

# PROFESSOR ANTHONY HALL

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## FURTHER/HIGHER EDUCATION

1993-1996 Leicester University, Department of Botany. PhD (Supervisor Prof. H.Smith FRS)  
1990-1993 University of Liverpool, BSc Honours Degree Molecular Biology

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## EMPLOYMENT RECORD

**September 2016-present** Earlham Institute, Head of Plant Genomics  
**December 2014-September 2016** University of Liverpool, Institute of Integrative Biology, Holbrook Gaskell Chair of Botany (Established 1884)  
**December 2013-December 2014** University of Liverpool, Institute of Integrative Biology, Professor in plant genetics  
**June 2010-December 2013** University of Liverpool, Institute of Integrative Biology. Reader  
**May 2010-June 2010** University of Liverpool, School of Biological Sciences. Senior Lecturer  
**September 2003- May 2010** University of Liverpool, School of Biological Sciences. Lecturer  
**November 1997-September 2003** University of Warwick, Dept of Biology, Post-Doctoral Research Associate working with Prof. A. Millar. Circadian gating of light responses and the isolation and characterisation of novel circadian mutants.  
**September 1999** Institute of Biology, Szeged, Hungary. Visiting Scientist, working with Dr F. Nagy. Setting up screen for the isolation of clock mutants.  
**October 1996 - August 1997** University of Leicester, Dept. of Botany, Part-time Research Technician in the lab of Prof H. Smith.

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## ADMINISTRATIVE EXPERIENCE

### External

#### Committee membership

Play an active role within the BBSRC, particularly with respect to response mode funding.

- Member of the Mid Term Review of BBSRC's Strategically-Funded Institutes panel (Rothamsted and IBERS)
- BBSRC committee B, Acting Co-Chair (spring 2014)
- BBSRC-UK/DBT-India "Crop Genomics and Technologies (CGAT)" Committee member
- BBSRC acting member on the Chair of Chairs committee. This is the final committee with responsibility for allocating £150 million of scientific funding over 3 days (Spring 2013).
- BBSRC sLoLa committee (Spring 2013)
- BBSRC committee B core member (Since 2010)
- BBSRC committee B member (Pool member since 2008)

I am a panel member for the Commonwealth Scholarship Commission. I sit on NASA/ESA grant review panels for the International Space Station and on the Norwegian Research council panel.

I was a member of the UK Arabidopsis steering committee (GARNET, 2012 elected member finish Dec. 2015).

The Gatsby charity foundation is a charity set up by Lord David Sainsbury and one key area the charity funds is plant science. Within the foundation I have played two roles:

- Gatsby Plants Mentor, a prestigious and invited position aimed at encouraging undergraduates into plant science.

- Gatsby Plants undergraduate programme advisory committee member

### Editorial and review

- Editor of the journal, “Plant Signalling and Behaviour” (since 2005)
- Review grants for the BBSRC, Research Committee B, Plants and Microbial Systems committee and the committee D, also regularly review for NERC, EPSRC, NSF and ERC.
- Regularly referee papers for high impact journals: Science, Current Biology, Plant Cell, Plant Physiology, New Phytologist and Plant Journal.

### External teaching/workshop/conference organisation

- **Organising software carpentry workshop, for plant science researchers at Warwick University, April 2014, University of Liverpool, November 2014.**
- **Organised “Data Mining with iPlant” training workshop 17-21 Sept. 2013.** Coordinating UK efforts to place the iplant API as a cloud computing solution for use of the HPC at Hartree
- **Organised and chaired 1 day UK Workshop in collaboration with The Genetics Society (26 Nov. 2012)** “New Technologies to Advance Plant Research” (95 international and UK delegates)
- **University of Warwick (2012-2014)** External examiner for their MSc in Systems Biology.
- **Regularly act as external PhD examiner**
- **Cold Spring Harbour Laboratories, USA** invited to run a session at the prestigious “Frontiers in Plant Research” summer school for post-doctoral scientists. Ran a one day lecture course on Plant genomics and a two day hands-on RNA-Seq workshop.
- **Established the North West Plant Science Forum** I led the formation of the North West Plant Science Forum, together with Prof Alistair Hetherington. The forum is for plant science researchers at the Universities of Lancaster, Manchester and Liverpool. I also **organised the 2006 and 2009 conferences.**

### University of Liverpool

#### **Research lead for IIB 2014- 2016**

Responsible for developing a research strategy for the Institute of Integrative Biology, an institute of 75 active researchers, covering research from structural biology to population ecology. I was instrumental in setting up the institute’s research themes. The role also includes developing an impact strategy and strategic approaches to enhance the generation of research income and improve research contribution.

- Chair a monthly research strategy committee for the IIB
- Sit on the institute’s senior management committee
- Sit on the faculty research and impact committees



Centre for  
Genomic Research

#### **A director in Centre for Genomic Research (CGR)**

I play a senior management role within the (CGR) The CGR is a not-for-profit service provider for the global community of cutting edge technologies in genomics and bioinformatics. Last year the CGR managed 257 sequencing projects with a turn over >6M. (<https://www.liverpool.ac.uk/genomic-research/>). As a director I am responsible for plant genomics and synthetic biology. I am lead PI /Co-PI on the £3.8M investment in the GeneMill and am responsible for the future strategy for the development and success the GeneMill within the CGR. I also directs plant genomics at Liverpool leading three international wheat genomics grants and the UK CyVerse cyber infrastructure grant.



**Director of the GeneMill**

The GeneMill was founded in Dec 2014 and is set to open in Feb 2016. It is a DNA synthesis centre funded by RCUK (£3.8M) as a collaborative DNA fabrication and synthetic biology assay platform for academia and industry. With funded industrial collaboration with Croda, Unilever and Skelene (<https://www.liverpool.ac.uk/genomic-research/services/genemill/>)

***Responsible for orchestrating the delivering the IIB pathways to impact, Chair of the Institute of Integrative Biology impact committee 2013- 2014***

Meet with a cross institute group of academic, staff and students to drive forward the institutes' impact agenda. Organise workshops, seminars and respond to funding opportunities.

***Organised the Institute of Integrative Biology Impact Day Jan 2013/Jan 2014/April 2015***

Organised impact day to showcase work within the institute, to the University, stakeholders and regional businesses for over 300 delegates. This provided a forum for outstanding output from established research groups and also PhD students.

***Co-ordinator of the School "Interdisciplinary Seminar Series", 2006-2009, weekly seminar***

Interdisciplinary research lies at the heart of my current research programme. I collaborate with mathematicians, engineers and computer scientists.

- This seminar series is aimed at fostering interdisciplinary research across campus. I identify key group leaders across campus to give a seminar each week and I have been responsible for organising and chairing the series.

***Director of Genetics with a Year in Industry BSc Sept 2005-2010***

Engagement with industry is a key objective for me, both in my research and teaching.

- Developed a website for students to discuss and find placements
- Worked with Trish Lunt to place two genetics student at XJTL University Business Park (China) and have developed links and have placed students with LGC, Glaxo Smith Kline and Astra Zeneca. Also SME's such as Aerotek and Eden Bioscience.
- Unified the way students search and apply for placements across the three placement programmes. This ensures consistency, reduces staff workload and allows students to benefit from the expertise of all three placement directors.
- Implemented a system of workshops to recruit 1<sup>st</sup> years across the School of Biological Science on to the year in industry course.
- Developed the Year in Industry into an MBiol course.

***Module co-ordinator for BIOL402 since Sept 2008 and BIOL209 since Sept 2009***

- I was module co-ordinator for two modules, these includes interacting with colleagues to develop the course, delivering the teaching, setting assessments and ensuring quality in the teaching and learning provided.

***I take an active role in providing advice and support in the preparation and writing of grants by colleagues***

- I regularly attend EU framework meetings and BBSRC meetings, and provide feedback to colleagues of funding opportunities.
- I am a member for the BBSRC committee B and provide feedback and insights into the funding process at the BBSRC.
- Using my expertise as a grant reviewer I read grants and offer constructive advice for colleagues throughout the institute mentoring young colleagues and offering them advice. I have recently worked with the institute manager to develop an internal peer review workflow which we are now implementing.

***PI of a large research group***

- I am group leader of an international research lab. It has been through the management of the group and the finances that has led to my current international standing in both circadian biology and plant genomics. I currently have 12 post-docs and 2 PhD students in my group.
- I collaborate with a number of groups throughout the institute and have had joint grants with both Prof. Neil Hall, Prof. Mike White, Dr John Kenny, Dr Alistair Darby and Dr Christiane Hertz Fowler. I also collaborate, held joint grants and have published with researchers at the Universities of Bristol, York, Edinburgh, Warwick, Cambridge, TGAC and the John Innes Institute in the UK and internationally with groups in Sweden, Germany, the US, Japan, India, Australia and Mexico

*Regularly sit on interview panels for staff recruiting post-doctoral and technical staff*

- I have attended the University training course in recruitment and selection and have interviewed staff for both research and academic posts

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## CONTINUED PROFESSIONAL DEVELOPMENT

- Completed MIT edx6.0. (2012) "Introduction to Computer Science and Programming."
- Completed three-week residential course at Cold Spring Harbour (2010) "Programming for biologists".
- Competent Python programmer.
- Completed The Certificate in Professional Studies in Learning and Teaching (2006)

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## RESEARCH INTERESTS

I have recently completed a prestigious **BBSRC Senior Research Development Fellowship** (2010 Oct-2013 Oct, BB/H022333/1) to develop next generation genetic tools for wheat (£401K). The fellowship has allowed me to bridge the gap between fundamental work in *Arabidopsis* and applied wheat research. It has led to both national and international collaborations and funding. I am now considered a leader in the field in plant genomics. It has also led to series of high profile publications, including (Brenchley *et al*, 2012; Gardiner *et al*, 2014; IWGS Consortium *et al*, 2015). My current research can be split into three research areas.

### Circadian research

I have a 3 year BBSRC grant (BB/K018078/1) in collaboration with Dr James Locke (Cambridge) and Dr Peter Gould (Liverpool) aimed at developing an understanding of the circadian clock at the single cell level in the context of a multicellular organism. The grant aims to challenge the assumption that the same clock system works in all cell types. This has implications for many networks where to date, our understanding is based on studying whole organisms. We are about to submit the second paper from this grant to Nature Plants.

Previously, I worked in the field of plant circadian biology for ten years. I was instrumental in the development of genetic and imaging technologies that I now use to dissect the circadian clock mechanism in *Arabidopsis*. This work has generated over 30 high impact publications, with an average citation number of over 50. My recent work has provided key insights into the molecular basis for temperature compensation of the *Arabidopsis* circadian oscillator (Gould *et al*. 2006) and the validation of a predicted three-loop feedback loop oscillator model in *Arabidopsis*. Most recently it has provided the first detailed understanding of temperature responses across a complex biological signalling network (Gould *et al*. 2013).

### Plant genomics research

Our plant genomics group started in 2009, and work has focused on developing next generation genetic approaches for plant research. To date we have generated a first draft wheat genome (Brenchley *et al.* Nature 2012) and epigenome (Gardiner *et al.* Genome Biology 2015). We developed a wheat exome capture and re-sequencing platform in collaboration with NimbleGen. We have developed novel strategies for the identification of EMS induced point mutations in *Arabidopsis* using high throughput sequencing (Ashelford *et al.* 2011) and extended these to wheat (Gardiner *et al.* 2014).

I currently lead three international wheat genomics projects: 1) a project to accelerate the breeding of new drought tolerance wheat varieties. The project is in collaboration with Rothamsted Research institute, the University of Lancaster and the Indian Directorate of Wheat Research. The project is co-funded by the BBSRC and Indian DBT (£1.2M). 2) ERA-CAPS INTREPID, characterising the wheat epigenome and its role in coordinating the three wheat sub-genomes, in collaboration with the JIC, US and Germany (€2.0M). 3) A wheat yield partnership grant (IWYP) using next generation genetic approaches together with field phenotyping to enhance photosynthesis in collaboration with Mexico and Australia (\$2.0M).

### **Synthetic Biology**

Director of the Liverpool GeneMill a DNA synthesis facility established as part of the RCUK strategy to improve the UK infrastructure for DNA synthesis. Over the last 2 years, the GeneMill has received £3.8M to invest in automated DNA fabrication and the associated software development. We are rapidly becoming the leading UK centre for DNA fabrication. We already have research projects funded by Unilever and Croda.

**See future research strategy for more details**

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### **FUNDING**

***Over the past 10 years I have been involved in writing over 60 RCUK grants to EPSRC, MRC, NERC and BBSRC as either a PI or Co-PI. These have included national and international collaborations.***

#### **Grants awarded**

##### **2017:**

**RCUK**, GCRF growing research capacity “Preserving, Restoring and Managing Colombian Biodiversity Through Responsible Innovation” (£6.5M Co-PI)

**BBSRC**, Strategic Programme “Designing Future Wheat (DFW)” (£24M Co-PI)

**BBSRC**, Strategic Programme, “From Genomes to Food Security and Healthy Life” (£5.5M Co-PI)

##### **2016:**

**BBSRC**, Tools and resources “A computational cloud framework for the study of gene families” (£182K, PI)

**BBSRC US-Partner award**. From Pathway Discovery to Re-engineering. (£49K) PI collaboration with the JGI.

**NEWTON Fund**, “Sequencing the genic portion of seeds of discovery advance pre-breeding germplasm to uncover the genetic variation” (£323K, PI), collaboration with CIMMYT, JIC and TGAC.

##### **2015:**

**International Wheat Yield Partnership (IWYP)**. Using Next Generation Genetic Approaches to Exploit Phenotypic Variation in Photosynthetic Efficiency to Increase Wheat Yield. (\$2M)

**lead PI** collaboration with CIMMYT (Mexico), Lancaster (UK) and ANU (Australia).

**European Research Area (ERA-CAPS)**, Investigating Triticale Epigenomes for Domestication, (£2.1M) (**lead PI**) collaboration with CSHL (US), JIC (UK), MIPS (Germany).

**BBSRC**, Synth 14, Assay Development Platforms. (£2.5M) (CoPI).

##### **2014:**

**BBSRC**, ALERT14, Liverpool BioAFM: an integrated optical and atomic force microscope for research across the life sciences. (£950K)(Co-PI)

**BBSRC**, ALERT14, Establishing a single cell genomics facility (£736K)(Co-PI)

**BBSRC**, iPlant UK: An E-science Environment for Biological Sciences (£1.8M) (Project lead) collaboration with Nottingham, TGAC, Warwick, Texas, Arizona

**BBSRC**, BBSRC-UK/DBT-India joint call in crop genomics. Combining field phenotyping and next generation genetics to uncover markers, genes and biology underlying drought tolerance in wheat. (£954K)(**lead PI**) collaboration with Lancaster, Rothamsted and India (DWR)

**BBSRC**, Synth13, Liverpool GeneMill (£2M)(PI)

#### **2013:**

**BBSRC**, ALERT13, Establishing Single Molecule Real Time Sequencing for the North of the UK. (£353K) (Co-PI)

**BBSRC**, ALERT13, Live 3D imaging using Light Sheet microscopy. (£246K)(Co-PI)

**BBSRC**, research grant (June 2013-June2016). Analysis of the circadian clock with single cell resolution in a multi-cellular context. (£950K)(PI) (Ranked 3<sup>rd</sup> out of 72), Collaboration with Cambridge and Liverpool

**MRC**, Optical microscopy special call (May 2013-May 2017). Liverpool Imaging Partnership: Molecular physiology and drug response (£1,250K)(Co-PI)

#### **2012-:**

**BBSRC**, research grant (Mar 2012- Mar 2016). Identification Of Genes Essential For Freezing Tolerance As Targets For Manipulation In Crops. (£820 K) (Co-PI), collaboration with Durham and Liverpool

**BBSRC**, research grant (Mar 2012-Mar 2015). Development and benchmarking of improved computational methods for transcript-level expression analysis using RNA-seq data. (£751K) (Co-PI), Collaboration with Liverpool and Manchester

**BBSRC**, research development fellowship (Oct 2010-Oct 2013). Developing Next Generation Genetic Tools for Wheat. (£401,034) (PI)

**BBSRC**, research grant (July 2009-July 2011), Mining the allohexaploid wheat genome for useful sequence polymorphisms. (£1.2 M) (Co-PI). (Ranked 1<sup>st</sup>). Collaboration with JIC, Bristol and Liverpool

**BBSRC**, Systems Biology Special Initiative. SABR initiative (Mar 2008-Mar 2013), "Regulation of signalling networks by temperature". (£921K to Liverpool total grant £6.5 million) (PI). Ranked Second. Collaboration with Exeter, Edinburgh, Warwick and Liverpool.

**Libyan Government**, PhD studentship ( Nov 2007-Nov 2010). "Is the circadian clock an important agricultural trait?" (£65K, PI)

**European commission**. Marie-Curie EST grant. "Sensing and Biological Responses to the Environment in Plants" (£865K, Co-PI).

**BBSRC**, research grant (May 2004-May2007) "The role of *G1* in the temperature compensation of circadian rhythms" Ref:BBS/B/11125. (£262K, PI). Ranked as "**A**" standard upon completion.

**University of Liverpool**, Research and Development fund, "Temporal Analysis of the proteome in model plant *Arabidopsis*: A pilot experiment" (6.5K, PI).

**Royal Society**, Research grant (July 2004-July 2005) "Simultaneous measurement of gene expression from two promoters in planta." (£14.5K, PI).

**University of Liverpool**, start up grant (£30K, PI).

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## **INVITATIONS TO SPEAK**

### **Invitations to speak- since arriving at Liverpool**

2016 San Diego, US 21<sup>st</sup> Plant and Animal genome conference "Genebanks, Genomics and Genetics"

2016 India Agro-Biodiversity conference "Present and Future Opportunities for Using Biodiversity for Wheat Improvement"

2015 UK,York BBSRC fellows meeting, "beyond the wheat genome"

2013 Japan, Yokohama IWGC conference, "Mutant hunting in wheat"



2012	Salzburg, Austria	SEB meeting, "Next generation wheat genetics"
2012	San Diego, US	19 <sup>th</sup> Plant and Animal genome conference, "Development of a wheat exome array"
2011	San Diego, US	18 <sup>th</sup> Plant and Animal genome conference, "Genome wide survey of wheat", invited speaker.
2010	Brazil, São Paulo	UK-Brazil Frontiers of Science meeting, "Plant development and climate change" Keynote speaker
2010	UK, Warwick	EPSRC Symposium Workshop on Clocks, Switches and Signals (CSS)
2009	UK, Durham	SEB meeting, Plant Temperature Response Networks. Speaker and session chair
2009	UK, Edinburgh	20 <sup>th</sup> International Conference on Arabidopsis Research, "Regulation of biological signalling by temperature (robust)"
2009	Dusseldorf, Germany	15 <sup>th</sup> International congress on Photobiology. "Changes in clock architecture with temperature"
2008	Marseille, France	SEB conference. "Temperature buffering of the plant circadian clock"
2007	Ventura, USA	Gordon conference, thermo-tolerance in plants "Temperature compensation of the circadian clock"
2006	Madison, USA	17 <sup>th</sup> International Arabidopsis conference "The molecular mechanism of temperature compensation in Arabidopsis"
2003	Marbury, Germany	International Plant Photobiology meeting "Keeping the clock ticking whatever the weather"

### UK invitations to speak.

Rothamsted, 2016; Nottingham, 2016; Cambridge, computational biology workshop, 2013; Edinburgh, systems biology seminar, 2009; York, Dept. seminar 2009; BBSRC "the future of plant genomics" Rothamsted, 2009; Warwick HRI, 2008; Warwick Systems Biology centre 2007; Manchester 2007; Edinburgh, British Council ,UK-China network 2006; North West Plant Science meeting 2006.

## INDUSTRIAL COLLABORATION

- Applied Biosystems, European field trial site for their RNAseq kit 2008-2009.
- Roche, £330,000 in support of our wheat genomic grant.
- Hamamatsu, test site for new cooled CCD cameras and software.
- Co-supervisor on case studentship (Oct. 2009) with Alzeim Ltd.
- Invited speaker at Promega's international meeting, 2004 Paris.
- Unilever Bedford, visiting lecturer 2010-2013.
- Nimblegen "Development of the wheat exome capture array". Now used as an international standard.
- Croda, hosting visiting post-doc to use synthetic biology to produce a sun tan lotion (£21K).
- Unilever, using synthetic biology to produce novel ingredients (£50K).

## OUT REACH

- Participated and help organise fascination in plants day at the Liverpool World Museum. Organised donating our old 454 sequencer to the museum.
- Development of educational resources for an international touring £2 million exhibition "Plant tastic" in association with Liverpool World Museum. Visited by over 150,000 school children and the general public in Liverpool. PHD and honours students ran workshops for school children over 5 weeks, providing important experiences in

communicating science to the public and establishing an on-going collaboration with the Liverpool World Museum and the IIB.

- Tutor at Gatsby undergraduate summer school
- University supervisor for Nuffield sixth form student summer bursaries 2006-2009. In 2009 my two students won both the regional and national final. Judge at the 2009 regional final.
- Invited speaker at Science and Plants for Schools (SAPS) discussion meeting in Cambridge

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## PUBLICATIONS

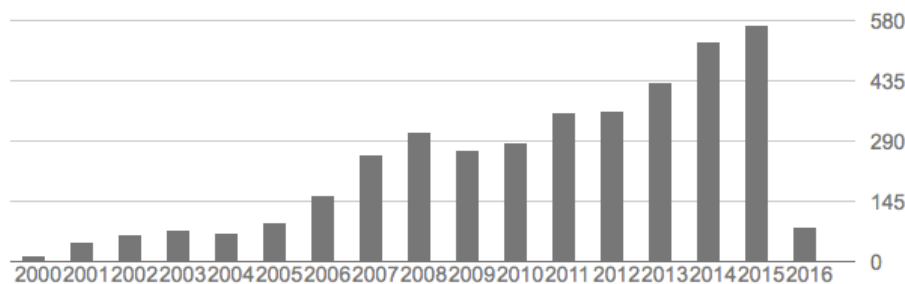
### Summary (google scholar data)

H- index 27, total citation 3996 with the tops 10 paper having 677, 413, 334, 264, 235, 210, 194, 140, 118, 113 citation. Including Nature(2), Science(1) and PNAS(1), together with discipline specific journals, Plant Cell, Genome Biology and Molecular Systems Biology.

Google Scholar: [https://scholar.google.co.uk/citations?user=TM\\_16JoAAAAJ&hl=en](https://scholar.google.co.uk/citations?user=TM_16JoAAAAJ&hl=en)

ORCID ID: <http://orcid.org/0000-0002-1806-020X>

Citations per year



### Books

“Endogenous Plant Rhythms” **Hall, A.** and McWatters, H., eds., (2006). Blackwells, Oxford, UK.

### Chapters

**Hall, A.**, and Brown, P. (2007). “Monitoring Circadian Rhythms in Arabidopsis Thaliana Using Luciferase Reporter Genes”. *Methods Mol Biol* 362, 143-152.

Southern, M.M., Brown, P., **Hall, A.** (2006). Luciferases as reporter genes. *Methods in Molecular Biology* 323. Arabidopsis protocols, 293-306.

### Journal publications.

1. Thomas Craig, Richard Holland, Rosalinda D’Amore, James Johnson, Hannah V McCue, Anthony West, Valentin Zulkower, Hille Tekotte, Yizhi Cai, Daniel Swan, Robert P Davey, Christiane Hertz-Fowler, Anthony Hall, and Mark Caddick Leaf LIMS: A flexible laboratory information management system with a synthetic biology focus *ACS Synthetic Biology* (accepted)
2. Rosalinda D’Amore, James Johnson, Sam Haldenby, Neil Hall, Margaret Hughes, Ryan Joynson, John G Kenny, Nicola Patron, Christiane Hertz-Fowler, **Anthony Hall** SMRT Gate: A method for validation of synthetic constructs on Pacific Biosciences sequencing platforms *Biotechniques* 63(1), 13–20



3. Laura-Jayne Gardiner, Pauline Bansept-Basler, Lisa Olohan, Ryan Joynson, Rachel Brenchley, Neil Hall, Donal Martin O'Sullivan and **Anthony Hall**. Using genic sequence capture in combination with a syntenic pseudo genome to map yellow rust resistance in hexaploid wheat. *Plant Journal* 2016 87(4), 403–419
4. James R. Johnson, Rosalinda D'Amore, Simon C. Thain, Thomas Craig, Hannah V. McCue, Christiane Hertz-Fowler, Neil Hall and **Anthony Hall**. GeneMill: A 21<sup>st</sup> Century Platform for Innovation. *Biochemical Society Transactions* 2016 44: 681-683
5. Laura-Jayne Gardiner, Mark Quinton-Tulloch, Lisa Olohan, Jonathan Price, Neil Hall and **Anthony Hall**. A genome-wide survey of methylation in hexaploid wheat. *Genome Biology* 2015, 16:273
6. Andrew J Tindall, Jade Waller, Mark Greenwood, Peter D Gould, James Hartwell, **Anthony Hall**. A comparison of high-throughput techniques for assaying circadian rhythms in plants. *Plant methods* 11 (1), 32 (2015).
7. Jelena Kusakina, Zoe Rutterford, Sean Cotter, María C Martí, David A Laurie, Andy J Greenland, **Anthony Hall**, and Alex A R Webb. Barley Hv CIRCADIAN CLOCK ASSOCIATED 1 and Hv PHOTOPERIOD H1 Are Circadian Regulators That Can Affect Circadian Rhythms in Arabidopsis. *PLoS ONE* 10, e0127449 (2015).
8. Ute Voß, Michael H Wilson, Kim Kenobi, Peter D Gould, Fiona C Robertson, Wendy A Peer, Mikaël Lucas, Kamal Swarup, Ilda Casimiro, Tara J Holman, Darren M Wells, Benjamin Péret, Tatsuaki Goh, Hidehiro Fukaki, T Charlie Hodgman, Laurent Laplaze, Karen J Halliday, Karin Ljung, Angus S Murphy, **Anthony Hall**, Alex A R Webb, and Malcolm J Bennett The circadian clock rephases during lateral root organ initiation in Arabidopsis thaliana. *Nat Comms* 6, 7641 (2015).
9. Katherine W Jordan, Shichen Wang, Yanni Lun, Laura-Jayne Gardiner, Ron MacLachlan, Pierre Hucl, Krysta Wiebe, Debbie Wong, Kerrie L Forrest, Andrew G Sharpe, Christine HD Sidebottom, Neil Hall, Christopher Toomajian, Timothy Close, Jorge Dubcovsky, Alina Akhunova, Luther Talbert, Urmil K Bansal, Harbans S Bariana, Matthew J Hayden, Curtis Pozniak, Jeffrey A Jeddloh, **Anthony Hall**, Eduard Akhunov. A haplotype map of allohexaploid wheat reveals distinct patterns of selection on homoeologous genomes. *Genome Biology* 16 (1), 48 (2015).
10. Laura Gardiner, Piotr Gawroński, Lisa Olohan, Thorsten Schnurbusch, Neil Hall, **Anthony Hall**. Using genic sequence capture in combination with a syntenic pseudo genome to map a deletion mutant in a wheat species. *The Plant Journal* 80(5), 895–904. (2014).
11. Niclas Gyllenstrand, Anna Karlgren, David Clapham, Karl Holm, **Anthony Hall**, Peter D Gould, Thomas Källman, Ulf Lagercrantz. No time for spruce: rapid dampening of circadian rhythms in picea abies (l. karst), *Plant and Cell Physiology* 55 (3), 535-550. (2014)
12. Piotr Gawroński, Ruvini Ariyadasa, Axel Himmelbach, Naser Poursarebani, Benjamin Kilian, Nils Stein, Burkhard Steuernagel, Goetz Hensel, Jochen Kumlehn, Sunish Kumar Sehgal, Bikram S Gill, Peter Gould, **Anthony Hall**, and Thorsten Schnurbusch A distorted circadian clock causes early flowering and temperature-dependent variation in spike development in the Eps-3Am mutant of einkorn wheat. *Genetics* 196, 1253–1261 (2014).
13. Antony N Dodd, Jelena Kusakina, **Anthony Hall**, Peter D Gould, Mitsumasa Hanaoka. The circadian regulation of photosynthesis. *Photosynthesis research* 119 (1-2), 181-190 (2014)
14. Dana R. MacGregor, Peter Gould, Julia Foreman, Jayne Griffiths, Susannah Bird, Rhiannon Page, Kelly Stewart, Gavin Steel, Jack Young, Konrad Paszkiewicz, Andrew J. Millar, Karen J. Halliday, **Anthony Hall** and Steven Penfield. HOS1 is required for correct circadian periodicity through the promotion of nucleo-cytoplasmic mRNA export in Arabidopsis. *Plant Cell* 25, 4391–4404 (2013)
15. Kusakina, J., Gould, P. D. & Hall, A. A fast circadian clock at high temperatures is a conserved feature across Arabidopsis accessions and likely to be important for vegetative yield. *Plant Cell Environ.* (2013).

16. Costa MJ, Finkenstädt B, Roche V, Lévi F, Gould PD, Foreman J, Halliday K, **Hall A** & Rand DA (2013) Inference on periodicity of circadian time series. *Biostatistics*
17. Dodd, A. N., Kusakina, J., **Hall, A.**, Gould, P. D. & Hanaoka, M. The circadian regulation of photosynthesis. *Photosyn. Res.* (2013). doi:10.1007/s11120-013-9811-8
18. Peter D. Gould, Nicolas Ugarte, Mirela Domijan, Maria Costa, Julia Foreman, Dana MacGregor, Ken Rose, Bärbel Finkenstädt, Steven Penfield, David A. Rand, Andrew J. Millar, Karen J. Halliday, **Anthony Hall** (2013). Network balance via CRY signalling controls the plant circadian clock over ambient temperatures. *Nature, Molecular Systems Biology* 9, 650.
19. Rachel Brenchley, Manuel Spannagl, Matthias Pfeifer, Gary L.A. Barker, Rosalinda D'Amore, Alexandra M. Allen, Neil McKenzie, Melissa Kramer, Dan Bolser, Suzanne Kay, Darren Waite, Yong Gu, Naxin Huo, Ming-Cheng Luo, Sunish Sehgal, Sharyar Kianian, Martin Trick, Ian Bancroft, Bikram Gill, Olin Anderson, Jan Dvorak, Paul Kersey, Richard McCombie, **Anthony Hall**<sup>1\*</sup>, Klaus F.X. Mayer<sup>\*</sup>, Keith J. Edwards<sup>\*</sup>, Michael W. Bevan<sup>\*</sup> and Neil Hall. (2012) Analysis of the allohexaploid bread wheat genome (*Triticum aestivum*) using comparative whole genome shotgun sequencing. *Nature* 491, 705–710 (2012) (**Co-corresponding author**), viewed over 44,000 times.
20. Winfield, M. O. Paul A. Wilkinson, Alexandra M. Allen, Gary L. A. Barker, Jane A. Coghill, Amanda BurrIDGE, Anthony Hall, Rachael C. Brenchley, Rosalinda D'Amore, Neil Hall, Michael W. Bevan, Todd Richmond, Daniel J. Gerhardt, Jeffrey A. Jeddelloh and Keith J. Edwards Targeted re-sequencing of the allohexaploid wheat exome. *Plant biotechnology journal* 10, 733–742 (2012).
21. Igor Y. Morozov, Meriel G. Jones, Peter D. Gould, Victoria Crome, James B. Wilson, Anthony J. W. Hall, Daniel J. Rigden and Mark X. Caddick mRNA 3' tagging is induced by nonsense-mediated decay and promotes ribosome dissociation. *Mol Cell Biol* 32, 2585–2595 (2012).
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\* Co-first author or co-corresponding author