



# **PetVivo Holdings, Inc.**

**OTCQB: PETV**

February 2020


# Forward-Looking Statements

This presentation and the accompanying oral commentary contains forward-looking statements within the meaning of the federal securities laws, which statements are subject to substantial risks and uncertainties that could cause actual results to differ materially from those anticipated or projected by the forward-looking statements. Forward-looking statements include all statements that are not statements of historical facts and can be identified by words such as “anticipates,” “believes,” “seeks,” “estimates,” “expects,” “intends,” “will,” “would,” “may,” “plans,” “potential,” “predicts,” “projects,” “should,” “could,” or similar expressions and the negatives of those expressions. In particular, forward-looking statements contained in this presentation and the accompanying oral commentary relate to, among other things, the effectiveness of our Kush™ therapeutic well as our ability to develop and successfully commercialize other companion animal or human therapeutics, our future or assumed financial condition, results of operations, strategic plans and objectives, product development plans, use of proceeds, competitive position, and potential opportunities.

Forward-looking statements represent our management’s current beliefs and assumptions based on information currently available. Forward looking statements involve numerous known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. We discuss these risks, uncertainties and other factors in the section entitled “Risk Factors” in our Annual Report on Form 10-K that we filed with the Securities and Exchange Commission (“SEC”) on July 31, 2019, as well as in our other filings with the SEC. Except as required by law, we assume no obligation to update any forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward looking statements, even if new information becomes available in the future.

Certain of the information provided in this presentation, and the accompanying oral commentary, has been obtained from independent industry sources, publications or research reports. This information has been obtained from sources we believe to be reliable. However, we have not independently verified such information.

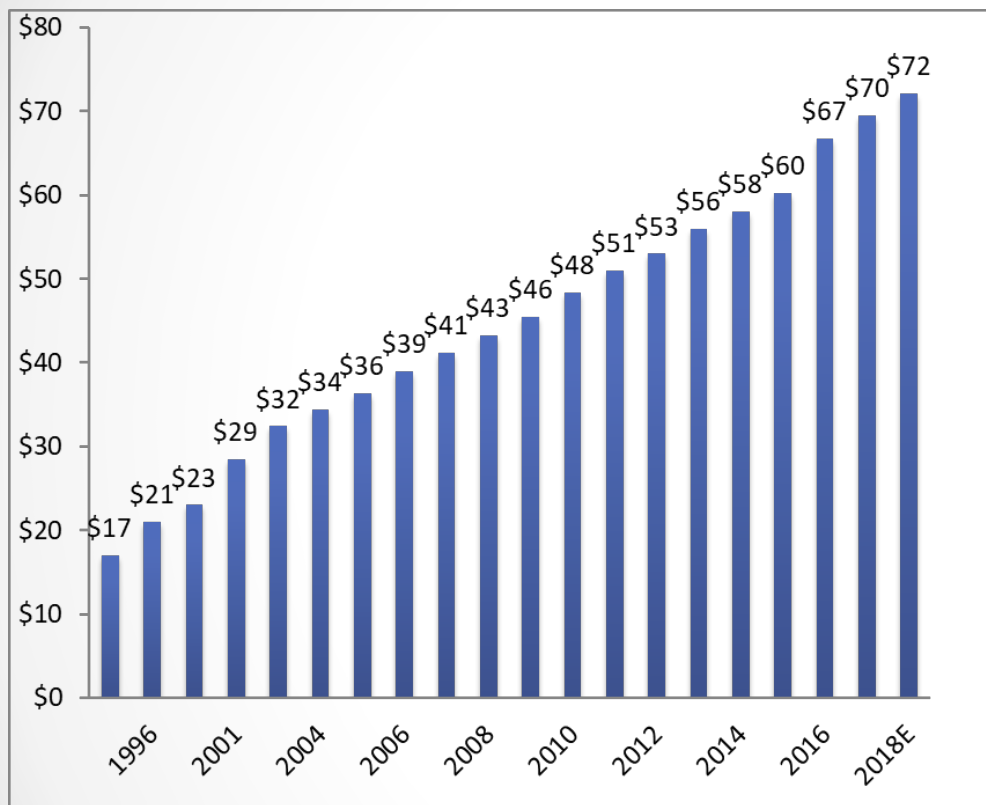
# Company Overview

- PetVivo is a Commercial Stage veterinary biotech company with unique technology and products
  - **Kush™** technology: patented thermoplastic protein co-polymer biomaterials engineered as devices to mimic the body's own structural tissue components
  - **Mucoadhesive Drug Delivery:** patented drug delivery system that will be used to initially to deliver CBD, caffeine and other nutritional supplements
  - Target market: Companion animal osteoarthritis (OA)
  - Trading on the OTCQB (PETV)
- 
- Completed initial commercial contract manufacturing validation runs 2018
  - 12/2018 executive management change
  - 6/2019 new board fully installed
  - 7/2019 Licensing Agreement with Emerald Organic Products, Inc. for Commercialization of CBD Nutritional Supplement Product



# Companion Animal/Veterinarian Market Overview

## U.S. Pet Owners Spend\*




Source: APPA; USD in Billions

\* Agricultural and professional equine markets not included

- Large and growing market
  - 2018E US Pet Spend \$72B
- Insensitive to Past Recession
- 68% of US Households own a pet
  - 94M Cats
  - 90M Dogs
  - 7.6M Horses
- Vet care is a leading growth driver
  - \$17B in US (2018E)
  - 24% of Pet Spend
- Pet therapeutics account for \$2.1B of total pet spend
- Market ripe for better and more effective therapeutics



# The Kush™ Technology

- Established IP portfolio with 8 US and 10 foreign issued patents
  - Extensive portfolio of product and process trade secrets
  - Companion animal use supported by underlying 145 human patient FDA dermal-filler clinical trial
  - Method of Action (MOA) is based on mechanical features of device, not on pharma/biologic activity
  - Companion animal patients with multiple year post treatment records
- 
- Unique new therapy and MOA to address root cause of affliction, not symptoms
  - No systemic drug side effects as often occurs with NSAIDs and other pain-directed pharmaceuticals
  - Focused on treatment void in \$1B+ companion animal OA therapeutics market
  - No similar product in US or foreign markets



# Competitive Landscape

- Many competitors, but little innovation
- Competitors rely on biologic activity with no structural components

## Treatments for Canine OA

Company	Product Name	Class	Target/technology	Clinical Status	Disease-Modifying
Parnell	Zydax	PPS	cartilage matrix synthesis	Approved x-US, US approval Q4'16	yes
NexVet Biopharma	NV-01 (Ranevetmab)	mAb	anti-NGF antibody	Field trials, safety/efficacy complete	No-Pain management
Aratana	Galliprant®	Biologic	anti-EP4 receptor	FDA Approved	No-pain management
Regeneus	CyroShot Canine™	Cells	allogenic stem cells	pre-pivotal study	Possibly
Dechra Pharmaceuticals	Pardale V®	Opioid	Paracetamol and codeine	commercial	No-Pain management
VetCell Therapeutics		Cells	PRP or growth factors	commercial	Possibly
<b>PetVivo</b>	<b>Kush™</b>	<b>Device</b>	<b>collagen matrix</b>	<b>pre-commercial</b>	<b>Unknown</b>
Bayer	Quellin™	NSAID	COX inhibitor	commercial-FDA -appvd	No-pain management
	carprofen	(carprofen)			
Ceva	Meloxidyl™	NSAID	COX inhibitor	commercial-FDA-appvd	No-pain management
	(meloxicam)	generic			
VetMedica (BI)	Metacam™	NSAID	COX inhibitor	commercial-FDA -appvd	No-pain management
	(meloxicam)				
Novartis Animal Health	Deramaxx™	NSAID	COX inhibitor	commercial-FDA-appvd	No-pain management
	(deracoxib)				
Pfizer	Rimadyl™	NSAID	COX inhibitor	commercial-FDA-appvd	No-pain management
	(carprofen)				
Boehringer Ingelheim	Surpass® topical cream	NSAID	diclofenac	commercial-FDA -appvd	No-pain management

Source: Company websites, CVM



# The Problem: Osteoarthritis (OA)



# The Problem: Osteoarthritis (OA)

## A common affliction of the joints...

- OA affects 1 out of 4 dogs and is even more prevalent in horses
- OA causes pain and inflammation from degenerating cartilage of stressed joints
- OA lameness worsens with time from ongoing loss of cartilage and bone

## yet current treatments manage symptoms, not the cause...

- Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) are often used to alleviate the pain and inflammation
  - NSAIDs are known to cause gastric problems
  - NSAIDs do not halt or slow the degeneration
- Steroid and/or HA injections often slow acting and/or short lasting
- Stem Cell, PRP require painful tissue harvesting and are time-sensitive, time-consuming and expensive





# The Solution: Kush™ OA Treatment



- Easily administered: **Kush™** particles are injected into the Synovial Space
- Case studies indicate long-lasting multi-month improvement in lameness without the use of NSAIDs
- Standard Intra-Articular injection technique using standard IA needle (e.g. 18-23 gauge)
- Multiple joints can be treated simultaneously



# The Solution: Kush™ OA Treatment



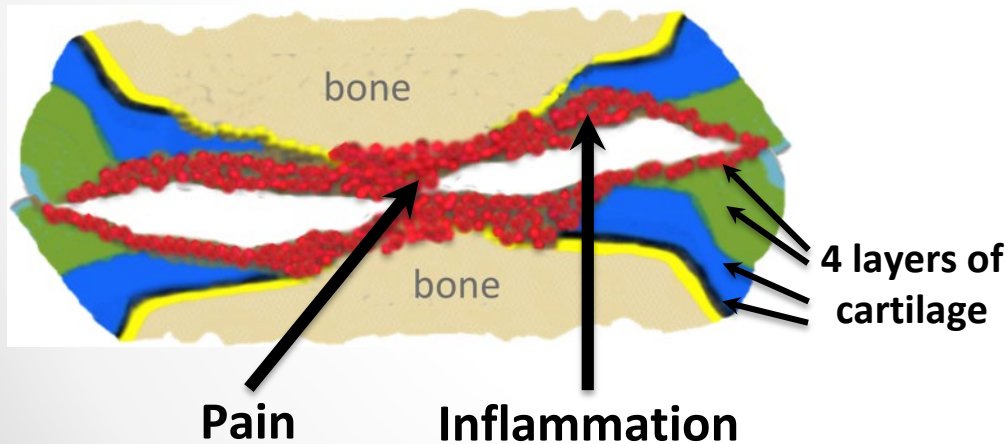
- Possible to discontinue use of NSAIDs
- **Kush™** is an economical and effective option for treating OA
- **Kush™** provides a biocompatible, lubricious cushion to the joint, which establishes a barrier between the bones, thereby protecting the remaining cartilage and bone



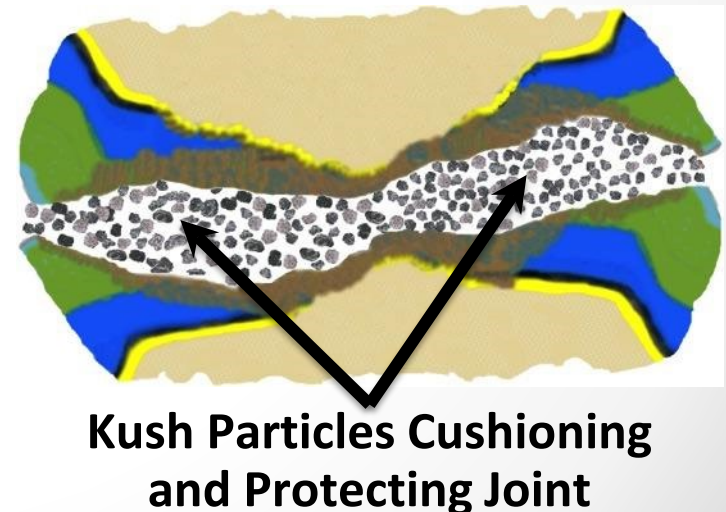
# Kush™ Mechanism of Action

- Augments synovial membrane function, without pharmacologic, chemical, or metabolic action
- Biocompatible particles are lubricious, “cushioning” and reside in joint synovial space
- These spongy augmentation particles mimic the protective function of cartilage -- providing both a slippery cushion and a protective barrier between bones

**Painful, Inflamed Joint**

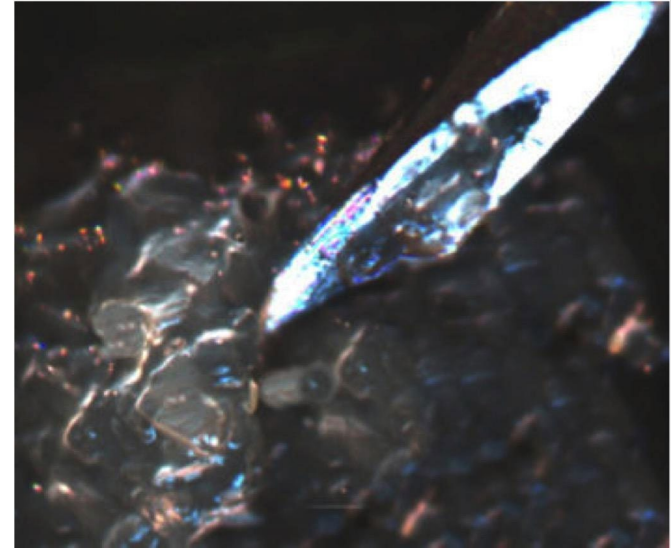


**Kush-Treated Joint**



# Why Use the Kush™ Biomaterial?

- Isolated purified components
  - Source bovine/porcine tissues purified to soluble component form
  - Memory of source tissue type removed, which precludes wrong tissue immune response
  - No inflammatory or foreign body response
- Comprised of Collagen, Elastin and Heparin
  - Same components found in natural cartilage
- Components self-assemble to form insoluble matrix
  - Slippery, wet, permeable, durable and resilient
  - Mimics natural cartilage in composition, structure and hydration



# Kush™ Markets and Competition

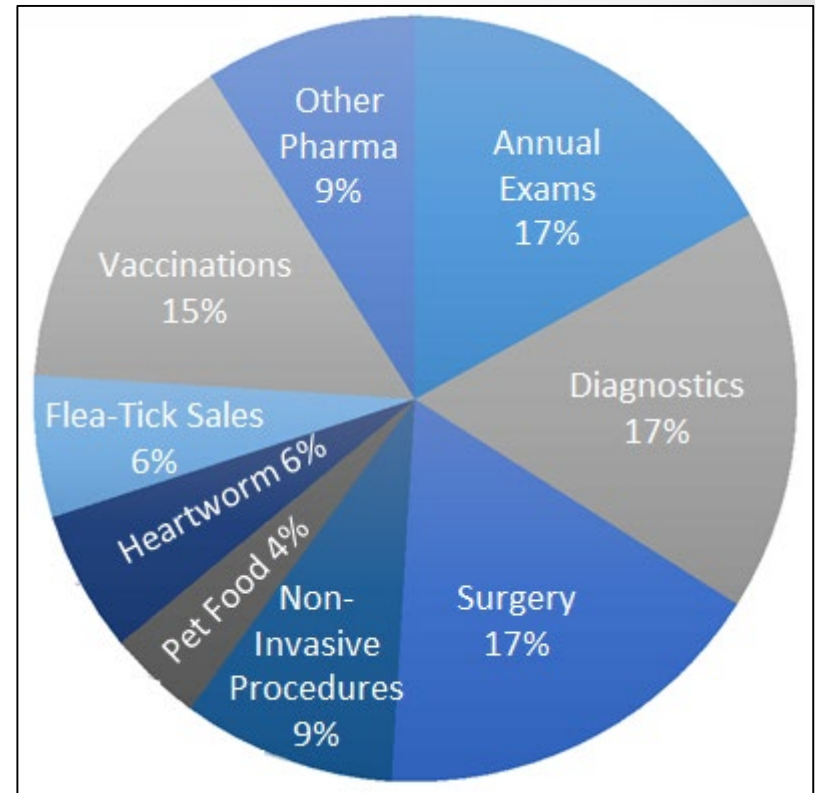
- **Kush™ Canine: Osteoarthritis Market Estimate**
  - 20,000,000 dogs with Osteoarthritis (US-EU)
  - **\$2.6B US-EU Market**
- **Kush™ Equine: Lameness Market Estimate**
  - 1,000,000 lame horses (US-EU)
  - **\$600M US-EU Market**

Kush competitors include the following animal health & pet therapeutics companies: Akorn, Anika Therapeutics, Arthimid, Aratana Therapeutics, BI, Ceva, Dechra, Heska, American Regent Animal Health (Adequan), Parnell, Novartis, Vetcell + Bayer, and Zoetis. Companies in our competition group currently trade at 4.87 x 2017 revenues.



# Veterinarian Business Model is Changing

- Vets are experiencing declining sales of high margin scripts that can now be filled at pharmacies
- Vets are looking for additional ways to drive revenue and traffic
- Kush can offer veterinarians higher margin opportunity at the same price point as existing OA products while providing better outcomes with less side effects for animals



- According to DVM News Magazine, veterinarians estimated the total dollar amount at which most of their clients would refuse or stop treatment for their pets has increased from \$576 in 1997 to \$1,704 in 2012

Source: DVM Newsmagazine's State of the Profession Report for 2012



# Kush™ vs. Competition

Treatment	Kush Canine – PetVivo	Rimadyl (NSAID)	Hyaluronic Acid Joint Injections	Elanco Galliprant®	Total Joint Replacement
Pro	Protects Joint, Increases Activity, Reduces Pain, Excellent Safety Profile	Temporary Pain Relief	Temporary Pain Relief Good Safety Profile	Temporary Pain Relief	Joint Replaced
Con	Minimally Invasive	Potential for gastric ulcers and kidney problems does not treat condition	Effectiveness diminishes over 30 days - Minimally invasive	Only treating OA pain without treating OA condition	Invasive and expensive surgical procedure requiring rehabilitation
Dosing/Treatment	Typically injected once per year	Once or twice daily by owner	Monthly injection at vet clinic	Daily by owner	Surgery and Rehab
Typical Owner Cost*	\$400-\$600 per joint	\$0.90 - \$2.40 per day (toxicity monitoring extra)	\$150 - \$250 per joint	TBD	\$2,000 - \$4,000 per joint
Annual Owner Cost	\$400 - \$600	\$400 - \$700	\$1,800 - \$3,000	TBD	\$2,000 - \$4,000

*\*Costs vary depending on animal size, dosing and treatment location*



# Kush™ Commercialization Strategy Overview

Jan – June 2020

July – Dec 2020

Jan – June 2021

**Initial Launch -  
Key Regional Mkts**

**Select National  
Partner(s)**

**Full National  
Rollout**

- Selected DVM KOLs
- Local reps/dist
  - MN, CO, IA, TX

Sales & Distribution

- Initiate Major National Rep/Distributor
- Expanded DVM KOLs

- Expand National Reps/Distributors
- Canada entry
- Mexico entry

- Educate KOLs
- Train local reps
- Local tech support

Education & Training

- Educate Vets/clinics
- Train National Rep
- Nat rep technical support

- Educate Vets/clinics
- Train National Reps
- US-wide technical support

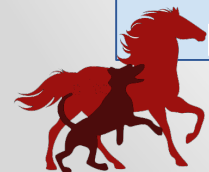
- KOL-focused mktg
- Targeted local vet/clinic staff mktg
- Clinical study eval
- DVM conf/sympos

Marketing/Other

- Major national dist. marketing support
- General vet/clinic staff marketing
- Expanded clinicals
- Expand DVM conf/symposiums

- US-wide distributor marketing support
- Vet/clinic staff mktg
- Consumer/owner awareness mktg
- Expand DVM conf/symposiums

- Concentrated distribution
  - Top 3 dist. over 75% of market
- Initial focus is:
  - Building KOL relationships with leading companion animal DVMs
  - Establishing alliances with national distr.



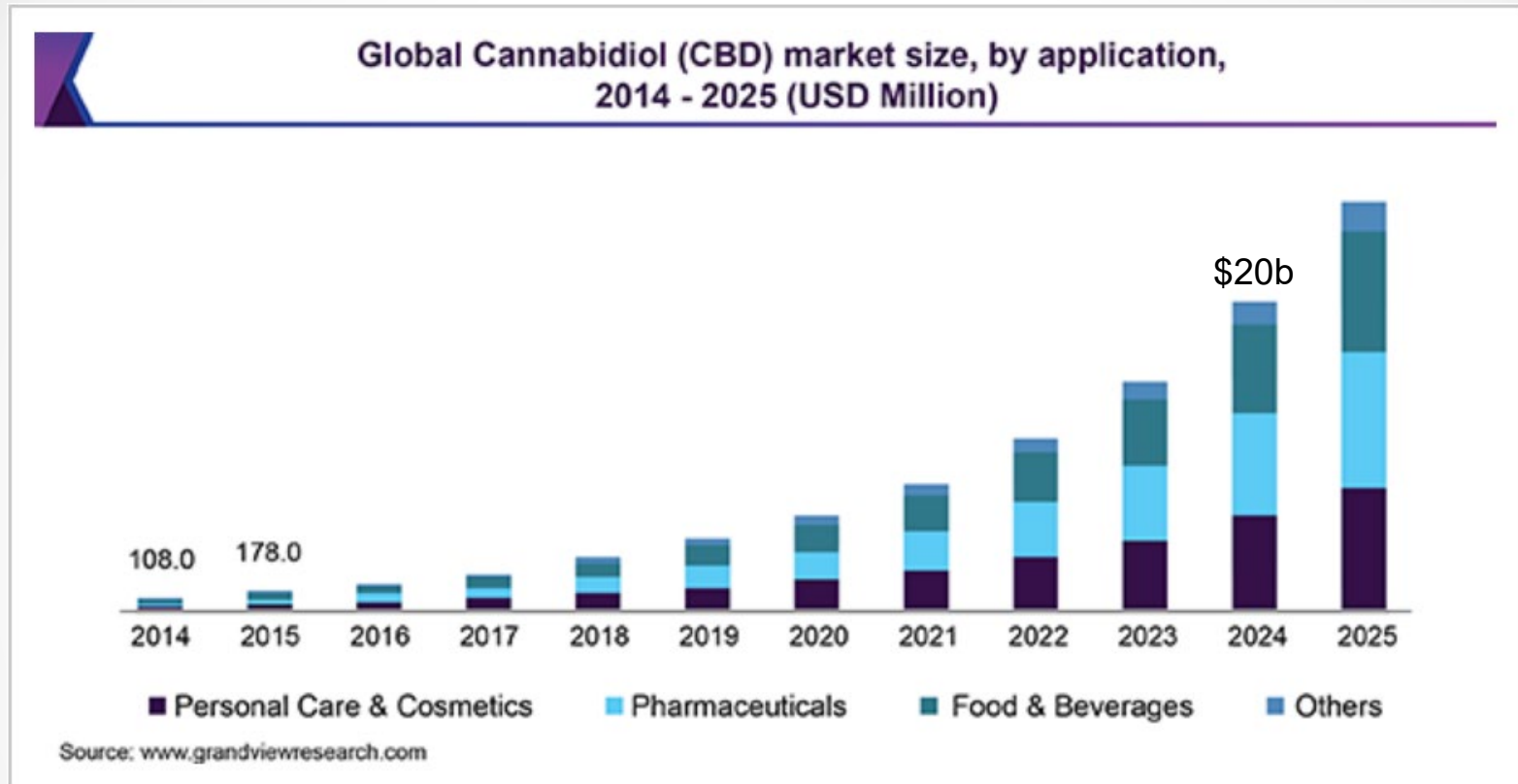


# Our Mucoadhesive Technology

- Our Mucoadhesive Device Technology is a drug delivery platform technology that is based on an eroding mucoadhesive protein matrix for the delivery of active agents (e.g. CBD, caffeine...), is well patented and uses only safe materials FDA-GRAS. In the wafer form, our Mucoadhesive Devices stick very strongly and comfortably to buccal mucosal tissue, which covers the roof of mouth, cheeks and gums.
- Small wafer for oral application
- Residency time in the mouth between 10-15 minutes
- Increases bioavailability of active agents by up to 10x
- Great patent protection in the United States, Canada, and the European Union



# CBD Market Overview



- Total U.S. CBD market to exceed \$20 billion by 2024

- CBD market projected to have a 12-year CAGR of 32%



# Senior Leadership Team

Detailed biographies @ [www.petvivo.com](http://www.petvivo.com)



**John Lai, CEO/President.** Mr. Lai has over 30 years of senior operations and financial experience and has served as CEO of Genesis Capital Group, Inc., President of Viper Powersports and CFO of Buyitnow.com. He has extensive experience in capital structure, financial analysis, business formation, mergers, acquisitions and driving revenue growth.



**John F. Dolan, General Counsel, Director.** Mr. Dolan, formerly CFO, serves as corporate and IP counsel for KILO, Inc., an alternative energy company. Mr. Dolan was an attorney at Fredrikson & Byron's IP Group for 12 years. Mr. Dolan advises early-stage companies on all aspects of IP asset protection, as well as new technology, corporate development, secondary offerings, PIPE's, M&A and licensing transactions. He was a patent examiner with the USPTO.



**John Carruth, CFO.** Mr. Carruth has spent several years in the accounting field with continually-progressing responsibilities. His areas of expertise include internal controls over financial reporting, SEC reporting, and GAAP compliance. He holds three degrees in accounting, including a Master of Accountancy degree from the University of Minnesota where the coursework surrounded navigating the SEC, SOX and the Dodd Frank Act.



**Gregory Cash, Board Chairman.** Greg has more than 35 years senior management and/or key sales and marketing executive experience in the life sciences industry, including being Chief Executive Officer or Division President of leading cardiovascular medical device companies. Since 2011, he has been the Chief Executive Officer and principal owner of Argent International LLC, Minneapolis, MN. Prior to founding Argent, Mr. Cash served for over thirty years in senior executive management or marketing roles with leading medical device companies, including five years with Boston Scientific Corporation and over twelve years with Medtronic, Incorporated.



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