

Volition   
Veterinary

April 2020

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Forward-looking statements relate to, among other things, the effectiveness of the Company's blood-based diagnostic tests, as well as the Company's ability to develop and successfully commercialize such test platforms for early detection of cancer and other diseases. The Company's actual results may differ materially from those indicated by forward-looking statements, due to numerous risks and uncertainties. For instance, if we fail to develop and commercialize diagnostic products, we may be unable to execute our plan of operations. Other risks and uncertainties include, but are not limited to, the Company's failure to obtain necessary regulatory clearances or approvals to distribute and market future products in the clinical IVD or veterinary markets, a failure by the marketplace to accept the products in the Company's development pipeline, or any other diagnostic products the Company might develop. The Company will face fierce competition, and the Company's intended products may become obsolete, due to the highly competitive nature of the diagnostics market and its rapid technological change, and other risks identified on the Company's most recent annual report on Form 10-K, and quarterly reports on Form 10-Q, as well as other documents that the Company files with the Securities and Exchange Commission.

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# Corporate Structure of Volition Veterinary



- Volition Veterinary Diagnostics Development established in 2019
- It is a majority-owned (87.5%) subsidiary of NYSE American listed VolitionRx Limited (VNRX)
- Texas A&M University (TAMU) holds remaining 12.5% stake in VVDD.
- TAMU Veterinary School is ranked in the **Top 5** Veterinary Colleges in the U.S. and is ranked **10<sup>th</sup>** in the World

# Highlights

- Majority Shareholder Parent Company VNRX is an epigenetic healthcare company with a suite of easy to use blood-based cancer tests under development
- VNRX has broad intellectual property portfolio for human and animal diagnostics, including 44 granted patents to-date worldwide
- **Encouraging** preliminary results using the Nu.Q™ diagnostics platform in Veterinary medicine
- Random Access Platform similar to humans and meets clinical industry standards
- Point of Care (POC) test also in development
- Significant market opportunity (6 million dogs diagnosed with cancer in U.S. each year) with high unmet need

***Potentially faster route to revenue than human diagnostics***

# Volition Vet Executive Team



**Dill Faulkes PhD, Executive Chairman** - Dill has over 30 years of entrepreneurial and managerial experience as the founder and CEO of several software companies within the United Kingdom and the United States. As the Founder and one of the benefactors of the Dill Faulkes Educational Trust, a UK registered charity, Dill also focuses on charitable activities.



**Cameron Reynolds MBA, Director of VVDD and President & Chief Executive Officer VNRX** - Cameron has extensive experience in the management, structuring, and strategic planning of start-up companies and has held positions including Chief Executive Officer, Chief Financial Officer, and Non-Executive Director of public and private enterprises. Cameron was educated at the University of Western Australia receiving both a B.Com. and an MBA.



**Nathan Dewsbury MsC, Chief Executive Officer of VVDD** - Nathan has unique global expertise in the animal health industry. Having direct involvement in national testing programs, current health diagnostics platforms and commercializing next generation products. He was educated at Texas A&M University where he received both his science and business degrees.



**Heather Wilson-Robles DVM, Chief Medical Officer of VVDD** – Heather is a well-established veterinary medical oncologist specializing in canine models of human cancer. Her research over the past 12 years has focused on improving canine models of pediatric and adult cancers and translating these findings to the mutual benefit of both species. Her basic research focuses on the identification and targeting the tumor initiating cells in osteosarcoma, melanoma and mammary/breast cancers in both canines and humans.



**Theresa Kelly PhD, Chief Scientific Officer of Volition America, Inc.** - Terry has over 10 years of experience in Epigenetics including developing novel technologies and seeing them through to commercialization. She previously was the R&D Director at Active Motif and the Global leader for custom assays and services and Agena Bioscience. She received her PhD from UCLA and did Post-doctoral training at USC's Norris Cancer Center where she studied epigenetic regulation in Cancer.



**Jason Terrell MD, Director of VVDD and Chief Medical Officer & Chief Executive Officer of Volition America, Inc.** - Jason has expertise in clinical medicine and in laboratory diagnostics in the areas of business development, clinical trials, regulatory affairs and commercialization strategies. He was educated at Hardin-Simmon University where he graduated Summa Cum Laude, also receiving the Holland Medal of Honor. He received his MD from the University of Texas Medical School an affiliate of the MD Anderson Cancer Center.



**Gaetan Michel PhD, Chief Executive Officer of Belgian Volition SPRL** - Gaetan has over 10 years of experience in production management. Previously he has held positions such as project manager and production manager in proteomics at Advanced Array Technology and production and process development manager at KitoZyme. He has a PhD in Biochemistry from the University of Namur.

# VNRX Intellectual Property\*

- Believe to be the only company working on ELISA measurement for epigenetically modified circulating nucleosomes
- 23 patent families covering human and veterinary use.
- Eight patents granted in the U.S.
- Nine patents granted in the E.U.
- 27 additional patents granted worldwide in growing IP portfolio
- 105 patents pending worldwide
- Protection expected through or least to 2031 for products including **animal** diagnostics

***Further Breakthrough Patents Ongoing***

# Significant Market Opportunity

VS

Approx. **1.66** million cancer diagnoses in HUMANS in the U.S. each year<sup>1</sup>

Approx. **6** million cancer diagnoses in DOGS in the U.S. each year<sup>2</sup>

More than  
**3.5X**

Country <sup>3</sup>	No. of Pet Dogs (millions)	No. of Pet Cats (millions)
United States	69.9	74.1
China	27.4	53.1
Russia	12.5	17.8
Japan	12	7.3
Philippines	11.6	
India	10.2	
Argentina	9.2	3
UK	9	8
France	7.6	11.5
South Africa	7.4	2

- <https://www.cancer.gov/about-cancer/understanding/statistics>
- <https://fetchacure.org/resource-library/facts/>
- <https://www.petsecure.com.au/pet-care/a-guide-to-worldwide-pet-ownership/>

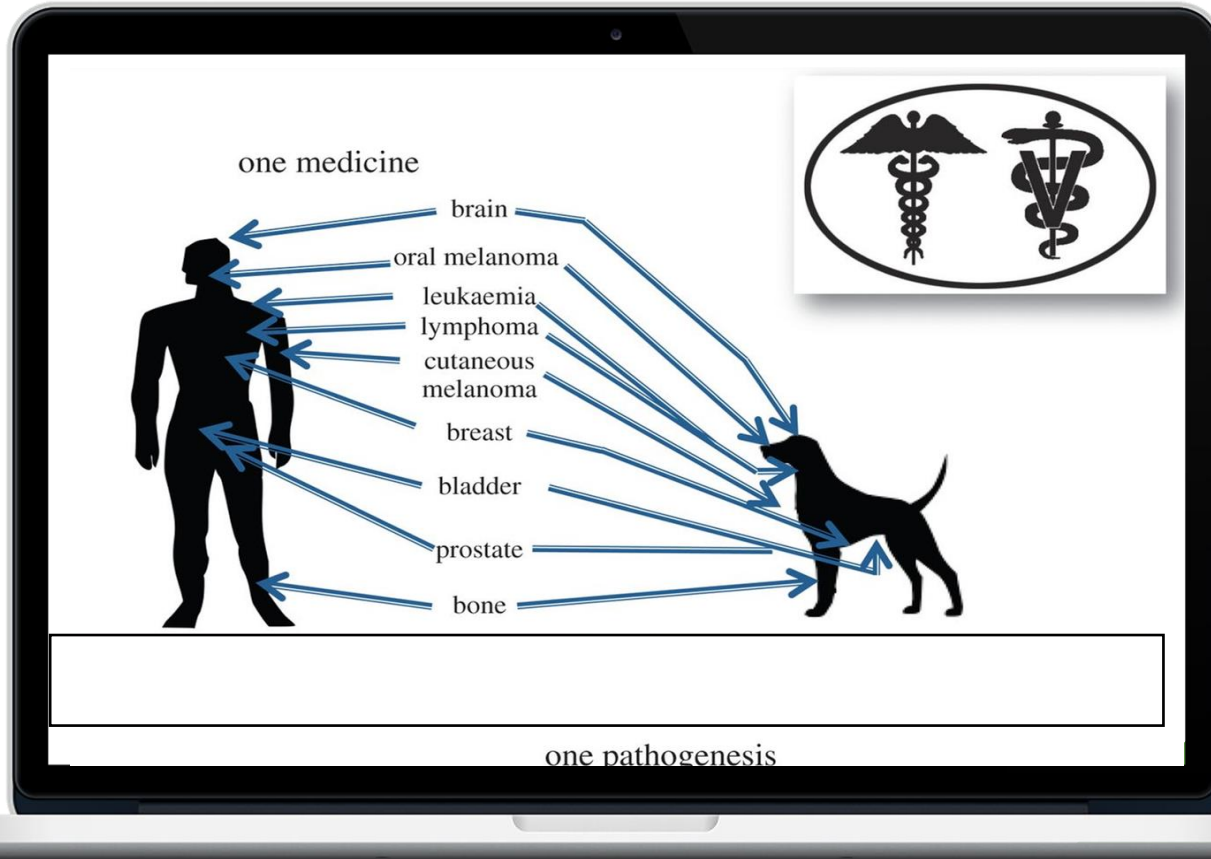
# High Unmet Needs

- Similar to the human diagnostic market there are no simple, easy to use, blood tests to help diagnose cancer
- Consequently, cancer in dogs is diagnosed late and through costly and/or potentially painful procedures such as scans and/or biopsies
- Human proteins such as PSA are not found in dogs and so human tests historically have not been transferrable however this is not the case for Nucleosomes

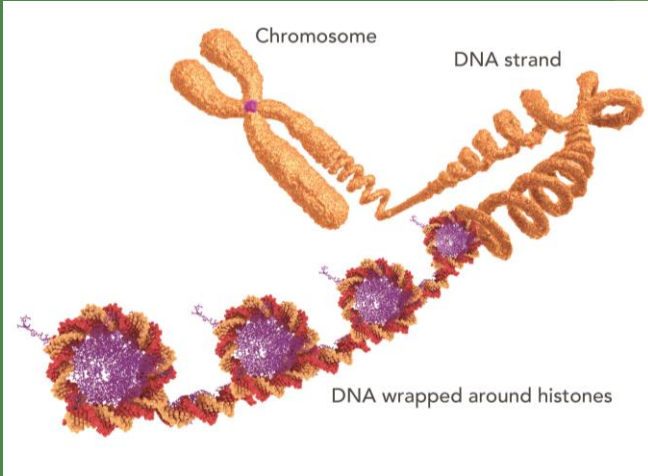


# Research findings often transferrable between humans and dogs

Nucleosomes  
found in  
humans &  
dogs

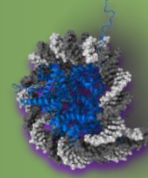


# Nu.Q™ – The basic concept (across species)



The genome is **3 billion** base pairs. If uncoiled it would measure 5 feet long. Every 150 base pairs of DNA are wrapped around a nucleosome to form a DNA-Nu complex.

Each individual bead is called a **nucleosome**.



Nucleosomes consist of DNA and histone proteins. Histones and DNA are subjected to a variety of **epigenetic modifications**.

Cancer leads to cell death which results in fragmentation and release of nucleosomes into the blood.

## Initial Disease Targets in Common Canine Diseases



- **For both disease diagnosis and disease monitoring**
- **Sarcoma**
  - Hemangiosarcoma, Osteosarcoma, Soft Tissue Sarcoma
- **Hematological Malignancy**
  - Lymphoma, Mast Cell Tumor
- **Inflammation**

# Dog – Product Anticipated Development Plan



## Q1 2020

Finalized Pre-Analytics

## Q2 2020

Process Samples for multi-disease study (cancer and inflammation)

## Q3 2020

Report Clinical Trial Results

Q4 2020 Launch first  product(s)

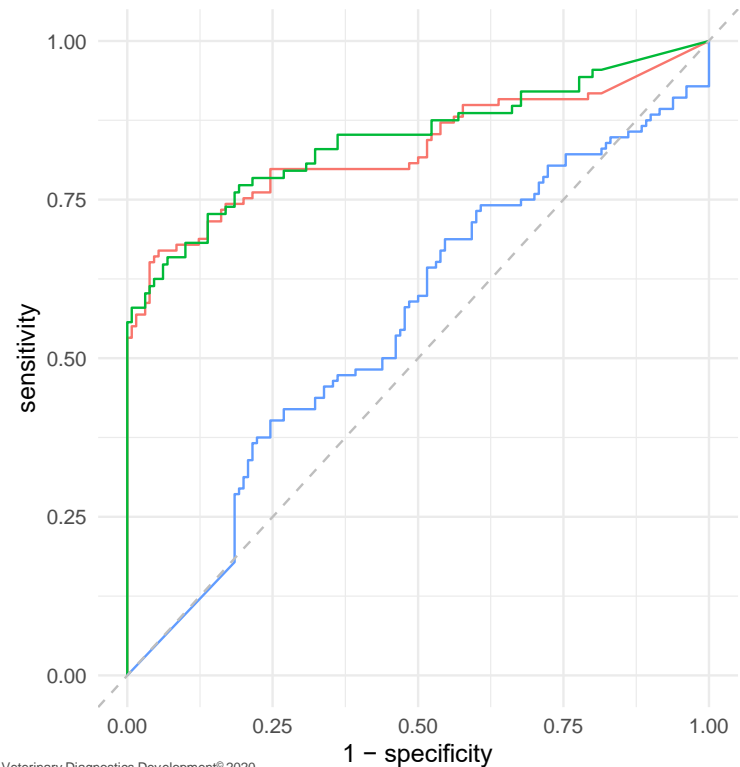
2021 Exploit  licensing opportunities

***Abstracts, Posters, Clinical Papers planned for publication throughout 2020 & 2021***

# Canine Pan-Cancer - First proof of concept data from TAMU



Nu.Q H3.1 LSA/HSA/OSA vs Control



name

- LSA.vs.Control AUC 83.1%. @80% specificity 75.2% sensitivity @90% specificity 67.9% sensitivity
- HSA.vs.Control AUC 84.5% @80% specificity 77% sensitivity; @90% specificity 68.2% sensitivity
- OSA.vs.Control AUC 55.4% @80% specificity 31.2% sensitivity; @90% specificity 9.7% sensitivity

Lymphoma n= 69  
 Hemangiosarcoma n=44  
 Osteosarcoma n= 65  
 Healthy Controls n=39

# Dog – Product Development Plan

- Acquire training study set for product (50+ samples)

Lock product test panel

**- RUO equivalent tests become available**

- Perform validation study to establish labeled claims of clinical performance (120 samples)

Utilizing existing reference lab courier services from clinics to TAMU

**- TAMU lab approved to offer test (Commercial Launch)**

- Perform USDA regulatory approval study demonstrating analytical performance within labeled claims of clinical performance

# Thank you for your interest in Volition Veterinary

For more information contact [mediarelations@volition.com](mailto:mediarelations@volition.com)