

# Corporate Presentation



January, 2017

# Company Overview

**ZIVO Bioscience, Inc. (OTCMKTS:ZIVO) develops and commercializes nutritional compounds and bioactive molecules created by its proprietary algal strains**

- Company is targeting the following applications:
  - Dietary Supplements, Nutraceuticals and Food Ingredients
  - Animal Feed, Dietary Supplements & Animal Drug Development
  - Pharmaceuticals

## **ZIVO Quick Facts:**

- Market Capitalization of \$15M (*as of January 4, 2017*)
- Pre-Revenue Status
- Headquarters in Keego Harbor, Michigan (United States)
- **Near-Term Revenue Opportunity** - ZIVO executed a collaboration agreement December 2013 with Zoetis (formerly Pfizer Animal Health), the world's largest animal health company for bovine mastitis research
- **Intellectual Property Portfolio** – ZIVO holds 4 issued patents and another 9 applications in process
- **Other Life Sciences** -- ZIVO also holds valuable innovations in metabolic testing for humans and animals – WellMetris is a breakthrough, smartphone-enabled testing platform that provides unprecedented insights into health and nutrition



Photo courtesy of Arizona Center for Algae Technology & Innovation



## Recent News & Events

ZIVO has announced 3 major news events recently, and continues to make progress to commercialize its world-class IP portfolio.

Growing the IP Portfolio	November 17, 2016 -- ZIVO announces that it received notice of a fourth US patent covering the <b><u>novel cholesterol management properties</u></b> of the bioactive components extracted from its proprietary algal culture
New Protein Product Concept	November 9, 2016 – ZIVO unveils a new, <b><u>high-protein vegan power drink concept</u></b> containing Company's proprietary algal biomass in fine powder. A significant source of non-animal, non-dairy, non-GMO vegan protein and dietary fiber
New JV in Poultry Feed Additives	December 15, 2016 – ZIVO announces an agreement in principle with animal nutrition innovator NutriQuest to develop a <b><u>poultry feed additive for immune health</u></b> and growth promotion. Work begins in February, 2017



# Algae Quick Facts

**Algae are a diverse group of aquatic organisms that have the ability to conduct photosynthesis**

- They look similar to land plants, but do not have the distinct cell and tissue types, such as stomata, xylem, and phloem
- Most recent estimates suggests 72,500 algal species worldwide
- Many commercial uses for algae, including:
  - **Nutrition** - animal/fish feed, human supplements, foods
  - **Medical** – uses in topical creams, and pharmaceutical compounds
  - **Specialty chemicals** – agrochemicals, food additives, cosmetics, food safety and more



# Management

Senior management at ZIVO has experience in capital formation, finance, biotech, biomedical engineering and collaborating with larger commercial entities



**Andrew A. Dahl**  
*Chief Executive Officer &  
President*

- Formerly managing member of Great Northern & Reserve Partners, a management consulting firm providing marketing and business consulting to biotech, biomed and IT companies
- Former President of Dawber & Company, one of the oldest and largest independent marketing & consulting firms in the Midwest. Extensive Fortune 500 client roster – GM, Ford, AT&T, Compuware and Xerox, among others
- Attended College for Creative Studies, Wayne State University
- Holds three US patents for interactive multimedia **and named inventor in eight recent biomedical patent applications**



**John B. Payne**  
*Vice-Chairman,  
Board of Directors*

- President & CEO of Compassion First, a nationwide network of specialty veterinary hospitals. Currently Chairman, American Humane Association
- Former CEO of Banfield Pet Hospitals, a nationwide 800-hospital chain
- Formerly, member of Mars Global PetCare leadership team representing over \$11 billion in animal health revenues annually
- Formerly President of Bayer North America Animal Health division
- MBA, Rockhurst University

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**Amy E. Steffek PhD**

*Director, Research & Development*

- Currently managing all science and product development at ZIVO
- Previously consulted to life science companies to develop pharma products, medical devices, medical IT products
- 14 years of scientific research spanning neurology, cardiology, oncology, psychiatry and endocrinology
- PhD in Neuroscience, University of Michigan – Ann Arbor
- Postdoctoral fellowships in translational medicine and neuroendocrinology, University of Michigan – Ann Arbor
- Named inventor in several biomedical patent applications



**Kerry W. Wilson**

*Director, Engineering Project Management*

- Currently managing engineering and project planning at ZIVO
- Formerly adjunct professor, University of Notre Dame, life science entrepreneurial studies and consultant to Notre Dame startups
- Formerly Director of Engineering, HandyLab, Inc. and lead developer of lab-on-a-chip technology platform.
- Formerly Manager, Bayer Diagnostics Business Development and Product Manager for Urine Chemistry Marketing
- BA in Physics, Wabash College – Crawfordsville, IN
- BS in Engineering, Columbia University – New York, NY

# Platform Strategy

## The ZIVO Business Model

- To become a licensor of developed IP of proprietary algae cultures, extracts and derivatives. working with two different types of partners
- Near-Term partners - can use the ZIVO IP and get to market quickly – in animal health, human dietary supplements and functional foods
- Longer-Term partners - pharmaceutical companies

## ZIVO Core Intellectual Property

- Proprietary, optimized algae strains
- Patented process of producing bioactive compounds
- Nutritive or bioactive components extracts, and
- Application of that strain/extract in supporting health and longevity

## World-Class Research & Validation

- Potential partners and licensees require proof that ZIVO's nutritional and active components deliver on claims
- Over last four years, ZIVO has engaged in a variety of validation, safety, interactions, and stability tests to prove such claims, and meet compliance regulations set forth by the FDA, USDA, EPA, and FTC

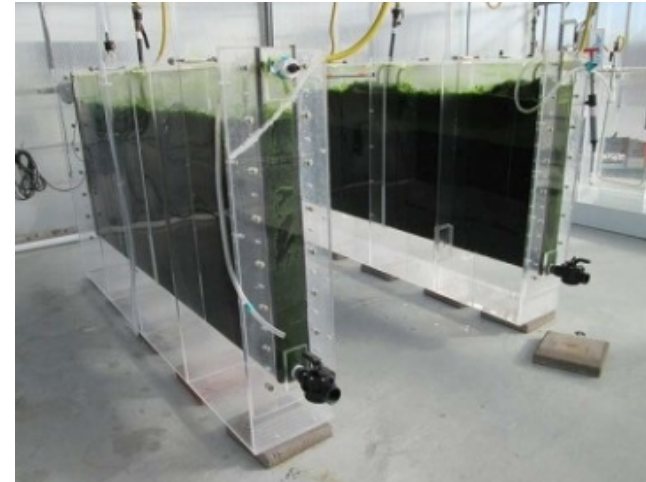
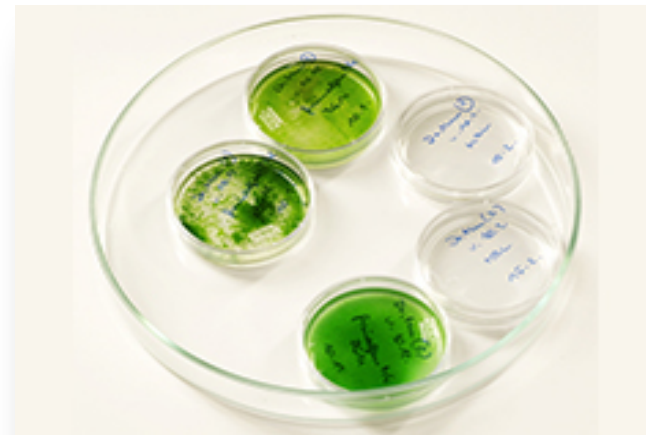


Photo courtesy of Arizona Center for Algae Technology & Innovation



# Food, Farming & the Future

**The Company's algal biomass, secondary metabolites and extracts may be developed into ingredients for these market verticals**

- Dietary Supplement/Nutraceutical
  - According to Transparency Market Research, the global nutraceuticals market will be \$279 Billion by 2021
  - US and worldwide opportunities include spirulina, algae-derived Omega-3s, algae-derived astaxanthin, dried kelp, etc.
- Functional Food Ingredient
  - Over 400 good-for-you food and beverage categories need powerful ingredients to support their product claims
  - Dozens of licenses can be created
- Pharmaceuticals
  - As potential lead compounds for drug development



**ZIVO is in discussions with major partners to propose joint ventures**

# New Vegan Protein Product Concept

**In November 2016, ZIVO unveiled a new, high-protein vegan power drink Concept to compete in veggie smoothie and vegan power drink categories**

- Vegetable and fruit juice beverage contains the Company's proprietary algal biomass, dried to a fine powder, provides a significant non-animal, non-dairy, non-GMO, antibiotic-free source of vegan protein
- This new product concept is intended to displace other vegetable and soy based protein drinks - a significant global market
  - Unlike some other cultivated algae, the ZIVO strain is essentially bland and mixes well with sweet or savory flavors
  - The two flavors in development feature a sweet, pomegranate finish and the other a more savory, vegetable finish
- ZIVO algae biomass represents a potentially viable alternative to other sources of high-quality protein, once approved for sale
  - Early formulations boast a standout 42 grams of plant-based protein per 15-ounce serving in a category where the average is 8 or less
  - A 100- gram (3 oz.) portion provides 42 grams of protein and 24 grams of fiber, while delivering more Vitamin C than a medium-sized orange, and more Vitamin A than 3-1/2 oz. of beef liver



# ZIVO Vegan Power Drink vs Competition

The ZIVO high-protein vegan power drink compares favorably to other entries in veggie shake, smoothie mix and ready-to-drink categories, *offering higher protein content, vitamins, fiber and other health benefits.*

Market Opportunity	Strong demand for gluten-free, dairy-free, antibiotic-free, non-GMO, plant-based protein vegan smoothies
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ZIVO Megatein (12oz serving)*		Naked Pressed Hearty Greens (12oz)**	
Protein	▪ 18g	Protein	▪ 3g
Dietary Fiber	▪ 6g	Dietary Fiber	▪ 0g
Vitamin A	▪ 59% DV	Vitamin A	▪ 0% DV
Vitamin C	▪ 34% DV	Vitamin C	▪ 25% DV
Iron	▪ 12% DV	Iron	▪ 2% DV
Calcium	▪ 9% DV	Calcium	▪ 4% DV



\*Preliminary product specifications pending regulatory approval and formulation testing

\*\*Product specifications derived from bottle labeling

# Fastest Growing Beverage Category

The fruit juice /refrigerated smoothie category was the fastest growing beverage category in 2015.

- According to the market research firm, Technavio, the Global smoothies market **will be \$7 Billion by 2020.**

## Market Share: Fruit Drinks and Fruit Juices (C-store sales | 2015)

Sub-Category	Dollar Share	% Growth Y-o-Y
RTD Tea	5.60%	-6.60%
RTD Coffee	2.70%	-10.00%
Water	12.80%	4.60%
Others	2.20%	3.80%
Sports drinks	9.90%	2.10%
Energy drinks	27.70%	9.50%
Fruit drinks	4.40%	14.30%
Carbonated soft drinks	31.10%	23.30%
Fruit juices	3.40%	94.00%

Sources: The Nielsen Co., Dr. Pepper Snapple Group Inc.



Megatein has the opportunity to be disruptive in this beverage category because it contains **more protein and essential vitamins**



Naked Juice was acquired by PepsiCo in 2007.



Odwalla Inc. was acquired by the Coca Cola Company in 2001



# ZIVO Vegan Protein vs Competition

The ZIVO vegan protein drink/mix compares favorably to other entries in protein drink mix and ready-to-drink categories, offering high quality protein content, vitamins, fiber and other health benefits

Market Opportunity	According to a Euromonitor 2016 Report on Sports Nutrition, the sports protein powder drinks market will be \$4.7 Billion by 2020
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ZIVO Megatein* (100 grams)		Muscle Milk** (100 grams)	
Protein	▪ 43g	Protein	▪ 46g
Dietary Fiber	▪ 24g	Dietary Fiber	▪ 7g
Vitamin A	▪ 200% DV	Vitamin A	▪ 5% DV
Vitamin C	▪ 110% DV	Vitamin C	▪ 30% DV
Iron	▪ 80% DV	Iron	▪ 90% DV
Calcium	▪ 9% DV	Calcium	▪ 50% DV



\*Natural, non-concentrated algal biomass as ingredient

\*\*Preliminary product specifications pending regulatory approval and formulation testing

\* Milk whey concentrated with solvents

\*\*Product specifications derived from bottle labeling

## Human Health - Research

**The Company's proprietary algal culture extracts were found to be beneficial in pre-NDI/pre-IND studies as applied to human and hypercholesterolemic hamster models**

- In-vivo testing of hypercholesterolemia at Wayne State University Dept. of Nutrition and Food Science found test subjects treated with culture extracts dropped total cholesterol by 32% and increased HDL cholesterol counts by 5% in studies conducted 2009-2012
- In-vitro testing of human HEP-G2 and PBMC cell lines revealed early promise in addressing inflammatory cascades resulting from lipid peroxidation in repeated studies at Wayne State University School of Medicine conducted 2010-2012
- Company commenced isolation and characterization efforts of bioactive components in 2014 as potential cholesterol management, autoimmune and anti-inflammatory ingredients in human food and dietary supplements
- Upon completion of safety trials and GRAS certification, ZIVO intends to license the use of bioactive components in a variety of health and nutrition applications for human and animal use



WAYNE STATE  
UNIVERSITY

# Animal Health Opportunity

**Near-Term Focus** – ZIVO's proprietary, algae-derived bioactive compounds were found to be effective in early studies when applied to dairy cattle and dog models

## Dairy Cows & Bovine Mastitis

- A ZIVO pilot study in dairy cows indicated that the Company's algal culture may be effective in supporting bovine mammary gland health
- Mammary gland issues affect 10% of the U.S. dairy herd at any given time, costing producers as much as \$300 per occurrence, per animal. In the U.S. alone, production losses are near \$3 billion annually<sup>(1)</sup>



## Dogs & Osteoarthritis

- A ZIVO pilot study indicated that the Company's algal culture may be effective in maintaining proper joint function and supporting healthy muscle functioning in active dogs and slowing the degenerative effects of canine osteoarthritis.
- Canine dietary supplement industry tops \$10 billion in the U.S. alone
- Canine joint health supplements is a \$300 million market in the US alone



(1) Data from the National Mastitis Council

# Animal Health Opportunity – Zoetis Collaboration

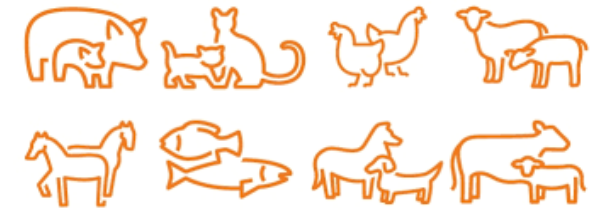
**The Company entered into a confidential Collaboration and Option Agreement with Zoetis, a global animal health company**

**Zoetis, Inc. is the world's largest producer of medicine and vaccinations for pets and livestock**

- Zoetis was a subsidiary of Pfizer, the world's largest drug maker
- Now an independent company and trades as NYSE:ZTS, with a \$24 Billion Market Capitalization and a member of S&P 500 Index
- Operates in 70 countries worldwide with recent expansions into Southeast Asia and China

**The agreement was created to study the prevention, treatment, and management of bovine mastitis**

- In the Agreement, ZIVO granted to Zoetis an exclusive option to negotiate an exclusive license
- Upon completion of a collaborative study (which is in process and will be completed upon adequate funding), the Agreement provides for a 90 day exclusivity period for evaluation of results and, based on the counterparty's desire for an exclusive license thereto, 90 days to conclude an exclusive license agreement

The Zoetis logo is displayed in a large, orange, lowercase sans-serif font.

# New JV Opportunity in Poultry Feed Additives

**ZIVO and NutriQuest have entered into an agreement in principle to develop and market animal nutrition products for immune health and productivity enhancement**



- Jointly conduct proof-of-concept studies to substantiate nutrition and health claims
- ZIVO to produce and NutriQuest to market a poultry feed additive, followed by swine and cattle
- NutriQuest operates in 20 countries, providing nutrition/health solutions to poultry and pork producers



Market Opportunity	Launch a category-dominating product in a rapidly growing segment of the global animal feed additive industry
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## NutriQuest and ZIVO Potential Partnership Structure

ZIVO Bioscience, Inc.	<ul style="list-style-type: none"><li>▪ Funds proof-of-concept poultry, swine studies</li><li>▪ Responsible for product formulation and production</li></ul>
NutriQuest, LLC	<ul style="list-style-type: none"><li>▪ Conducts proof-of-concept poultry, swine studies</li><li>▪ Markets and distributes finished products globally</li></ul>

**ZIVO and NutriQuest to split gross margin 50/50 over cost of goods sold**



# Poultry Feed Additive Market Landscape

**ZIVO animal health products are positioned as immune health and productivity enhancers**

- Non-starch polysaccharides are a valuable promoter of digestive health and immune response
- Producers are able to cut back on the use of antibiotics in feed and use lower-cost feed ingredients

Market Opportunity	The global animal feed additive market is expected to reach \$27 billion by 2021 at a CAGR of 6.5% per year <sup>1</sup>
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## Poultry Feed Additive Facts

Global Poultry Additive Market	▪ Expected to reach \$7.8 billion by 2018
Global Phytogenic Feed Additives	▪ This segment to reach \$675 million by 2020
Largest Markets for Phytogenics	▪ EU and US largest purchasers of phytogenic feeds
ZIVO Poultry Feed Additive	▪ Potential to be category leader

ZIVO and NutriQuest intend to obtain regulatory approval, secure biomass production offtake agreements and initially enter the market with a single poultry feed additive product

(1) Allied Market Research, "World Animal Feed Additives Market-Opportunities and Forecasts, 2014-2021".



## Animal Health – Research

**The Company's proprietary algal culture, its extracts and isolates, are found to be effective in pre-NDI studies as applied to dairy cattle and dog models**

- In-vitro testing of primary bovine mammary epithelial cells in 3D culture at University of Wisconsin-Madison Dept. of Dairy Science indicated enhanced immune response when cells were exposed to infective pathogens responsible for bovine mastitis, 2013-2014
- Explant testing of canine joint tissues at University of Missouri Comparative Orthopaedic Laboratory has indicated the Company's bioactive compounds may slow the degenerative effects of canine osteoarthritis, 2014
- Dairy cow mastitis in vivo pilot study at UC-Davis yielded very impressive results in combatting mycoplasma bovis. As part of its ongoing collaboration agreement with Zoetis, formerly Pfizer Animal Health – world's largest animal pharma company, the Company delivered a pilot study report in spring, 2015

ZIVO to conclude safety/efficacy testing in order to obtain regulatory approval to formulate and market products. Dairy cattle and poultry are the two initial target species



## Acquiring Other Intellectual Property

**Acquired assets of metabolic testing company in August 2013 – WellMetris is a subsidiary currently in FDA pre-submission, preparing for market launch and active partnering**

- WellMetris develops, manufactures, markets and sells Wellness Tests for humans and animals
- The Wellness Tests are intended to provide individuals the information and opportunity to optimize their health and identify future health risks or to provide insurers, employers and healthcare providers timely information to intervene with wellness programs, fitness regimes or other preventative measures
- ZIVO / WellMetris have filed and drafted an additional eight patent applications



# Capitalization/Ownership Table

Company has a shareholder base that believes in ZIVO's near-term and long-term prospects

Ownership Table (as of October 13 <sup>th</sup> , 2016)		
Holder	# of Shares	% Of CSO
Directors & Officers	24,646,415	18%
Public Float	111,570,361	82%
Total	136,216,776	100%
Capitalization Table		Weighted Average
Security	Common Stock Equivalent Held	Conversion / Exercise Price
Common Stock	136,216,776	
Convertible Debt	102,122,573	\$0.12
Warrants	29,267,488	\$0.10
Fully Diluted Shares Outstanding	267,606,837	

## Upcoming Milestones

**Management of ZIVO looks forward to announcing over the next several months, the following types of news announcements, pending available funding**

- ZIVO to conclude the final phases of its collaborative study with Zoetis, and begin negotiating an option/licensing deal
- ZIVO conducting safety studies for human FDA approval of its algal biomass and extracts as food ingredients and dietary supplement ingredients
- ZIVO conducting analytic studies at University of Georgia to fully characterize the active ingredients in its proprietary algal extract
- ZIVO to conduct product development with NutriQuest LLC to market algae-based poultry and pig feed ingredients
- ZIVO looks to expand production capacity in southern California or Southwest areas



## Investment Highlights

- \$13M<sup>(1)</sup> Equity Value represents compelling buying opportunity
- Near-Term commercialization opportunity with Zoetis – pending study
- Major opportunity in human health / nutraceutical production being pursued



(1) Equity Value as of January 4, 2017

## Corporate Presentation – January, 2017



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