

**Next Generation Sequencing –  
The Role of New Sequence Technologies in Shaping the  
Future of Veterinary Science**

**Hosted by the RCVS Charitable Trust**



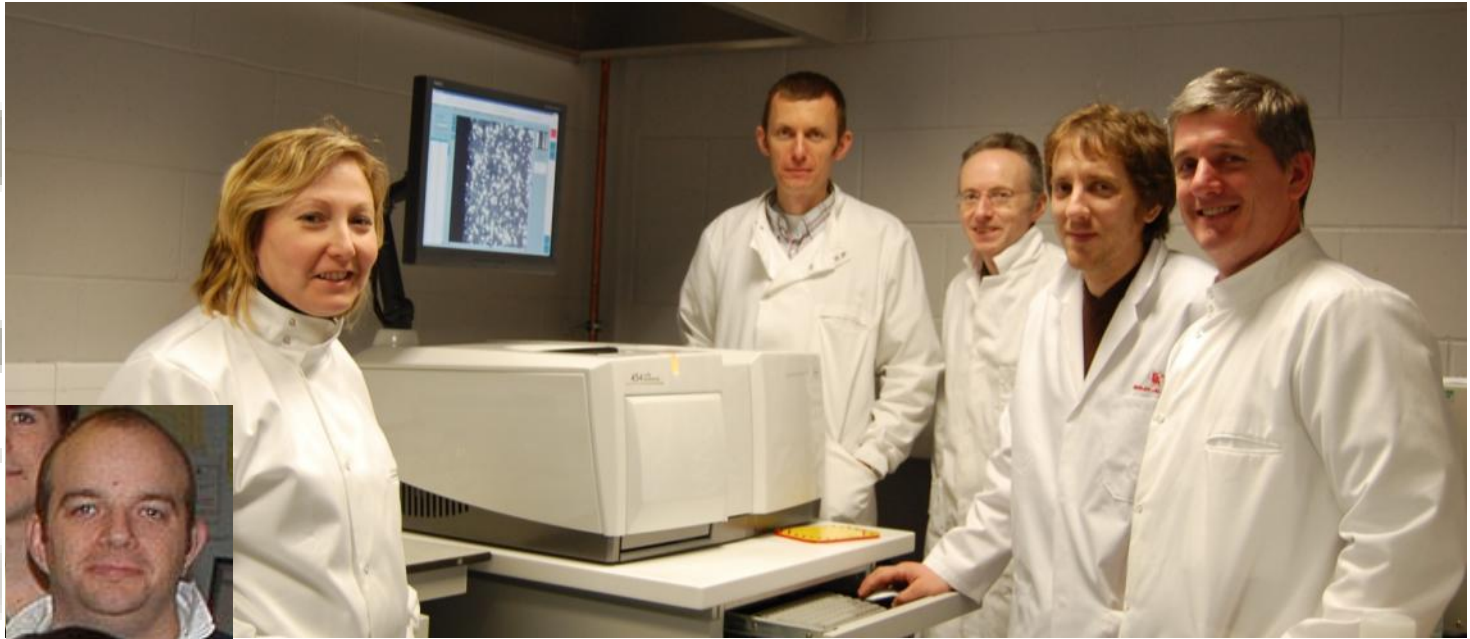
# 50 genomes for 50 years of the RCVS Trust



- Vetseq
- <http://www.liv.ac.uk/vetseq/>
- *Sep 2008 - Sep2011*
- To boost the next generation sequencing revolution in veterinary science

# 50 genomes for 50 years of the RCVS Trust

RCVS Trust  
**50**  
Golden Jubilee  
1958 - 2008



Gone from 1000 bases per night to 100 million bases per night!

# The process of genome selection

- Genomes invited by public call
  - 2008 (Vet Rec. 2008 Aug 16;163(7):225-6).
  - 2009 (email)
- Genomes selected based on
  - *Academic validity*
  - *Veterinary significance*
  - *Likelihood of delivery*
  - *Publication strategy*
- Independent review
  - *Vetseq plus.....*

Prof Tom Humphreys  
University of Bristol



Prof Andy Tait  
Vet Parasitology  
University of Glasgow



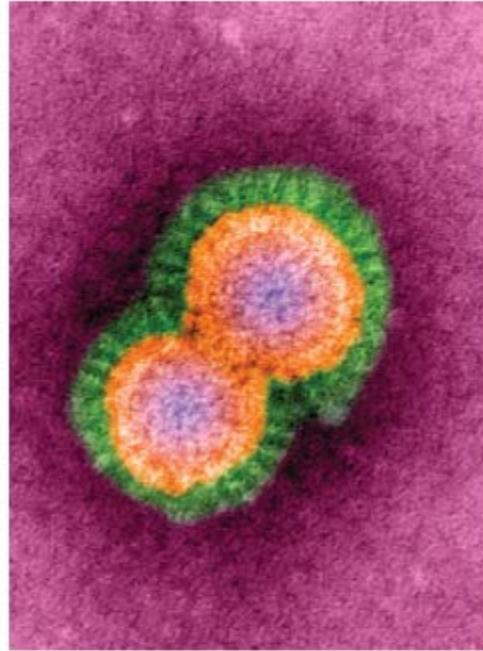
Prof Duncan Maskell,  
Head Vet Med, Cambridge



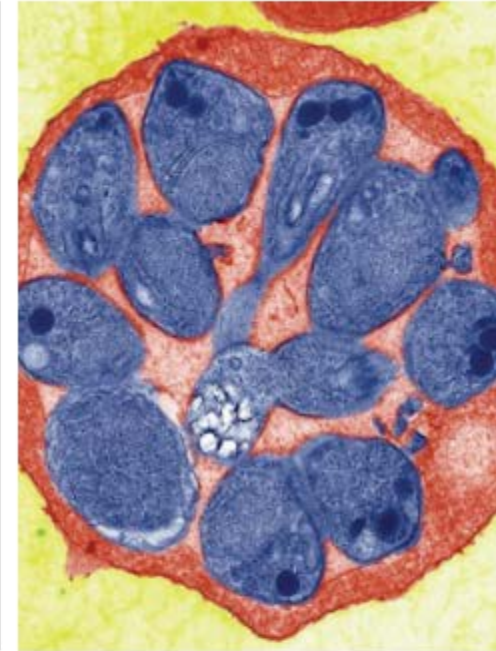
The final list adds up to more than 50!



75 Bacteria

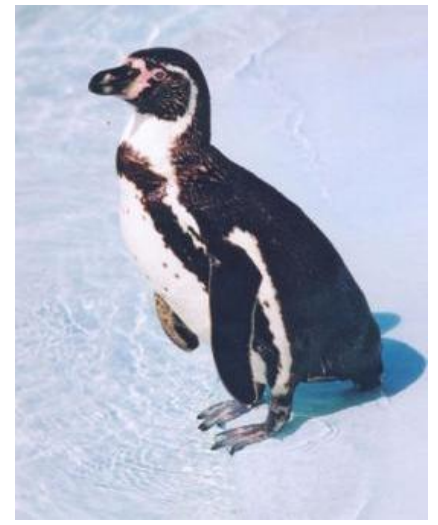


16 Viruses



3 Parasites





# 50 genomes for 50 years of the RCVS Trust

1	1958	Squirrel pox	cotton
2	1959	Bartonella genomes	paper
3	1960	Bartonella genomes	leather
4	1961	Bartonella genomes	fruit / flowers
5	1962	Bartonella genomes	wooden
6	1963	Bartonella genomes	sugar
7	1964	Wolbachia pipientis	wooled
8	1965	African Swine fever	salt
9	1966	African Swine fever	copper
10	1967	African Swine fever	tin
11	1968	Streptococcus equi	
12	1969	Streptococcus equi	Silk /fine linen
13	1970	Treponema spp.	
14	1971	Treponema spp.	
15	1972	Treponema spp.	crystal
16	1973	Treponema spp.	
17	1974	Treponema spp.	
18	1975	Mycoplasma tully	
19	1976	Salmonella enterica DT40	
20	1977	Salmonella enterica DT56.	china
21	1978	Escherichia coli serotype 056.	
22	1979	Escherichia coli serotype 086.	
23	1980	Arcanobacterium pyogenes	
24	1981	Campylobacter	
25	1982	Campylobacter	silver
26	1983	Campylobacter	
27	1984	Campylobacter	
28	1985	Campylobacter	
29	1986	Campylobacter	
30	1987	Campylobacter	pearl

31	1988	Campylobacter	
32	1989	Babesia divergens	
33	1990	Theileria lestoquardi	
34	1991	MRSA.	
35	1992	Feline herpesvirus-1	coral
36	1993	Capripoxviruses	
37	1994	Capripoxviruses	
38	1995	Capripoxviruses	
39	1996	Pseudomonas aeruginosa	
40	1997	Pseudomonas aeruginosa	ruby
41	1998	Pseudomonas aeruginosa	
42	1999	badger Salmonella	
43	2000	Mycobacterium microtii.	
44	2001	Actinobacillus porcitosillarum	
45	2002	Leptospira interrogans	
46	2003	Corynebacterium ulcerans	
47	2004	Corynebacterium ulcerans	
48	2005	Corynebacterium ulcerans	
49	2006	Corynebacterium ulcerans	
50	2007	Brachyspira pilosicoli	gold
51	2008	Mycoplasma haemominutum	
52	2009	Enterococcus faecium	
53	2010	Enterococcus faecium	
54	2011	Enterococcus faecium	
55	2012	Bartonella transcriptome	
56	2013	Bartonella transcriptome	
57	2014	Fish rna viruses	
58	2015	Fish rna viruses	
59	2016	Fish rna viruses	







# RCVS Trust workshop on bioinformatics

27<sup>th</sup> – 28<sup>th</sup> October 2009

- *Delegates from VLA, Pirbright, Manchester University, University of Liverpool, AHT, NCZR*



# Publications

1. Barker EN, Darby AC, Helps CR, Peters IR, Heesom KJ, Arthur CJ, Crossett B, Hughes MA, Radford AD, and Tasker S. 2011. Molecular characterization of the uncultivable hemotropic bacterium *Mycoplasma haemofelis*. *Veterinary research* 42:83.
2. Barker EN, Darby AC, Helps CR, Peters IR, Hughes MA, Radford AD, Novacco M, Boretti FS, Hofmann-Lehmann R, and Tasker S. 2012. Genome sequence for "Candidatus *Mycoplasma haemominutum*," a low-pathogenicity hemoplasma species. *Journal of bacteriology* 194:905-906.
3. Barker EN, Helps CR, Peters IR, Darby AC, Radford AD, and Tasker S. 2011. Complete genome sequence of *Mycoplasma haemofelis*, a hemotropic mycoplasma. *Journal of bacteriology* 193:2060-2061.
4. Chapman DA, Darby AC, Da Silva M, Upton C, Radford AD, and Dixon LK. 2011. Genomic analysis of highly virulent Georgia 2007/1 isolate of African swine fever virus. *Emerging infectious diseases* 17:599-605.
5. Paillot R, Darby AC, Robinson C, Wright NL, Steward KF, Anderson E, Webb K, Holden MT, Efstratiou A, Broughton K, Jolley KA, Priestnall SL, Marotti Campi MC, Hughes MA, Radford A, Erles K, and Waller AS. 2010. Identification of three novel superantigen-encoding genes in *Streptococcus equi* subsp. *zooepidemicus*, *szef*, *szen*, and *szep*. *Infection and immunity* 78:4817-4827.
6. Radford AD, Chapman D, Dixon L, Chantrey J, Darby AC, and Hall N. 2012. Application of next-generation sequencing technologies in virology. *The Journal of general virology*.
7. Radford AD, Williams NJ, Leatherbarrow AJ, Hall N, Darby AC, and Winstanley C. 2008. Sequencing veterinary pathogens. *The Veterinary record* 163:225-226.

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