CURRICULUM VITAE
Lynn Boyd

Arkansas State University
870-972-3079
lyboyd@astate.edu

EDUCATION

University of Utah - Salt Lake City, Utah 1986-1992
Ph.D. from Department of Human Genetics (1992)
Thesis: Translation of E74A protein in *Drosophila melanogaster*
Advisor: Dr. Carl S. Thummel

Wake Forest University - Winston-Salem, North Carolina 1979-1983
B.A. in Latin; Minor in Mathematics; *cum laude*

CURRENT POSITION

Dean, College of Sciences and Mathematics July 2019-present
Arkansas State University

PREVIOUS POSITIONS

Professor and Department Chair, Department of Biology July 2012-July 2019
Middle Tennessee State University

Associate Professor, Department of Biological Sciences, Aug. 2005-July 2012
University of Alabama in Huntsville

Visiting Investigator, National Institutes of Health NIDDK, July 2008-June 2009
Lab of Dr. Andy Golden (sabbatical)

Assistant Professor, Department of Biological Sciences, Jan. 1998-Aug. 2005
University of Alabama in Huntsville

Visiting Assistant Professor, Department of Biology July 1996-June 1997
Colgate University, Hamilton, NY

Post-Doctoral Fellow, Lab of Dr. Ken Kemphues Nov. 1992-July 1996
Cornell University

FELLOWSHIPS

American Cancer Society Post-Doctoral Fellowship	1992-1995
Basic Cancer Research Training Grant, University of Utah	1988-1990

GRANT FUNDING

Pending: National Institutes of Health. "Elucidating the Function of the Sperm Proteasome" R15 HD099661. $384,422. July 2019-June 2021.

National Institutes of Health. "Degradation of Sperm Organelles After Fertilization" R15 HD083882. $309,973. April 2015-March 2018.

UAHuntsville RCEU. Summer undergraduate research. $3000. 2011.

UAHuntsville RCEU. Summer undergraduate research. $3000. 2010.

National Science Foundation, PI. "MRI: Acquisition of a Confocal Laser Scanning Microscope with Multifluorescence Detection Capability" MRI 0923402. $415,000. September 2009.

National Institutes of Health. "ARRA: Administrative Supplement for Analysis of ubiquitination enzymes in *C. elegans"* R15 GM065444-03A1S1. $55,138. September 2009-March 2010.

UAHuntsville RCEU. Summer undergraduate research. $3000. 2008.

National Institutes of Health. "Analysis of ubiquitination enzymes in *C. elegans"* R15 GM065444-03. $218,250. April 2008-March 2011.

UAHuntsville RCEU. Summer undergraduate research. $3000. 2006.

National Institutes of Health. "Analysis of ubiquitination enzymes in *C. elegans"* R15 GM065444-02. $218,250. April 2005-March 2008.

National Institutes of Health. "The ubiquitin-proteasome pathway in *C. elegans* embryos" R15 GM65444. $145,500. April 2002-May 2004.

UAH Instructional Mini-grant. "Enhancement of DNA Amplification Facilities for the Genetics Core Course." $3,000. May 2002.

Order of the Eastern Star. Research support gift. $7000. October 2001.

National Science Foundation. Alabama Structural Biology Constortioum/EPSCoR, Co-Principal Investigator. $10,000. February 2001-January 2002.

American Cancer Society Grant. "Cell polarity and protein localization in *C. elegans* embryos" RPG 244-01-CSM. $375,000. July 2000- June 2003.

UAH Mini-grant. "Protein localization in nematode embryos." $8,500. January-October 2000.

UAH Mini-grant. "Protein localization and the generation of cellular diversity." $8,800. January-October, 1999.

PUBLICATIONS

P. Molina, Y. Lim, and **L. Boyd** (2019) Ubiquitination is required for the initial removal of paternal organelles in *C. elegans. Developmental Biology* in press.

K.L. Sampuda, M. Riley, and **L. Boyd** (2017) Stress Induced Nuclear Granules Form in Response to Accumulation of Misfolded Proteins in *Caenorhabditis elegans. BMC Cell Biology* 18:8.

C. Hajjar, K.L. Sampuda, and L. **Boyd** (2014) Dual roles for ubiquitination in the processing of sperm organelles after fertilization. *BMC Developmental Biology*, **14** (1) 6.

G. Skibinski, and **L. Boyd** (2012) Ubiquitination is involved in secondary growth, not initial formation of polyglutamine protein aggregates in *C. elegans*. *BMC Cell Biology,* **13** (1) 10.

S. Al Rawi, S. Louvet-Vallee, A. Djeddi, M. Sachse, E. Culetto, C. Hajjar, **L. Boyd**, R. Legouis, and V. Galy (2012) Allophagy: a macroautophagic process degrading spermatozoid-inherited organelles. *Autophagy.* **8** pp 421-423.

S. Al Rawi, S. Louvet-Vallee, A. Djeddi, M. Sachse, E. Culetto, C. Hajjar, **L. Boyd**, R. Legouis, and V. Galy (2011) Post-fertilization autophagy of sperm organelles prevents mitochondrial heteroplasmy. *Science.* **334,** pp. 1144-1147. Reviewed in Faculty of 1000.

L. Boyd, C. Hajjar, and K. O'Connell (2011) Time-lapse microscopy of early embryogenesis in *Caenorhabditis elegans. Journal of Visualized Experimentation* **54**. *e2582.*

R. Howard, P. Sharma, C. Hajjar, K. Caldwell, G. Caldwell, R. du Brueil, R. Moore, and **L. Boyd** (2007) Ubiquitin conjugating enzymes participate in polyglutamine protein aggregation. *BMC Cell Biology* **8**:32

Y. Hao, **L. Boyd**, and G. Seydoux (2006) Stabilization of cell polarity by the *C. elegans* RING protein PAR-2. *Developmental Cell* **10** pp. 199-208.

M. Gudgen, A. Chandrasekaran, T. Frazier, and **L. Boyd** (2004) Interactions within the ubiquitin pathway of *Caenorhabditis elegans*. *Biochemical and Biophysical Research Communications* **325** pp. 479–486.

T. Frazier, D. Shakes, U. Hota, and **L. Boyd** (2004) *C. elegans* UBC-2 functions with the anaphase promoting complex and has other non-APC related activities. *Journal of Cell Science* **117** pp. 5427-5435.

R. Moore, and **L. Boyd** (2003) Analysis of RING finger proteins required for embryogenesis in *C. elegans Genesis.* **38** pp. 1-12.

L. Boyd, S. Guo, D. Levitan, D. Stinchcomb, and K.J. Kemphues (1996) PAR-2 is asymmetrically distributed and promotes the association of P granules and PAR-1 with the cortex in *C. elegans* embryos. *Development* **122** pp. 3075-3084.

J.L. Watts, B. Etemad-Moghadam, S. Guo, **L. Boyd**, B.W. Draper, C.C. Mello, J.R. Priess, and K.J. Kemphues (1996) *par-6*, a gene involved in the establishment of asymmetry in early *C. elegnas* embryos, mediates the asymmetric localization of PAR-3. *Development* **122** pp. 3133-3140.

D.J. Levitan, **L. Boyd**, C.C. Mello, K.J. Kemphues, and D.T. Stinchcomb (1994) *par-2*, a gene required for blastomere asymmetry in *C. elegans*, encodes zinc-finger and ATP-binding motifs. *Proc. Natl. Acad. Sci.* **91** pp. 6108-6112.

L. Boyd, and C.S. Thummel (1993) Selection of CUG and AUG codons for *Drosophila E74A* translation depends on downstream sequences. *Proc. Natl. Acad. Sci.* **90** pp. 9164-9167.

L. Boyd, E. O'Toole, and C.S. Thummel (1991) Patterns of E74A RNA and protein expression at the onset of metamorphosis in *Drosophila*. *Development* **112** 981-995.

Book Chapters and Lab Manuals

L Boyd and K Sampuda (2018) "Molecular Chaperones and the Nuclear Response to Stress" in *Heat Shock Proteins and Stress,* Springer Publishing.

J Agee, **L Boyd**, and L Cseke (2011) "Inhibition of Gene Expression" in *Handbook of Molecular and Cellular Methods in Biology and Medicine*, third edition, CRC Press.

M Davis (2010) "BYS300- Cell and Developmental Biology Concepts and Investigations" Cengage Learning.

L Boyd (2008) "Symbiosis: Genetics Lab Manual" Prentice Hall Custom Publishing.

Poster Presentations at National/International Conferences

JM Evers, J Hayes, **L Boyd**. (2018) American Society for Cell Biology Meeting. San Diego, CA. Characterizing the role of the sperm specific proteasomal subunit RPN6.2 in *Caenorhabditis elegans*.

P Molina, Chelsea Campbell, **L Boyd**. (2018) Cell Dynamics Symposium. Vanderbilt University. Sperm derived organelle dynamics are regulated by UBC-18 during early embryogenesis in *C. elegans.*

P Molina, **L Boyd**. (2018) Association of Southeastern Biologists. Myrtle Beach, SC. Understanding the Role of Ubiquitin during the Elimination of Paternal Organelles in *C. elegans*.

K Sampuda, J Evers, and **L Boyd**. (2017) International *C. elegans* Meeting. UCLA. Stress Induced Nuclear Granules.

K Sampuda and **L Boyd**. (2016) Aging, Metabolism, Pathogenesis, Stress, and mRNAs Meeting. University of Wisconsin. Stress Induces Nuclear Protein Degradation.

P Molina, **L Boyd**. (2016) The Allied Genetics Conference. Orlando, FL. Ubiquitin conjugating enzymes required for tagging paternal organelles.

K Sampuda and **L Boyd**. (2015) International *C. elegans* Meeting. UCLA. Ubiquitin-and Proteasome-rich Spheres Form in Response to Cellular Stress.

P. Molina, **L Boyd**. (2015) International *C. elegans* Meeting. UCLA. Ubiquitin conjugating enzymes required for tagging paternal organelles.

J Sanders, **L Boyd** (2015) International *C. elegans* Meeting. UCLA. Ubiquitin localization changes as *C. elegans* undergo stress.

K Sampuda and **L Boyd**. (2014) Aging, Metabolism, Pathogenesis, Stress, and mRNAs Meeting. University of Wisconsin. Ubiquitin-and Proteasome-rich Spheres Form in Response to Cellular Stress.

K Sampuda and **L Boyd**. (2014) Midwest Stress Response and Molecular Chaperones Meeting. Northwestern University. Ubiquitin-and Proteasome-rich Spheres Form in Response to Cellular Stress.

J Sanders, **L Boyd** (2014) Midwest Stress Response and Molecular Chaperones Meeting. Northwestern University. Ubiquitin localization in muscle cells of *C. elegans* adults.

G Skibinski, and **L Boyd** (2011) International *C. elegans* Meeting. UCLA. The role of ubiquitin conjugating enzymes in polyglutamine protein aggregation.

C Hajjar, A Golden, and **L Boyd** (2011) International *C. elegans* Meeting. UCLA. Sperm mitochondria are associated with ubiquitinated vessicles after fertilization.

G Skibinski and **L Boyd** (2011) Genomics Symposium at HudsonAlpha Institute for Biotechnology. The role of ubiquitin conjugating enzymes in polyglutamine protein aggregation.

L Boyd, and A Golden (2009) Ubiquitin Family Meeting. Cold Spring Harbor. Ubiquitination in early development of *C. elegans.*

G Skibinski, and **L Boyd** (2007) Regional Worm Meeting. Madison, WI. Graduate student talk. Ubiquitin conjugating enzymes are not involved in the initial aggregation phase of polyglutamine protein aggregation.

D Hockman, C Hajjar, R Suessmann, P Sharma, and **L Boyd** (2007) Mechanisms of Neurodegeneration, Keystone Symposium. Toas, NM. Ubiquitin conjugating enzyme UBC-1 effects polyglutamine aggregates in *C. elegans*.

L Boyd, and U Hota (2006) Southeastern Division of the Society for Developmental Biology Meeting. Vanderbilt University. Functional overlap in genes encoding ubiquitin conjugating enzymes.

Y Hao, T Frazier, **L Boyd**, and G Seydoux (2006) International Worm Meeting. UCLA. Analysis of the RING finger protein PAR-2 implicates the ubiquitination machinery in polarity maintenance in the *C. elegans* zygote.

Y Hao, T Frazier, **L Boyd**, and G Seydoux (2004) Annual Meeting of the Society for Developmental Biology. Analysis of the RING finger protein PAR-2 implicates ubiquitination in polarity maintenance in the *C. elegans* zygote.

T Frazier, and **L Boyd** (2003) International *C. elegans* Meeting. UCLA. Analysis of the ubiquitin ligase activity of the *Caenorhabditis elegans* APC11 subunit of the anaphase promoting complex.

L Boyd, and T Frazier (2003) Cold Spring Harbor Meeting on *The Ubiquitin Family*. The RING finger protein, PAR-2, has E3 ubiquitin ligase activity in vitro.

J Snow, B Stevenson, and **L Boyd** (2002) Midwest Worm Meeting. St. Louis, MO. RNAi of the proteasome subunit, Rpt6, causes larval arrest.

A Odutola, C Morales, J Snow, T Meyers, and **L Boyd** (2002) Midwest Worm Meeting. St. Louis, MO. RNAi analysis of regulatory subunits of the proteasome.

B Squyres, and **L Boyd** (2001) International *C. elegans* Meeting. UCLA. Is PAR-2 an E3 ubiquitin ligase?

L Boyd (2001) International *C. elegans* Meeting. UCLA. A simple lab using single worm PCR and *dpy-5.*

J Snow, C Morales, R Moore, and **L Boyd** (2001) International *C. elegans* Meeting. UCLA. Functional analysis of potential E2 ubiquitin conjugating enzymes using RNAi.

L Boyd, B Squyres, and A Odutola (2001) Cold Spring Harbor Meeting: Proteolysis and Biological Control. Embryogenesis in *C. elegans* requires the ubiquitin pathway.

P Schwiensberg, and **L Boyd** (2000) East Coast Worm Meeting. Atlanta, Ga. Searching for factors responsible for PAR-2 cortical localization.

R Moore, J R Hudson, **L Boyd** (2000) East Coast Worm Meeting. Atlanta, Ga. Expression and functional analysis of RING finger domains in *C. elegans.*

SELECTED SERVICE ACTIVITIES

MTSU:

2018-2019	Environmental Health and Safety Committee
2017-2018	Chair, Chairs Council
2015-2019	Institutional Biosafety Committee
2016	Search Committee, Vice Provost for Academic Programs
2016	Search Committee, Vice Provost for Research/Graduate Dean
2016-2018	MT Engage Oversight Committee
2016-2017	Vice-Chair, Chairs Council
2012-2016	Chairs Council Member
2013-2019	President's Leadership Council
2014-2016	Advisory Board for Project Lead the Way
2013-2019	Advisory Board of MTSU MSPS program

UAH:

2011-2012	Member Graduate Council
2005-2012	Executive Committee, Partnership for Biotechnology Research
2010-2011	College of Science Promotion and Tenure Advisory Committee

2009-2010	Parliamentarian, Faculty Senate
2000-2011	Alabama State Science and Engineering Fair Judge Coordinator
2006-2011	Institutional Animal Care and Use Committee
2001-2011	Organizer for Annual Biotechnology Symposium
2010	Review Committee for Institute of Science Education
2010	Chair of Search Committee for 3 Visiting Professors
2003-2008	Faculty Senate Departmental Representative
2007-2008	Faculty Senate President
2003-2006	Chair of Personnel Committee, Faculty Senate
2006	Department of Chemistry Review
2005-2008	Graduate Program Coordinator
2004-2007	Chair, Biotechnology Science and Engineering Ph.D. Program Curriculum Committee
2005	Special Committee to Review OSP Policies and Procedures
2001	Search Committee for NMR Spectroscopy Center Director
2000	Search Committee for Graduate Dean

Reviewer for Journals

Genome Research
Journal of Molecular Biology
Clinical Genetics
Eastern Biologist
Tissue and Cell Research
Autophagy
Molecular and Cellular Biology
FEBS Letters
Development
Aging Cell
Nature Cell Biology
JoVE

Reviewer for Granting Agencies

National Science Foundation (ad hoc and panel reviews)
Israel Science Foundation
Parkinson's Disease Society
Vienna Science and Technology Fund

ADVISING/MENTORING

- Undergraduate student advisees, over 100
- Undergraduate student researchers, over 45
- Master's students thesis project in Boyd laboratory
  completed 11
  underway 1
- Ph.D. Student dissertation projects in Boyd laboratory,
  completed 4
- Post-Doctoral Fellow, Dr. Pratima Pandey, 2005-2007
- Visiting Scientist, Sang Min Lee, 2014-2016

SCIENTIFIC SOCIETIES and OTHER HONORS

Martin Luther King, Jr. Award, 2010-2011, Minority Graduate Student Association, UAHuntsville

HERS Summer Leadership Institute, June-July 2010

Outstanding Faculty Member Award, 2007-2008, UAH Student Government Association

Partnership for Biotechnology Research, Steering Committee Member, 2004 - 2012

Sigma Xi Scientific Research Society, Secretary of Local Chapter, 2003-2005