Introducing FIT-E-D: Filling the Gap in the Treatment of Depression

Aben Cooper, MPT, MBA
David Miller, MBA
Chris Shoemaker, MEd, MBA

Problem 1: Subjective Diagnosis

Over the past couple of weeks, have you:

- [ ] been having restless or disturbed nights?
- [ ] been feeling unhappy or depressed?

[ ] Yes LIKELY DEPRESSION
[ ] No UNLIKELY DEPRESSION

The “Gold Standard”
Problem 2: Non-Compliance Leads to Relapse and Recurrence

The Kupfer Curve

```
<table>
<thead>
<tr>
<th>Increased Severity</th>
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</thead>
<tbody>
<tr>
<td>&quot;Normalcy&quot;</td>
</tr>
<tr>
<td>Symptoms</td>
</tr>
<tr>
<td>Depression Diagnosis</td>
</tr>
<tr>
<td>Drug Therapy</td>
</tr>
<tr>
<td>Response</td>
</tr>
<tr>
<td>Relapse</td>
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<tr>
<td>Recovery</td>
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<tr>
<td>Time</td>
</tr>
</tbody>
</table>
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Acute 6-12 Wks
Continuation 4-9 Mons
Maintenance > 1 yr

Problem 3: Depression Drastically Increases Health Care Costs

Increased Utilization & Costs in patients with Depression (12 Months)

- Outpatient Mental Health
- Outpatient Primary Care
- Outpatient Pharmacy
- Inpatient Medical

Patients without Depression: $2,371
Patients with Depression: $4,246

Source: Panzarino PJ, et al.
Who do the problems impact?

Who do the problems impact?

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Who do the problems impact?
Market Opportunity

Americans with 12-month Incidence

Target Market: 4 million Complex Depression Cases

Psych-Outpatient
- Drug Resistant Depression
- Reluctant Patient

Inpatient Mental Health
- Drug Resistant Depression
- Severe Clinical Depression

Patients with additional conditions
- Post Surgery
- Post Partum
Reimbursement Strategy

Premarket
- Demonstrate clinical utility
- Apply for CPT Code
- Form label considerations
- Approach AMA
- Influence thought-leaders through scientific board

FDA Review

Postmarket
- Continue gathering cost data
- Apply for new CPT Code
- Monitor payment experiences

Intermediate Revenue Development

Education of Commercial Partners:

Sublicensed research will generate an early revenue stream:

- sanofi aventis
- MERCK
- Lilly

Release Date:
- 2010/2011
- 2010
- 2011
The Path to FITE-D Technology

- **1983 – 2005: Rasenick**
  Animal studies and studies with cultured brain cells showed increase activation of Adenylyl Cyclase after chronic antidepressant treatment

- **1985: Schatzberg**
  Enhanced signal transduction by Adenylyl Cyclase in platelet membranes from patients showing effective antidepressant response

- **1990 – 2000: Rasenick**
  Gs-alpha mobility identified as a target of chronic antidepressant treatment

- **2005: Tabakoff**
  Platelet Adenylyl Cyclase activity is decreased in major depression

- **2008: Rasenick**
  Postmortem Brain Tissue of depressed Suicides reveals increased Gs-alpha localization in lipid raft domains where it is less likely to activate Adenylyl Cyclase

**Total NIH Funding to date: > $10 M**

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The Technology: FITE-D

FITE-D Measures Ratio of the amount of Available vs Unavailable Gs
Value Proposition

<table>
<thead>
<tr>
<th>Party</th>
<th>Benefit</th>
<th>Quantitative Impact</th>
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</thead>
<tbody>
<tr>
<td>Patient</td>
<td>• Shortened time to effective treatment (less &quot;error&quot; in Trial and Error)</td>
<td>Early discontinuation of treatment is estimated to cost between $800-$3000 per year per patient (Arch Internal Medicine, 2005)</td>
</tr>
<tr>
<td></td>
<td>• Decreased exposure to unnecessary side-effects from non-efficacious medication</td>
<td></td>
</tr>
<tr>
<td>Physician</td>
<td>• Increased patient compliance</td>
<td>Study shows increased compliance occurs w/ increased education given, (&gt;65 group)</td>
</tr>
<tr>
<td></td>
<td>• Greater certainty in diagnosis</td>
<td>(International Journal of Geriatric Psychiatry, 2002)</td>
</tr>
<tr>
<td>Payer</td>
<td>• Decreased time to treatment efficacy</td>
<td>Direct medical costs estimated at $3.5 million per 1000 plan members with depression (Arch Internal Medicine, 2005)</td>
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<tr>
<td></td>
<td>• Fewer psychiatric visits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Decreased complications of medical illness due to comorbidity</td>
<td></td>
</tr>
<tr>
<td>Pharma</td>
<td>• Reduced the cost of clinical trials</td>
<td>If FITE-D could improve only 1 in 10 “go”, “no-go” decisions the average savings in drug development costs might be as great as $100 million (Business Insights, 2006)</td>
</tr>
<tr>
<td></td>
<td>• Fast-track promising compounds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Increased compliance leads to increased use of therapeutic</td>
<td></td>
</tr>
<tr>
<td>Employers</td>
<td>• Reduced absenteeism, presenteeism, disability</td>
<td>Persons who are depressed miss work because of illness at twice the rate of the general population, translating into $44 billion in annual wages (Managed Care Magazine, 2006)</td>
</tr>
<tr>
<td></td>
<td>• Increased productivity</td>
<td></td>
</tr>
</tbody>
</table>

Intellectual Property

- Technology protected by Issued U.S. Patents:
  - 6,875,566: Methods for Assaying Antidepressant Therapy Markers
    Filed 7/30/2005
  - 7,118,858: Marker for Antidepressant Therapy & Methods Related Thereto
    Filed 2/8/2005

- International Coverage:
  - Publication Number: WO/2006/121869: Compositions and Methods for Treating Mood and Anxiety Disorders

- Exclusive Option to License pending funding
Agreement with UIC

- Exclusive option to license the technology
- Exercisable contingent on funding
- Standard License terms:
  - 3-5% Royalties
  - Milestone payments and/or
  - Equity in Pax Neuroscience, Inc.
- Legal Representation (Sonnenschein Nash & Rosenthal)

Competing/Complementary Technologies

<table>
<thead>
<tr>
<th>Technology</th>
<th>Accuracy</th>
<th>Readiness</th>
<th>Cost</th>
<th>FDA Approved</th>
<th>Covered by Insurance</th>
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</thead>
<tbody>
<tr>
<td>FITE-D</td>
<td>4</td>
<td>2</td>
<td>$225</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Rating Scales</td>
<td>3</td>
<td>5</td>
<td>$250</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Electroencephalogram (EEG)</td>
<td>3</td>
<td>3</td>
<td>≈$500</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Cytochrome P450 (CYP450) genotyping test</td>
<td>3</td>
<td>5</td>
<td>$970</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>5HTTLPR biomarker</td>
<td>3</td>
<td>5</td>
<td>$500</td>
<td>Yes</td>
<td>No</td>
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</tbody>
</table>

**5 is the preferred rating**
## Exit Summary

- Seeking Series A funding of $1.5 Million to achieve critical milestones prior to regulatory process
- Offer innovative product advantage to acquisition partner
- Opportunity to build the company with future products (diagnostic and therapeutic)
- Initial investors can expect a return of 10 times their investment
### 2009 Funds

#### Use of Funds
- 55%
- 25%
- 4%
- 5%
- 2%
- 2%
- 2%
- 2%

#### Source of Funds
- 97%
- 1%

- **STTR Federal Grant**
- **Illinois Matching Grant**
- **Series A Investment**

**STTR Grant Due**
August 5, 2009

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### The Team

<table>
<thead>
<tr>
<th>Founders</th>
<th>Business Advisory Board</th>
<th>Scientific Advisory Board</th>
</tr>
</thead>
</table>
| **Christopher Shoemaker, MEd, MBA**  
Director of Business Management | Marc Puleo, MD  
Pharma Entrepreneur  
Founder  
1800PETMEDS | Alan Schatzberg, MD  
Stanford University  
President-Elect  
American Psychiatric Association |
| **David Miller, MBA**  
Director of Operations | Rajni Aneja, MBA  
zuChem Inc. | Mark Rapaport, MD  
Cedars-Sinai/UCLA |
| **Aben Cooper, MPT, MBA**  
Director of Research & Development | Suzanne O’Shea, JD  
Baker & Daniels | Eric Nestler, MD, PhD  
PsychoGenics  
Mount Sinai School of Medicine |
| **Kate Liebelt**  
Pharma Outsourcing Manager | Bryan Roth, MD, PhD  
University of North Carolina |
| **Ryan P. Haas, JD**  
Sonnenschein Nath & Rosenthal | Mark Rasenick, PhD  
Inventor  
University of Illinois at Chicago |
| **Rodney Shrader, PhD**  
University of Illinois at Chicago | | |
In Summary:

- **Strong I.P. Protection**: 2 Issued U.S. Patents, 1 PCT
- **Proof of Concept Exists**: Animal/Human studies
- **Competitive Advantages**: Speed, Objectivity, Cost
- **Industry Interest**: Major drug company is using FITE-D
- **World-Class Advisory Board**: Science & Industry
- **Potential Future Products**: Diagnosis & Therapeutic

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Thank You to:

Mark Rasenick, Ph.D.
Rajni Aneja, M.B.A.
Robert Donati, Ph.D.
Rodney Shrader, Ph.D.
### Questions?

<table>
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<tr>
<th>Problem 1</th>
<th>Value Proposition</th>
<th>FDA Process</th>
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<tr>
<td>Problem 2</td>
<td>Intellectual Property</td>
<td>Current Stage of Development</td>
</tr>
<tr>
<td>Problem 3</td>
<td>Agreement with UIC</td>
<td>Current Multiples</td>
</tr>
<tr>
<td>Who do the problems impact?</td>
<td>Competition</td>
<td>Transaction Multiples</td>
</tr>
<tr>
<td>Solution</td>
<td>Path to Commercialization</td>
<td>Income Statement</td>
</tr>
<tr>
<td>Market Opportunity</td>
<td>Exit Summary</td>
<td>Cash Flows</td>
</tr>
<tr>
<td>Target Market</td>
<td>2009 Funds</td>
<td>Balance Sheet</td>
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<tr>
<td>Reimbursement Strategy</td>
<td>TEAM</td>
<td>The Inventor</td>
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<tr>
<td>Intermediate Revenue</td>
<td>Business Model</td>
<td>Risks</td>
</tr>
<tr>
<td>The Path to FITE-D</td>
<td>Valuation</td>
<td>Current Standard of Care</td>
</tr>
<tr>
<td>The Technology</td>
<td>Pioneer Products Penetration</td>
<td>Workflow</td>
</tr>
</tbody>
</table>

### Business Model

![Business Model Diagram](image-url)
Valuation

- If exit after FDA approval via acquisition 2012 or later:

<table>
<thead>
<tr>
<th>Transaction Value ($ millions)</th>
<th>Industry</th>
<th>Acquiring Party</th>
<th>Transferring Party</th>
<th>Revenue at time of Purchase</th>
<th>Multiple</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.5</td>
<td>Diagnostics</td>
<td>Carl Zeiss AG</td>
<td>Clarient</td>
<td>6</td>
<td>2.08</td>
<td>2007</td>
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<tr>
<td>27</td>
<td>Diagnostics</td>
<td>Genetix</td>
<td>Applied Imaging</td>
<td>20</td>
<td>1.35</td>
<td>2006</td>
</tr>
<tr>
<td>27</td>
<td>Diagnostics</td>
<td>Cepheid</td>
<td>Sangtec Molecular Diagnostics</td>
<td>8</td>
<td>3.38</td>
<td>2007</td>
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<tr>
<td>102</td>
<td>Medical Devices</td>
<td>Greatbatch Inc.</td>
<td>Enpath Medical Inc.</td>
<td>39</td>
<td>2.62</td>
<td>2007</td>
</tr>
<tr>
<td>110</td>
<td>Medical Devices</td>
<td>Eppendorf Group</td>
<td>New Brunswick Scientific Company Inc.</td>
<td>75</td>
<td>1.47</td>
<td>2007</td>
</tr>
</tbody>
</table>

- Projected Revenue at time of acquisition = $15 Million
- Value Drivers: Patents, Advisory Board, Proof of Concept, Industry Connections, Market Viability

Revenue Forecasting - Product Life Cycle

- Pioneering drugs may take as long as 8 years to reach peak, while “me-too” drugs may hit peak in 3 years
- Pioneering products may take longer to reach peak, because unfamiliarity with safety and usage can limit physician utilization
  - “A major reason for the long growth phase of pioneer drugs in our opinion results from the high perceived risk that doctors are facing when they prescribe new products.”
  - Bauer & Fischer, 2000*
- “Me-too” drugs that follow the pioneers can reach peak more quickly, since they leverage the existing knowledge base for the class

---

**Bauer, H.H. and Fischer, M., 2000, “Product life cycle patterns for pharmaceuticals and their impact on R&D profitability of late mover products”, International Business Review, vol. 9, p. 755-775. The growth phase of the “Pioneer” curve is generated using the NORMDIST Excel function with 7 years of ramp and a standard deviation of 2. L.E.K. analysis was used to fill in the decay phase for the “Pioneer” curve, which was not given in the Bauer & Fischer research.
**The FDA Process**

**FITE-D**
- Class II Device
- In Vitro Diagnostic Device
- Predicate Device Identified
- 510(k) Application
- Clinical Trial – CRO: Comprehensive Neuroscience

---

**Dr. Mark Rasenick**

“In simple language -- we may be able to tell you if you are depressed and more importantly, whether you are responding to the chosen antidepressant therapy.”
Current Stage of Development

Concept Proven in:

- Animal Studies
- Human Brain tissue

Theoretical Concept exists:

- Large Pharmaceutical - current

Competitive Advantages

**FITE-D** is:

- Objective
- Fast
- Inexpensive
The Solution: FITE-D

<table>
<thead>
<tr>
<th>January 2009</th>
<th>February 2009</th>
<th>Mar-09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
</tr>
<tr>
<td>Week 4</td>
<td>Week 5</td>
<td>Week 6</td>
</tr>
<tr>
<td>Week 7</td>
<td>Week 8</td>
<td>Week 9</td>
</tr>
</tbody>
</table>

- Depression is Diagnosed: ✧
- FITE-D Test 1 is Administered: ✧
- Antidepressant Treatment Begins: →
- FITE-D Test 2 Administered: ✧
- FITE-D Delivers YES/NO Result: ✧

Current Standard of Care

Patient Reevaluated

Patient Continues Treatment

Improved Standard of Care
Reduced Side-Effects

Fast Objective

Current multiples have significant drawbacks that limit their application

Current Multiples Analysis

- It is difficult to find peer companies that have similar value drivers

- By assuming value drivers are similar across peer companies, comparable multiple analysis “averages away” the very distinctions that are most important in estimating value

- Ratios are often not comparable across companies, across time or across international borders

- Comparable multiples analysis typically uses public company data to calculate the value to current owners -- issues specific to a private company may result in a value different from a similar public company

- It is difficult to estimate how a multiple should change as a result of changes in strategy, making them useless in evaluating different strategies
Transaction multiples also have significant drawbacks that limit their application

**Transaction Multiples Analysis**

- Similar transactions may not be available
- Past acquirers may have paid too much or too little…
- ...and just because others paid certain multiples does not mean that it makes sense for you to do so
  - Prices others paid (presumably) reflected the value they were able to achieve including the specific synergies the acquirer and target could realize
  - You may be able to achieve greater or lesser amounts of synergies
  - Never pay more than a company is worth to your firm
- Data is not comparable across companies, across time, or across international borders
- It is difficult to estimate how the premium would change as a result of changes in strategy
- Comparable transaction analysis only calculates synergistic values, not current value

**Income Statement**

**Pax 5 Year Income Statement (thousands of $)**

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milestones &amp; Royalties</td>
<td>1000</td>
<td>1500</td>
<td>2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grants</td>
<td>150</td>
<td>750</td>
<td></td>
<td></td>
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<tr>
<td>Contracts</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sales</td>
<td>528</td>
<td>16449</td>
<td>33482</td>
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<tr>
<td><strong>Gross Revenue</strong></td>
<td>0</td>
<td>150</td>
<td>2273</td>
<td>16148</td>
<td>35482</td>
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<tr>
<td><strong>Operating Expenses</strong></td>
<td></td>
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</tr>
<tr>
<td>Compensation &amp; Benefits</td>
<td>270</td>
<td>270</td>
<td>550</td>
<td>1400</td>
<td>1700</td>
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<td>Insurance Premiums</td>
<td>50</td>
<td>60</td>
<td>25</td>
<td>1025</td>
<td>2344</td>
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<td>Royalties &amp; Licensing fees</td>
<td>60</td>
<td>70</td>
<td>50</td>
<td>1025</td>
<td>1674</td>
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<td>Professional Fees</td>
<td>70</td>
<td>100</td>
<td>225</td>
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<td>Rent</td>
<td>20</td>
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<td>80</td>
<td>130</td>
<td>150</td>
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<td>General &amp; Administrative</td>
<td>20</td>
<td>25</td>
<td>35</td>
<td>35</td>
<td>40</td>
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<td>Depreciation of Property, Plant and Equipment</td>
<td>1</td>
<td>12</td>
<td>24</td>
<td>28</td>
<td>38</td>
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<td>Research &amp; Development</td>
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<td>50</td>
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<td>Product Development</td>
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<tr>
<td>Clinical Studies</td>
<td>1000</td>
<td>3000</td>
<td>1000</td>
<td>2000</td>
<td>1794</td>
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<tr>
<td><strong>Total Operating Expenses</strong></td>
<td>1,539</td>
<td>3,637</td>
<td>3,966</td>
<td>5,471</td>
<td>7,816</td>
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<td><strong>Gross Operating Income (Loss)</strong></td>
<td>(1539)</td>
<td>(3487)</td>
<td>(1693)</td>
<td>1067</td>
<td>27666</td>
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<td><strong>Non-Operating Expenses</strong></td>
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<tr>
<td>Interest Expense</td>
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<td>(26)</td>
<td>(13)</td>
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<tr>
<td>Interest Income</td>
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<tr>
<td>Total Non-Operating Expenses</td>
<td>(8)</td>
<td>(26)</td>
<td>(13)</td>
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<tr>
<td><strong>Net Income (Loss) before Taxes</strong></td>
<td>(1539)</td>
<td>(3495)</td>
<td>(1716)</td>
<td>10771</td>
<td>27962</td>
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<td>Taxes</td>
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<td>(9780)</td>
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<td><strong>Net Income (Loss)</strong></td>
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<td>(3495)</td>
<td>(1716)</td>
<td>10771</td>
<td>27962</td>
</tr>
<tr>
<td>EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization)</td>
<td>(1539)</td>
<td>(3495)</td>
<td>(1716)</td>
<td>10771</td>
<td>27962</td>
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<td>Accumulated Income (Loss)</td>
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<td>(5000)</td>
<td>(6748)</td>
<td>2615</td>
<td>20776</td>
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</table>
# Cash Flows

PAX 5 Year Statement of Cash Flows (in thousands of $)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Net Income</strong></td>
<td>(1,539)</td>
<td>250</td>
<td>(3,490)</td>
<td>(430)</td>
<td>(310)</td>
<td>1,719</td>
<td>9,360</td>
<td>18,163</td>
<td></td>
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<td></td>
<td>1,719</td>
<td>9,360</td>
<td>18,163</td>
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<tr>
<td><strong>Adjustments to Net Income</strong></td>
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<tr>
<td>Depreciation and amortization</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>12</td>
<td>4.5</td>
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<td>4.5</td>
<td>18</td>
<td>28</td>
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<tr>
<td><strong>Net Cash Inflows from Operations</strong></td>
<td>(1,538)</td>
<td>-3</td>
<td>-3</td>
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<td>247</td>
<td>(3,478)</td>
<td>(434)</td>
<td>(434)</td>
<td>(434)</td>
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<td>(434)</td>
<td>(434)</td>
<td>(1,701)</td>
<td>9,390</td>
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<td><strong>Cash Flows from Investing Activities</strong></td>
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<tr>
<td>Purchase of Property, Plant, Equipment</td>
<td>(20)</td>
<td>(10)</td>
<td>(10)</td>
<td>(10)</td>
<td>(10)</td>
<td>(40)</td>
<td>(8)</td>
<td>(8)</td>
<td>(8)</td>
<td>(8)</td>
<td>(8)</td>
<td>(8)</td>
<td>(30)</td>
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<td>(50)</td>
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<tr>
<td><strong>Cash Flows from Financing Activities</strong></td>
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<td>Sale of Common Stock</td>
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<td>2000</td>
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</tr>
<tr>
<td>Long-Term Borrowings</td>
<td>50</td>
<td>440</td>
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</tr>
<tr>
<td>Long-Term Borrowings Payment</td>
<td>(50)</td>
<td>(440)</td>
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<tr>
<td><strong>Net Increase (Decrease) in Cash</strong></td>
<td>(58)</td>
<td>(1468)</td>
<td>2159</td>
<td>8900</td>
<td>18151</td>
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<tr>
<td><strong>Cash &amp; Short-Term Investments (start of period)</strong></td>
<td>0</td>
<td>(58)</td>
<td>(1526)</td>
<td>633</td>
<td>9534</td>
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<tr>
<td><strong>Cash &amp; Short-Term Investments (end of period)</strong></td>
<td>(58)</td>
<td>(1526)</td>
<td>633</td>
<td>9534</td>
<td>27685</td>
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</table>

# Balance Sheet

PAX 5 Year Balance Sheet (in thousands of $)

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash &amp; Equivalents</td>
<td>$ (58)</td>
<td>$ (1,526)</td>
<td>$ 633</td>
<td>$ 9,534</td>
<td>$ 27,685</td>
</tr>
<tr>
<td>Accounts Receivable - Net</td>
<td>$ 19</td>
<td>$ 47</td>
<td>$ 59</td>
<td>$ 81</td>
<td>$ 93</td>
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<tr>
<td>Property, Plant, &amp; Equipment</td>
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<td></td>
<td></td>
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<tr>
<td>Prepaid Expenses</td>
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<tr>
<td>Other Current Assets, Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>$ (39)</td>
<td>$ (1,479)</td>
<td>$ 692</td>
<td>$ 9,615</td>
<td>$ 27,778</td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts Payable</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other Current Liabilities, Total</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Current Liabilities</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Long-Term Debt</td>
<td>$ 50</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Total Long-Term Debt</strong></td>
<td></td>
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<tr>
<td>Deferred Income Tax</td>
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<tr>
<td>Other Liabilities, Total</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>$ -</td>
<td>$ 50</td>
<td>$ 440</td>
<td></td>
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</tr>
<tr>
<td>Redeemable Preferred Stock, Total</td>
<td>$ 1,500</td>
<td>$ 3,500</td>
<td>$ 7,000</td>
<td>$ 7,000</td>
<td>$ 7,000</td>
</tr>
<tr>
<td>Preferred Stock - Non Redeemable, Net Common Stock, Total</td>
<td>$ 1,500</td>
<td>$ 3,500</td>
<td>$ 7,000</td>
<td>$ 7,000</td>
<td>$ 7,000</td>
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<tr>
<td>Retained Earnings (Accumulated Deficit)</td>
<td>$ (1,539)</td>
<td>$ (5,029)</td>
<td>$ (6,748)</td>
<td>$ 2,615</td>
<td>$ 20,778</td>
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<tr>
<td>Other Equity, Total</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Equity &amp; Debt</strong></td>
<td>$ (39)</td>
<td>$ (1,479)</td>
<td>$ 692</td>
<td>$ 9,615</td>
<td>$ 27,778</td>
</tr>
</tbody>
</table>
Mark M. Rasenick, PhD

- Distinguished UIC Professor
- Physiology and Biophysics, and Psychiatry
- Director, Biomedical Neuroscience Training Program
- Robert Wood Johnson Foundation Health Policy Fellow
- Founded the Interamerican Consortium on Basic and Clinical Neuroscience

“In simple language -- we may be able to tell you if you are depressed and more importantly, whether you are responding to the chosen antidepressant therapy.”

Dr. Mark Rasenick

Risks

A. Market Acceptance
B. Depression Pharmacogenomics market is new with unknown demand
C. MDD field is well funded with emerging competitors
D. Limited Experience of Management Team
E. FDA 510 (k) Clearance
Paul Welstone Mental Health Parity Act

- Created in 1996
- Signed into law on Oct 3, 2008 as an addition to the Initial Financial Bailout Package signed by congress
- Ensures equal support for medical and mental health issues for employees of large companies

Current Standard of Care

1. Counseling
2. Electroconvulsive shock
3. Antidepressants
   - SSRI
   - MAOI
   - TCI

Trial and Error Prescribing

- Typically takes 4-6 weeks for a patient to remit on a given drug
- If no improvement after that time, either increase (or decrease) the dose or change prescriptions
- 30% of patients are not effected by first prescription
Digging Deeper for Antidepressant Action

- Increased hormonal activity improves disposition
- cAMP – cyclic AMP
  - facilitates the response to hormones intracellularly
- Adenylyl Cyclase (AC)
  - allows for creation of cAMP
- Patients who show positive reaction to Antidepressants, also show increased AC activity (Sulser '78, '83)

Gs-alpha Protein is the Key

- Available G-protein can activate AC
- Chain reaction begins w/ G-protein

Elisa Kit Characteristics

- 96 Wells
- 12 Wells per patient
- 8 Tests per kit
## Market Opportunity

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Depressed Persons in the United States</td>
<td>30,800,000</td>
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<tr>
<td>% Initiating Treatment in Given Year</td>
<td>29%</td>
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<tr>
<td>% Of Patients Prescribed Medication</td>
<td>85%</td>
</tr>
<tr>
<td>% That Can be Evaluated Using FITE-D</td>
<td>98%</td>
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<tr>
<td>True Addressable Population</td>
<td>7,440,356</td>
</tr>
</tbody>
</table>

## Workflow:

- **Physician informs patient of results:**
  - **Yes:** Continue prescribed treatment
  - **No:** Change medication or dosage
Where is the Light

My mood is black. I've lost all hope.
I've sunk into despair.
The tentacles of gloom grip tight
I must escape. But where

Am I to go? I've lost desire
To live or love or laugh.
I feel no pleasure, just dull pain.
I see my epitaph,

Yet it is blank. This endless gloom
From which I must escape
Yields no promise of afterlife.
I recognize no shape

Nor color, taste, passion, joy;
Just foul and acrid mood.
I cannot work, I cannot play
I lie in bed and brood.

Shall I end this worthless life?
Have I the motivation?
I guess I'll just maintain this state
Of endless dissipation.

—Mark M. Rasenick 12/7/99

Market Development

- Influence Thought Leaders
- Publish in Scientific Literature
- Build Awareness within Consumer Groups

Deliver FITE-D to Target Markets:

Primary Care Physicians

Psychiatrists
The Solution:

**FITE-D**

*Fast Indicator of Therapeutic Efficacy in Depression*

“In simple language -- we may be able to tell you if you are depressed and more importantly, whether you are responding to the chosen antidepressant therapy.”

Mark Rasenick, PhD

**Distinct Competitive Advantages:**

- **Objectively measures** response/non-response to drugs
- **Rapidly delivers** results (5 days vs. 45 days)
- **Easily integrated** with current standard of care