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Pulse Biosciences

Advancing therapies through cell signaling

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[March 28, 2016]

Information Included In This Presentation

We have filed a Registration Statement on Form S-1 (including a prospectus) (our "Registration Statement") with the Securities and Exchange Commission (the "SEC") for the offering to which this communication relates. Before you invest, you should read the prospectus in that Registration Statement, as subsequently amended to date, and other documents that we have filed with the SEC for more complete information about us and this offering. You may get these documents for free by visiting EDGAR on the SEC website at www.sec.gov. Alternatively, we, our underwriters or any dealer participating in this offering will arrange to send you the prospectus if you request it.

This presentation contains certain forward-looking information about Pulse Biosciences. Forward-looking statements are statements that are not historical facts. Words such as "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue," "strong," "up coming," and similar expressions are intended to identify forward-looking statements. These statements include, but are not limited to, statements regarding our ability to successfully develop and commercialize our products; our ability to expand our long-term business opportunities; plans to conduct future clinical trials; the outcomes of our development activities, and their underlying assumptions; and our future performance.

Forward-looking statements may address the following subjects among others: expected products, applications, customers, technologies and performance, insurance reimbursements, results of clinical studies, success of research and development and our expectations concerning our business strategy. Forward-looking statements involve inherent risks and uncertainties which could cause actual results to differ materially from those in the forward-looking statements. Investors should review these and other risks inherent in our forward looking statements and our company under the caption "Risk Factors" in our most recently filed Registration Statement. The Company does not undertake, and specifically disclaims any obligation, to update or revise such statements to reflect new circumstances or unanticipated events as they occur.

In this document, we refer to information regarding potential markets for products and other industry data. We believe that all such information has been obtained from reliable sources that are customarily relied upon by companies in our industry. However, we have not independently verified any such information.

Pulse Biosciences Overview

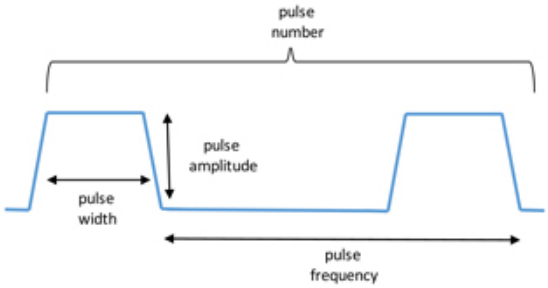
- **Novel therapeutic tissue treatment platform**
  - Nanosecond Pulsed Electric Fields (nsPEF) induce a unique cellular response
  - Addresses multiple potential markets - Tissue Ablation, Oncology, Dermatology/Aesthetics, and Veterinary
- **Proprietary position in nsPEF technology and IP**
  - Leveraging investment in R&D, IP, and pre-clinical studies from company and partners over the last 15 years.
  - Dominant IP position with 39 granted patents and 41 pending worldwide.
- **Capital efficient commercialization strategy**
  - U.S. FDA 510(k) for the platform to perform soft tissue ablation
  - Pulse generator platform being developed to pursue a number of applications
  - Potential strategic partnerships for commercial reach

Unique nsPEF Cellular Effect

- Nanosecond pulses applied across a cell create transient nanopores in the cell membrane and organelles.
- The nanopores allow Ca^{2+} to flow into the cell, stressing the endoplasmic reticulum, and inducing unique cellular responses.

Nano-Pulsed Electro-Signaling (NPES)

- Modulating the pulses can induce cellular **apoptosis**, the body's natural programmed cell death process.
- When applied to malignant cells it may induce immunogenic apoptosis.
- Applying the pulses across a volume of tissue may result in complete tissue ablation.
- This novel non-thermal tissue treatment technology is called **Nano-Pulsed Electro-Signaling.**



Pulse Modulation Parameters

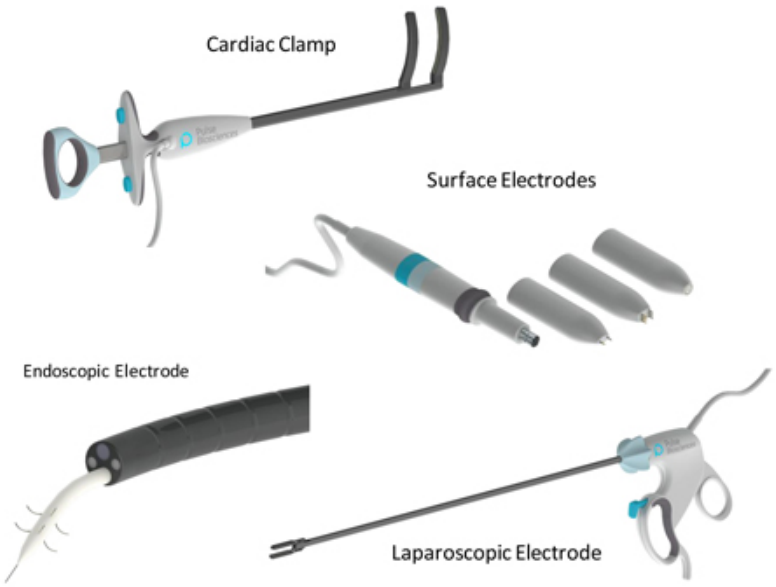
PulseTx™ – The First Commercial NPES System

- Pulse Biosciences is developing the first **tunable** NPES platform for human clinical use, the PulseTx™.
- Designed to support a wide array of electrodes.
- Plan to submit a 510(k) for soft tissue ablation.
- Tunable design is based on a novel pulse generator architecture.

PulseTx™ System Design

PulseTx™ Electrodes

- PulseTx™ is designed to support a broad array of electrodes.
- Relatively small incremental investment in electrode development.
- Designs for surface treatments in open surgery and minimally invasive procedures.



PulseTx™ Electrode Designs

NPES Applications

- Pursuing three significant vertical markets: Tissue Ablation, Oncology, and Dermatology/Aesthetics.
- Published data validates the use of NPES in each of these verticals.
- Veterinary Medicine Oncology may represent an additional opportunity.

NPES for Tissue Ablation

- Current ablation technologies use heat or cooling to destroy tissue, causing thermal necrosis and inflammation, resulting in secondary tissue damage.
- NPES induces apoptosis, with indicated good healing and little or no scaring.
- Ablation zones with NPES depend on the electric field so can be precise and consistent.
- NPES treatment times are short - seconds to several minutes.

We believe NPES has demonstrated an ability to induce immunogenic apoptosis, leading to an adaptive immune response against cancer cells.

Tissue Ablation – Partnership Strategy

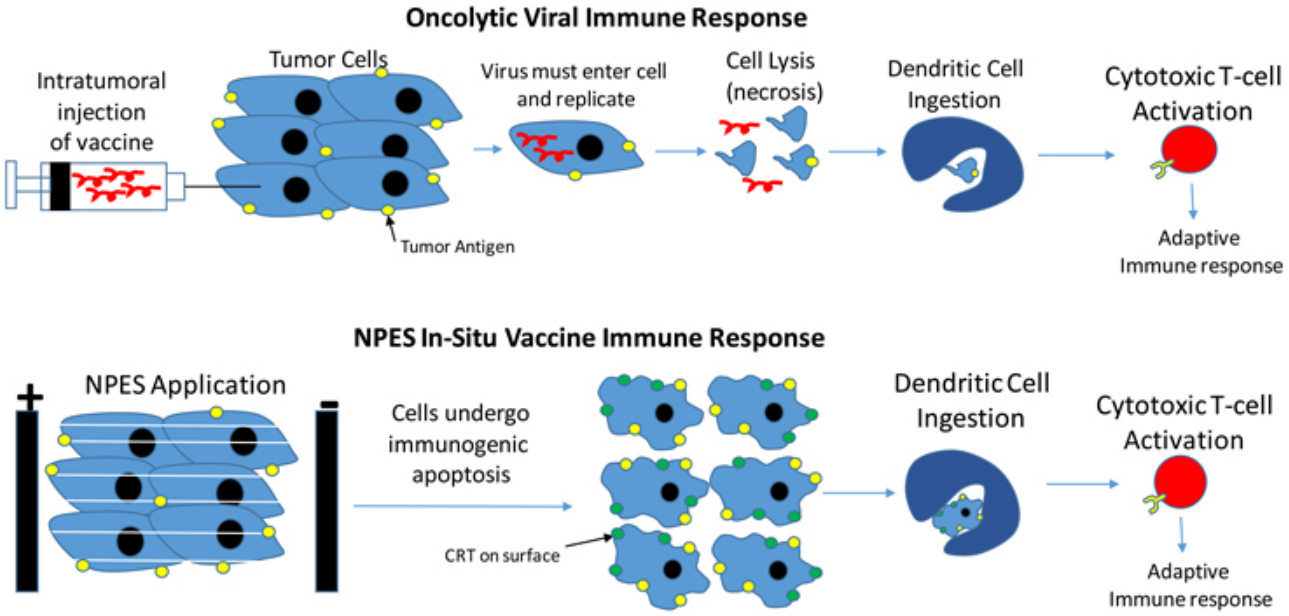
- Engage strategic partners in cardiac ablation
- Partnership opportunities in lung ablation applications
  - Potential applications include asthma, COPD, and chronic bronchitis
- Additional applications in ENT and GI specialties may be pursued through partnerships

Oncology

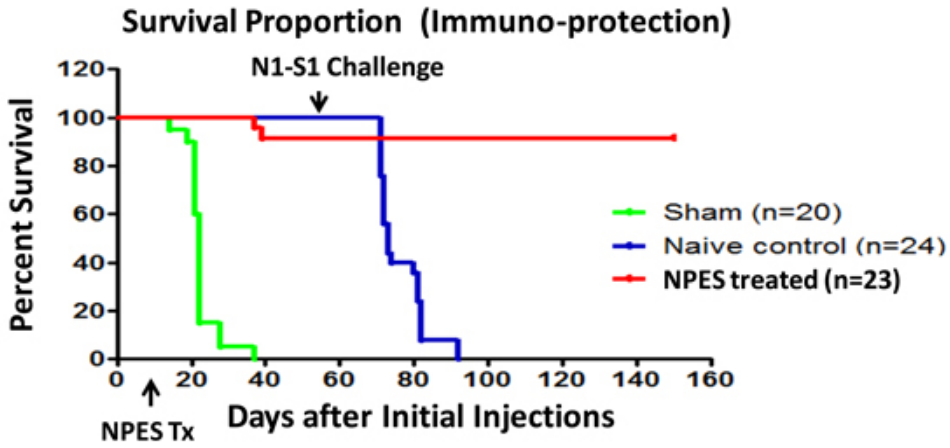
- **Cancer immunotherapy is revolutionizing cancer care**
  - Major biopharma companies investing significantly in internal programs and M&A;
  - Checkpoint inhibitors have shown good clinical results; and
  - Leading cancer centers are marketing direct to consumers.

- **PulseTx™ platform may play an important role**
  - NPES treatment may enable drug-free local tumor control that exposes the immune system to the local tumor antigens;
  - Potentially overcomes many of the challenges with oncolytic viral vaccines with potentially better results; and
  - Potentially synergistic with other immunotherapeutics, e.g. checkpoint inhibitors

Oncology - Immune Response Mechanisms



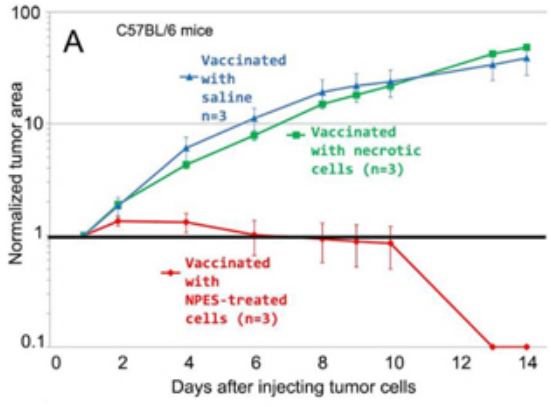
Oncology – Immune Response Data

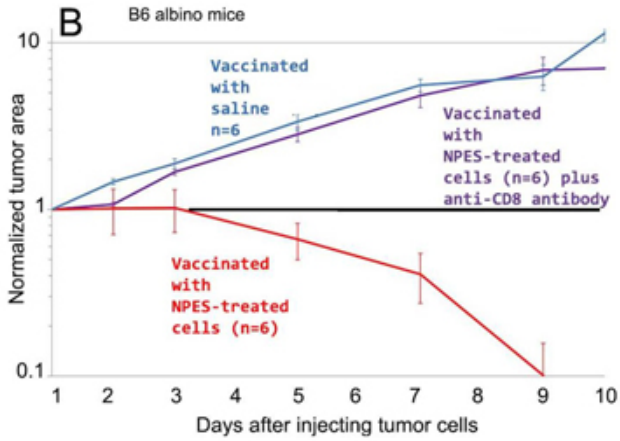


- 23 Rat liver tumors were ablated, seven weeks later secondary tumors were injected and failed to grow in any of the animals.

Chen et al. Euro J of Cancer 50: 2705 (2014)

Oncology – Immune Response Data





Tumor cells treated in vitro with NPES were used to vaccinate mice against fibrosarcoma tumors. Three weeks post vaccination animals were challenged with a fibrosarcoma cell injection, all NPES vaccinated mice resisted tumor growth unless they were pre-treated with an anti-CD8 antibody.

Nuccitelli et al. PLOS One 10(7):e0134364 2015)

Oncology – Go to market

- **Demonstrate NPES provides local, drug-free tumor destruction and the potential to elicit a systemic adaptive immune response**
  - Planning to execute a small study using 510(k) cleared system and IDE approval to demonstrate local tumor control and immune response.
  - The first clinical application may be in the treatment of melanoma.
  - Several additional applications may follow quickly once NPES is validated in melanoma – head and neck, liver, and lung cancer are all targets.

- **Partnership opportunities with medtech and biopharma companies**
  - We believe there are a number of oncology medtech companies that will be interested in a partnership.
  - Biopharma companies involved in immuno-oncology have shown preliminary interest.

Dermatology/Aesthetics Vertical

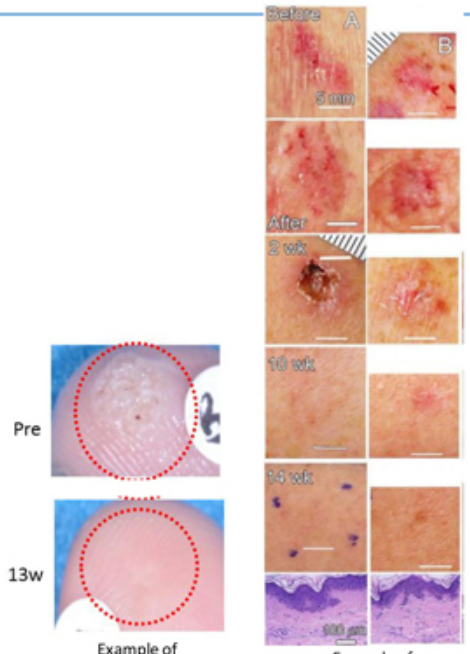
- **Current treatments of freezing, burning or cutting out lesions leads to longer and multiple treatments with disappointing cosmetic results**
- **NPES can provide a compelling treatment option**
  - **Apoptosis can result in complete ablation and excellent cosmetic result**
  - Short treatment time and we believe there is potential for single visit treatment
  - In office treatment that will fit into the office workflow
  - Immune response potential

Seborrheic Keratosis

Example of Single NPES Treatment

Dermatology/Aesthetics Vertical

- **Feasibility demonstrated in human pilot studies using NPES for benign and malignant skin lesions**
- **NPES Basal Cell Carcinoma Pilot Study**
  - Seven of ten lesions completely ablated;
  - No visible scars in successfully ablated lesions; and
  - We believe the study demonstrated NPES is safe and can offer a fast and scarless alternative to current standard of care.
- **NPES Wart Pilot Study**
  - Pilot study of up to 40 patients;
  - We believe this trial will demonstrate the feasibility of NPES in effectively treating warts; and
  - May help understand the potential for the treatment of multiple HPV wart indications.



Example of Wart Treatment

Example of BCC Treatment

Dermatology/Aesthetics – Go to Market

- Planning for a clinical study in dermatology in 2016 to validate treatment prior to commercialization.
- Initial regulatory clearance through the straightforward FDA 510(k) process will be pursued.
- We believe the PulseTx will be a good fit in the product portfolios of the large strategics in the dermatology and aesthetics space.

Veterinary

- **Commercial Rationale**
  - It has been reported that*,
    - there are over 70 million pet dogs in the U.S.
    - cancer is the #1 cause of death in dogs over the age of two
    - 50% of all dogs will acquire cancer, 25% of dogs will die from cancer
  - Existing therapies tend to negatively impact quality of life
  - No regulatory clearance needed
  - May provide a therapy that is easier for the veterinarian to sell to pet owner
- **Medical Rationale**
  - May provide a simple procedure with minor side-effects as compared to drugs or more significant surgical procedures
  - Can de-bulk tumor with potentially increased immunogenic activity to other known therapies

*U.S. Pet (Dog and Cat) Population Fact Sheet, American Humane Association, 2012

Veterinary – Go to Market

- Plan to execute studies at major veterinary medicine center(s) to validate scientific thesis
- Plan to engage with high volume veterinary oncologists to perform commercial oriented studies
- Plan to engage large veterinary chains to assess market feasibility
- Potentially partner with large veterinary device or oncology companies

Intellectual Property

- **We believe our NPES IP position enables value creation based on the potential for multiple medical indications and multiple business models that can be pursued.**
- **Patent Portfolio**
  - 39 issued worldwide
  - 41 pending worldwide
- **Current patents and patent applications describe**
  - Use of NPES to induce cell apoptosis or cell death
  - NPES pulse generators, electrodes, and indications
  - Use of NPES to induce an immune response

Commercialization Strategy

- Develop the first tunable NPES platform, PulseTx™, to support an array of electrodes.
- File for a 510(k) clearance of the PulseTx™ System for soft tissue.
- Pilot studies and partnering pre-510(k) clearance.
- Pursue partnerships in applications where strategics have domain expertise and an established distribution channel.

Commercialization Priorities

- Focus on applications/indications that require little to no clinical studies
- Focus on applications where reimbursement is not critical (eg. aesthetics and veterinary)
- Focus on applications where there are multiple partnering opportunities and where our technology could add significant value

Pulse Biosciences Management Team

- **Darrin Uecker, President/CEO**
  - 20+ years medical device experience
  - COO of Auxogyn, CEO/President of Gynesonics, CTO of RITA Medical
  - Experience in Surgical Robotics, Ablation, Women's Health
- **Rich Nuccitelli, Ph.D. – Chief Science Officer**
  - Over 35 years experience in biophysics, bioelectrics and medical devices
  - Over 120 published scientific papers and four books
  - Past President of the Bioelectromagnetics Society
- **Brian Dow, CFO**
  - Experienced MedTech CFO and finance executive, in public and private companies.
- **Dave Danitz, VP of Engineering**
  - 15 years medical device R&D product development experience

Pulse Biosciences Board of Directors

- **Darrin Uecker, President/CEO, Director**
- **Robert Levande, Chairman (non-Executive)**
  - 26 years Pfizer Medical Device Group, various senior management roles
  - Senior Managing Director at MDB Capital Group
  - Former Director Orthovita (NASDAQ)
  - Co-Founder of VirnetX (NYSE MKT)
- **Thierry Thaure, Director**
  - CEO Cephea
  - Former CEO Endogastric solutions
  - Former SVP Accuray
- **Mitch Levinson, Director**
  - Founder & CEO Cerebrotech
  - Founder & Former CEO Zeltiq
- **Robert Greenberg, MD, Ph.D., Director**
  - Co-Founder of Second Sight Medical Products
  - Co-managed the Alfred E. Mann Foundation

IPO Overview

- 5,000,000 shares at $4.00 per share
- 7.5 million shares outstanding pre-offering, 12.5 million post-offering
- Pre-money valuation approximately $30 million; post-money approximately $50 million
- Requirement to raise future capital via rights offerings to existing shareholders until company is profitable or shares reach $12 per share
- Timing of offering – late April early May

Pulse Biosciences

- Broad platform technology with a dominant IP position;
- Experienced team capable of developing and commercializing the technology platform;
- A straightforward 510(k) path based on predicate ablation systems;
- A number of significant applications to pursue either independently or through partnerships;
- Capital efficient value creation plan; and
- Multiple value inflection milestones - clinical data, partnership deals, PulseTx sales.

Pulse Biosciences

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