLC lab activity promotes student metacognition and argumentation. *Journal of Chemical Education*, doi: 10.1021/acs.jchemed7b00258, 2018.

Krimm H**, Schuele CM, **Brame CJ**. Viability of online learning for ensuring basic skills in speech-language pathology. Perspectives of the ASHA Special Interest Groups, doi:10.1044/persp2.SIG10.49, 2017.

Hande K, Parish AL, Cook C, Glassford MA, Pitts CJ, Richmond A, Widmar SB, **Brame CJ**, and Kennedy B. Junior Faculty Teaching Fellowship: A model to support nursing education development. *Nurse Educator* DOI: 10.1097/NNE.0000000000000413, 2017.

Green NH**, McMahon DG, and **Brame CJ**. Using online active-learning techniques to convey time compensated sun compass orientation in the Eastern North American Monarch. *Journal of Microbiology and Biology Education* 17, 430-435, 2016.

Biel R* and **Brame CJ**. Traditional versus online biology courses: Connecting course design and student learning in an online setting. *Journal of Microbiology and Biology Education* 17, 417-422, 2016.

Brame CJ. Effective educational videos: Principles and guidelines for maximizing student learning from video content. CBE-Life Sciences Education 15, pii:es6, 2016.

Hamrin V, Vick R, **Brame CJ,** Simmons M, Vanderhoef D, and Smith L. Teaching a systems approach: An innovative quality improvement project. *Journal of Nursing Education* 55, 209-214, 2016.

Brame CJ and Biel R*. Test-enhanced learning: The potential for testing to promote greater learning in undergraduate science courses. *CBE-Life Sciences Education* 14, 1-12, 2015.

Ortega RA** and **Brame CJ**. The synthesis map is a multi-dimensional educational tool that provides insight into students' mental models and promotes students' synthetic knowledge generation. *CBE- Life Sciences Education* 14, 1-11, 2015.

Chick N and **Brame CJ**. An investigation of the products and impact of graduate student SoTL programs: Observations and recommendations from a single institution. *International Journal for the Scholarship of Teaching and Learning* 9, No. 1, Article 3, 2015. Available at http://digitalcommons.georgiasouthern.edu/ij-sotl/vol9/iss1/3.

Rao AS, Fan J**, **Brame CJ**, and Landman BA. Improving conceptual understanding of signals and systems in undergraduate engineering students using collaborative in-class laboratory exercises. 2014 ASEE Annual Conference, paper ID #9790. Available at http://www.asee.org/public/conferences/32/papers/9790/view.

Chiang H*, Robinson LC, **Brame CJ,** and Messina TM. Molecular mechanics and dynamics characterization of an in silico mutated protein: A stand-alone lab module or support activity for in vivo and in vitro analyses of targeted protein. *Biochemistry and Molecular Biology Education* 41: 402-408, 2013.

Brame CJ, Pruitt WM, and Robinson LC. A molecular genetics laboratory course applying bioinformatics and cell biology in the context of original research. *CBE—Life Sciences Education* **7**: 410-421, 2008.

Davies SS, Amarnath V, **Brame CJ**, Boutaud O, and Roberts LJ, II. Measurement of chronic oxidative and inflammatory stress by quantification of isoketal/levuglandin γ-ketoaldehyde protein adducts using liquid chromatography tandem mass spectrometry. *Nature Protocols* **2**: 2079-2091, 2007.

Webb DJ, Schroeder MJ, **Brame CJ**, Whitmore L, Shabanowitz J, Hunt DF, and Horwitz, AR. Paxillin phosphorylation sites mapped by mass spectrometry. *J. Cell Science* **118**: 4925-4929, 2005.

Moran MF, White F, Marto J, **Brame CJ**, Ornatsky O, Ross M, Toledo-Sherman LM, Castro A, Duewel H, Hosfield C, Orsi C, Topaloglou T, Figeys D, Caldwell-Busby J, and Stover DR. Phospho-proteomics in drug discovery and development. Chapter in: *Protein Tyrosine Kinase Inhibitors in Cancer Therapy*. D. Fabbro and F. McCormick, eds. Humana Press, 2004.

Marto JA, **Brame CJ**, Ficarro SB, White FM, Shabanowitz J, and Hunt DF. Sequence analysis: Low energy MS/MS-Peptide Interpretation. Chapter in: *Encyclopedia of Mass Spectrometry, Volume 2: Biological Applications*. R. Caprioli and M. Gross, eds. Elsevier, 2004.

Marto JA, **Brame CJ**, Ficarro SB, White FM, Shabanowitz J, and Hunt DF. Chemical derivitization for peptide sequence analysis and consideration for sequence analysis of peptides subjected to posttranslational modifications. Chapter in: *Encyclopedia of Mass*

Spectrometry, Volume 2: Biological Applications. R. Caprioli and M. Gross, eds. Elsevier, 2004.

Brame CJ, Moran MF, and McBroom-Cerajewski, LD. A mass spectrometry-based method for distinguishing between symmetrically and asymmetrically dimethylated arginine residues. *Rapid Communications in Mass Spectrom.* **18***:* 877-81, 2004.

Brame CJ, Boutaud O, Davies S, Yang T, Oates JA, Salomon RG, Roden DM, Morrow JD, and Roberts LJ, II. Modification of proteins by isoketal-containing oxidized phospholipids. *J. Biol. Chem.* **279**: 13447-51, 2004.

Zarling AL, Luckey CJ, Marto JA, White FM, **Brame CJ**, Evans AM, Lehner PJ, Cresswell P, Shabanowitz J, Hunt DF, and Engelhard VH. Tapasin is a facilitator, not an editor, of class I MHC peptide binding. *J Immunol*. **171**: 5287-95, 2003.

Davies SS, **Brame CJ**, Boutaud O, and Roberts LJ, II. Measurement of isoketal protein adducts by liquid chromatography electrospray tandem mass spectrometry. Chapter in: *Methods in Biological Oxidative Stress*. K. Hensley and RA Floyd, eds., pp 127-136, 2003.

Harnpicharnchai P, Jakovljevid J, Horsey E, Miles T, Roman J, Rout M, Meagher D, Imai B, Guo Y, **Brame CJ**, Shabanowitz J, Hunt DF, and Woolford JL, Jr. Composition and functional characterization of yeast 66S ribosome assembly intermediates. *Mol Cell* **8**: 505-515, 2001.

Boutaud O, Li J, Chaurand P, **Brame CJ**, Marnett LJ, Roberts LJ, II, and Oates JA. Oxygenation of arachidonic acid by cyclooxygenases generates reactive intermediates that form adducts with proteins. *Adv Exp Med Biol.* **500**:133-137, 2001.

Strahl BD, Briggs SD, **Brame CJ**, Caldwell JA, Koh SS, Ma H, Cook RG, Shabanowitz J, Hunt DF, Stallcup MR, and Allis CD. Methylation of histone H4 at arginine 3 occurs in vivo and is mediated by the nuclear receptor coactivator PRMT1. *Curr. Biol.* **11**: 996-1000, 2001.

Boutaud O, **Brame CJ**, Chaurand P, Li J, Rowlinson SW, Crews BC, Ji C Marnett LJ, Caprioli RM, Roberts LJ, II, and Oates JA. Characterization of the lysyl adducts of prostaglandin H-synthases that are derived from oxygenation of arachidonic acid. *Biochemistry* **40**: 6948-6955, 2001.

Mosammaparast N, Jackson KR, Guo Y, **Brame CJ**, Shabanowitz J, Hunt DF, and Pemberton LF. Nuclear import of histone H2A and H2B is mediated by a network of karyopherins, including Kap114p, Kap121p, Kap123p, and Kap95p. *J. Cell*. *Biol*. **153**: 251-262, 2001.

Roberts LJ, II, Chen Y, Boutaud O, Davies SS, Morrow JD, Oates JA, and **Brame CJ**. Reactive products of the isoprostane pathway: isoketals and cyclopentenone A_2/J_2-isoprostanes. Chapter in: *Advances in Prostaglanding and Leukotriene Research: Basic Science and New Clinical Applications*. B. Samuelsson, R. Paoletti, GC Folco, E. Granstrom, and S. Nicosia, eds. Kluwer Academic Publishers, 2001.

Hsu J-Y, Sun Z-W, Li X, Reuben M, Tatchell K, Biship DK, Grushcow JM, **Brame CJ**, Caldwell JA, Hunt DF, Lin R, Smith MM, and Allis CD. Mitotic phosphorylation of histone H3 is governed by Ipl1/aurora kinase and Glc7/PP1 phosphatase in budding yeast and nematodes. *Cell* **102:** 279-291, 2000.

Reich EE, Zackert WE, **Brame CJ**, Chen Y, Roberts LJ, II, Hachey DL, Montine TJ, and Morrow JD. Formation of novel D-ring and E-ring isoprostane-like compounds (D-4/E-4-neuroprostanes) *in vivo* from docosahexaenoic acid. *Biochemistry* **29**: 2376-2383, 2000.

Roberts LJ, II, **Brame CJ**, Chen Y, and Morrow JD. Formation of novel reactive products via the isoprostane pathway. In: *Proc. 5th Internat. Conf. On Eicosanoids and Other Bioactive Lipids in Cancer, Inflammation, and Other Related Diseases*. KV Honn, S Nigam, L Marnett, and E Dennis, eds., Plenum Publishers, 2000.

Salomon RG, Sha W, **Brame CJ**, Kaur K, Subbanagounder G, O'Neil J, Hoff HF, and Roberts LJ, II. Protein adducts of iso[4]levuglandin E_2 in oxidized low density lipoprotein. *J. Biol. Chem*. **274**: 20271-20280, 1999.

Brame CJ, Boutaud O, Oates JA, and Roberts LJ, II. Characterization of lysyl adducts formed by the □-ketoaldehyde prostanoids LGE_2/D_2. *Biochemistry* **38**: 9389-9396, 1999.

Roberts LJ, II, Salomon RG, Morrow JD, and **Brame CJ**. New developments in the isoprostane pathway: identification of novel highly reactive □-ketoaldehydes (isolevuglandins) and characterization of their protein adducts. *FASEB J*. **13**: 1157-1168, 1999.

Roberts LJ, II, **Brame CJ**, Chen Y, Morrow JD, and Salomon RG. Formation of reactive products of the isoprostane pathway: isolevuglandins and cyclopenteneone isoprostanes. *Adv. Exp. Med. & Biol*. **469**: 335-341, 1999.

Brame CJ, Salomon RG, Morrow JD, and Roberts LJ, II. Identification of extremely reactive □-ketoaldehydes as products of the isoprostane pathway. *J. Biol*. *Chem*. **274**: 13139-13146, 1999.

Roberts LJ, II, **Brame CJ**, Chen Y, and Morrow JD. Novel eicosanoids: Isoprostanes and related compounds. *Methods Mol. Biol*. **120**: 257-285, 1999.

Morrow JD, Chen Y, **Brame CJ**, Yang J, Sanchez SC, Xu J, Zackert WE, Awad JA, and Roberts LJ, II. The isoprostanes: unique prostaglandin-like products of free radical-catalyzed lipid peroxidation. *Drug Metab. Rev*. **31**, 117-139, 1999.

Subbanagounder G, Salomon RG, Murthi KK, **Brame CJ**, and Roberts LJ, II. Total synthesis of iso[4]-levuglandin E_2. *J. Org. Chem*. **62**: 7658-7666, 1997.

SELECTED ORAL PRESENTATIONS AND WORKSHOPS

Invited talk: The Flipped Classroom, Empower2 Conference, Nashville, TN, June 2017.

Building and using rubrics. Vanderbilt Center for Second Language Studies, January 2017.

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Interpreting your course evaluations. Vanderbilt Arts and Science science faculty, January 2017.

Dealing with student distress. Vanderbilt Arts and Science science faculty, November 2016.

Active learning in two-minute increments. Vanderbilt Arts and Science science faculty, October 2016.

Active learning. Trevecca University, October 2016.

Syllabus writing workshop. Vanderbilt University. August 2016.

Evidence-based college science teaching. Vanderbilt new faculty orientation, August 2016.

Scaffolding student learning. Vanderbilt Course Design Institute, May 2016.

How learning works: a framework for evidence-based college science teaching. Vanderbilt Chemistry Department, April 2016.

Flipping the classroom two-day workshop at Bridgewater College, June 2015
Presentations:
Putting principles into practice
Effective educational videos

Annual conference of the American Organization of Contact Lens Educators, June 2015
Presentations:
Writing effective multiple choice questions (lecture and workshops)
Test-enhanced learning

Testing for learning : Test-enhanced learning effects. Vanderbilt University School of Nursing, January 2015.

Designing effective questions for homework, assignments, and exams. George Washington University, December 2014.

Identifying and helping at-risk students. Vanderbilt Nurse-Midwifery faculty, September 2014.

Getting started teaching : The importance of learning objectives and formative assessment. Teaching at Vanderbilt orientation for new faculty, August 2014.

Writing good multiple choice items. Vanderbilt faculty workshop, August 2014.

Writing and assessing multiple choice items. Southern College of Optometry, May 2014.

Successful approaches and models for mentoring. Vanderbilt Women in Science Symposium, April 2014.

Expanding the circle: How do we prepare faculty, graduate students, and post-docs to teach CUREs? CUREnet meeting, Cold Spring Harbor Lab, March 2014.

Incorporating research and design into undergraduate science and engineering classes. With Dr. Joel Barnett. GradSTEP, January 2014.

Developing your teaching portfolio: A faculty panel. CIRTL Coffee Hour, November 2013.

Flipping the classroom. Vanderbilt Medical Education Grand Rounds, October 2013.

SoTL programs for graduate students: Characteristics and Impact. ISSOTL, October 2013.

The flipped classroom: What, why, and how? Vanderbilt Educator Development Program workshop, September 2013.

Item analysis: How to determine if your multiple choice items are valid and discriminating. Nursing Education workshop, September 2013.

Flipping the classroom. Center for Teaching fall workshops, August 2013.

Thinking about how people learn: Implications for the science classroom. Centenary College faculty development workshop, June 2013.

Writing good multiple choice test items. Nursing Education workshop, April 2013.

Teaching across the generations: From boomers to millenials. Nursing Education workshop, December 2012.

Teaching blended and online classes: Seven principles of good practice. Nursing Education workshop, October 2012.

Investigating conserved sequences in CK1 protein kinases: Coupling teaching and research. Centenary College seminar series sponsored by Natural Science Division and Convocations Committee, September 2009.

Investigating conserved sequences in CK1 protein kinases: Coupling teaching and research. Department of Biochemistry and Molecular Biology, LSU Health Sciences Center-Shreveport, April 2009.

Identification of potential yeast casein kinase 1 substrates via a comparative phosphoproteomic analysis. Presented at the annual meeting of the American Society of Biochemistry and Molecular Biology, Washington, D.C. May 2007.

Using phosphoproteomics to understand cell migration. Presented to the November meeting of the local chapter of American Chemical Society, Shreveport, LA. November 2004.

Using phosphoproteomics to understand cell migration. Presented at the Natural Sciences Division Seminar Series, Centenary College, Shreveport, LA. October 2004.

Assessing differences between cell populations: Identification of differentially expressed and modified proteins. Presented at the Department of Pharmacology and Therapeutics seminar series, LSU-Health Sciences Center, Shreveport, LA. May 2004.

Differential expression and phosphorylation of membrane proteins using "gel free" proteomics. Presented at the FASEB Summer Research Conference, Snow Mass, CO. 2001.

Proteomics: From seeing differences to understanding pathways. Presented at the National Health and Environmental Effects Research Lab of the EPA, Research Triangle Park, NC. 2001.

Proteomics: an overview of current approaches. Presented at Taylor Technology, Princeton, NJ. 2000.

Isolevuglandins, highly reactive products of lipid peroxidation, preferentially form phospholipid-esterified adducts with membrane proteins *in vivo*. Presented at Department of Anesthesiology at the University of Alabama at Birmingham, Birmingham, AL. 1999.

Isolevuglandins, highly reactive products of lipid peroxidation, rapidly form protein adducts *in vivo*. Department of Biochemistry and Molecular Biology, Centre College, Danville, KY. 1998.

SELECTED STUDENT PRESENTATIONS OF COLLABORATIVE RESEARCH

Kristin D. Droege, Cynthia J. Brame, Brandt Eichman, Lauren Jackson, and Charles Singleton. Does online homework format impact student learning and interest in biochemistry? Presented at the Society for the Advancement of Biology Education Research, July 2017.

Mary E. Keithly, Cynthia J. Brame, Mark A. Woelfle, and Katherine L. Friedman. Blending it up: Active learning in a STEM classroom through the use of on-line materials. Presented at the American Chemical Society annual meeting, August 2015.

Gaurav Shah and Cynthia J. Brame. Isolation and phosphorylation analysis of Yck2, a CK1 protein kinase. Presented at the Centenary Student Research Forum, April 2012; awarded third place in the Natural Science oral competition.

Harry Chiang and Cynthia J. Brame. Does the RD pocket contribute to regulation of CK1 protein kinases? Presented at the Centenary Student Research Forum, April 2012.

MK Orsulak, Priscilla Hawthorne, and Cynthia J. Brame. Retinoid-containing anti-aging cosmiceuticals do not exhibit photocarcinogenicity in C57Bl/6 mice. Presented at the Centenary Student Research Forum, April 2012.

Wesley Carlisle and Cynthia J. Brame. Integration of mathematical approaches into the cell biology curriculum. Presented at the Centenary Student Research Forum, April 2011; awarded first place in the Humanities and Social Science oral competition.

Joshua Phillips, Lauren C. Larkin, Lucy C. Robinson, and Cynthia J. Brame. Ser243 in the activation loop of the Yck2 CK1 protein kinase may be an inhibitory phosphorylation site. Poster presented at 2011 Experimental Biology annual meeting, April 2011, and the Centenary Student Research Forum, April 2011.

Lauren C. Larkin, Lucy C. Robinson, and Cynthia J. Brame. Investigation of a potential tyrosine phosphorylation site in the activation loop of a yeast casein kinase 1 protein kinase. Poster presented at 2011 Experimental Biology annual meeting, April 2011. Poster also presented at Student Research Forum, April 2011; awarded second place in poster presentations.

Matthew N. Blam, Troy C. Messina, Cynthia J. Brame, and Lucy C. Robinson. Molecular modeling of casein kinase 1. Poster presented at 241st National American Chemical Society meeting, March 2011.

S. Elise McMahen, Wesley Carlisle, Jonathan Carrere, Marci McMahen, Lucy C. Robinson, and Cynthia J. Brame. Does phosphorylation of a conserved tyrosine regulate CK1 activity? Poster presented at Student Research Forum, April 2010.

Ahmad Azzawe, Chris Bryan, Bethany Joseph, MK Orsulak, Taylor Pahls, Joshua Phillips, Lucy C. Robinson, and Cynthia J. Brame. Does phosphorylation of an activation loop serine inhibit CK1 activity? Poster presented at Student Research Forum, April 2010.

Dallas Krentzel, Noor Azzawe, Michaela Berg, Caitlin Cavarra, John Cefalu, Jordan Day, Rob Grant, Sarah Kuruvilla, Ruth Litwinowicz, Colin McRae, Marco Rajo, Kelly Reed, Tyler Smith, Garrett Vick, Heather Wensler, Lucy C. Robinson, and Cynthia J. Brame. Investigation of the conserved RD pocket in the CK1 protein kinase family. Poster presented at Student Research Forum, April 2010; awarded third place in poster presentations.

Jessica L. Miller, Lucy C. Robinson, and Cynthia J. Brame. Investigation of a conserved serine residue in a yeast casein kinase 1 protein kinase. Poster presented at 2009 American Society of Biochemistry and Molecular Biology Student Poster Competition, April 2009. Poster also presented at Student Research Forum, April 2009.

Jordan Day, Lucy C. Robinson, and Cynthia J. Brame. Investigation of a conserved tyrosine residue in a yeast casein kinase 1 protein kinase. Poster presented at 2009 American Society of Biochemistry and Molecular Biology Student Poster Competition, April 2009. Poster also presented at Student Research Forum, April 2009; awarded third place in poster presentations.

Spencer Saulsbury, Cynthia J. Brame, and Lucy C. Robinson. Does Yck1/2 phosphorylation affect septin-dependent compartmentalization in yeast cells? Poster presented at 2009

American Society of Biochemistry and Molecular Biology Student Poster Competition, April 2009. Poster also presented at Student Research Forum, April 2009.

Jillian A. Kennedy, Lucy C. Robinson, and Cynthia J. Brame. Understanding the Differential Efficiency of Palmitoylation of Two C-terminal Cys Residues. Poster presented at the Student Research Forum, April 19, 2007. Awarded first place in poster presentations.

Jillian A. Kennedy, Elizabeth M. Wilson, Lucy C. Robinson, and Cynthia J. Brame. The Effect of Deletion of Four Consecutive Histidines on Yeast Casein Kinase 2 Function. Poster presented at Student Research Forum, April 21, 2006.

Talicia Johnson, Cheynita Metoyer, Lucy C. Robinson, and Cynthia J. Brame. Does instability of a mutant Yck2 protein require Yck2 kinase function? The effect of a kinase domain mutation in an unstable Yck2 mutant. Poster presented at Student Research Forum, April 21, 2006.

Kelly Waterhouse, Julia Reynolds, Lucy C. Robinson, and Cynthia J. Brame. Does deletion of a large glutamine/alanine-rich sequence alter function or localization of yeast casein kinase 2? Poster presented at Student Research Forum, April 21, 2006. Awarded second place in poster presentations.

Brittany Bjerke, Lucy C. Robinsin, and Cynthia J. Brame. The effects of the conversion of a lysine to an arginine in the catalytic site of Yck2 in *Saccaromyces cerevisiae*. Oral presentation at Student Research Forum, April 21, 2006.

Travis Reece, Michelle McNamara, Allyson Sandifer, Lucy C. Robinson, and Cynthia J. Brame. Membrane localization of Yeast Casein Kinase 2 by palmitoylation: Does distance from the carboxyl terminus matter? Oral presentation at Student Research Forum, April 21, 2006.

Brett Martin, Courtney Rome, Jennifer Wilson, Ashley Williams, Lucy C. Robinson, and Cynthia J. Brame. Effects of the deletion of 17 amino acids from the carboxyl terminus of Yeast Casein Kinase 2. Oral presentation at Student Research Forum, April 21, 2006. Awarded first place in oral presentations.

Beth Allen, Lucy C. Robinson, and Cynthia J. Brame. The effect of Yck phosphorylation of SEC4 on vesicle function with the plasma membrane. Poster presentation at Student Research Forum, April 2005.

COURSES TAUGHT

Advanced cell biology (2005-2012, alternative years)
Biochemistry (Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015, Fall 2016, Fall 2017, Fall 2018)
iSeminar: So you want to find a cure? An introduction to immersive experiences in the biosciences. (Spring 2018, Spring 2019)
Biology of cancer (2009-2013, alternative years)

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Cell biology (multiple sections, 2003-2011, with lab)
Genetics (2003-2012, with lab)
Principles and methods of biology (Fall 2004)
Techniques in molecular biology (Spring 2004)

PATENT

- Methods of Detecting Protein Arginine Methytransferase, and Uses Related Thereto. United States Patent 6,747,273, granted June 8, 2004.

GRANTS AND FELLOWSHIPS

- Centenary Student/Faculty Summer Research Grant, 2011. Purification and analysis of Yck2, a model CK1 protein kinase. Gaurav Shah (Centenary College, 2012).
- Louisiana Board of Regents Support Fund Educational Enhancement Grant for "Learning to think like a scientist: Using differential centrifugation and phase contrast microscopy in a multi-week, inquiry-based project." Awarded April 2009. $40,000 for one year.
- Centenary Research Professorship in Natural Sciences, 2008-2010. Investigation of lipid peroxidation induction of protein misfolding in a cell culture model of Parkinson's disease. $3000/year for two years.
- Centenary Student/Faculty Summer Research Grant, 2008. Student investigations of Yck2 stability, function and localization using mutant alleles created by BIOL 313 students as part of the project described below. Jordan Day (Centenary College, 2010) and Jessica Miller (Centenary College, 2010).
- Centenary Research Professorship in Natural Sciences, 2006-2008. Student investigations of CK1 structure and function via mutagenesis followed by analysis of function and localization. $3000/year for two years.
- Louisiana Board of Regents Support Fund Educational Enhancement Grant for "Enhancement of Biomolecular Tools at Centenary College" in collaboration with Dr. Scott Chirhart. Awarded April 2006. $47,802 for one year.
- Louisiana Board of Regents Support Fund Educational Enhancement Grant for "Proteomics in the Undergraduate Curriculum." Awarded April 2006. $47,803 for one year.
- National Science Foundation Grant for "Identification of substrates for the yeast Yck2 protein kinase" in collaboration with Dr. Lucy Robinson. Awarded September 2005. $370,838 for three years.
- Louisiana Board of Regents Grant within Research and Development Program and Research Competitiveness Subprogram for "Identification of substrates for the yeast Yck2 protein kinase" in collaboration with Dr. Lucy Robinson. Awarded June, 2005. $66,920 for two years.
- Faculty Summer Research Grant, Summer 2005.
- Mattie Allen Broyles Inaugural Year Research Chair, Sept. 2003-Sept. 2004.
- Dissertation Enhancement Award. Grant awarded by Vanderbilt Graduate School for expansion of thesis work, 1998.
- Predoctoral Fellowship, Pharmaceutical Research and Manufacturers of America (PhRMA) Foundation, 1997-1998.
- Vanderbilt University Graduate School Fellowship, 1994-1998.

- Interdisciplinary Graduate Program Fellowship, Vanderbilt University, 1994-1995.
- Barry Goldwater Scholarship for potential in science research, 1993-1994.

HONORS AND AWARDS

- Faculty Maroon Jacket. Awarded by senior leadership organization called the Maroon Jackets, April 2011.
- Zeta Tau Alpha January Professor of the Month. Awarded January 2006.
- Young Investigator Award. Oxygen '98 and '97, 5th and 4th annual meetings of the Oxygen Society.
- Phi Beta Kappa, academic honor society, 1994.
- Omicron Delta Kappa, honor society for leadership, 1994.

COMMITTEE AND ADVISING EXPERIENCE

- Immersion Vanderbilt Initiative Academic Strategic Plan committee, 2014-2016.
- Chair, Centenary Faculty Coordinating Committee, 2011-2012.
  - Carried membership on Centenary Board of Trustees
- Member, Centenary Trek Committee, 2010-2011.
  - Secretary, 2011.
- Member, Centenary Presidential Academic Advisory Task Force, fall 2009.
- Member, Centenary Academic Policy Committee, 2008-present.
  - Chair, 2009-2010.
  - Secretary, 2007-2008.
- Centenary advisor for the Barry M. Goldwater Scholarship competition, 2004-2012.
- Member, Centenary Premedical Advising Committee, 2004-2012.
- Advisor to Centenary's Nancy Christian Scholars, Jan. 2006-May 2008.
- Member, Centenary Faculty Development Committee, 2006-2007.
- Member, Centenary Plan Committee, 2004-2006.
  - Chair, 2005-2006.
  - Secretary, 2004-2005.

OTHER ACTIVITIES

- Ad hoc reviewer: *Teaching and Learning Inquiry; CBE—Life Sciences Education*; *Journal of Chemical Education*; other science education journals
- Coordinator, Centenary and LSU: Leaders for Undergraduate Learning and Research (CELLULAR) program, 2010-2012.
- Member, Signal Transduction Review Panel, Molecular and Cellular Biosciences, National Science Foundation, 2008.
- Ad hoc reviewer, Cellular Systems Cluster, Molecular and Cellular Biosciences, National Science Foundation, 2009.