

ANIMAL HEALTH
INVESTMENT Europe

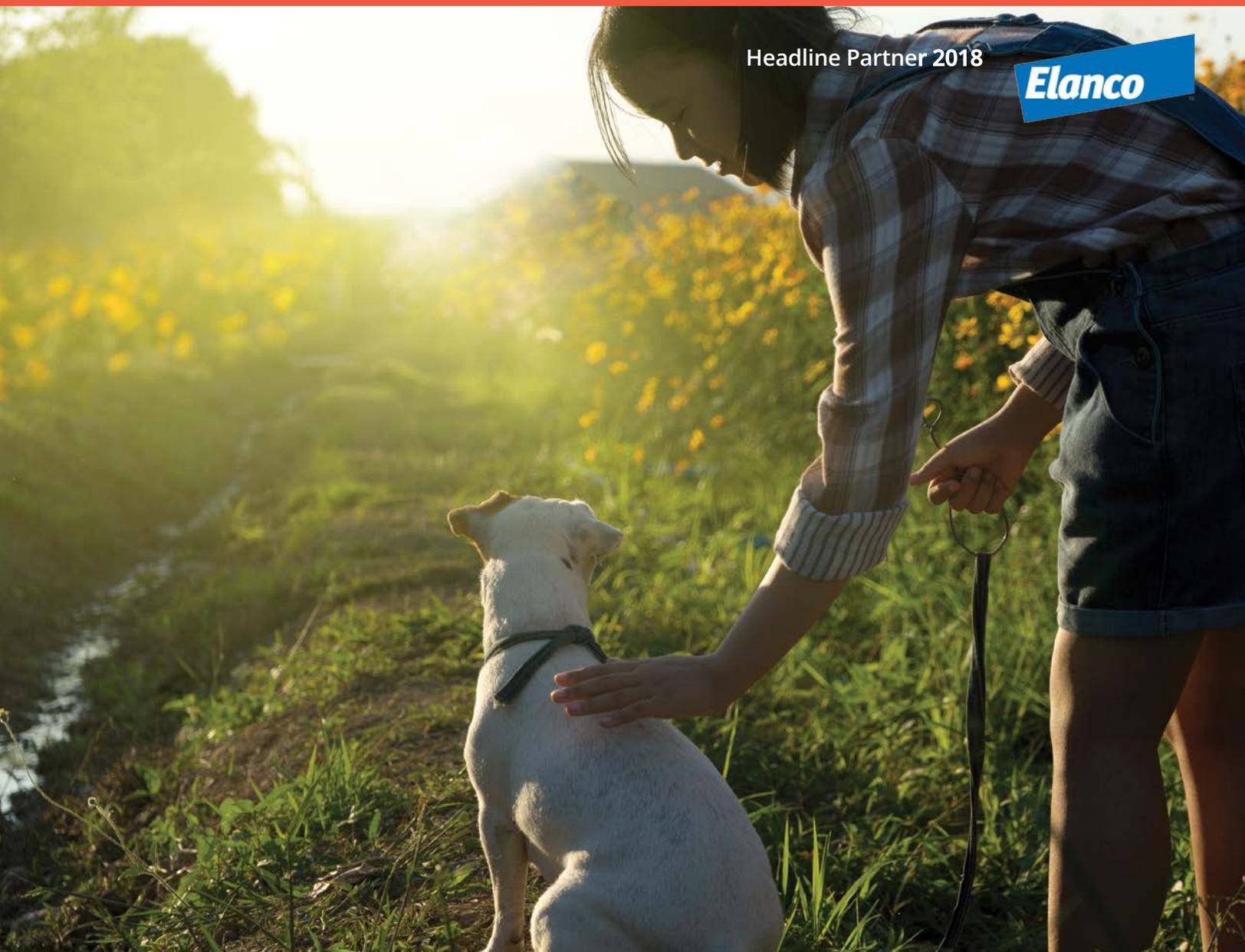
Animal Health Investment talks Innovation and Investment in Animal Health with



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GOING FORWARD, WHAT FUTURE INNOVATIONS IN ANIMAL HEALTH ARE EXCITING FOR ELANCO?

New vaccine platforms – vectors, nucleic acids, needle free

- Gene editing capabilities – in the context of whole animal as well as drug/vaccine design
- “Next generation” parasitology – from toxins to immune modulation
- Alternatives to traditional mammalian protein expression systems
- Digital technologies – real time feeds on animal wellbeing, with well characterized disease/condition architypes (production, home and clinical trial impacts)
- Microbiome engineering

ELANCO HAS COINED THE TERM *NUTRITIONAL HEALTH*. IS ELANCO INTERESTED IN MOVING INTO THE ANIMAL NUTRITION INDUSTRY?

Elanco has always maintained a portfolio of products and service to support animal health and productivity. As consumer preferences have impacted methods of protein production, producers are looking for non-medicated solutions proven to protect animal health.

In response, Elanco has developed a Nutritional Health division that is tasked with discovering, developing and commercializing solutions proven to establish and maintain a healthy gut in animals. Science shows that a healthy gut is key to the long-term health and performance of animals. This is entirely aligned with our vision of Food and Companionship Enriching Life.

Our Nutritional Health team will focus on solutions that exhibit specific activities in the gastrointestinal tract and improve health through prevention and control of disease.

Our understanding of the microbiome, its vast array of microbes and their complex interrelationships and host interactions is just starting to yield viable opportunities to solve long-standing animal health challenges. There are a variety of exciting technologies developing in this area and it is our intention to be at the forefront of developing those technologies.



IN YOUR PERSONAL VIEW, HOW DO WE SOLVE THE LACK OF VENTURE CAPITAL INVESTMENT IN ANIMAL HEALTH?

The dearth of dedicated venture capital to animal health can be solved when the conviction of existing capital sources (LPs – pension funds, family offices, sovereign wealth) converges with professional investors (GPs) and strategic investors (i.e. large animal health players).

We need a few courageous players in each category to realize the moment we're in and step forward and put funds together and stimulate deal flow.

I believe we need dedicated animal health funds, as the agribusiness or crop science funds are often conflicted to invest in an animal health pureplay as a strategy, rather they see animal health investing as a way to balance their portfolio of mainly crop science focus.

I believe we might be stuck in a chicken and egg situation, where investors hold back because they are worried about the lack of precedent exits and entrepreneurs are held back because of the lack of courageous investors. So we need a coalition of LPs, GPs, strategics to commit to foundational efforts to bring AH focused funds online.

IF YOU COULD SOLVE ONE CHALLENGE IN ANIMAL HEALTH, WHAT WOULD IT BE?

The best challenge to solve in animal health is new technologies to replace antibiotics. It's clear that consumer preference and regulatory environment is unfavourable for existing shared class and even animal only antibiotics due to concerns over AMR.

We need new technologies to take their place....molecules that are not absorbed and work by classical means of "killing bugs". Rather we need strategies that are biologically based, or restrict chemical agents to very localized activity.

Additionally, strategies that amplify the animals immune function, I believe will be relevant, especially as these could be pathogen independent approaches.

Next generation vaccine and biologic approaches (RNA, DNA, RNA replicon) can also be relevant advances.

Further understanding of the microbiome and discovery and development of means to engineer the microbiome composition and/or leverage the microbiome for delivery of molecules is a promising area as well.

Finally, we need regulatory regimes that incentivise the development of alternatives...fast tracks for approval for new technologies in this space, conditional approval strategies, special platforms for regulatory interaction, and ultimately harmonization of regulatory requirements and inducements.