MARK D. BUROW
Professor - Peanut Breeding and Genetics

Texas A&M University (75%)
Texas AgriLife Research
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Texas Tech University (25%)
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EDUCATION
Ph.D. University of Wisconsin-Madison. 1990. Plant Breeding/ Plant Genetics, Biochemistry.
B.A. St. Olaf College, Northfield, Minnesota. 1981. Chemistry.

PROFESSIONAL EXPERIENCE
Professor - Peanut Breeding and Genetics, Sep. 2014 -present.
Associate Professor - Peanut Breeding and Genetics, Sep. 2007 -2014.
Assistant Professor - Peanut Breeding and Genetics, Feb. 2001- August 2007.
Assistant Research Scientist, University of Georgia, Jan. 1999 - Jan. 2001. Peanut Genetics.
Postdoctoral research associate, Texas A&M University, Feb. 1994 - Dec. 1998.
Postdoctoral research associate, Louisiana State University. Mar. 1989 -Dec. 1993.
Graduate student, University of Wisconsin. Sep. 1982 - Jan. 1990.
Undergraduate student, St. Olaf College, Northfield, Minnesota. Sep. 1977-May 1981.

PROGRAM OVERVIEW
Goals of the program are, in collaboration with peanut breeding programs in College Station and Stephenville to
(1) release new cultivars for Texas growers, incorporating:
- high yield
- improved edible seed quality -early maturity, high oleic oil
- resistance to water deficit, heat, and salt stress
- resistance to disease and pests, especially leafspot, nematodes, and Sclerotinia blight

(2) Participate in the International Peanut Genome Initiative, and use genomics technology in cultivar development
(3) Participate in international collaborations with scientists, especially in Ghana and Burkina Faso through a Peanut and Mycotoxin Innovation Lab/ USAID project

Significant 5 Year Accomplishments
(1) Developer or co-developer of 5 released peanut cultivars (9 total).
(2) Identification of drought-tolerant peanut germplasm, coupled with identification of GWAS markers for drought tolerance.
(3) Developed transcriptome sequences of cultivated and wild species accessions, using these for genetic mapping and QTL analysis, and participation in the consortium to sequence the peanut genome.
(4) Identification of peanut and algal accessions capable of producing high amounts of oil.

PROFESSIONAL ACTIVITIES
Varieties and Germplasm Released
peanut: TamVal OL14 (under revision), Tamrun OL12, Schubert, Tamrun OL11, Red River Runner, Tamrun OL07, Tamnut OL06, TxAG-8, NemaTAM; 7 high-oil accessions disclosed.
algae: 7 accessions (TAMU-LBK-002, -009, -016, -017, -018, -020 [*Nitzschia* sp.] and TAMU-LBK-003 [*Scenedesmus rubescens*].

Direction of Graduate Students:
PhD students (1 current, 2 graduated)
MS students (2 current, 6 graduated)
Member of other thesis committees (3 PhD current, 5 PhD graduated, 0 MS current, 3 MS graduated)

Teaching:
Plant and Soil Science 6424, Structural Genomics of Plants and Animals, Texas Tech University.
Plant and Soil Science 3421, Introduction to Genetics, Texas Tech University.

Refereed Publications (10 most recent peer-reviewed publications)

Chopra, R., G. Burow, A. Farmer, J. Mudge, C. E. Simpson, T. A. Wilkins, M. R. Baring, N. Puppala, K. D. Chamberlin, and M. D. Burow. 2015 Next-Generation Transcriptome Sequencing, SNP discovery and Validation in Four Market Classes of Peanut, *Arachis hypogaea* L. Mol. Gen. Genet. 290(3):1169-80. doi: 10.1007/s00438-014-0976-4.

Chamberlin, K. D., J. P. Damicone, M. R. Baring, M. D. Burow, C. B. Godseye, R. S. Bennett, H. A. Melouk, and C. E. Simpson. 2015. Registration of High-Oleic Peanut Germplasm Line ARSOK-S1 (TX996784) with Enhanced Resistance to Sclerotinia Blight and Pod Rot. J. Plant Regist. 9(1):103-107.

Jiang, Y., K. S. Laverty, J. Brown, L. Brown, J. Chagoya, M. Burow, A. Quigg. 2015. Effect of silicate limitation on growth, cell composition, and lipid production of three native diatoms to Southwest Texas desert. J. Appl. Phycology 27: 1433-1442.

Chopra, R., G. Burow, A. Farmer, J. Mudge, C. E. Simpson, and M. D. Burow. 2014. Comparisons of De Novo Transcriptome Assemblers in Diploid and Polyploid Species Using Peanut (*Arachis* spp.) RNA-Seq Data. PloS ONE. 9(12): e115055. doi: 10.1371/journal.pone.0115055

Burow, M. D., M. R. Baring, N. Puppala, C. E. Simpson, J. L. Ayers, J. Cason, A. M. Schubert, A. Muitia, and Y. López. 2014. Registration of 'Schubert' Peanut. J. Plant Regist 8:122-126.

Burow, M. D., M. R. Baring, J. L. Ayers, A. M. Schubert, Y. López. and C. E. Simpson, 2014. Registration of Tamrun OL12' Peanut. J. Plant Regist 8:117-121.

Burow, M. D., J. L. Starr, C.-H. Park, C. E. Simpson, and A. H. Paterson. 2014. Introgression of homeologous quantitative trait loci (QTLs) for resistance to the root-knot nematode [*Meloidogyne arenaria* (Neal) Chitwood] in an advanced backcross-QTL population of peanut (*Arachis hypogaea* L.) Mol. Breeding 34: 393-406.

Chagoya, J. C., J. Brown, M. S. Gomez, J. Zhang, Y. Jiang, K. Laverty, L. Brown, A. Quigg, and M. D. Burow. 2014. Media optimization and lipid formation of two native diatoms for cultivation in the Southwest Texas desert. J. Appl. Phycology 26: 2075-2085.

Jiang, Y., K. Starks-Laverty, J. Brown, M. Nunez, L. Brown, J. Chagoya, M. Burow, and A. Quigg. 2014. Effects of fluctuating temperature and silicate supply on the growth, biochemical composition and lipid accumulation of *Nitzschia* sp. Bioresource Technol. 154: 2336-344.

Neya, F. B., K. Koïta, M'bi B. Zagre, A. T. Nana, M. D. Burow, P. Sankara, and C. Simpson. 2013. Evaluation au champ de la performance de quelques lignees d'arachide (*Arachis hypogaea* L.) a grosses graines pour la resistance aux Cercosporioses de l'arachide dans la zone centre du Burkina Faso de 2010 à 2012. Annale de l'Université de Ouagadougou – Série C, vol. 009, décembre 2013.

Synergistic Activities
1. Executive Committee, International Peanut Genome Initiative (IPGI)
2. Member, American Peanut Research and Education Society (APRES)
3. Member, Crop Science Society of America (CSSA)
4. Member, American Association for the Advancement of Science (AAAS)
5. Member, Peanut and Mycotoxin Innovation Laboratory (PMIL)