

M. Cran Lucas

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Summary of Achievements

LSUS Outstanding Faculty Award for Teaching: 1985, 1993, 2002

LSUS Merit Faculty Award: 1995

LSUS American Studies Fellowship: 1999

Teaching Experience

1988-Present	Professor of Biological Sciences, LSUS
1983-1988	Associate Professor of Biological Sciences, LSUS
1978-1983	Assistant Professor of Biological Sciences, LSUS
1977	Adjunct Assistant Professor of Biology, Florida State University

Postdoctoral Research Experience

1977-1978	University of Idaho Department of Biochemistry and Microbiology
1975-1977	University of Georgia Department of Genetics
1973-1975	University of Illinois Department of Botany

Education

Ph.D, Molecular Genetics, 1974
Washington State University
Pullman, Washington

B.S. Biology, 1969
Lewis and Clark College
Portland, Oregon

Courses Taught

BIOS 101 General Biology (for non-majors)

BIOS 106 Human Heredity and Society (for non-majors)

BIOS 120/120L General Biology and Lab (for majors)

BIOS 320/320L General Microbiology and Lab

BIOS 355 Dinosaurs

BIOS 420/420L/620/620L Cell Biology and Lab

BIOS 430/430L/630/630L Molecular Biology and Lab

BIOS 460/660 Microbial Genetics

BIOS 462/690 Astrobiology

BIOS 490/690 Biological Anthropology (Special Topics)

BIOS 490/690 Virology (Special Topics)

BIOS 785 Ecogenetics and Ecotoxicology

SC 480/680 History of Science

Other Teaching Opportunities

Taught a special cell biology lecture and lab course for the Biotechnology Magnet Program at Southwood High School, Shreveport, LA, Spring, 2009.

Courses Taught at LSU Health Science Center-Shreveport for Medical Technology Program:

MTEC 6151 Cell and Molecular Biology

MTEC 6180 Human Genetics

Professional Affiliations

American Association for the Advancement of Science

National Association of Biology Teachers

Selected Publications

Shupe TF, Piao C, Lucas C. 2011. Termite resistance of superhydrophobic wood treated with ZnO nano rods. Euro. J. Wood & Wood Prod. 69: DOI:10.1007/s00107-011-0563-x.

Wang, C., Piao, C., Lucas, C. 2011. Synthesis and characterization of superhydrophobic wood surfaces. J. Appl. Polym. Sci. **119** (3):1667-1672.

Banks, S. W., Lucas, M.C., Burden, B.J., Gossett, D.R., Ingold, J.L., Williams-Hart, T., Crnkovic, A.C. 2009. Preparation and Application of a Protein Standard Curve. *Vernier Advanced Biology Manual*. Vernier Instrument Company.

Gossett, D.R., Banks, S.W., Lucas, M.C. 2002. Signal Transduction Pathways Associated with the NaCl-Induced Up-regulation of Antioxidant Enzyme Activity in Cotton Callus Tissue. *In Current Research Developments in Plant Physiology* **3**:99-133. ISBN: 81-7736-154-6

Bellaire, B., J. Carmody, J. Braud, D. R. Gossett, S. W. Banks, and M. C. Lucas. 2000. Involvement of abscisic acid-dependent and independent pathways in the upregulation of antioxidant enzyme activity during NaCl stress in cotton callus tissue. *Free Radical Res.***33**:531-545.

Manchandia, A., S. W. Banks, D. R. Gossett, B. A. Bellaire, M. C. Lucas, and E. P. Millhollon. 1999. The influence of α -amanitin on the NaCl-induced upregulation of antioxidant enzyme activity in cotton callus tissue. *Free Radical Research* **30**:429-438.

Rajguru, S. N., S. W. Banks, D. R. Gossett, M. C. Lucas, T. E. Fowler, and E. P. Millhollon. 1999. Antioxidant response to salt stress during fiber development in cotton ovules. *Journal of Cotton Science* **3**:11-18.

Gossett, D.R., S.W. Banks, E.P. Millhollon, M. Cran Lucas. 1996. Antioxidant response to NaCl Stress in a control and NaCl-tolerant cotton cell line grown in the presence of paraquat, buthionine sulfoximine, and exogenous glutathione. *Plant Physiology* **112**:803-809.

Rainwater, D. T., D.R. Gossett, H.H. Hanna, E.P. Millhollon, S.W. Banks, and M.C. Lucas. 1996. The relationship between yield and the antioxidant defense system in tomatoes grown under heat stress. *Free Radical Res.* **25**:421-435.

Gossett, D. R., E. P. Millhollon, S. W. Banks, and M. Cran Lucas. 1995. Antioxidant Response to salt stress in cotton. *In Biochemistry of Cotton*. Cotton Incorporated, Raleigh, NC . pp 3-10.

Gossett, D. R., E. P. Millhollon, M. C. Lucas, S. W. Banks, and M. M. Marney. 1994. The effects of NaCl on antioxidant enzyme activities in callus tissue of salt-tolerant and salt-sensitive cultivars of cotton. *Plant Cell Reports.* **13**: 498-503.

D. R. Gossett, E. P. Millhollon, and M. C. Lucas. 1994. Changes in antioxidant levels in response to NaCl treatment in salt tolerant and sensitive cultivars of cotton, Gossypium hirsutum L. *Crop Science.* 34: 706-714.

S. W. Banks, D. R. Gossett, M. C. Lucas, E. P. Millhollon, and M. G. LaCella. 1993. Agrobacterium-Mediated Transformation of Kenaf (*Hibiscus cannabinus* L.) with the beta-Glucuronidase (GUS) Gene. *Plant Molecular Biology Reporter.* 11:101-104.

L. M. Hardy and M. C. Lucas. 1991. A crystalline protein is responsible for dimorphic egg jellies in the salamander, Ambystoma maculatum. *Comp.Biochem. and Physiology.* 100A: 653-660.

J. D. Goodrich, M. C. Lucas, and K. F. Worley. 1989. A comparison of the effect of zinc and fluoride on the growth and acid production of Streptococcus mutans. Louisiana Dental Assoc. J. 48:6-7.

M. C. Lucas, L. K. Shumway, and J. M. Hill. 1983. Electron microscopy of the quasi-crystalline protein-lipid-RNA complex from the ascomycete fungus Neurospora crassa. Proc. Louisiana Acad. Sci. 46:56-61.

M. C. Lucas and J. M. Hill. 1982. Characterization of a low molecular weight RNA from the cytoplasm of the ascomycete fungus Neurospora crassa. Proc. Louisiana Acad. Sci. 45:138-145.

M. C. Lucas, C. D. Peterson, and J. M. Hill. 1982. Multiple forms of the quasi-crystalline protein from the cytoplasm of the ascomycete fungus Neurospora crassa. Proc. Louisiana Acad. Sci. 45:146-154.

M. C. Lucas, J. W. Jacobson, and N. H. Giles. 1977. Characterization and *in vitro* translation of polyadenylated messenger ribonucleic acid from Neurospora crassa. J. Bacteriol. 130:1192-1198.

J. W. Jacobson, J. H. Hautala, M. C. Lucas, W. R. Reinart, P. Stroman, J. Barea, V. B. Patel, M. E. Case, and N. H. Giles. 1977. Regulation of quinate catabolism in Neurospora crassa: The qa gene cluster. In: Molecular approaches to eucaryotic genetic systems (ICN-UCLA Symposia on Molecular and Cellular Biology, Vol. 6) Eds. G. Wilcox, J. Abelson, and C. F. Fox. Academic Press, New York.

M. C. Lucas and L. N. Vanderhoef. 1975. The characterization of 5.8S ribosomal ribonucleic acid in Neurospora crassa. J. Bacteriol. 124:736-741.

Selected Presentations

Devkota, Om, Stephen W. Banks, M. Cran Lucas, Dalton R. Gossett and Patrick D. Colyer. *"Presence of Atrazine in Surface Waters of North Louisiana"*. Presented as a poster at the LSUS Annual Research Forum, April 25th 2014.

Hinson, Katherine R., Stephen W. Banks, M. Cran Lucas, Dalton R. Gossett. *"8-oxo-2-deoxyguanosine as an Indicator of Surgically Induced Stress in Dogs."* Presented as a poster at the LSUS Annual Research Forum, April 25th 2014.

Bird, Brandon A., M. Cran Lucas, Dalton R. Gossett, Patrick D. Colyer, and Stephen W. Banks "A Determination of the Concentration of Estrogenic Steroids in the Watersheds of Northwest Louisiana." Presented as a poster presentation at the Annual Meeting of the Southern Section of the American Society of Plant Biologists, Little Rock, Arkansas, 6th-8th April 2013.

Fowler, R. W., D. R. Gossett, S. W. Banks, M. C. Lucas, M.C. 2002. NaCl Stress Induces DNA Damage in Cotton Callus. Proceedings of the Beltwide Cotton Production and Research Conference. National Cotton Council Memphis.

Laboratory Manuals

Laboratory Manual for BIOS 101L/120L, 2nd Ed., LSU-S
M. C. Lucas, S. W. Banks, and B. Burden

Cell Biology Laboratory Manual, LSU-S.
M. C. Lucas

Molecular Biology Laboratory Manual, LSU-S.
M. C. Lucas

Grants

National Science Foundation
PI (1 grant/\$152,000)
Co-PI (1 grant/\$197,000)

LA. Board of Regents
PI (5 grants/\$141,000)
Co-PI (4 grants/\$253,000)

Magale Foundation
PI (4 grants/\$10,669)

American Heart Foundation-LA Student Research Grants
(16 grants/\$9,500)

LSUS Research/Development/Technology Grants
(17 grants/\$23,000)

University Service

Member, Health Science Advisory Committee (pre-med committee)
Member, School of Sciences Curriculum Committee
Member, School of Sciences Graduate Committee
Member, LSU System Radiation Safety Committee
Campus Radiation Safety Officer

Synergistic Activities: Innovations in Teaching.

Lucas, C., Banks, S., and Burden, B. (2009) BIOS 101L/120L Laboratory Manual, 2nd Ed.
LSUS

Banks, S. W., Lucas, M.C., Burden, B.J., Gossett, D.R., Ingold, J.L., Williams-Hart, T.,
Crnkovic, A.C., (2009) Preparation and Application of a Protein Standard Curve. *Vernier
Advanced Biology Manual*. Vernier Instrument Company.

Collaborators & Other Affiliations Collaborators and Co-Editors.

Dr. Dalton R. Gossett, Professor of Biological Sciences, LSUS., Dr. Stephen Banks,
Professor of Biological Sciences, LSUS, Dr. James, L. Ingold, Professor of Biological
Sciences.