Corporate Overview
January 2019

NYSE American: RNN
The statements that follow (including projections and business trends) are forward-looking statements. Rexahn’s actual results may differ materially from anticipated results and expectations expressed in these forward-looking statements, including as a result of certain risks and uncertainties, such as Rexahn’s lack of profitability, the need for additional capital to operate its business to develop its product candidates; the risk that Rexahn’s development efforts relating to its product candidates may not be successful; the possibility of being unable to obtain regulatory approval of Rexahn’s product candidates; the risk that the results of clinical trials may not be completed on time or support Rexahn’s claims; demand for and market acceptance of Rexahn’s drug candidates; Rexahn’s reliance on third party researchers and manufacturers to develop its product candidates; Rexahn’s ability to develop and obtain protection of its intellectual property; and other risk factors set forth from time to time in our filings with the Securities and Exchange Commission. Rexahn assumes no obligation to update these forward-looking statements.
Investment Highlights

- Clinical stage biopharmaceutical company developing innovative therapeutics for cancers that are difficult to treat

- Targeted to tumor cells to maximize efficacy and minimize toxicity

- Phase 2 pipeline addressing significant market opportunities with high unmet medical need
  - Robust *in vitro* activity and *in vivo* data demonstrating efficacy
  - RX – 3117: Oral, small molecule nucleoside analogue activated selectively in cancer cells
  - RX – 5902: Oral, small molecule β-catenin/Wnt pathway modulator with first-in-class potential that has both antitumor and immunomodulatory activity

- Validating partnership to develop RX-0301 for hepatocellular carcinoma
# A Diversified Portfolio of Cancer Therapeutics

<table>
<thead>
<tr>
<th>CANDIDATE &amp; INDICATION</th>
<th>PRECLINICAL</th>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>COLLABORATOR/ PARTNER</th>
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<tbody>
<tr>
<td>RX-3117</td>
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<tr>
<td>Metastatic Pancreatic Cancer</td>
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<td>Advanced Bladder Cancer</td>
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<td>RX-5902</td>
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<td>Metastatic Triple Negative Breast Cancer</td>
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<td><a href="http://www.merck.com">Merck</a></td>
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<td>RX-0301</td>
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<td>Hepatocellular Carcinoma</td>
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<td><a href="http://www.huhai.com.cn">Zhejiang Huahai</a></td>
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RX-3117: Best-in-class Nucleoside Analogue

- Small molecule cancer cell specific nucleoside analogue
- Prodrug activated by UCK2 which is predominantly present in cancer cells
- Broad spectrum anti-cancer activity and active against gemcitabine resistant cancers
- Addressing significant unmet medical Need
  - Prognosis for metastatic pancreatic cancer is very poor; 5 year survival ≈ 7%
  - Few treatment options for advanced bladder cancer
  - Orphan drug designation for pancreatic cancer
- Completed Phase 2a clinical proof-of-concept trial for metastatic pancreatic cancer (third line)
- Currently being tested in a Phase 2a trial in first line metastatic pancreatic cancer patients
- Completed enrollment in Phase 2a clinical proof-of-concept trial in advanced bladder cancer (third line)
RX-3117 is activated by UCK2 which is abundant in cancer cells and minimally present in normal tissues.

Activated RX-3117 crosses the nuclear membrane and is incorporated into both RNA and DNA leading to cancer cell death.
RX-3117 is significantly more effective than gemcitabine in preclinical models of pancreatic and bladder cancer.
Clinical Development Path in Pancreatic Cancer

Phase 2a MONOTHERAPY
3rd Line

- Stage 1: n=10
- Stage 2 Expansion: n=40

Phase 2a COMBINATION WITH ABRAXANE®
1st Line

- Stage 1 Maximum Tolerated Dose of Combination: n=5
- Stage 2 Expansion: n=35

Ongoing
RX-3117 Phase 2a Monotherapy Study
Encouraging Safety and Efficacy in Third Line Pancreatic Cancer*

- 43 evaluable patients
- 78% percent of patients had received two or more prior cytotoxic therapies
  - Expected median survival of 1.5 months
  - 93% of the patients had progressed after receiving gemcitabine therapy

**Trial Results**

- Safe and well tolerated
- 31% of patients had disease stabilization for at least two months
  - Compares favorably to gemcitabine published data which shows 17% of 2nd line patients saw disease stabilization**
- Safety and initial efficacy data supported conducting a clinical trial in first line pancreatic cancer patients

* Data presented at ASCO GI January 2018
**Fernandes BM et al. J Clin Oncol 2017;35:4 suppl. 489
RX-3117 Phase 2a Combination Trial with ABRAXANE®
Demonstrated Tolerability in 1st Line Metastatic Pancreatic Cancer

- **Stage 1:** Determined optimal dose of RX-3117 in combination with ABRAXANE® (nab-paclitaxel)
  - Dosing
    - RX-3117: 700 mg PO daily 5 times a week, 3 weeks on/1 week off
    - Abraxane: 125 mg/m² iv once weekly, 3 weeks on/1 week off
  - Combination of RX-3117 and ABRAXANE® is safe and well tolerated when given at the highest recommended doses for both agents

- **Stage 2:** Plan to recruit a total of 40 patients into the study
RX-3117 Phase 2a Combination Trial with ABRAXANE®

Preliminary Results in 1st Line Pancreatic Cancer

Days on Study: Evaluable Subjects: Phase 1 and Phase 2 Stage 1

03-001
02-002
07-004
07-003
06-001
07-005
07-001
07-011
02-001
03-007
07-006
02-003
03-004
04-001
07-002
09-002
09-001
13-001
06-002
13-003
07-009
03-015
03-002
01-002
03-013
03-016
03-009
02-004
06-003
13-005
10-001
03-010
13-006
03-018

CR Complete Response
PR Partial Response

*Data presented at ASCO GI, January 2019
RX-3117 Phase 2a Combination Trial with ABRAXANE®
Preliminary Results in 1st Line Pancreatic Cancer (continued)

*Data presented at ASCO GI, January 2019

Best Overall Response per Subject – Phase 1 and Phase 2 Stage 1 (RECIST V1.1)

Change in Target Lesions from Baseline (%)

-120% -100% -80% -60% -40% -20% 0% 20% 40% 60% 80% 100% 120%

PR

PR* - small non-target lesion present

PR* - small non-target lesion present

0%

20%

40%

60%

80%

100%

120%

13%

0%

1%

0%

0%

19%

3%

1%

0%

25%

25%

0%

0%

0%

25%

-3%

-14%

-15%

-15%

-15%

-19%

-25%

-32%

-33%

-36%

-37%

-38%

-39%

-48%

PR

CR

PR*
RX-3117 Phase 2a Proof-of-Concept Trial in Advanced Bladder Cancer
Demonstrated Safety and Preliminary Efficacy in Heavily Pretreated Patients

Data presented at ASCO 2018
Number in parenthesis indicate the number of prior therapies the patient received

Longest progression-free survival duration – 315 days
RX-3117 Development Rationale

HIGH UNMET MEDICAL NEED
- Metastatic Pancreatic Cancer
  - Poor prognosis; short survival
- Advanced Bladder Cancer
  - Limited treatment options
- Limited innovation / development of new treatments

COMMERCIAL POTENTIAL
- Pancreatic Cancer – U.S. 49,000 new cases/40,000 deaths (2015)
  - $3+ billion market opportunity (first line)
- Bladder Cancer – U.S. 74,000 new cases/16,000 deaths (2015)
  - $1+ billion market opportunity (advanced)

REGULATORY / CLINICAL PATH TO MARKET
- Accelerated pathway for high unmet medical need indications
- Well defined development pathway

PRECLINICAL / CLINICAL DATA
- Better efficacy than gemcitabine in preclinical models of pancreatic and bladder cancer
- Initial evidence of single agent activity of RX 3117 - stable disease and tumor response in ongoing Phase 2a clinical trials in pancreatic and bladder cancer
RX-5902: Overview
Potential First-in-Class Inhibitor of Critical Cancer Pathway

- Orally active, highly potent small molecule inhibitor of phosphorylated p68 (p-p68)
  - Modulates β-catenin/Wnt pathway
  - Enhances the immune response to cancer cells: Increases tumor-infiltrating T cells and reduces immune suppressor cells

- Demonstrated activity in >100 human cancer cell lines including: triple-negative breast cancer (TNBC), ovarian cancer, pancreatic cancer, non small cell lung cancer, colon cancer, melanoma and renal cancer

- Completed Phase 1 clinical trial with RX-5902 in cancer patients and determined recommended Phase 2a dose

- Ongoing proof-of-concept Phase 2a monotherapy clinical trial in metastatic TNBC

- Phase 2a combination trial with KEYTRUDA® (pembrolizumab) in TNBC
  - First patient to be dosed in 2H 2019
Mechanism of Action

β-catenin turns on oncogenes (cancer genes) that promote proliferation and metastasis of cancer cells. RX-5902 targets P-p68 which plays a key role in promoting the transport of β-catenin into the nucleus where it turns on cancer genes.

RX-5902 binds to P-p68 and inhibits the transportation of β-catenin across the nuclear membrane, leading to a reduction in β-catenin in the nucleus which inhibits tumor growth.
RX-5902 Inhibited Human TNBC Tumor Growth in Preclinical Studies

Opportunity

- TNBC represents 20% of breast cancer diagnoses
- Limited treatment options
- Potential for expedited path to approval
Phase 1 Data Suggest Single-agent Activity

In Phase 1 trial, stable disease persisting more than 500 days achieved in three patients.
Phase 2a TNBC Monotherapy Trial

** 18% reduction in tumor volume

(x) = Number of prior therapies

** Best Overall Response of Stable Disease

J Clin Oncol 36, 2018 (suppl; abstr 1097)
In Phase 2 clinical trials in TNBC, immunotherapy increases progression free survival but the overall response rate is only 8% to 16%.

There is significant interest in identifying synergistic mechanisms to enhance the activity of immunotherapy agents.

RX-5902 potentiates the efficacy of immunotherapy in a humanized mouse xenograft model of TNBC by increasing the immune response to cancer cells through modulation of the β-catenin/Wnt pathway.

RX-5902 activates immune dendritic cells, increases T cell infiltration into the tumor and decreases the activity of immune suppressor cells.

### Planned Combination Study with Immunotherapy in TNBC

**Mouse TNBC (MDA-MB-231) Xenograft Model**

<table>
<thead>
<tr>
<th>TREATMENT GROUP</th>
<th>TUMOR GROWTH INHIBITION*</th>
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<tbody>
<tr>
<td>Vehicle</td>
<td>-</td>
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<tr>
<td>RX-5902**</td>
<td>0%</td>
</tr>
<tr>
<td>nivolumab</td>
<td>32%</td>
</tr>
<tr>
<td>RX-5902 + nivolumab</td>
<td>85%</td>
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* Tumor Growth Inhibition at day 26
**Sub-efficacious dose of RX-5902
Clinical trial collaboration and supply agreement with Merck to evaluate the combination RX-5902 with the anti-PD-1 therapy KEYTRUDA® (pembrolizumab)

## Primary Endpoint
- Overall response rate (ORR)

## Secondary Endpoint
- Progression free survival, Overall Survival, Overall Response using immune response related criteria, time to disease progression, Duration of Response

## Design
- Open label, single arm, multi-center trial
  - RX 5902: 250 mg po once daily five times a week
  - Pembrolizumab: 200 mg IV once every three weeks
- Safety cohort (10-15 patients)
- 2-stage Simon design (35 additional patients)

## Timing
- First patient to be dosed in 2H 2019
RX-5902: Rationale for Development in TNBC

HIGH UNMET MEDICAL NEED
- Triple Negative Breast Cancer (TNBC)
  - No approved therapy; poor prognosis
  - Not responsive to hormonal or targeted therapies used in other breast cancers

COMMERCIAL POTENTIAL
- TNBC represents approximately 15-20% of breast cancer diagnoses
  - $1+ billion market opportunity in metastatic TNBC

REGULATORY / CLINICAL PATH TO MARKET
- Accelerated / breakthrough pathway for high unmet medical need indications

PRECLINICAL / CLINICAL DATA
- Compelling preclinical proof of concept of combination with immunotherapy
- P-p68/β-catenin/Wnt pathway implicated in TNBC
RX-0301: Potential Best-in-Class AKT-1 Inhibitor

In Preclinical Hepatocellular Carcinoma Studies

- Novel inhibitor of cancer cell signaling protein AKT-1
  - Targets clinically-validated cancer pathway
  - Potentially inhibits drug resistance to existing therapies

- Preclinical models demonstrate potential of RX-0301 to:
  - Decrease proliferation / growth of cancer cells
  - Decrease tumor growth in HCC models

- Re-focusing clinical development on hepatocellular carcinoma
  - Commercially viable market (>$2B)
  - Advancing program through funded collaboration with Zhejiang Haichang Biotechnology Co., Ltd

AKT-1 signaling protein highly overexpressed in cancer cells

- AKT-1 elevated in cancer cells
- AKT-1 Inhibition blocks development of resistance to mTOR and Tyrosine Kinase inhibitors
- RX-0301 targets PI3K/AKT-1/mTOR pathway
Zhejiang Haichang Biotechnology Co., Ltd. is a privately-owned, specialized biotechnology company headquartered in Hangzhou, China, focused on the development and manufacture of complex intravenous pharmaceuticals.

Haichang will develop RX-0301 as a nano-liposomal formulation of RX-0201 using its proprietary QTsome™ technology.

Haichang will fund the development of pre-clinical and clinical activities through completion of a Phase 2a proof-of-concept clinical trial for the treatment of hepatocellular carcinoma.

Rexahn retains 30% of economics from downstream licensees in mainland China, Hong Kong, Macau and Taiwan, and 70% of revenues from licensees in the rest of the world.
## Upcoming Milestones

<table>
<thead>
<tr>
<th>Rx</th>
<th>Description</th>
<th>Quarter</th>
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<tbody>
<tr>
<td>RX-3117</td>
<td>Interim data from Phase 2 study in combination with ABRAXANE in first-line pancreatic cancer</td>
<td>Q1 2019</td>
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<td></td>
<td>Additional data from Phase 2 study in advanced bladder cancer</td>
<td>Q2 2019</td>
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<tr>
<td></td>
<td>Obtain end of Phase 2 guidance from FDA on development path in pancreatic cancer</td>
<td>Q3 2019</td>
</tr>
<tr>
<td>RX-5902</td>
<td>Updated data from Phase 2 monotherapy in TNBC</td>
<td>Q2 2019</td>
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<td>Dose First Patient Phase 2a combination study with KEYTRUDA®</td>
<td>Q3 2019</td>
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### Financial Summary

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<tr>
<th><strong>Exchange: Symbol</strong></th>
<th>NYSE American: RNN</th>
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| **Common Shares Outstanding**<sup>1</sup> | Outstanding: 37.5 million  
Fully Diluted: 52.9 million |
| **Market Capitalization**<sup>2</sup> | $35 million |
| **Resources**<sup>3</sup> | Cash and Investments: $16 million  
Estimated Quarterly Burn: $5 million |
| **Employees**             | 10                 |

<sup>1</sup> As of November 2, 2018;  
<sup>2</sup> Stock price as of January 3, 2019;  
<sup>3</sup> As of December 2, 2018
Experienced Leadership Team with Significant Drug Development, Regulatory and Strategy Experience

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<tr>
<th>Name</th>
<th>Position</th>
<th>Years of Experience</th>
<th>Previous Experience</th>
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| Douglas Swirsky             | President & CEO                               | 19+                 | 19+ years experience in life sciences executive leadership, corporate finance & investment banking  
                         |                                               |                     | Previously: President, CEO and Director of GenVec                                    |
| Lisa Nolan, Ph.D.           | Chief Business Officer                        | 25+                 | 25+ years experience in biopharma corporate strategy, M&A, funding partnerships, out-licensing, and in-licensing transactions  
                         |                                               |                     | Previously: Chief Business Officer at Relmada Therapeutics and Topigen Pharmaceuticals |
| Ely Benaim, M.D.            | Chief Medical Officer                         | 25+                 | 25+ years experience in healthcare including biopharma clinical research in academia, government, and industry and regulator affairs  
                         |                                               |                     | Previously: Senior Vice President of Regulatory Affairs & Chief Medical Officer of Berg Pharma |
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