



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

HOLDEN THORP  
Chancellor

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March 24, 2011

President Thomas Ross  
Office of the President  
910 Raleigh Road, CB#9000

RECEIVED  
MAY 12 2011  
OFFICE OF THE PRESIDENT

Dear President Ross:

It is my pleasure to submit to you the nomination for appointment to the UNC Press Board of Governors for approval by the UNC Board of Governors. I wish to make the following nominee to succeed Professor Nina Allen, who is not eligible for reappointment.

- **LINDA HANLEY-BOWDOIN**, William Neal Reynolds Distinguished Professor, Department of Molecular and Structural Biochemistry, North Carolina State University (appointment effective 1 July 2011; term expires 30 June 2016).

The Board also approved the following reappointments:

- Eric Muller (term expires 30 June 2016)
- Gillian Cell (term expires 30 June 2016)

Thank you for your consideration of this request.

Very sincerely,

  
H. Holden Thorp

HHT:bl

cc: Bart Corgnati  
Brad Wilson, UNC Board of Governors

Thorp/pressbog2011

# UNC Press Board of Governors

## Chair

### **John P. (Jack) Evans**

Hettleman Professor of Business Administration  
Kenan-Flagler Business School  
University of North Carolina at Chapel Hill

**Term Expires 2015**

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Professor, Department of Botany  
North Carolina State University

**Term Expires 2011**

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### **W. Fitzhugh Brundage**

William B. Umstead Professor of History  
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University of North Carolina at Chapel Hill

**Term Expires 2013**

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### **Kathleen DuVal**

Associate Professor of History  
University of North Carolina at Chapel Hill

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University of North Carolina at Chapel Hill

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School of Information and Library Science  
University of North Carolina at Chapel Hill

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University of North Carolina at Chapel Hill

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### **James L. Peacock III**

Kenan Distinguished Professor of Anthropology  
University of North Carolina at Chapel Hill

**Term Expires 2014**

### **Loren Schweninger**

Elizabeth Rosenthal Excellence Professor of History  
University of North Carolina-Greensboro

**Term Expires 2013**

## CURRICULUM VITAE

### Linda Kay Hanley-Bowdoin

William Neal Reynolds Distinguished Professor  
Department of Molecular and Structural Biochemistry  
North Carolina State University  
Raleigh, NC 27695-7622  
[919] 515-6663  
[919] 233-1074 (fax)  
linda\_hanley-bowdoin@ncsu.edu

## EDUCATION

- 1986 Ph.D. Molecular Biology (advisor: Dr. Nam-Hai Chua). The Rockefeller University, New York, NY.
- 1981 M.Sc. Biochemistry (advisor: Dr. Byron Lane). University of Toronto, Toronto, Ontario, Canada.
- 1971 B.A. Biochemistry, *summa cum laude*. University of California, Riverside, CA.

## PROFESSIONAL EXPERIENCE

- 2005-present William Neal Reynolds Distinguished Professor, Department of Molecular and Structural Biochemistry, NCSU.
- 2000-2005 Professor. Department of Molecular and Structural Biochemistry, NCSU.
- 1993-present Associate Member. Department of Genetics, NCSU.
- 1995-2000 Associate Professor (with tenure). Department of Biochemistry, NCSU.
- 1990-1995 Assistant Professor. Department of Biochemistry, NCSU.
- 1987-1990 Postdoctoral Fellow (supervisor: Dr. Stephen Rogers). Plant Molecular Biology, Corporate Research, Monsanto Company, St. Louis, MO.
- 1986-1987 Postdoctoral Associate (supervisor: Dr. Olin Yoder). Department of Plant Pathology, Cornell University, Ithaca, NY.
- 1976-1978 Research Assistant (supervisor: Dr. Joel Shaper). Department of Pharmacology and Experimental Therapeutics, The Johns Hopkins University School of Medicine, Baltimore, MD.
- 1973-1976 Research Assistant (supervisor: Dr. Anthony Bellve). Laboratory of Human Reproduction and Reproductive Biology, Harvard Medical School, Boston, MA.

## HONORS

Fellow, American Association for the Advancement of Science  
William Neal Reynolds Distinguished Professor, College of Agriculture and Life Sciences, NCSU  
North Carolina State University Alumni Outstanding Research Award  
National Service Research Award Trainee in Cell Biology, The Rockefeller University.  
University of Toronto Open Fellowship.  
Connaught Fellowship, University of Toronto.

**Linda Hanley-Bowdoin**

William Neal Reynolds Distinguished Professor  
North Carolina State University

Phi Beta Kappa, University of California.  
Regents Scholarship, University of California.

**RESEARCH****Publications**

- Sánchez-Durán, M.A., Dallas, M.B., Ascencio-Ibañez, J.T., Reyes, M.I., Ruiz-Albert, J., Hanley-Bowdoin, L., Bejarano, E.R. (2011) Interaction between geminivirus replication protein and the SUMO conjugating enzyme is required for viral infection, submitted.
- Shen, Q., Liu, Z., Song, F., Xie, Q., Hanley-Bowdoin, L. Zhou, X. (2011) Tomato SlSnRK1 protein interacts with and phosphorylates geminivirus  $\beta$ C1 protein to attenuate viral infection, submitted.
- Nash, T.E., Dallas, M.B., Reyes, M.I., Buhrman, G.K., Ascencio-Ibañez, J.T., Hanley-Bowdoin, L. (2011) Functional analysis of a novel motif conserved across geminivirus Rep proteins, *J. Virol.*, **85**:1182-1192 (featured in Spotlight).
- Lee, T.-J., Pascuzzi, P.E., Settlege, S., Shultz, R., Tanurdzic, M., Rabinowicz, P.D., Menges, M., Zheng, P., Main, D., Murray, J.A.H., Sosinski, B., Allen, G.C., Martienssen, R.A., Hanley-Bowdoin, L., Vaughn, M.W., Thompson, W.F. (2010) *Arabidopsis* chromosome 4 replicates in two phases that correlate with chromatin state, *PLoS Genetics*, **6**(6): e1000982. doi:10.1371/journal.pgen.1000982.
- Sozzani, R., Maggio, C., Giordo, R., Umana, E., Bergounioux, C., Ascencio-Ibañez, J. T., Hanley-Bowdoin, L., Diego, A., Cella, R. (2009) The E2FD/DEL2 factor is a component of a regulatory network controlling cell proliferation and development in *Arabidopsis*. *Plant Mol. Biol.*, **72**:381-395.
- Shultz R.W., Allen, G.C., Lee, T.-J., Thompson, W.F., Hanley-Bowdoin, L. (2009) Dynamic localization of the DNA replication proteins MCM5 and MCM7 in plants, *Plant Physiol.* **150**:658-669.
- Shen, W., Reyes, M.I., Hanley-Bowdoin, L. (2009) *Arabidopsis* protein kinases GRIK1 and GRIK2 specifically activate SnRK1 by phosphorylating its activation loop, *Plant Physiol.* **150**:996-1005.
- Ascencio-Ibañez, J. T., R. Sozzani, T.-J. Lee, T.-M. Chu, R. D. Wolfinger, R. Cella, Hanley-Bowdoin, L. (2008) Global analysis of *Arabidopsis* gene expression uncovers a complex array of changes impacting the pathogen response and cell cycle controls during geminivirus infection, *Plant Physiol.* **148**:436-454.
- Arguello-Astorga, G., Ascencio-Ibanez, J.T., Dallas, M.B. Orozco, B.M., Hanley-Bowdoin, L. (2007) High frequency reversion of geminivirus replication protein mutants during infection, *J. Virol.* **81**: 11005-11015.
- Jordan, C.V, Shen, W., Hanley-Bowdoin, L., Robertson, D. (2007) Geminivirus-induced gene silencing of the tobacco retinoblastoma-related gene results in cell death and altered development, *Plant Mol. Biol.* **65**: 163-175.
- Shultz R.W., Tatineni, V.M., Hanley-Bowdoin, L., Thompson, W.F. (2007) Genome-wide analysis of the core DNA replication machinery in the higher plants, *Plant Physiol.* **144**, 1697-1714.
- Shen, W., Hanley-Bowdoin, L. (2006) Geminivirus infection up-regulates the expression of two *Arabidopsis* protein kinases related to yeast SNF1 and mammalian AMPK activating kinases. *Plant Physiol.* **142**:1642-1655.

## **Linda Hanley-Bowdoin**

William Neal Reynolds Distinguished Professor  
North Carolina State University

- Lopez-Ochoa, L., Ramirez-Prado, J., Hanley-Bowdoin, L. (2006) Peptide aptamers that bind to a geminivirus replication protein interfere with viral replication in plant cells, *J. Virol.* **80**:5841-5843.
- Shultz, R.W., Settlege, S.B., Hanley-Bowdoin, L., Thompson, W.F. (2005) A trichloroacetic acid-acetone method greatly reduces autofluorescence of protein extracts from plant tissues. *Plant Cell Biol. Rep.* **23**:1-5.
- Settlege, S.B., See, R.G., Hanley-Bowdoin, L. (2005) A geminivirus C3 protein – Replication enhancement and protein interactions, *J. Virol.* **79**:9885-9895.
- Arguello-Astorga, G., Lopez-Ochoa, L., Kong, L.-J., Orozco, B.M., Settlege, S.B., Hanley-Bowdoin, L. (2004) A conserved motif in the geminivirus replication protein interacts with the plant retinoblastoma homolog RBR. *J. Virol.* **78**:4817-4826.
- Castillo, A.G., Kong, L.-J., Hanley-Bowdoin, L., Bejarano, E.R. (2004) Interaction between a geminivirus replication protein and the plant sumoylation system. *J. Virol.*, **78**:2758-2767.
- Lee, T.-J., Shultz, R.W., Hanley-Bowdoin, L., Thompson, W.F. (2004) Establishment of rapidly proliferating rice cell suspension culture and its characterization by fluorescence-activated cell sorting analysis. *Plant Mol. Biol. Rep.* **22**:259–267.
- Egelkrout, E., Mariconti, L., Cella, R., Robertson, D., Hanley-Bowdoin, L. (2002) Two E2F elements regulate the proliferating cell nuclear antigen promoter differently during leaf development, *Plant Cell*, **14**: 3225-3236. (featured “In This Issue”).
- Nagar, S., Bass, H., Hanley-Bowdoin, L., Robertson, D. (2002) Host DNA replication is induced by geminivirus infection of differentiated plant cells. *Plant Cell*, **14**:2995-3007
- Kong, L.-J., Hanley-Bowdoin, L. (2002) A geminivirus replication protein interacts with a protein kinase and a motor protein that display different expression patterns during plant development and infection, *Plant Cell*, **14**:1817-1832.
- Peele, C., Jordan, C.V., Muangsang, N., Trunage, M., Egelkrout, E., Eagle, P., Hanley-Bowdoin, L., Robertson, D. (2001) Rapid silencing of combinations of genes using geminivirus-derived vectors, *Plant J.*, **27**:357-366
- Egelkrout, E., Robertson, D., Hanley-Bowdoin, L. (2001) Proliferating cell nuclear antigen transcription is repressed through an E2F consensus element and activated by geminivirus infection in mature leaves, *Plant Cell*, **13**:1437-1452.
- Settlege, S.B., Miller, A. B., Gruissem, W., Hanley-Bowdoin, L. (2001) Dual interaction of a geminivirus replication accessory factor with a viral replication protein and a plant cell cycle regulator, *Virology*, **279**:570-576.
- Kong, L.J., Orozco, B.M., Roe, J.L., Nagar, S., Ou, S., Feiler, H.S., Durfee, T., Miller, A.B., Gruissem, W., Robertson, D., Hanley-Bowdoin, L. (2000) A geminivirus replication protein interacts with retinoblastoma through a novel domain to determine symptoms and tissue-specificity of infection in plants, *EMBO J.* **19**:3485-3495.
- Bass, H., Nagar, S., Hanley-Bowdoin, L., Robertson, D. (2000) Chromosome condensation induced by geminivirus infection of mature plant cells, *J. Cell Sci.*, **113**:1149-1160.
- Orozco, B.M., Kong, L.J., Batts, L.A., Elledge, S., Hanley-Bowdoin, L. (2000) The multifunctional character of a geminivirus replication protein is reflected by its complex oligomerization properties, *J. Biol. Chem.*, **275**:6114-6122.
- Orozco, B.M. and Hanley-Bowdoin, L. (1998) Conserved sequence and structural motifs contribute to the DNA binding and cleavage activities of a geminivirus replication protein *J. Biol. Chem.*, **273**:24448-24456.

## **Linda Hanley-Bowdoin**

William Neal Reynolds Distinguished Professor  
North Carolina State University

- Orozco, B.M., Gladfelter, H.J., Settlage, S.B., Eagle, P.A., Gentry, R.N., Hanley-Bowdoin, L. (1998) Multiple cis elements contribute to geminivirus origin function. *Virology*, **242**:346-356.
- Gladfelter, H.J., Eagle, P.A., Fontes, E.P.B., Batts, L.A., Hanley-Bowdoin, L. (1997) Two domains of the AL1 protein mediate geminivirus origin recognition, *Virology*, **239**:186-197.
- Eagle, P.A., Hanley-Bowdoin, L. (1997) cis Elements that contribute to geminivirus transcriptional regulation and efficiency of DNA replication, *J. Virol.*, **71**:6947-6955.
- Ach, R.A., Durfee, T., Miller, A.B., Taranto, P., Hanley-Bowdoin, L., Zambriski, P.C., Grisse, W. (1997) RRB1 and RRB2 encode maize retinoblastoma-related proteins that interact with a plant D-type cyclin and geminivirus replication protein, *Mol. Cell. Biol.*, **17**:5077-5086.
- Orozco, B.M., Miller, A.B., Settlage, S.B., Hanley-Bowdoin, L. (1997) Functional domains of a geminivirus replication protein, *J. Biol. Chem.*, **272**:9840-9846.
- Settlage, S.B., Miller, A.B., Hanley-Bowdoin, L. (1996) Interactions between geminivirus replication proteins. *J. Virol.*, **70**:6790-6795.
- Orozco, B.M., Hanley-Bowdoin, L. (1996) A DNA structure is required for geminivirus origin function, *J. Virol.* **70**:148-158.
- Nagar, S., Pedersen, T.J., Carrick, K., Hanley-Bowdoin, L., Robertson, D. (1995) A geminivirus induces expression of a host DNA synthesis protein in terminally differentiated plant cells, *Plant Cell*, **7**:705-719, (featured "In This Issue").
- Eagle, P.A., Orozco, B.M., Hanley-Bowdoin, L. (1994) A DNA sequence required for geminivirus replication also mediates transcriptional regulation, *Plant Cell*, **6**:1157-1170.
- Fontes, E.P.B., Gladfelter, H.J., Schaffer, R.L., Petty, I.T.D., Hanley-Bowdoin, L. (1994) Geminivirus replication origins have a modular structure, *Plant Cell*, **6**:405-416.
- Fontes, E.P.B., Eagle, P.A., Sipe, P., Luckow, V.A., Hanley-Bowdoin, L. (1994) Interaction between a geminivirus replication protein and origin DNA is essential for viral replication, *J. Biol. Chem.*, **269**:8459-8465.
- Pedersen, T.J., Hanley-Bowdoin, L. (1994) Molecular characterization of the AL3 protein encoded by a bipartite geminivirus, *Virology*, **202**:1070-1075.
- Fontes, E.P.B., Luckow, V.A., Hanley-Bowdoin, L. (1992) A geminivirus replication protein is a sequence-specific DNA binding protein, *Plant Cell*, **4**:597-608.
- Hanley-Bowdoin L., Elmer J.S., Rogers S.G. (1990) Expression of functional replication protein from tomato golden mosaic virus in transgenic plants, *Proc. Natl. Acad. Sci. USA*, **87**:1446-1450.
- Hanley-Bowdoin L., Elmer J.S., Rogers S.G. (1989) Functional expression of the leftward open reading frames of the A component of tomato golden mosaic virus in transgenic tobacco plants, *Plant Cell*, **1**:1057-1067.
- Hanley-Bowdoin L., Chua N.-H. (1989) Transcriptional interaction between the promoters of the maize chloroplast genes which encode the  $\beta$  subunit of ATP synthase and the large subunit of ribulose 1,5-bisphosphate carboxylase. *Mol. Gen. Genet.*, **215**:217-224.
- Hanley-Bowdoin L., Elmer J.S., Rogers S.G. (1988) Transient expression of heterologous RNAs using tomato golden mosaic virus. *Nucleic Acids Res.*, **16**:10511-10528.
- Lam E., Hanley-Bowdoin L., Chua N.-H. (1988) Characterization of a chloroplast sequence-specific DNA binding factor. *J. Biol. Chem.*, **263**:8288-8293.
- Hanley-Bowdoin L., Chua N.-H. (1988) Transcription of the wheat chloroplast gene that encodes the 32 kd polypeptide. *Plant Mol. Biol.* **10**:303-310.
- Hanley-Bowdoin L., Chua N.-H. (1987) Chloroplast promoters. *TIBS* **12**:67-70.

## **Linda Hanley-Bowdoin**

William Neal Reynolds Distinguished Professor  
North Carolina State University

- Hanley-Bowdoin L., Orozco E.M., Chua N.-H. (1985) In vitro synthesis and processing of the maize chloroplast transcript encoded by the ribulose 1, 5 biphosphate carboxylase large subunit gene. *Mol. Cell. Biol.* **5**:2733-2745.
- Hanley-Bowdoin L., Lane B.G. (1983) A novel protein programmed by the mRNA conserved in dry wheat embryos. *Eur. J. Biochem.* **135**:9-15.
- Gozelczak Z., Stalolo M., Hanley-Bowdoin L., Kennedy T., Lane B.G. (1982) Synthesis and turnover of proteins and mRNAs in germinating wheat embryos. *Can. J. Biochem.* **60**: 389-397.
- Kennedy T.D., Hanley-Bowdoin L., Lane B.G. (1981) Structural integrity of RNA and translational integrity of ribosomes in nuclease-treated cell-free protein synthesizing systems prepared from wheat germ and rabbit reticulocytes. *J. Biol. Chem.* **256**:5802-5809.
- Bellve A.R., Anderson E., Hanley-Bowdoin L. (1975) Synthesis and amino acid composition of basic proteins in mammalian sperm nuclei. *Dev. Biol.* **47**:349-365.

### Invited Book Chapters and Reviews

- Lopez-Ochoa, L., Nash, T.,E., Ramirez-Prado, J., Hanley-Bowdoin, L. (2009) Isolation of peptide aptamers to target protein function. In Nucleic Acid and Peptide Aptamers. Series: Methods in Molecular Biology. Volume 535, pp. 333-360. Ed. G. Mayer, Humana Press, Inc. , Totowa, NJ.
- Hanley-Bowdoin, L., Settlege, S.B., Robertson, D. (2004) Reprogramming plant gene expression – A prerequisite to geminivirus DNA replication. *Mol. Plant. Path.* **5**:149:156.
- Hanley-Bowdoin, L., Settlege, S.B., Orozco, B.M., Nagar, S., Robertson, D. (1999) Geminiviruses - Models for plant DNA replication, transcription and cell cycle regulation *Cri. Rev. Plant Sci.* **18**:71-106 (republished in *Cri. Rev. Biochem. Molec. Biol.* **35**:105-140, 2000).
- Hanley-Bowdoin, L., Eagle, P.A., Orozco, B.M., Robertson, D., Settlege, S.B. (1996) In: Biology of Plant-Microbe Interactions (Stacey, Mullin, Gresshoff, eds). International Society of Molecular Plant-Microbe Interactions, St. Paul, MN, pp. 287-292.
- Hanley-Bowdoin L., Hemenway, C. (1992) Transgenic plants expressing viral genes. In: Genetic Engineering with Plant Viruses (Wilson, Davies, eds). CRC Press, Inc., pp. 251-295.
- Orozco E.M., Mullet J.E., Hanley-Bowdoin L., Chua N.-H. (1986) In vitro transcription of chloroplast protein genes. *Methods Enzymol.* **118**:232-253.
- Hanley-Bowdoin L., Orozco E.M., Chua N.-H. (1985) Transcription of chloroplast genes by homologous and heterologous RNA polymerases. In: Molecular biology of the photosynthetic apparatus (Arntzen, Bogorad, Bonitz, Steinback, eds). Cold Spring Harbor Press, pp. 311-318.

**Invention Disclosures** - nine since 1992

### **Patents and Licenses**

- Hanley-Bowdoin, L. , Lopez-Ochoa, L., Peptide aptamers that bind to the Rep proteins of ssDNA viruses, PCT Application No. PCT/US2006/030491 (filed 8/4/06)
- Evaluation License Agreement with Plant Biosciences Limited (Norwich, UK) and Krishidhan Seeds (Indore, India) (2/18/08)
- Hanley-Bowdoin, L. Orozco, B.M, Kong, L.-J., Gruissem, W. (1999) Geminivirus resistant transgenic plants. Patent Number 6,800,793. Awarded 10-5-04.
- Hanley-Bowdoin, L. Settlege, S.B. (1998) Geminivirus resistant transgenic plants expressing a mutant geminivirus AL3/C3 coding sequence. Patent Number 6,747,188. Awarded 6-8-04.

**Linda Hanley-Bowdoin**

William Neal Reynolds Distinguished Professor

North Carolina State University

**Funding History**Federal

- 2011-2016 GEPR: Epigenome dynamics during DNA replication, NSF Plant Genome, \$6.78M
- 2011-2014 The GRIK-SnRK1 protein kinase cascade and its potential role in regulating TCP transcription factors in Arabidopsis, NSF, \$705,000.
- 2006-2011 A broad-based geminivirus disease resistance strategy using peptide aptamers to interfere with viral replication and infection, USDA. \$399,992.
- 2006-2010 Geminivirus-resistant tomato plants: Combining transgenic and conventional strategies for multi-viral resistance (co-PI), BARD. (NCSU - \$111,000).
- 2004-2011 VGA - Global analysis of functional units of plant chromosomes: DNA replication, domain structure, and transcription (co-PI), NSF Plant Genome. \$5.13M
- 2003-2009 GRIK – A novel kinase involved in leaf development and geminivirus infection, NSF. \$445,000.
- 2003-2004 Global analysis of functional units of plant chromosomes: DNA replication, domain structure, and transcription (co-PI), NSF-SGER. \$50,000
- 2001-2005 Geminiviruses and plant gene expression. NSF. \$569,766.
- 2001-2005 Geminivirus Rep proteins: Host interactions and disease resistance. USDA. \$275,000.
- 2001-2003 Purchase of an oligonucleotide-based microarray system. (Co-PIs: S. Clouse and S. Muse) NSF, \$222,309
- 1998-2002 A geminivirus DNA replication protein - Reprogramming its plant host. NSF. \$339,000
- 1998-2001 Transcriptional control of a plant DNA synthesis factor in geminivirus-infected cells. (Co-PI - D. Robertson, NCSU Botany) USDA. \$160,000
- 1995-1998 Initiation of geminivirus replication. NSF. \$329,000
- 1996-1998 Geminivirus induction of a plant DNA synthesis factor. (Co-PI - D. Robertson, NCSU Botany) USDA. \$126,100
- 1993-1996 Plant DNA replication: An accessory factor for geminivirus replication. USDA. \$225,000
- 1991-1994 Geminiviruses as models for plant nuclear DNA replication. NSF. \$315,000
- 1993-1994 Purchase of a photon-counting video imaging system (Co-PI with S. Curtis [PI] and W. Thompson). NSF. \$73,431
- 1991 Geminiviruses as models for plant nuclear DNA replication. USDA. Grant funded, award not accepted.

Private Foundations

- 2006-2010 Development of broad-based resistance to African Maize streak virus disease. Rockefeller Foundation. (co-PI, PI - Jesse Machuka, University of Kenyatta) \$462,539.
- 2003-2006 A combinatorial chemistry approach for broad-based geminivirus disease resistance. Rockefeller Foundation. \$306,321.

Corporate

- 1996-1999 Mutant geminivirus proteins. Monsanto/Calgene Fresh. \$280,954
- 1996-1999 Educational aid grant, DuPont. \$55,000



**Linda Hanley-Bowdoin**

William Neal Reynolds Distinguished Professor  
North Carolina State University

**Regional**

- 2001-2002 Purchase of an oligonucleotide-based microarray system. NC Biotechnology Center, \$50,000
- 2000-2001 An aptamer-based interference strategy for eukaryotic single-stranded DNA viruses. NC Biotechnology Center, \$55,000.
- 1995-1996 Geminivirus resistant plants - A new approach. NC Biotechnology Center. \$40,000
- 1994-1995 Geminivirus promoters for transgene expression in plants. NC Biotechnology Center. \$40,000
- 1993-1994 Purchase of a photon-counting video imaging system (Co-PI with S. Curtis [PI] and W. Thompson). NC Biotechnology Center. \$62,650
- 1992-1993 Development of a shuttle vector for dicots. NC Biotechnology Center. \$40,000
- 1991-1992 Use of polycistronic mRNA to express multiple proteins in transgenic plants. NC Biotechnology Center. \$25,000

**University**

- 2005 CALS Equipment Grant, \$10,000
- 2001 CALS Equipment Grant, \$6000
- 1999 *In vitro* systems for studying geminivirus replication and transcription. CALS Research Initiative Grant. \$15,000
- 1998 CALS Equipment Grant, \$6000
- 1996 CALS Equipment Grant, \$2500
- 1994 Faculty Development Award, \$5000
- 1991 Replication of tomato golden mosaic virus DNA. Faculty Research and Professional Development Award, NCSU. \$3,500
- 1990 Geminivirus resistance strategies for tobacco. NC Tobacco Foundation. \$7,000

**Invited Lectures and Seminars**

- 2011 – III Brazilian Symposium on Plant Molecular Genetics, Ilheus, Brazil
- 2010 – Institute of Biotechnology, Zhejiang University, Hangzhou, China
- National Academy of Science, Beijing, China
- EMBO Workshop “Genomic approaches to interactions between plant viruses, their hosts and their vectors”, Fenestrelle (Torino), Italy
- Society of Experimental Biology, Prague, Czech Republic
- Plenary speaker, 6<sup>th</sup> International Geminivirus Symposium and ssDNA Comparative Virology Workshop, Guanajuato, Mexico
- Syngenta Biotechnology Inc., Research Triangle Park, NC
- Nagoya University/NCSU AgBiotech Industry Round Table, NC Biotechnology Center
- Department of Plant Biology, NCSU
- 2009 – Kenyatta University, Nairobi, Kenya
- Department of Molecular and Structural Biochemistry, NCSU
- Department of Plant Pathology, NCSU
- Department of Plant Biology, NCSU
- 2008 – USDA-NRI Awardee Meeting, Washington, DC
- First NCSU/UFV Plant Biotechnology Workshop, NCSU

**Linda Hanley-Bowdoin**

William Neal Reynolds Distinguished Professor

North Carolina State University

- Second NCSU/UFV Plant Biotechnology Workshop, UFV, Brazil
- 2007 – 5<sup>th</sup> International Geminivirus Symposium and ssDNA Comparative Virology Workshop, Ouro Preto, Brazil
- Rockefeller Foundation 3rd General Meeting: Biotechnology, Breeding and Seed Systems for African Crops, Maputo, Mozambique
- Department of Plant Pathology, University of Georgia
- 2006 – Plenary speaker, American Society of Virology Annual Meeting, Madison, WI
- 2005 – Plant Sciences Program, University of Arizona, Tucson, AR
- Department of Plant Pathology, Physiology and Weed Science, Virginia Polytechnic University, Blacksburg, VA
- 2004 – 5<sup>th</sup> International Workshop on Geminiviruses. Cape Town, South Africa
- 2003 – Symposium on Plant Virus Interactions, 8<sup>th</sup> International Congress of Plant Pathology, Christchurch, New Zealand
- American Phytopathological Society Annual Meeting, Charlotte, NC
- Biology Department, University of Missouri-St. Louis
- Danforth Plant Science Center, St. Louis, MO
- 2002 – Woolhouse Lecture, Society of Experimental Biology, Swansea, Wales, U.K
- First Satellite Meeting on Plant Viruses, Annual Meeting of the American Society of Virology, Lexington, KY
- EPSO Meeting on Plant Networks, Brunnen, Switzerland
- Plant Biology, Virginia Technical University, Blacksburg, VA
- Department of Genetics, NCSU
- 2001 – 3<sup>rd</sup> International Workshop on Geminiviruses, John Innes Institute, Norwich, UK
- Institute for Plant Sciences, ETH Zentrum, Zurich, Switzerland
- Department of Molecular Genetics and Cell Biology, University of Maryland – College Park
- 2000 – Designer Crops, Ghent, Belgium
- Friedrich Miescher Institute, Basel, Switzerland
- Institute for Plant Sciences, ETH Zentrum, Zurich, Switzerland
- Biology Department, Purdue University
- Microbiology Department, NCSU
- 1999 – Workshop on Cell Cycle Regulation and Cytoskeleton in Plants. Juan March Institute, Madrid, Spain
- National Meeting, The Brazilian Society of Biochemistry and Molecular Biology, Caxambu, Brazil
- International Course on the Structure, Function and Manipulation of the Plant Genome, Center for Investigation and Advanced Studies, Irapuato, Mexico
- 1998 – 3<sup>rd</sup> International Workshop on Bemisia and Geminiviruses, San Juan, Puerto Rico
- Department of Plant Sciences, University of California-Berkeley, CA
- Monsanto Company, St. Louis, MO
- 1997 – Calgene Fresh, Davis, CA
- 1996 – Keystone Symposium on Viral Genome Replication, Tamarron, CO
- State-of-the-Art Lecture, American Society of Virology, London, Ontario, Canada
- 8<sup>th</sup> International Congress of Plant-Microbe Interactions, Knoxville, TN
- Department of Plant Sciences, University of California-Berkeley, CA

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- Triagency Faculty Seminar Series, NCSU
- 1995 - American Phytopathological Society, Pittsburgh, PA
- Biology and Molecular Epidemiology of Geminiviruses, Tuscon, AR
- Calgene Fresh, Davis, CA
- Monsanto Company, St. Louis, MO
- DuPont Company, Wilmington, DE
- 1994 - EMBO Workshop on Plants and Viruses: Partners in Pathogenicity, Grignon, France
- First International Symposium on Geminiviruses, Almeria, Spain
- Southeastern Regional Virology Conference, Georgia State University, GA
- Monsanto Company, St. Louis, MO
- 1993 - Department of Genetics, NCSU
- NCSU Biotechnology Retreat, Research Triangle Park, NC
- Triangle Virology Seminar Series, Research Triangle Park, NC
- Department of Biology, New York University
- 1992 - Department of Biology, University of Michigan
- 1991 - Department of Botany, Duke University
- Plant Physiology seminar series, NCSU
- 1990 - NC Biotechnology Center Plant Molecular Biology Retreat, Beaufort, NC
- Department of Botany, NCSU

**ACADEMIC**

**Classroom Teaching** - As a biochemistry faculty member, I have taught ca. one course per academic year (3 semester hours or 45 lectures). At NCSU, undergraduate courses are designated by numbers from 100-499 while graduate courses are assigned numbers from 500-799.

Current courses

- BCH703        Biosynthesis of Macromolecules (1994-2010) - co-ordinate and teach sections on DNA replication and transcription
- BCH/GN761    Advanced Molecular Biology of the Cell (1994-2010, alternate years) - advance topic course on DNA replication, cell cycle regulation and programmed cell death
- BCH493        Special topics/problems in Biochemistry – undergraduate research (annually)

Past courses

- BCH541        Nucleic Acids (1992)
- BCH543        Biochemical Regulation (1993, 1991)
- BCH590G      DNA Replication and the Cell Cycle (1992)
- BCH605        Molecular Biology of the Cell (1995)
- BCH691        Graduate Seminar (1995, 1993)

Guest lectures

- HON 310       Creativity in the Sciences
- BIT815J       Microarrays
- MB130        Virology (UNC-CH Medical School, 1996)
- PP605        Molecular Plant Virology (1990)
- BCH495        Senior Seminar in Biochemistry (1995, 1994, 1991)
- BCH453        Metabolism and Molecular Biology (1997, 1996, 1995)

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BCH150 Survey in Biochemistry (1991)  
ALS103 Introductory Topics in Agriculture and Life Sciences (1994, 1992)

**Course Development**

BCH/GN761 Advanced Molecular Biology of the Cell  
BCH703 Biosynthesis of Macromolecules  
BCH605 Molecular Biology of the Cell

**Education Grants**

2005 – 2011 Faculty trainer on “Graduate training in molecular biotechnology at NC State University,” (PI – R. Kelly) NIH, \$1,356,805  
2005 – 2008 Faculty mentor on “Beckman Scholars Program,” (PI – L. Blanton) Beckman Foundation, \$154,400  
2006 – 2007 Outreach supplement for VGA - Global analysis of functional units of plant chromosomes: DNA replication, domain structure, and transcription (co-PI), NSF Plant Genome. \$62,683.  
1995 – 2000 Interdisciplinary research training group in transgenic plant technology for laboratory and field applications (PIs. Thompson, Chilton, Weissinger and 11 training faculty). NSF, \$1,869,620

**Advising** – 10 undergraduate biochemistry majors for 2008-2009

**Thesis Committees**

Current – 5 Ph.D. committees representing 3 departments, 1 M.S. committee  
Past – 19 Ph.D. and 9 M.S. committees representing 10 departments

**Research Training****Current Undergraduate Students**

Rachael Coppersmith  
Keleah Crouch  
Adam Festa  
Alison Neal  
Diana Vu  
Kim Wagner

**Past Undergraduate Students**

36 students, 25 of whom were supported by NSF RUE, NSF-MGE, NIH BRITE, AGEP, Beckman Scholars, Howard Hughes, RISE, R.J. Reynolds or Phillip Morris undergraduate research fellowships.

**Current Graduate Students**

Laura Greely (Ph.D. candidate, Biochemistry)  
Maria Reyes (Ph.D. candidate, Biochemistry)  
Allan Mugutu (Ph.D. candidate, Kenyatta University, Kenya)

**Past Graduate Students**

Tara Nash (Ph.D. 12/10, Postdoctoral Research Associate, NCSU)

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J. Trinidad Ascencio-Ibañez (Ph.D. 12/06, Teaching Assistant Professor, NCSU)

Erin Eaglekrou (Biochemistry Ph.D. 5/02, NIH GAANN Fellow, Main-Becton Dickenson Research Award; Scientist at Applied Biotechnology Institute, Cal Poly State University)

Ling-Jie Kong (Biochemistry Ph.D. 4/02, Main-Becton Dickenson Research Award; Scientist at Merck Pharmaceuticals)

Luca Sardo (Ph.D. 3/10, University of Turino, Italy, NIH postdoctoral associate)

Miguel Sanchez (Ph.D. 7/10, University of Malaga, Spain, EMBO fellow)

Araceli Castillo Garriga (Ph.D. 7/02, University of Malaga, Spain, EMBO fellow, Edinburgh University)

Patricia Eagle (Biochemistry Ph.D. 9/97, NIH Patricia Roberts Harris Fellow, Werk Research Award)

Anne Brier Miller (Biochemistry M.S. 8/96)

Thomas Watson (MLS - 3/93)

### Current Postdoctoral Researchers

Leandro de Leon (Fulbright Fellow)

Pete Pascuzzi

Wei Shen

### Past Postdoctoral Researchers

Gerardo Arguello-Astorga (PEW Fellow, Associate Professor, University of San Martin, Mexico)

J. Trinidad Ascencio-Ibañez (Teaching Assistant Professor, NCSU)

Gerardus Dambruaskus (Staff Scientist, Nimblegene, Iceland)

Elizabeth Fontes (CNPq Fellow; Professor of Biochemistry, University of Vicosa, Brazil)

Luisa Lopez-Ochoa (Staff Scientist, Department of Biochemistry and Plant Biology, Center for Scientific Investigation of the Yucatan, Mexico)

Beverly Orozco (PHS NRSA Fellow, Research manager, Talicris)

Thomas Pedersen (PHS NRSA Fellow; Director of Curriculum Development, SAS Institute)

Sharon Settlege (PHS NRSA Fellow; Instructor in technical writing, NCSU)

Randall Shultz (Senior Researcher, Monsanto Company)

Rosangela Sozzani (Postdoctoral Fellow, Duke University)

Fabrice Turin (Postdoctoral Fellow, University of Leon, France)

## **SERVICE**

### **Review Activities**

#### Study Sections

- NSF grants review panel on “Basic Research to Enable Agricultural Development” (2009)
- USDA-NRI review panel on “Plant Biology: Gene Function and Regulation” (2008)
- USDA-NRI review panel on “Genetic Processes and Mechanisms of Crop Plants” (2005)
- NSF grants review panel on the “Biochemistry of Gene Expression” (1997-2001)
- NC Biotechnology Center competitive grants review panel (1991)

#### Editorial Boards

- Associate Editor, Plant Molecular Biology (2002-present)
- Member of Editorial Board, Journal of Virology (2002-2010)
- Associate Editor, Molecular Plant-Microbe Interactions (1996-1998)

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**Other Activities**

- Participant – BMGF US-Africa Connections Workshop (Nairobi, Kenya, 2009)
- Participant – The National Plant Genome Initiative at Ten Years Workshop (Irvine, CA, 2008)
- Reviewer for Hayes Investment Fund program (Ohio Board of Regents, 1999)
- Ad-Hoc reviewer for NIH, NSF, USDA, and international competitive grants programs
- Ad-Hoc reviewer for Journal of Biological Chemistry, Journal of General Virology, Molecular Plant Pathology, Nucleic Acids Research, Phytopathology, Plant Cell, Plant Journal, Proceedings of the National Academy of Sciences, Science, Virology

**Committees****International**

- Member of Scientific Committee for the 6<sup>th</sup> International Geminivirus Symposium and ssDNA Comparative Virology Workshop (Mexico, 2010)
- Member of Agricultural Evaluation Panel for the Spanish National Research Council (Seville, Spain, 2009)
- Member of Scientific Committee for the 5<sup>th</sup> International Geminivirus Symposium and ssDNA Comparative Virology Workshop (Ouro Preto, Brazil, 2007)
- Member of international advisory committee for the 4<sup>th</sup> International Workshop on Geminiviruses (Norwich, U.K., 2001)
- Member of organizing committee for the 3<sup>rd</sup> International Workshop on Bemisia and Geminiviruses (San Juan, Puerto Rico, 1998)

**National**

- Member of USDA/APHIS Biotechnology and Scientific Services Panel on Viruses (1996)

**Regional**

- Coordinator for NC Plant Molecular Biology Consortium (1998-1999)
- Organizer for 13<sup>th</sup> annual Plant Molecular Biology Retreat (Ashville, NC, September 1999)
- Member of NC Plant Molecular Biology Consortium steering and seminar committees (1991-1992, 1996-1999)

**University**

- Office of Postdoctoral Affairs Faculty Advisory Committee (2008-present)
- Vice Chancellor for Research and Graduate Studies Nomination Committee (2008)
- Faculty Senate (2004-2008)
- Faculty Senate Executive Committee (2005-2008)
- Faculty Senate Subcommittee on Personnel Policy (2005-2008, co-chair)
- Faculty Senate Subcommittee on Infrastructure (2004-2005)
- UNC Tomorrow Faculty Team (2008)
- University Honorary Degree Committee (2007-2008)
- PACE Advisory Committee (2006-2007)
- Faculty Task Force on Graduate Student Tuition Remission (2005-2006)
- University Research Committee (2000-2005, chair for 2002-2003, Faculty Senate representative 2004-2005)
- University Reappointment, Promotion and Tenure Committee (2003-2005, Provost's representative)
- NCSU Post-doc Task Force (2003-2004, co-chair)
- University Research Operations Committee (2002-2003)

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- University Safety Committee (2002-2003)
- Search committee for the Associate Vice Chancellor of technology transfer (2002-2003)

**College**

- Genome Sciences Laboratory Board (2008-present)
- Keller Award Selection committee (2011)
- Cluster Hire Search Committee, Plants for Human Health Institute (2009-2011)
- CALS Strategic Planning Workshop (2008)
- Co-organizer – First NCSU/UFV Workshop on Plant Biotechnology (2008)
- William Neal Reynolds Distinguished Professor review committee (2007)
- College of Agriculture and Life Sciences faculty research committee (1996-2004)
- Genomic Sciences graduate faculty (1999-present)
- Genomics graduate recruiting committee (2002-2004)
- Biotechnology faculty (1990-present)
- University Library Committee (1996-2000)
- Agricultural Research Service strategic planning subcommittee on "Optimizing Structure and Function" (1995)
- Steering, curriculum and research/finance (chair) committees for Molecular, Cellular and Developmental Biology Graduate Program (1994)
- Search committee for assistant director of NC Agricultural Research Service (1994)
- Cell biology faculty search committee (Dept. of Zoology, 1993)

**Department**

- Departmental curriculum committee (2010)
- Matrone lecture (organizer, 2003)
- Departmental Review committee (chair-research, 2002)
- Graduate admissions committee (chair, 2000-2002 and 1992-1996, 2010)
- Graduate curriculum committee (2000)
- Junior faculty mentor (2000-2008)
- Faculty search committee (chair, 1997-1999)
- Head search committee (1995-1996)
- Departmental strategic planning committee (1995)
- Coordinator for Glaxo and Matrone lectures (1995, 2003)
- Departmental seminar committee (1995, 2004)