

Curriculum Vitae ANNE E. OSBOURN

Education

- 1985 PhD, University of Birmingham, UK
- 1982 BSc, University of Durham

Posts held

- 2013-present Director, Norwich Research Park Industrial Biotechnology Alliance
- 2008-2013 Institute Strategic Programme Leader, John Innes Centre
- 2006-present Honorary Professor, University of East Anglia
- 2006-2008 Head, Department of Metabolic Biology, John Innes Centre
- 2005-present Group Leader, Department of Metabolic Biology, John Innes Centre
- 1999-2005 Group Leader, Sainsbury Laboratory, Norwich
- 1987-1999 Research Fellow, Sainsbury Laboratory, Norwich
- 1985-1987 Research Associate, John Innes Institute

Invited Lectures (selected - since 2012)

- Plenary, Gordon Research Conference on Natural Products and Bioactive Compounds, Andover, NH, US (2017)
- Templeton Lecture, University of Arkansas (Feb 2017)
- EFB 3rd Applied synthetic biology in Europe Lisbon, Portugal (2016)
- Plenary, Oats 2020 meeting, Birmingham UK (2015)
- EMBO/EMBL Conference on Emerging Biotechnologies, Heidelberg (2015)
- TERPNET, Vancouver, Canada (2015)
- Natural Product Discovery and Development in the Post Genomic Era, San Diego, US (2015)
- Plant Metabolic Engineering Gordon Research Conference, Waterville, US (2015)
- 26th International Conference on Arabidopsis Research, Paris, France (2015)
- 12th Symposium on Cytochrome P450 Biodiversity and Biotechnology, Kyoto, Japan (2014)
- 3rd International Conference on Plant Metabolism, Xiamen, China (2014)
- Banff Conference on Plant Metabolism, Banff, Canada (2014)
- 1st European Conference on Natural Products, Frankfurt, Germany (2013)
- 6th International Meeting on Synthetic Biology, London (2013)
- Phytochemical Society of North America, London, Ontario, Canada (2013)
- Australian Society of Biochemistry and Molecular Biology, Adelaide, Australia (2012)
- International Symposium on Cytochrome P450 Biodiversity and Biotechnology, Turin, (2012)

Panels and Committees (selected, since 2012)

- 2016 onwards SAB, Warwick Integrative Synthetic Biology Centre
- 2016 onwards SAB, The Genome Analysis Centre, Norwich
- 2015-2016 DOE Joint Genome Institute User Meeting Committee
- 2013-present International SAB, RIKEN Center for Sustainable Resource Science, Japan
- 2014-2016 Editorial Board, Molecular Plant
- 2009-present Editorial Board, New Phytologist: Trustee from 2012
- 2013-2016 BBSRC Appointments Panel

Awards and special lectures

- Branco Weiss Society in Science Fellowship (Oct 2005-10).
- Defelicé Endowed Lecture, Salem State College, US (Feb. 2005).
- National Endowment for Science, Technology and the Arts Dream Time Fellowship (2004-05).
- Medal of the University of Helsinki (2003).
- Visiting Fellowship, Japanese Ministry of Education, Culture, Sports, Science & Technology (2003).
- Whetzel-Westcott-Dimock Special Lecture, Cornell University (2003).

Founder: The Science, Art and Writing (SAW) Trust (UK reg. charity no. #1113386) – A science education charity (www.sawtrust.org).

Patents awarded

- Osbourn A, Haralampidis K, Melton R, Bakht S, Qi X. (2006). Root-specific promoters. Awarded US 19.07.11 (US 7,982,096)
- Qi X, Osbourn A (2004). Enzymes involved in triterpene synthesis. Awarded US 27.05.08, Mexico 27.07.09 (#268689), (US737828), Australia 24.03.11 (AU2005295733)
- Osbourn A, Haralampidis K (2000) Plant gene. Awarded US March 6th 2007 (US7186884), Australia 16.03.06 (#783739), Mexico 25.07.08 (#259077), Canada 10.05.11 (#2392435)

Selected publications (since 2012)

- Salmon M., Thimmappa, R.B., Minto, R.E., Melton, R.E., Hughes, R.K., O'Maille, P.E., Hemmings, A.M., Osbourn A. (2016) A conserved amino acid residue critical for product and substrate specificity in plant triterpene synthases. *PNAS* 113 (30):E4407-E4414
- Yu, N., Nuetzmann, H-W., MacDonald, J.T., Moore, B., Field, B., Berriri, S., Trick, M., Rosser, S.J., Kumar S.V., Freemont, P.S., Osbourn A. (2016) Delineation of metabolic gene clusters in plant genomes by chromatin signatures. *Nucl. Acids Res.* 44, 2255-2265
- Alagna, F., Geu-Flores, F., Kries, H., Panara, F., Baldoni, L., O'Connor, S.E., Osbourn A. (2015) Identification and characterization of the iridoid synthase involved in oleurope in biosynthesis in olive (*Olea europaea*) fruits. *J. Biol. Chem.* 291, 5542-5554
- Patron, N.J., *et al* (2015) Standards for plant synthetic biology: a common syntax for exchange of DNA parts. *New Phytol.* 208,13-19
- Liu, J., Osbourn, A., Ma, P.D. (2015) MYB transcription factors as regulators of phenylpropanoid metabolism in plants. *Mol. Plant* 8, 689-708
- Boutanaev, A., Zi, J., Nelson, D.R., Mugford, S.T., Peters, R.J., Osbourn, A. (2015) Investigation of terpene diversification across multiple sequenced plant genomes. *Proc. Natl Acad. Sci. USA* 112, E81-88
- Ma, P.D., Liu, J.Y., Osbourn, A., Dong, J.N., Liang, Z.S. (2015) Regulation and metabolic engineering of tanshinone biosynthesis. *RSC Advances* 5, 18137-18144
- Moses, T., Pollier, J., Shen, Q., Soetaert, S., Reed, J., Erfelinck, M.L., Van Nieuwerburgh, F.C., Vanden Bossche, R., Osbourn, A., Thevelein, J.M., Deforce, D., Tang, K., Goossens, A. (2015) OSC2 and CYP716A14v2 catalyze the biosynthesis of triterpenoids for the cuticle of aerial organs of *Artemisia annua*. *Plant Cell* 27, 286-301
- Nützmann, H.-W., Osbourn, A. (2015) Regulation of metabolic gene clusters in *Arabidopsis thaliana*. *New Phytol.* 205, 503-510
- Kemen, A.C., Honkanen, S., Melton, R., Findlay, K., Mugford, S.T., Hayashi, K., Haralampidis, K., Rosser, S., Osbourn, A. (2014) Investigation of triterpene synthesis and regulation in oats reveals a role for β -amyrin in determining root epidermal cell patterning. *Proc. Natl Acad. Sci. USA* 111, 8679-8684
- Thimmappa, R., Geisler, K., Louveau, T., O'Maille, P., Osbourn, A. (2014) Triterpene biosynthesis in plants. *Annu. Rev. Plant Biol.* 65, 225-257
- Nützmann, H.-W., Osbourn, A. (2014) Gene clustering in plant specialised metabolism. *Curr. Opin. Biotechnol.* 26, 91-99
- Geisler, K., Hughes, R.K., Sainsbury, F., Lomonosoff, G.P., Rejzek, M., Fairhurst, S., Olsen, C.E., Motawia, M.S., Melton, R., Hemmings, A., Bak, S., Osbourn, A. (2013) Biochemical analysis of a multi-functional cytochrome P450 (CYP51) enzyme required for synthesis of antimicrobial triterpenes in plants. *Proc. Natl Acad. Sci. USA* 110, E3360-3367
- Krokida, A., Delis, C., Geisler, K., Garagounis, C., Tsikou, D., Peña-Rodríguez, L.M., Katsarou, D., Field, B., Osbourn, A., Papadopoulou, K.K. (2013) Biosynthetic gene clusters for triterpenes in legumes. *New Phytol.* 200, 675-690
- Owatworakit, A., Townsend, B., Louveau, T., Jenner, J., Rejzek, M., Hughes, R.K., Saalbach, G., Qi, X., Bakht, S., Deb Roy, A., Mugford, S.T., Goss, R.J.M., Field, R.A., Osbourn, A. (2013) Glycosyltransferases from oat (*Avena*) implicated in the acylation of avenacins. *J. Biol. Chem.* 288, 3696-3704
- Xue, Z., Duan, L., Li, M., Guo, J., Ge, S., Dicks, J., O'Maille, P., Osbourn, A., Qi, X. (2012) Divergent evolution of oxidosqualene cyclases in plants. *New Phytol.* 193, 1022-1038
- Kleibenstein, K. Osbourn, A. (2012) Making new metabolites – Evolution of new metabolic pathways in plants. *Curr. Opin. Plant Biol.* 15, 415-423