

GARY ALFRED PAYNE

EDUCATION

Cornell University	Ph.D.	1977	Plant Pathology
Cornell University	M.S.	1973	Plant Pathology
N.C. State University	B.S.	1970	Agronomy

PROFESSIONAL EXPERIENCE

2002 - present	Co-director of Interdisciplinary Training Program in Agricultural Biology: Linking Emerging and Existing Technologies, NCSU, Raleigh, NC
2002 - present	Associate Director, Center for Integrated Fungal Research, NCSU, Raleigh, NC
1990 - present	Professor, Department of Plant Pathology, NCSU, Raleigh, NC
1985-1990	Associate Professor, Department of Plant Pathology, NCSU, Raleigh, NC
1978-1984	Assistant Professor Department of Plant Pathology, NCSU, Raleigh, NC
1977-1978	Research Associate, Laboratory of Agricultural Biochemistry. University of Nebraska, Lincoln, NE

HONORS AND AWARDS

2005	William Neal Reynolds Professor
2002	Certificate of Excellence for the development of agronomic education material in the category of publications: Koenning, S., Payne, G. and Carson, M.
2000-2001	ESCOPE/ACOP Leadership Training Program
1998	Inducted into Gamma Sigma Delta, 1998, Elected President 2000
1997	Fellow, American Phytopathological Society

PEER-RECOGNITION OF LEADERSHIP IN DISCIPLINE AND SCIENTIFIC COMMUNITY

2004-2005	Chair, Division O, Fermentation and Biotechnology. American Society for Microbiology
2000-2003	Co-chair CAST (Council on Agriculture and Science Technology) Task Force, "Mycotoxins: Risks and impacts in plant and animal systems"
1993-2002	Associate Editor, Applied and Environmental Microbiology (3 terms)
1992-1993	Associate Editor, Phytopathology
1998	CSREES Review Panel, Department of Plant Pathology, Iowa State
1997	CSREES Review Panel, Department. of Plant Pathology, Pennsylvania Sate University.
1995	Panel Manager, USDA/NRI, Competitive Grants
1992-1993	Panel Member, Strengthening Grants, USDA/NRI, Competitive Grants
1992	Review Panel, Mycotoxicology Unit, USDA/ARS/NCAUR, Peoria, IL
1989	CSRS Review Panel, Department Plant Pathology, University of Georgia
1989-1990	Panel Member, USDA/NRI Compleitive Grants

SCHOLARLY ACCOMPLISHMENTS-LIST OF PUBLICATIONS (LAST FIVE YEARS)

Original Research Articles in Refereed Journals

- Nielsen, K., G. A. Payne and R. S. Boston. 2001. Maize ribosome inactivating protein inhibits normal development of *Aspergillus nidulans* and *Aspergillus flavus*. *Mol. Plant Microb. Int.* 14:164-172.
- Price, M. S., J. J. Classen, and G. A. Payne. 2001. *Aspergillus niger* absorbs copper and zinc from swine waste water. *J. Bioresour. Technol.* 77:41-49.
- OBrian, G. O., Fakhoury, A. M. and Payne, G.A. 2003. Identification of genes differentially expressed during aflatoxin biosynthesis in *Aspergillus flavus* and *Aspergillus parasiticus*. *Fungal Genetics and Biology.* 2003. 39:118-27.
- Brown, R. L., C. S. Brown-Jenco, Bhatnagar, D., and Payne, G.A. 2003. Construction and preliminary evaluation of an *Aspergillus flavus* reporter gene construct as a potential tool for screening aflatoxin resistance. *Journal of Food Protection.* 66:1927-1931.
- Moore, K. G., Price, M. S., Boston, R. S., Weissinger, A.K., and Payne, G. A. 2004. A Chitinase from Tex6 Maize Kernels Inhibits Growth of *Aspergillus flavus*. *Phytopathology* 94:82-87.
- Bush, B. J., Carson, M. L., Cubeta, M. A., Hagler, W. M., and Payne, G. A. 2004. Infection and Fumonisin Production by *Fusarium verticillioides* in developing maize kernels. *Phytopathology* 94:88-93.
- Pirttilä, A. M., McIntyre, L. M., Payne, G. A., and Woloshuk, C. P. 2004. Expression profile analysis of wild-type and *fcc1* mutant strains of *Fusarium verticillioides* during fumonisin biosynthesis. *Fungal Genetics and Biology* 41:647-656.
- Yu, J. J., Chang, P.K. Ehrlich, K.C., Cary, J. W., Bhatnagar, D. Cleveland, T. E. Payne, G. A., Linz, J. E., Woloshuk, C. P. and Bennett, J. W. 2004. Clustered pathway genes in aflatoxin biosynthesis. *Applied and Environmental Microbiology* 70: 1253-1262.
- Xue, H. Q., T. G. Isleib, G. A. Payne, W. F. Novitzky, and G. OBrian. 2005. Aflatoxin Production in Peanut Lines Selected To Represent a Range of Linoleic Acid Concentrations. *Journal of Food Protection* 68:126-132.
- Price, M. S., Connors, S. B., Tachdjian, S., Kelly, R. M. and Payne, G. A. 2005. Aflatoxin conducive and non-conducive growth conditions reveal new gene associations with aflatoxin production. *Fungal Genetics and Biology* 42:506-518.
- Robertson, L.A., Kleinschmidt, C.E., White, D.G., Payne, G.A., Maragos, C.M., and Holland, J.B. 2005. Heritabilities and correlations of *Fusarium* ear rot resistance and fumonisin contamination resistance in two maize populations. *Crop Science* 46:353-361.
- Price, M. S., J. Yu, W. C. Nierman, H. S. Kim, B. Pritchard, C. A. Jacobus, D. Bhatnagar, T. E. Cleveland, and G. A. Payne. 2006. The aflatoxin pathway regulator AflR induces gene transcription inside and outside of the aflatoxin biosynthetic cluster. *FEMS Microbiology Letters* 255:275-9.
- Robertson, L. A., Jines, M.P., Balint-Kurti, P. J., Kleinschmidt, C. E., White, D. G., Payne, G. A., Maragos, C. M., Molnár, T. L. and Holland, J. B. 2006. QTL mapping for *Fusarium* ear rot and fumonisin contamination resistance in two populations of maize (*Zea mays*). *Crop Science* (accepted)

Research review articles in peer-reviewed journals

- Scheidegger, K. A. and Payne, G. A. 2003. Unlocking the secrets behind secondary metabolism: a review of *Aspergillus flavus* from pathogenicity to functional genomics. *J. of Toxicology* 22:423-459.
- Payne, G. A., A.M. Fakhoury, K. A. Scheidegger, M.S. Price. 2004. Genomic analysis of aflatoxin biosynthesis. Pages 89-97, in *New Horizon of Mycotoxicology for Assuring Food Safety. Proceedings of the International Symposium of Mycotoxicology in Kagawa 2003*, T. Yoshizawa, Ed. Tokyo, Japan.
- Georgianna, R and Payne, G. A. 2006. Regulation of aflatoxin biosynthesis. *Fungal Genetics and Biology* (in preparation)

Books and Book Chapters

- Fakhoury, A. K. and Payne, G. A. 2003. Genomics of filamentous fungi: A general overview. In D. K. Arora, ed. *Handbook of Fungal Biotechnology*. 2nd Ed. Volume 20 of the *Mycology Series*.
- Price, M. S. and Payne, G. A. 2004. Genomics and gene regulation of the aflatoxin biosynthetic pathway, p. 387-404. In Z. An (ed.), *Handbook of Industrial Mycology*. Marcel Dekker, Inc., New York.
- Bhatnagar, D., G. A. Payne, T. E. Cleveland, and J. F. Robens. 2004. Mycotoxins: Current Issues in USA. Pages 17-47, in *Meeting the Mycotoxin Menace*, Eds. H. Barug, H. P. van Egmond, R. Lopez-Garcia, W. A. van Osenbruggen, and A. Visconti. Wageningen Academic Publishers, Netherlands.
- Robertson, L.A., Payne, G.A., and Holland, J.B. 2005. Marker Assisted Breeding for Host Resistance to Mycotoxin Contamination. *Aflatoxin and Food Safety*, edited by H. Abbas. CRC Press (In Press).
- Richard, J. L. and G. A. Payne. 2003. Eds., *Mycotoxins: Risks in Plant, Animal, and Human Systems*. Task Force Report 139. Council for Agricultural Science and Technology. Ames, Iowa. 199 pages.
- Payne, G. A. and Cubeta, M. A. 2005. Biology and detection of fungal pathogens of humans and plants. In *Microbial Forensics*, Eds. R.G. Breeze, B. Budowle, and S. E. Schutzer. Elsevier Academic Press. New York.
- Payne, G. A. Genomics of *Aspergillus flavus*. In, *The Aspergilli: Genomics, Medical Applications, Biotechnology, and Research Methods*. Osmoni and Goldman CRC Press 2007.