



molecularera labs

*Changing How Medicine is Practiced for
Neuropsychiatric and Behavioral Disorders*

*Angel Investor Overview
July 2018*

*Craig Shimasaki, PhD, MBA
Co-founder & CEO*



Convertible Bridge Note ***Maximum \$1MM, Minimum \$100K***

- 36 month term
- 20% discount into Series B
- 8% interest until conversion
- 30% warrant coverage at \$1/share

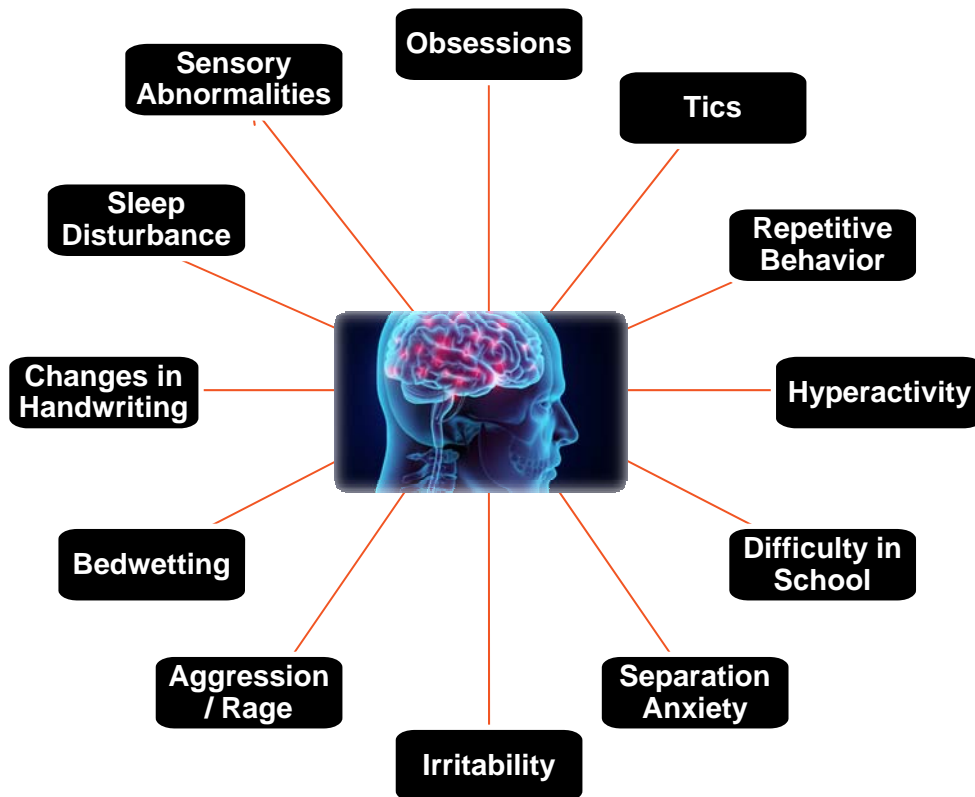
Series B Preferred \$8MM to \$12MM

- Anticipate in Q1/2019
- Ready to scale the business, expand the U.S./International markets and undertake additional clinical studies for broader expansion of clinical utility to Autism, ADD/ADHD, Anxiety disorder, Major Depressive Disorder, Tourette's, Developmental Disorders, etc.

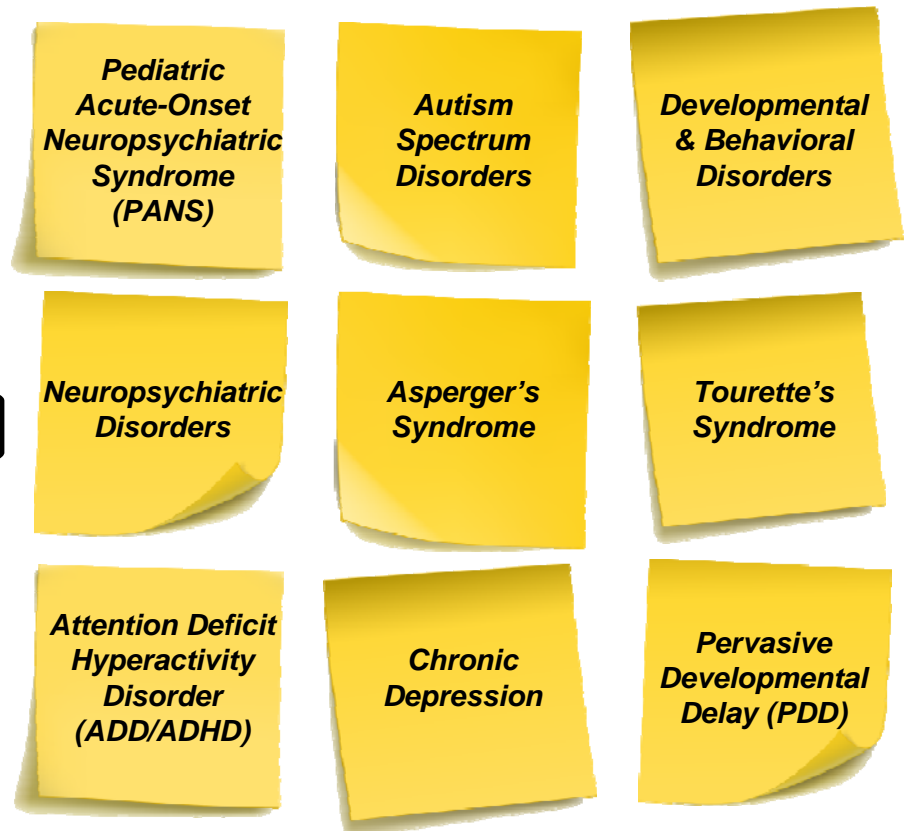
PROBLEM: Patients are Labeled into Symptom-Based Categories which are Typically Deemed “Incurable”



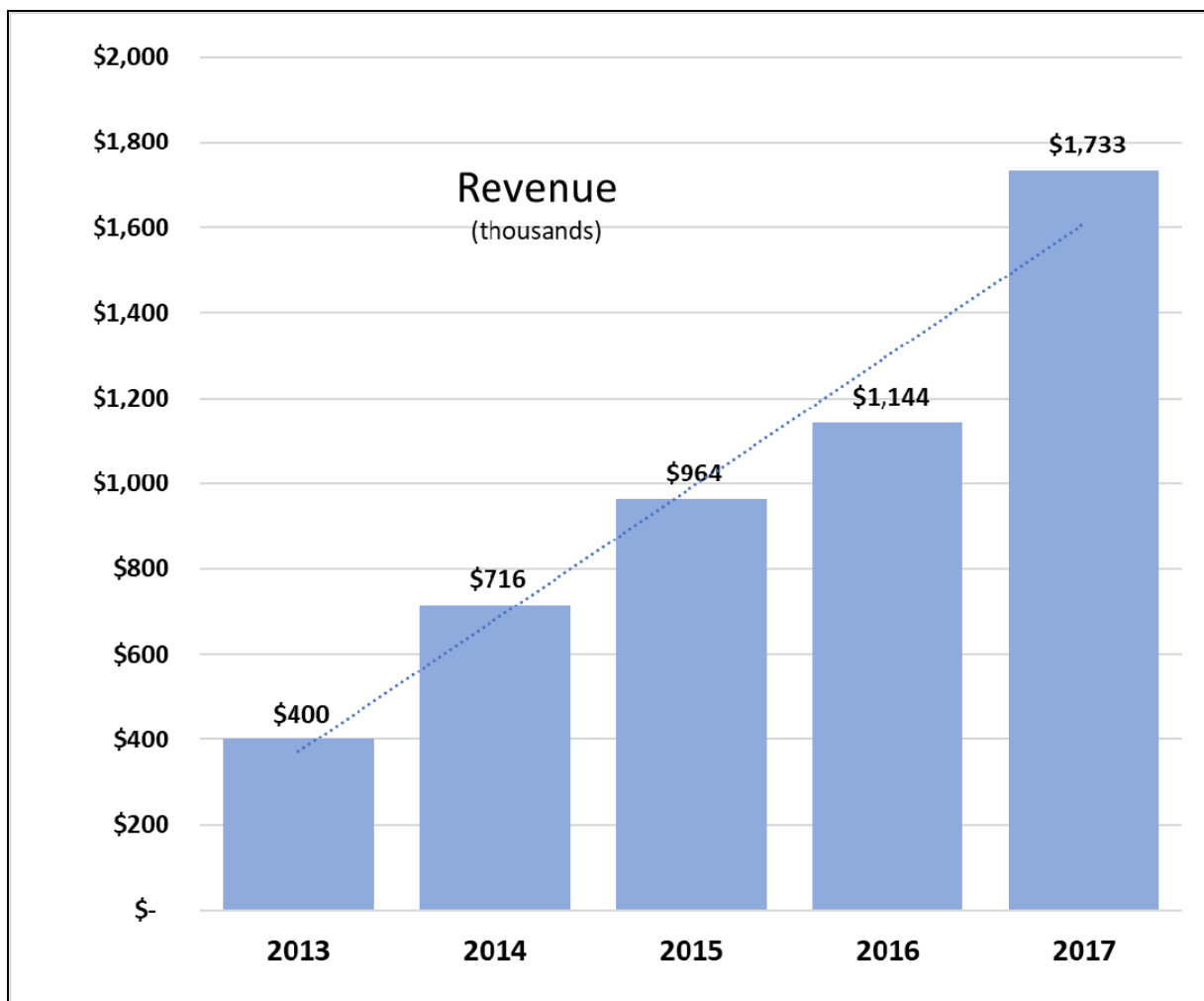
Common Symptoms



Diagnostic Categories



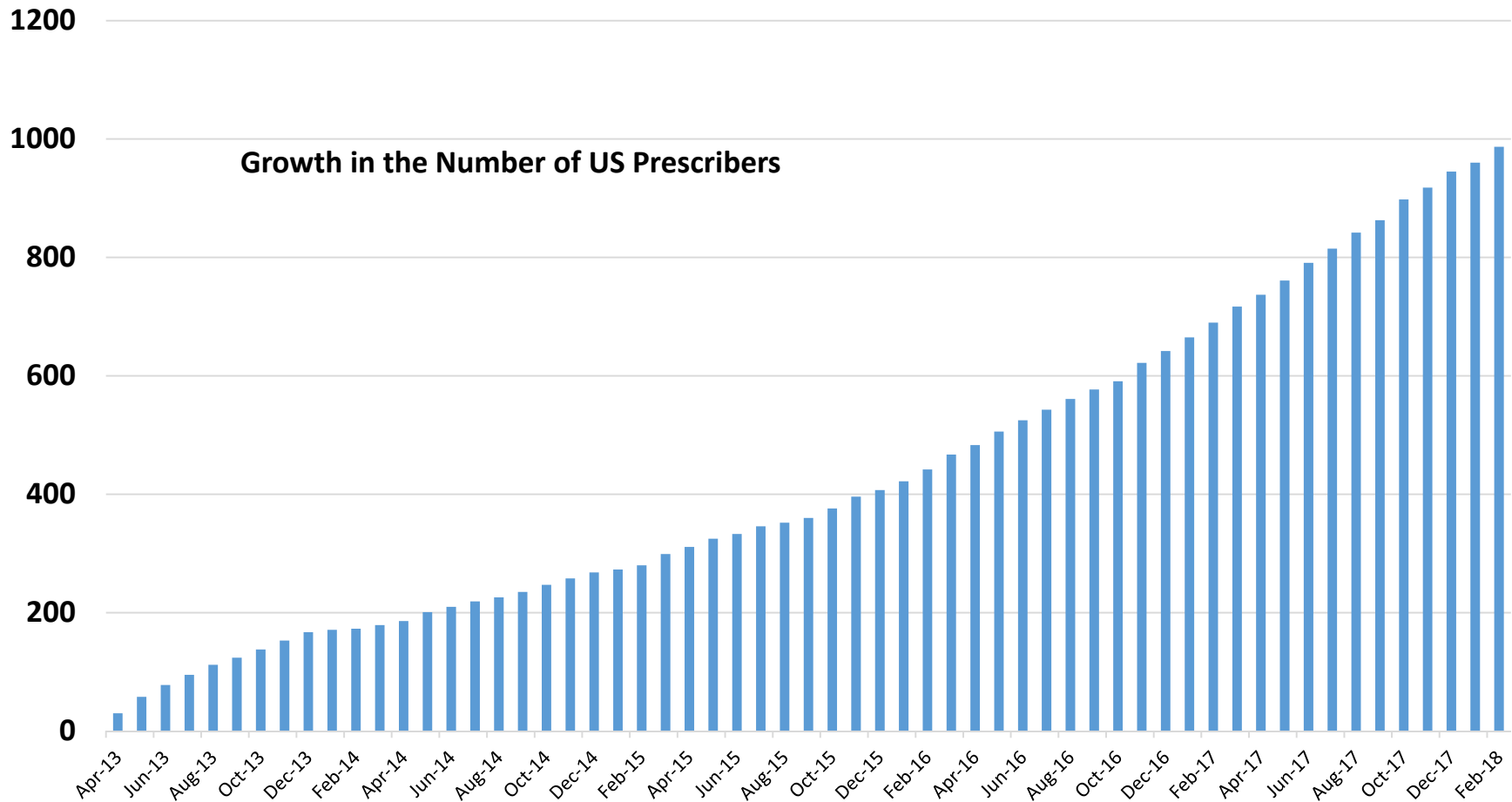
Steady Revenue Increase during Identification and Optimization of Most Effective Go-to-Market Strategy



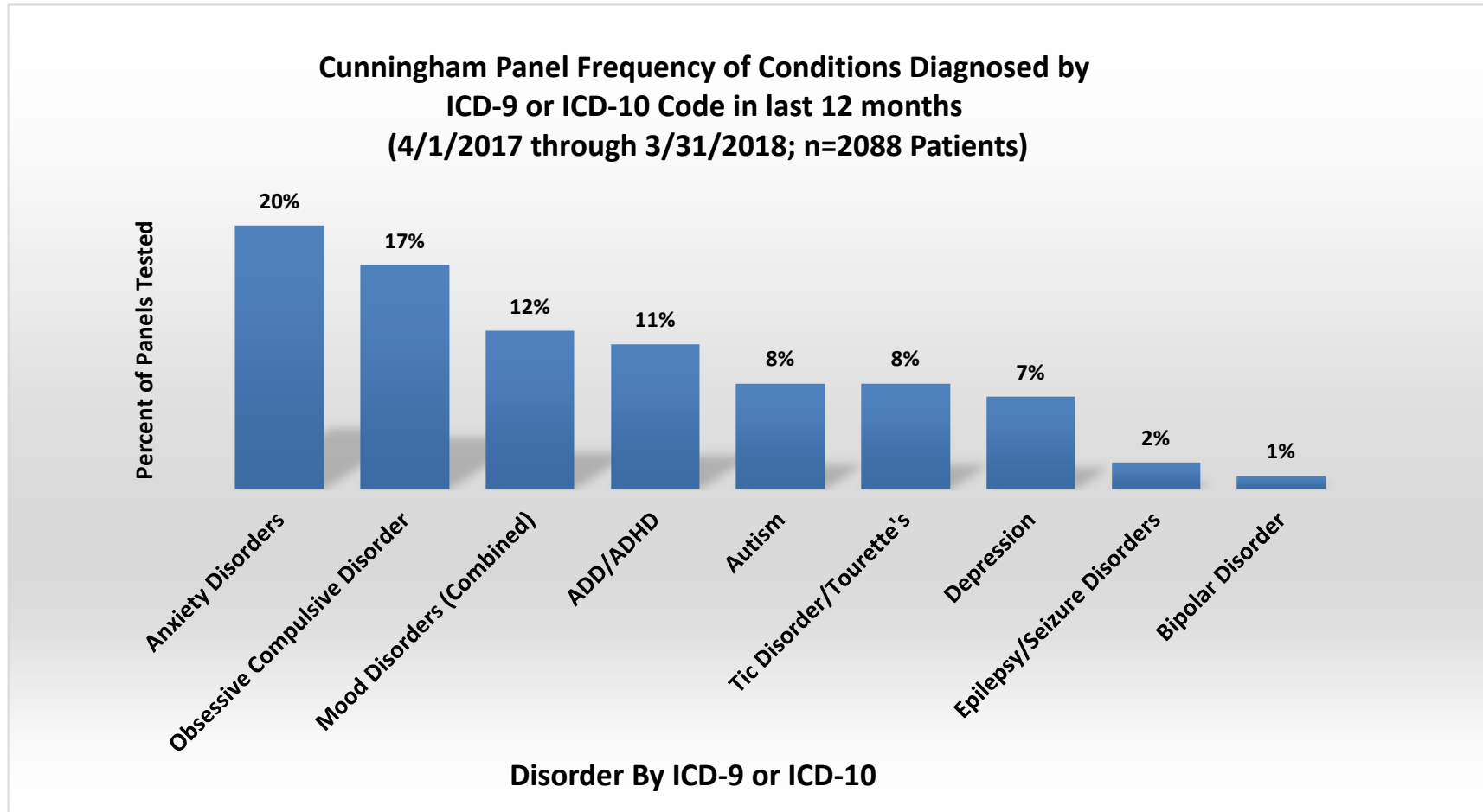
Steady Increase in Number of Prescribing Physicians



Currently 20 to 40 new prescribers sign up and order a panel each month

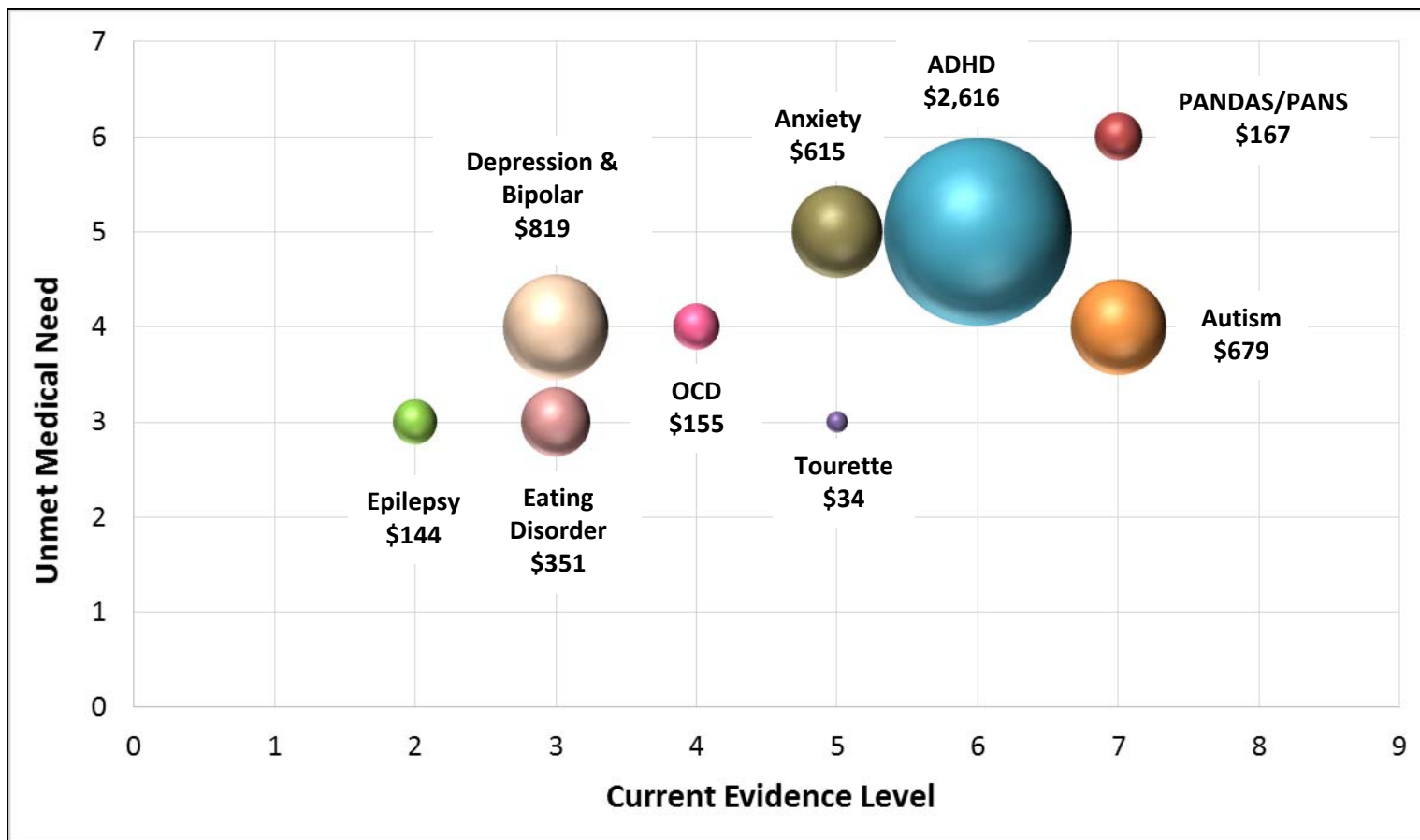


Current % of Cunningham Panels Prescribed for These Disorders Percent of Total Orders in Recent 12 Months

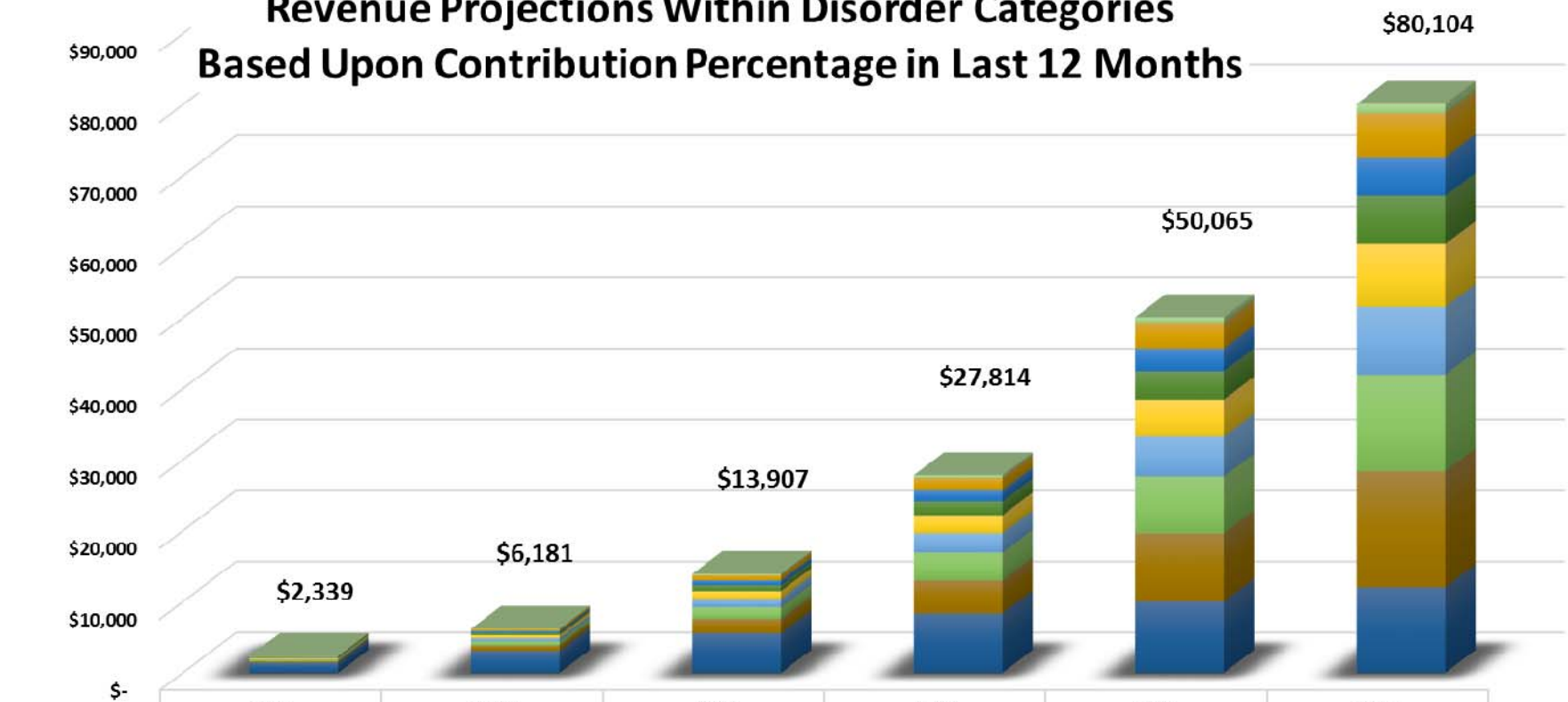


*Numbers do not add to 100% as multiple codes can be used. Remaining percentages are PANDAS/PANS patients.
Disorder categories based upon ICD-9 and ICD-10 diagnoses codes submitted by physician.*

Potential US Market Opportunity Ranked by Need, Evidence Level, and Size



Revenue Projections Within Disorder Categories Based Upon Contribution Percentage in Last 12 Months



	2018	2019	2020	2021	2022	2023
■ Epilepsy	\$19	\$62	\$167	\$389	\$801	\$1,362
■ Tic/Tourettes	\$84	\$278	\$751	\$1,752	\$3,605	\$6,128
■ Depression	\$75	\$247	\$668	\$1,558	\$3,204	\$5,447
■ Autism	\$94	\$309	\$834	\$1,947	\$4,005	\$6,809
■ ADD/ADHD	\$122	\$402	\$1,085	\$2,531	\$5,207	\$8,851
■ Mood	\$131	\$433	\$1,168	\$2,726	\$5,607	\$9,532
■ Obsessive	\$187	\$618	\$1,669	\$3,894	\$8,010	\$13,618
■ Anxiety	\$225	\$742	\$2,003	\$4,673	\$9,612	\$16,341
■ PANDAS/PANS	\$1,403	\$3,090	\$5,563	\$8,344	\$10,013	\$12,016

■ PANDAS/PANS
 ■ Anxiety
 ■ Obsessive
 ■ Mood
 ■ ADD/ADHD
 ■ Autism
 ■ Depression
 ■ Tic/Tourettes
 ■ Epilepsy

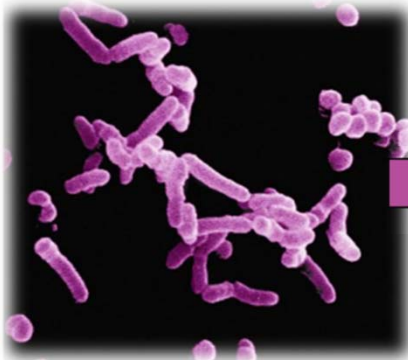
Total Revenue Projections with P&L

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Reports	1,242	1,424	2,056	2,673	6,682	15,035	30,069	54,124	86,599
Revenues (\$,000)	\$ 964	\$ 1,144	\$ 1,733	\$ 2,339	\$ 6,181	\$ 13,907	\$ 27,814	\$ 50,065	\$ 80,104
Costs									
License fee	20	21	42	89	237	532	1064	1916	3066
Shipping	56	62	98	107	267	601	1203	2165	3464
Materials	213	223	221	321	802	1804	3608	6495	10392
Personnel	278	340	366	447	500	700	1000	1600	2200
Facility	65	71	71	84	100	150	250	450	700
Depreciation	29	40	43	54	100	120	140	160	180
Total Costs	661	757	841	1102	2006	3908	7265	12786	20001
G.P	\$ 303	\$ 387	\$ 892	\$ 1,237	\$ 4,175	\$ 9,999	\$ 20,549	\$ 37,279	\$ 60,103
G.P. %	31%	34%	51%	53%	68%	72%	74%	74%	75%
Cost per report	\$ 532.21	\$ 531.60	\$ 409.05	\$ 412.26	\$ 300.16	\$ 259.92	\$ 241.63	\$ 236.23	\$ 230.97
Expenses									
R&D	116	85	71	226	300	375	450	525	600
S&M	447	412	408	552	1000	1600	2500	4000	6000
G&A	1226	1107	961	1169	1400	1700	2000	2400	3000
	\$ 1,789	\$ 1,604	\$ 1,440	\$ 1,947	\$ 2,700	\$ 3,675	\$ 4,950	\$ 6,925	\$ 9,600
OP P(L)	\$ (1,486)	\$ (1,217)	\$ (548)	\$ (710)	\$ 1,475	\$ 6,324	\$ 15,599	\$ 30,354	\$ 50,503
Amounts/test									
Revenue	\$ 776.17	\$ 803.37	\$ 842.90	\$ 875.05	\$ 925.02	\$ 924.98	\$ 925.01	\$ 925.01	\$ 925.00
License fee	16.10	14.75	20.43	33.40	35.40	35.40	35.40	35.40	35.40
%	2.1%	1.8%	2.4%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%
Shipping	45.09	43.54	47.67	40.00	40.00	40.00	40.00	40.00	40.00
Materials	171.50	156.60	107.49	120.00	120.00	120.00	120.00	120.00	120.00
Personnel	223.83	238.76	178.02	167.23	74.83	46.56	33.26	29.56	25.40
Facility	52.33	49.86	34.53	31.43	14.97	9.98	8.31	8.31	8.08

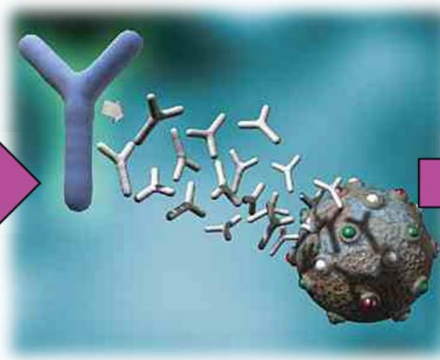
Autoimmune Mechanism for Multiple Neuropsychiatric Behavioral Disorders



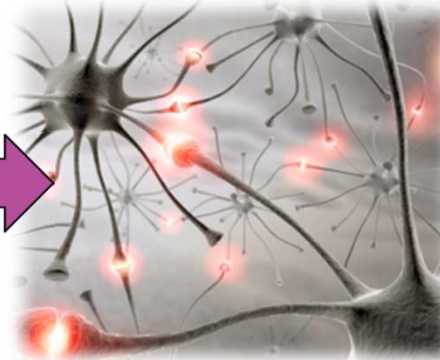
***Microbial, Viral,
Fungal Infection
Occurs***



***Body Produces
Antibodies That
Recognize
Infectious Agent***



***Antibodies
Cross-React
With Neurologic
Receptors
(molecular
mimicry)***



***Reaction
Disrupts
Brain Function
(friendly fire)***

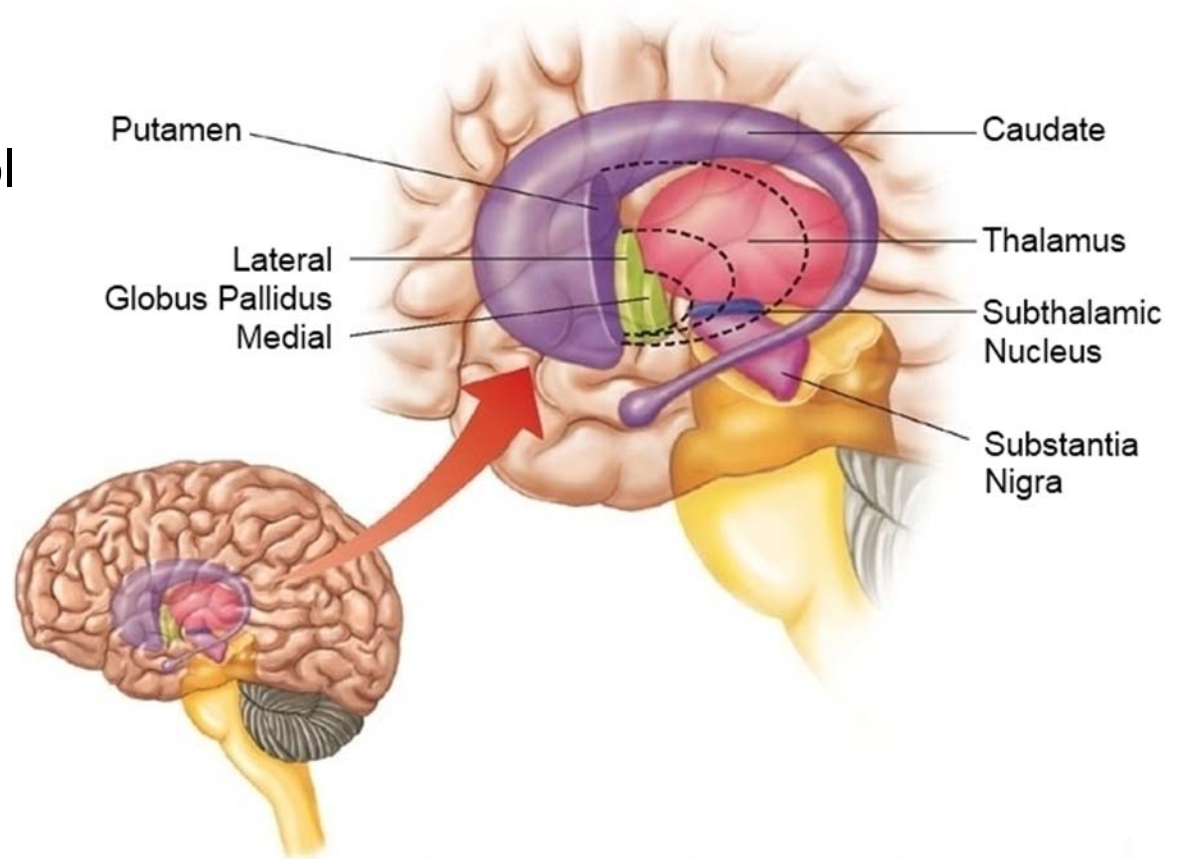


Autoimmune and Immune-mediated Inflammatory Disorders of the Basal Ganglia

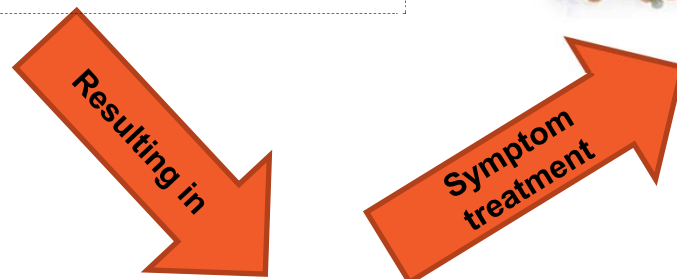
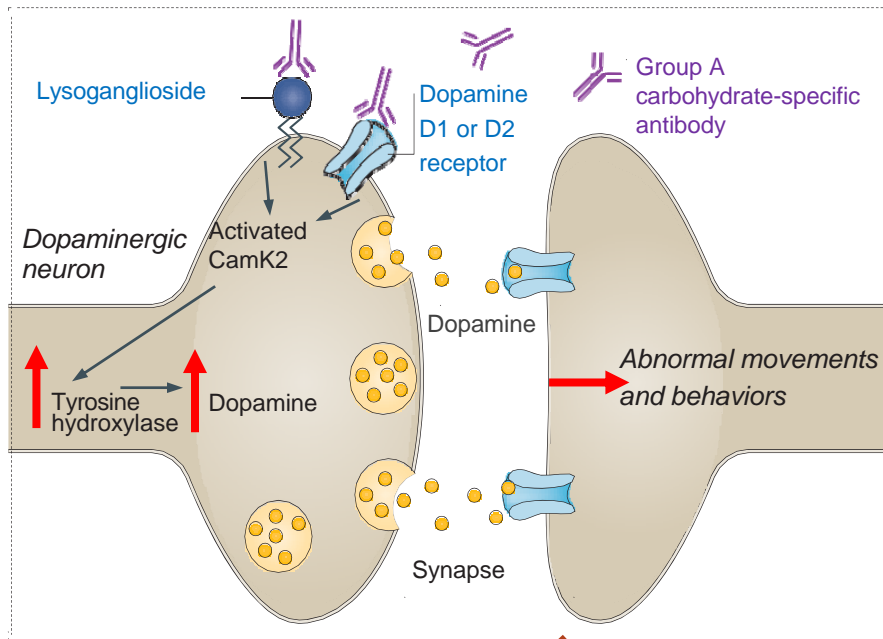
Basal Ganglia is Responsible for:

- Voluntary motor control
- Procedural learning
- Cognitive functions
- Emotional functions
- Eye movement

Two disorders of the Basal Ganglia are Parkinson's' Disease and Huntington's Disease

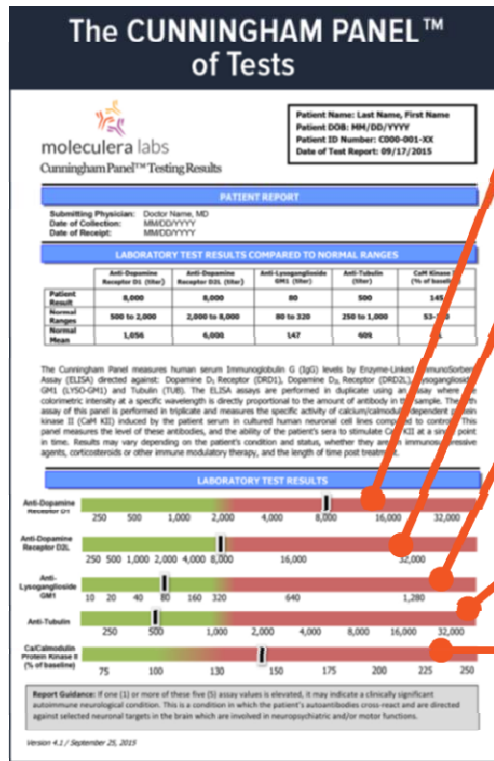


PROBLEM: Many Neuropsychiatric Disorders are Autoimmune Based but Medical Practice Treats Symptoms



Neuropsychiatric Symptoms Including Anxiety, Aggression, Rage, OCD, Tics, Depression, Hyperactivity, Insomnia, Phobias

SOLUTION: Multi-Biomarker 5-Test Panel Autoantibody Detection for Neuropsychiatric Disorders



1) Anti-Dopamine D1

Correlates with psychiatric symptoms⁽¹⁾

2) Anti-Dopamine D2L

Correlates with movement disorders⁽¹⁾

3) Anti-Lysoganglioside GM1

Correlates with neuropathic symptoms⁽¹⁾

4) Anti-Tubulin

Correlates with cognitive complaints⁽¹⁾

5) CaM Kin Activity

Correlates with involuntary movements⁽¹⁾

Physicians utilizing the Cunningham Panel for many of these disorders with positive results from treatment

The Cunningham Panel identifies patients with an underlying autoimmune etiology

- PANDAS/PANS
- Autism Spectrum Disorder (ASD)
- ADHD
- Tourette's
- Anxiety
- Obsessive Compulsive Disorder
- Chronic Depression
- Bipolar Disorder
- Epilepsy
- Eating Disorders

Ref: (1) Reported by Dr. Amirm Katz base upon his 112 patients studied and our patient responses

Literature Supports that Portions of ASD, OCD, ADD/ADHD, Bipolar, Tourette's have Links to Immune Dysfunction

Open

Molecular Psychiatry (2012) 17, 389–401
© 2012 Macmillan Publishers Limited All rights reserved 1359-4184/12
www.nature.com/mp

EXPERT REVIEW

A review of research trends in physiological abnormalities in autism spectrum disorders: immune dysregulation, inflammation, oxidative stress, mitochondrial dysfunction and environmental toxicant exposures

DA Rossignol¹ and RE Frye²

¹International Child Development Resource Center, Melbourne, FL, USA and ²Arkansas Children's Hospital Research

"A large percentage of publications implicated an association between ASD and immune dysregulation/inflammation (416 out of 437 publications, 95%)...The strongest evidence was for immune dysregulation /inflammation and oxidative stress..."

frontiers
in Cellular Neuroscience

REVIEW
published: 19 January 2016
doi: 10.3389/fncel.2015.00219

Relevance of Neuroinflammation and Encephalitis in Autism

"...a conservative estimate based on the research suggests that at least 69% of individuals with an ASD diagnosis have microglial activation or neuroinflammation"

Journal of Neuroimmunology

Journal of Neuroimmunology 179 (2006) 173–179
www.elsevier.com/locate/jneuroim

Antibody-mediated neuronal cell signaling in behavior and movement disorders

Christine A. Kirvan^a, Susan E. Swedo^b, Lisa A. Snider^b, Madeleine W. Cunningham^{c,*}

^a Department of Biological Sciences, California State University, Sacramento, 6000 J Street, Sacramento, CA 95818-6077, USA
^b Pediatrics and Developmental Neuropsychiatry Branch, National Institutes of Mental Health, National Institutes of Health, Department of Health and Human Services, 35 Convent Dr., Bldg 35 MSC 3710, Bethesda, MD 20814, USA
^c Department of Microbiology and Immunology, University of Oklahoma, HSC, 975 N. E. 10th Street, Biomedical Research Center Room 217, Oklahoma City, OK 73104, USA

Brain Research

Volume 1617, 18 August 2015, Pages 72–92

Toward an immune-mediated subtype of autism spectrum disorder

Christopher J. McDougle^{a, d, f, A, B}, Samantha M. Landino^{b, e}, Arshya Vahabzadeh^{d, e, f}, Julia O'Rourke^{a, d, f}, Nicole R. Zurcher^{a, d, f}, Beate C. Finger^{b, e, f}, Michelle L. Palumbo^{a, d, f}, Jessica Helt^{a, d, f}, Jennifer E. Mullett^{a, d, f}, Jacob M. Hooker^{c, d, f}

The Role of Infection and Immune Responsiveness in a Case of Treatment-Resistant Pediatric Bipolar Disorder

Greenberg^a
^aPsychotherapy Associates, PA, Summit, NJ, United States

If psychotropic-resistant pediatric bipolar disorder is presented. Both awareness per treatment of previously unrecognized infections and their effects on the system were very important in stabilizing the patient's psychiatric symptoms.

pediatric bipolar disorder, treatment resistance, inflammation, infections and psychiatric illness, memory

Brain Research

Volume 1617, 18 August 2015, Pages 126–143

The role of immune mechanisms in Tourette syndrome

Davide Martino^{a, b, c, A, B}, Panagiotis Zis^a, Maura Buttiglione^d

"...a body of evidence supports the hypothesis that disease mechanisms in TS, like other neurodevelopmental illnesses (e.g. autism), may involve dysfunctional neural-immune cross-talk, ultimately leading to altered maturation of brain pathways controlling different behavioral domains..."

Journal of the American Academy of
**CHILD & ADOLESCENT
PSYCHIATRY**

Follow JAACAP: [Facebook] [Twitter] [LinkedIn] [YouTube]

Login | Register | Claim Subscription | Subscribe

Articles & Issues - Collections - CME - Podcasts - Cover Art - Authors & Reviewers - Journal Info - AACAP

J Am Acad Child Adolesc Psychiatry. 2017 Mar;56(3):234-240.e1. doi: 10.1016/j.jaac.2016.12.010. Epub 2016 Dec 27.

Associations Between Autoimmune Diseases and Attention-Deficit/Hyperactivity Disorder: A Nationwide Study.

Nielsen PR¹, Benros ME², Dalsgaard S³.

Author information

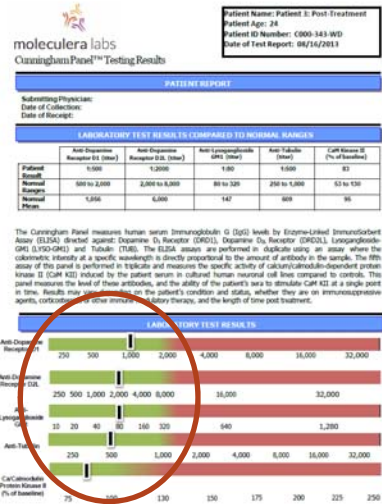
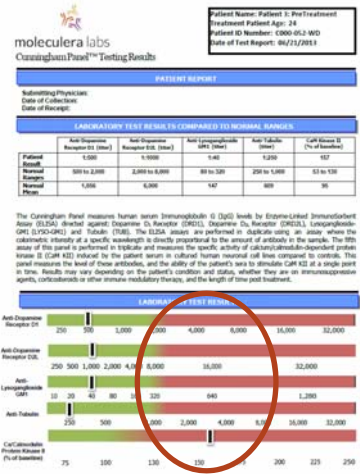
"A personal history and a maternal history of autoimmune disease were associated with an increased risk of ADHD."

Examples of Case Studies Pre and Post-Treatment



Case Study #1

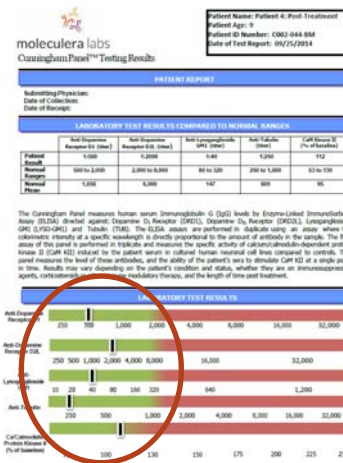
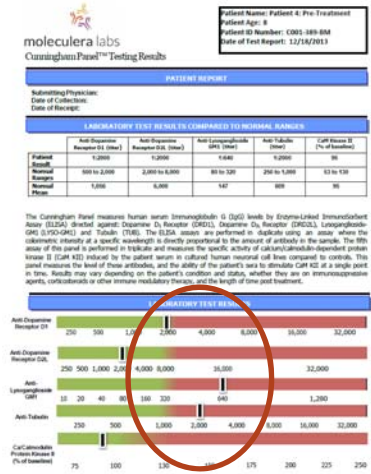
24 y/o Male: Presenting symptoms: OCD, tics, decreased appetite with 30 pound weight loss, inability to concentrate, sensory abnormalities, emotional lability, behavioral regression, separation anxiety, et al.



Treatment: Patient treated with IVIG and plasmapheresis resulted in symptom reduction

Case Study #2

9 y/o Female: obsessive-compulsive behaviors, verbal tics and “stimming”, inability to concentrate, sensory and motor abnormalities, emotional lability, behavioral regression, urinary and sleep problems, dysgraphia, and aggressiveness, Relapsing and remitting in nature



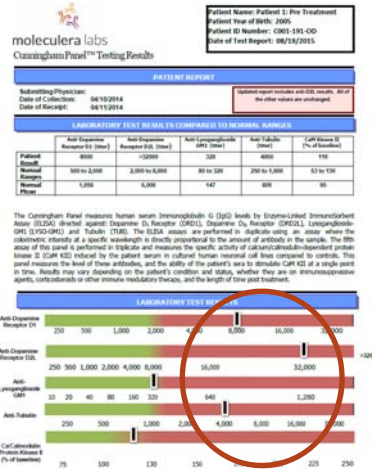
Treatment: Patient was treated with azithromycin with rapid improvement in symptoms

Examples of Case Studies Pre and Post-Treatment



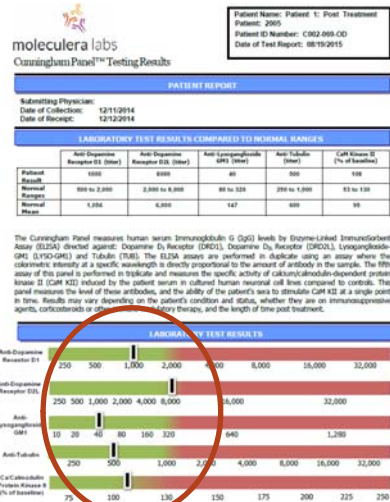
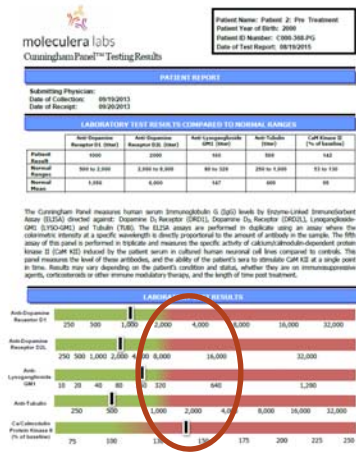
Case Study #3

9 y/o Female: Presenting with unknown origin of neuropsychiatric symptoms. Lyme disease positive by Western Blot, Child said during a bout of strep, **“Mom, something happened to my brain”**

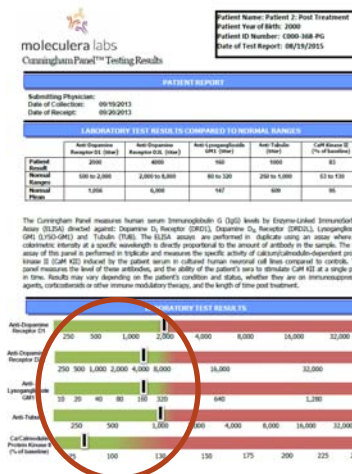


Case Study #4

9 y/o Male: Presenting 30 days post confirmed strep infection with OCD, Tics, inability to concentrate, sensory abnormalities, emotional lability, separation anxiety, developmental regression, urinary frequency and urgency, sleep disturbance, dysgraphia, aggressiveness, choreiform movements, relapsing and remitting symptoms.



Treatment: azithromax, naproxen, omnicef, and Bactrim, Tindamax (anti parasitic) 3 IVIG treatments; complete symptom regression

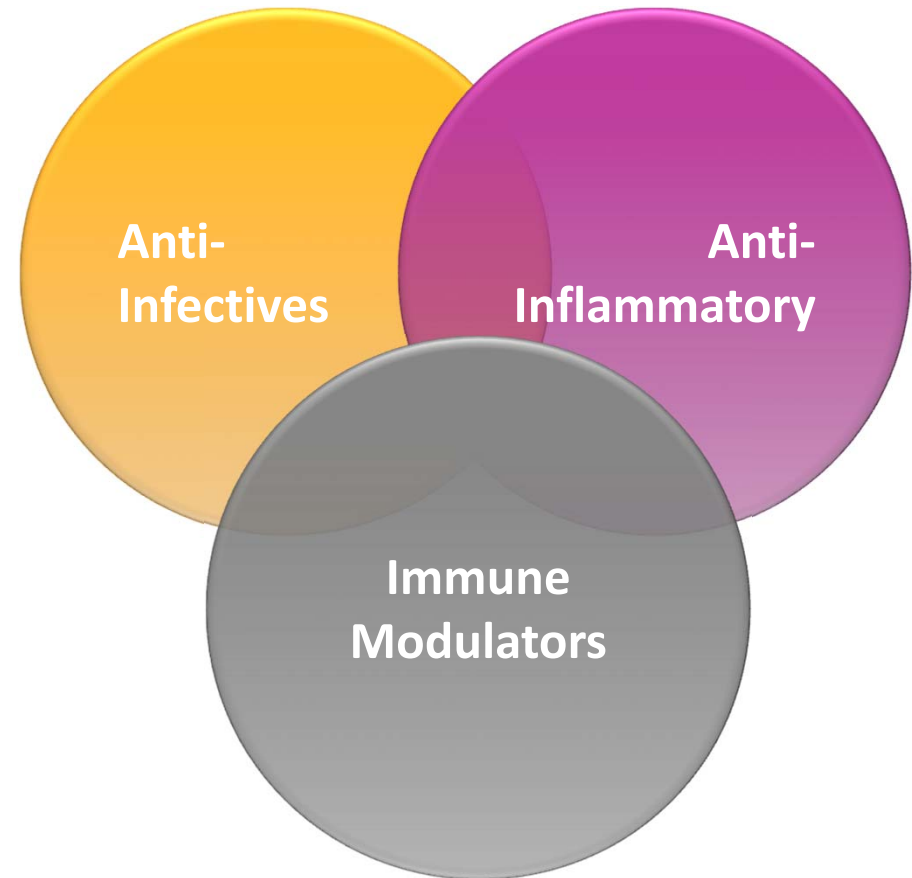


Treatment: Patient had IVIG within one month of diagnosis with complete symptom elimination.

Existing Treatments have Remarkable Responses



- **Anti-microbials**
- **Steroids and NSAIDs**
- **Plasmapheresis (Plasma exchange)**
- **Intravenous Immunoglobulins (IVIG)**
- **Immune modulating medications**
- **Symptomatic Treatment**
 - **Cognitive Behavioral Therapy**
 - **Low dose SSRIs**





Intellectual Property Coverage

1. **Exclusive License from the University of Oklahoma in 2012**
2. **US Patent Issued for the Diagnosis of PANDAS/PANS (First Market Application)**
 - U.S. Patent 9,804,171 B2
 - Issued October 31, 2017 - Claims for 5 tests
 - Anti-dopamine D1 Receptor
 - Anti-dopamine D2 Receptor
 - Anti-Lysoganglioside GM1
 - Anti-Tubulin
 - CaMKII Cell Stimulation Assay
3. **Trademarked “Cunningham Panel”**
4. **Trade Secrets on portions of the assays**
5. **Additional patent applications to be filed on new targets**

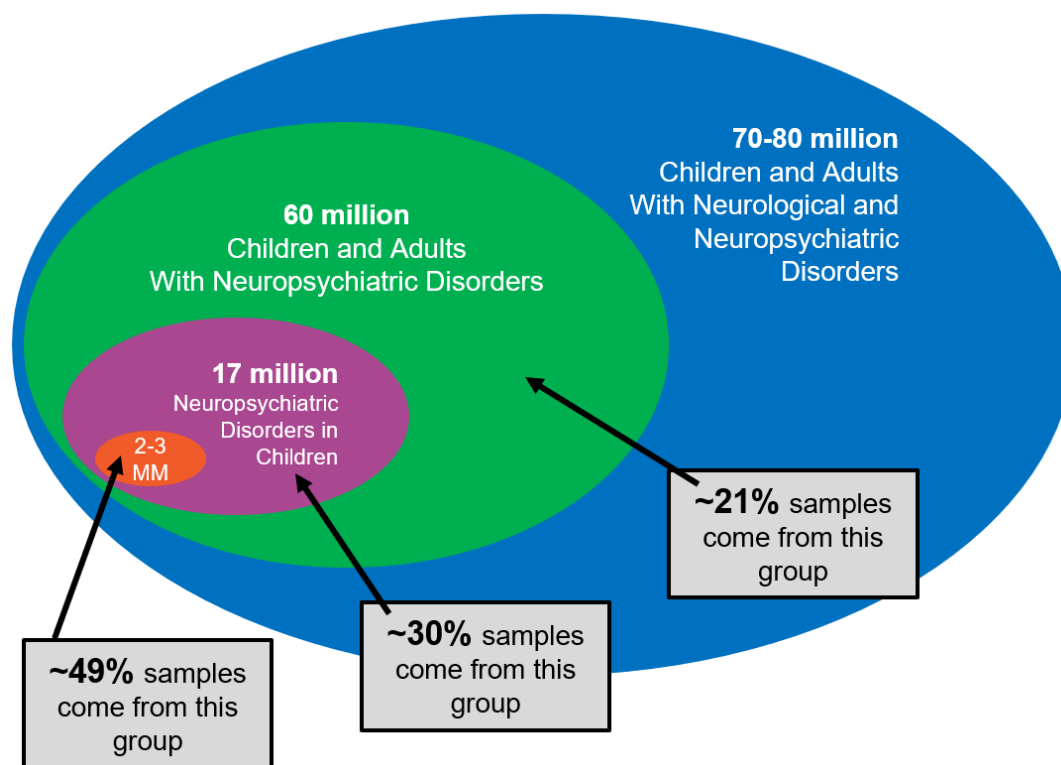


Target Market is Pediatric Physician Subspecialties With Expanding Utilization to Adult Markets



Initial Target Market Physicians	
Pediatric Neurologist	3,000
Pediatric Psychiatrist	8,300
Pediatric Immunology and Rheumatology	1,000
Behavioral and Developmental Pediatrician	1,000
Integrative Medicine	10,000

Utilization is transitioning from pediatric to adult populations



*An addressable market and validated through sales/marketing analysis
Physician referrals are expanding clinical utilization to adults*

Revenue is Combination of Insurance Reimbursement and Patient Pay



We Utilize Existing CPT Codes and price at \$925/Panel

- ✓ **\$425 Electronic Patient Deposit** required prior to testing. >95% pay the deposit or the full \$925 upfront
- ✓ **We bill the insurance on behalf of the patient** within 2 days after lab report completed
- ✓ **Cut checks back to patients based upon reimbursement received**
- ✓ **Not currently contracted with carriers**, we intend to consider contracts in the future

We write off \$30 on each \$925 panel order. Average ~97% Test Price Collection

Ongoing work to Improve Insurance Reimbursement

- ✓ **Collecting pharmacoeconomic data for future publications**
- ✓ **Anticipate beginning application process for separate CPT code in the near future**
- ✓ **Working on clinical case studies with many physicians and participation in treatment clinical trial**
- ✓ **Development of treatment algorithms based upon 3,000+ patient samples and treatment annotations**

CPT Codes Utilized



We Utilize Existing CPT Codes and price at \$925/Panel

CPT Code 83520 x 4 (4x \$40 = \$160)

- Immunoassay for analyte other than infectious agent antibody or infectious agent antigen; quantitative, not otherwise specified

CPT Code 88230 x 1 (\$355)

- Tissue culture for non-neoplastic disorders; lymphocyte

CPT Code 86352 x 1 (\$410)

- Cellular function assay involving stimulation (e.g., mitogen or antigen) and detection of biomarker

Aged Accounts Payables/Percent Outstanding					
0-30 Days	30-59 Days	60-89 Days	90-119 Days	120+ Days	Average Insurance Reimbursement
60.2%	20.7%	6.2%	6.7%	6.2%	\$434

Six Market Channels Validated with Metrics that Demonstrate Cost-effective Scalable Returns



Our Top Six Most Effective Market Channels that form our Go-to-Market Strategy

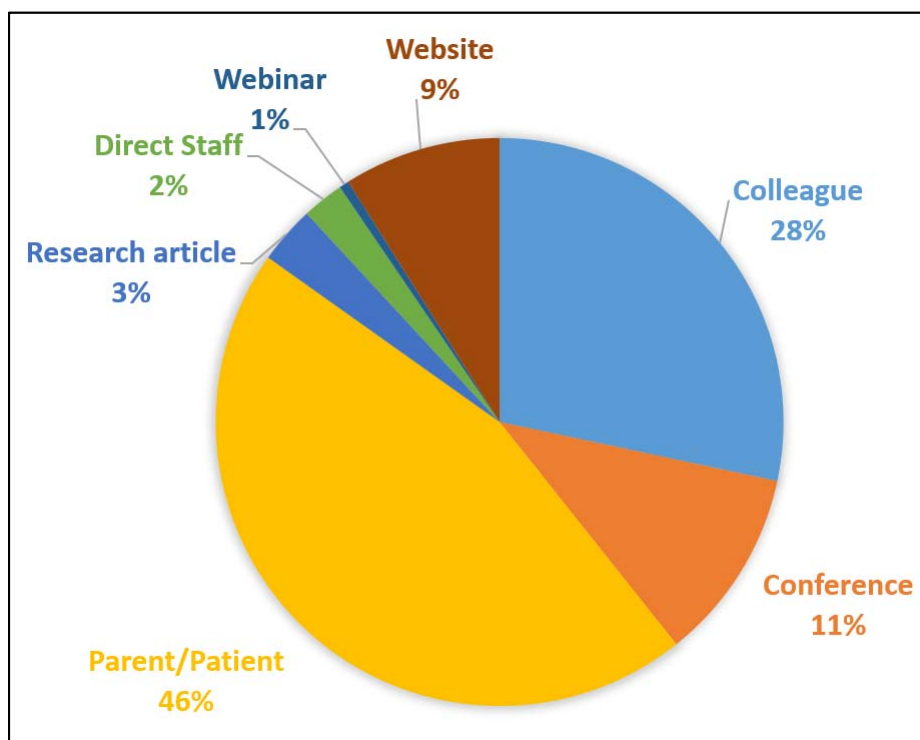
1. **Highly Selective Conference Exhibiting** to target market physicians when a prescriber is speaking on the podium and/or related topics covered in conference sessions
2. **Educational Email Campaigns** to growing prescriber base, to personal contacts at conferences, to targeted and warm leads and referrals
3. **Establishment and support of a Global Physician's Network** peer-to-peer monthly conference calls sharing best practices for diagnosing and treating patients. Includes KOL speaking engagements, grand rounds and sponsored meetings to stimulate protocol sharing and Dx/Tx support
4. **Social Media Awareness** Release of education videos, public relations campaigns, news and press releases, interactive website and social media information to advocacy groups and parents
5. **Laboratory Report Interpretation Assistance** Psychiatric Nurse staff and Clinical Scientists speak with each new prescriber after the first three patient reports. ~50% of physicians utilize this service and many continue to call for future clinical cases and studies
6. **International Distributor Partnerships** two recent international partnerships marketing our test in the UK/Ireland, and a second partner serving Australia, New Zealand, Indonesia, Singapore, Malaysia, Thailand, Hong Kong and Japan

Combination of increased awareness, educational resources, interactive support and peer-to-peer connections

Identifying and Directing our Market Channel Focus



Self-Reported: New Physician Referral Source



Repeat Orders by Referral Source

Referral Source	Average Month	Repeat Orders
Direct Staff	2%	67%
Conference	11%	54%
Research Article	3%	50%
Colleague/ Mentor	28%	47%
Parent	46%	11%
Website	9%	0%
Don't Know	1%	0%

Parents are largest facilitators of awareness but lowest referral source for repeat orders

Go-to-Market Strategy is directed toward the methods for highest repeat orders

Growing List of Institutional Partnership Invoiced Accounts



1. Stanford Hospital and Clinics, Palo Alto, CA
2. Wieslab / Euro Diagnostica AB, Malmo, Sweden
3. Statens Serum Institut, Copenhagen, Denmark
4. Children's Hospital Colorado, Aurora, CO
5. Kaiser Permanente, Honolulu, HI
6. Miami Children's Hospital, Miami, FL
7. Women's and Children's Hospital, Columbia, MO
8. Children's Hospital and Medical Center, Omaha, NE
9. Seattle Children's Hospital, Seattle, WA
10. Ultra Wellness Center, Lenox, MA
11. Cincinnati Children's Hospital, Cincinnati, OH
12. Kaiser Permanente, San Francisco, CA
13. Arkansas Children's Hospital, Little Rock, AR
14. University of Rochester Medical Center, Rochester, NY
15. OUHSC – Dr. Madeleine Cunningham's Autism Study, OKC, OK
16. Texas Scottish Rite Hospital for Children, Dallas, TX
17. John Muir Health, Walnut Creek, CA
18. Valley Children's Hospital, Madara, CA
19. Kaiser Permanente, Redwood City, CA
20. St. Paul's Hospital, Saskatoon, Saskatchewan,
21. Hoffman Chiropractic Wellness Center, Alberta, Canada
22. The Nardella Clinic, Calgary, Alberta, Canada
23. The Hoffman Centre for Integrative Medicine, Calgary, Ontario, Canada
24. Kaiser Regional Reference Lab, Hollywood, CA
25. University of Mississippi Medical Center, Jackson, MS
26. CentreSpringMD, Atlanta, GA
27. Nebraska Medicine, Omaha NE
28. University of Florida/Shands Medical Laborator, Gainesville, FL
29. Nationwide Children's Hospital Lab in Columbus, OH
30. Rady Children's Hospital, San Diego, CA
31. Austin State Hospital, Austin, TX
32. CDL Laboratories, Quebec, Canada
33. Carolinas Healthcare NE, Concord, NC
34. Lifespan Rhode Island Hospital, Providence, RI
35. Hackensack Meridian Healthcare, Hackensack, NJ
36. Saline Memorial Foundation, Benton, AR
37. Dartmouth Hitchcock Medical Center, Lebanon, NH
38. Wisconsin Children's Hospital, Madison, WI
39. NaturoMedica, Issaquah, WA
40. Dr. John Gannage, MPC, Ontario, Canada
41. Academy of Nutritional Medicine (AONM), United Kingdom

Two Recent International Partners



- **Entered into agreement AONM in the UK for exclusivity of UK/Ireland offering the Cunningham Panel (based upon volume)**
 - Previously worked with them for over a year helping physicians in UK
 - They will promote, train, hold conferences and support testing in UK/Ireland

- **NutriPATH is Australia's largest functional pathology testing facility (non-exclusive)**
 - Non-exclusive agreement to support physician requests in Australia, New Zealand, Indonesia, Singapore, Malaysia, Thailand, Hong Kong and Japan



Likely Exits for Moleculera Labs



Exit	Circumstances	Some Needed Milestones	Estimate of Valuation
Acquisition by Multinational Clinical Lab	<ul style="list-style-type: none"> Benefit to acquirer to increase collateral revenue ~3-4 years exit 	<ul style="list-style-type: none"> Demonstrate consistent double digit growth Show continuing target market adoption and medical reimbursement 	4x-5x multiple of revenue
Acquisition by Strategic Partner	<ul style="list-style-type: none"> Alignment with other products with same call points Ability to synergistically increase both companies revenue ~3-4 years exit 	<ul style="list-style-type: none"> Demonstrate consistent double digit growth Show continuing adoption in target market of acquisition partner Show continuing medical reimbursement 	Possible premium over 4x-5x multiple of revenue
IPO	<ul style="list-style-type: none"> Financial window must be good Having another successful Dx company IPO prior ~4-5 years 	<ul style="list-style-type: none"> Revenue in \$50MM+ range Exponential growth Follow-on Tests Full-Management Team 	\$250MM+ (50% revenue multiple, 50% biotech opportunity)



Example of Comparable Company Acquisition Values

Representative M&A multiples for laboratory services and diagnostics at exit

Announced	Target	Acquirer	Target Business Description	Value	EV/LTM Revenue
8/3/2016	Assurex Health Inc.	Myriad Genetics, Inc.	Offers GeneSight tests, including genetic tests that analyze genes that affect a patient's response to antidepressant and antipsychotic medications; to medicines prescribed to treat acute or chronic pain; and to medications prescribed to treat ADHD.	\$ 410.0	6.8x
7/27/2016	Sequenom, Inc.	Laboratory Corp. of America Holdings	Develops and commercializes molecular diagnostics testing services that serve women's health and oncology markets.	\$ 419.1	3.2x
5/31/2016	Sividon Diagnostics GmbH	Myriad Genetics, Inc.	Develops a portfolio of treatment-related diagnostic tests.	\$ 55.7	7.0x
5/25/2016	Recombine, Inc.	The Cooper Companies	Provides clinical genetic testing services.	\$ 85.0	4.3x
5/16/2016	Nanosphere, Inc.	Luminex Corporation	Develops, manufactures, and markets molecular diagnostic tests for infectious diseases and associated drug resistance markers for earlier disease detection.	\$ 65.2	2.3x
4/4/2016	Genesis Genetics Institute, LLC	The Cooper Companies	Provides pre-implantation testing of embryos for inherited genetic abnormalities.	\$ 60.0	2.5x
3/30/2016	Focus Diagnostics, Inc.	DiaSorin S.p.A.	Manufactures and distributes molecular and immunology products to hospitals and commercial laboratories worldwide.	\$ 300.0	3.8x
3/24/2016	Magellan Diagnostics, Inc.	Meridian Bioscience, Inc.	Medical device company, develops and manufactures point-of-care systems, clinical laboratory instruments, and analytical laboratory services focused on lead testing.	\$ 66.0	4.1x
3/8/2016	eResearchTechnology, Inc.	Nordic Capital; Novo A/S	Provides patient safety and efficacy endpoint data collection solutions for use in clinical drug development and clinical research needs.	\$ 1,800.0	6.0x
2/1/2016	Alere Inc.	Abbott Laboratories	Provides point-of-care diagnostics and services for infectious disease, cardiometabolic disease, and toxicology.	\$ 9,094.7	3.5x
1/8/2016	Affymetrix Inc.	Thermo Fisher Scientific, Inc.	Provides life science products and molecular diagnostic products that enable parallel analysis of biological systems at the gene, protein, and cell level.	\$ 1,251.0	3.1x
10/21/2015	Clariant, Inc.	NeoGenomics Laboratories, Inc.	Provides oncology testing and diagnostic services.	\$ 301.1	2.4x
6/29/2015	Emory Genetics Laboratory	Eurofins Scientific SE	Provides biochemical, cytogenetics, and molecular genetic testing services.	\$ 40.0	2.7x
6/29/2015	CBR Systems, Inc.	AMAG Pharmaceuticals, Inc.	Operates as an umbilical cord blood stem cell and cord tissue bank worldwide.	\$ 977.6	7.9x

Sources: Capital IQ, Company Reports



Capital Efficient use of Early Investment Funds

- Management recognizes how to achieve effective utilization of funds to reach value-enhancing milestone
- Assurance that new investment will be deployed in same capital-efficient manner

Global and Broad Unmet Market Need

- One of few remaining untapped markets having expansive global opportunity for severe debilitating neuropsychiatric and developmental disorders

Experienced Management Team

- Executive, scientific, commercial and financial team
- Each with 30+ years experience in their respective field and in Life Science Companies

Small Initial Investment (\$5MM) to Demonstrate Revenue Traction, Market Need, and to Validate a Go-to-Market Scale-up Strategy

- Required ~15-20% of capital to reach similar stage of market traction compared to other diagnostic companies
- Greater shareholder return: estimate investment of \$18MM-\$20MM total to reach potential \$115MM-\$250MM exit
- ROI similar to therapeutic company in shorter timeframe

Seasoned and Experienced Leadership Team



Craig Shimasaki, PhD, MBA – Cofounder & CEO



33 years biotechnology industry experience beginning at Genentech; serial entrepreneur co-founding 9 companies in molecular testing, diagnostic/medical device and therapeutics, led 5 products through FDA 510(k), taking several companies public. PhD in Molecular Biology and Biotechnology, MBA from Northwestern University's Kellogg School of Business.

Madeleine Cunningham, PhD – Cofounder & CSO



OUHSC George Lynn Cross Research Professor, over 40 years research in molecular mimicry and immunity, inventor of technology. Over 100+ peer-reviewed publications in high impact journals such as Nature Medicine, Journal of Immunology, Journal of Clinical Microbiology, Neuropsychopharmacology.

James Appleman, PhD, - VP R&D and Clinical Development (consultant)



30+ years experience in building successful diagnostic and therapeutic companies from company inceptions through successful exits, including a \$230M exit to Roche. Ph.D. in Biochemistry from Oklahoma State University and postdoctoral training at Dartmouth Medical School.

Richard Huguen, MBA – VP of Commercial Development (consultant)



30 years life science product commercialization in start-ups, a mid-cap and 3 Fortune 500 companies. Management of marketing and sales teams for Johnson & Johnson, Abbott Diagnostics and Cordis Cardiology. Directed marketing Becton Dickinson's \$210M molecular diagnostics business.

Fred Hiller, CPA – Chief Financial Officer (consultant)



45+ years experience in corporate finance and accounting, Began career at Touche Ross & Co. in 1962. Controller at Elgin National & Columbia Pictures, CFO at Wilkinson Sword, Financial consultant to numerous companies including two biotechnology companies including one publicly traded biotechnology company.

Seasoned and Experienced Board of Directors



Craig Shimasaki, PhD, MBA– Executive Management

33 years biotechnology industry experience beginning at Genentech; serial entrepreneur and co-founder of 8 companies in molecular testing, diagnostic/medical device and therapeutics, led 5 products through FDA 510(k). PhD in Molecular Biology and Biotechnology, MBA from Northwestern University's Kellogg School of Business.



Sammi Hill - Investor

Former CEO of successful clinical laboratory start-up, rapidly growing the company to a successful exit selling to Alere. Serial entrepreneur and investor in multiple ventures. Successful pharmaceutical sales career background focused on psychiatrists and neurologists.



Robert Calcaterra, PhD - Investor

President St. Louis Arch Angels; Managing Director, Start-up Midwest, Former CEO, multiple start-ups and Investor, i2E Entrepreneur-in-Residence. Founder of the St. Louis Arch Angels which if invested in over 60 companies with over \$60MM since 2005.



Brian Clevinger, PhD - Investor

Co-Founder and General Partner of Prolog Ventures, focused on early-stage start-ups in the life science industry. An immunologist, and former biotech CEO and Professor at Washington University with over 30 years of experience in all phases of commercial development. He has been an investor in over 50 biotech companies.



Vijay Aggarwal, PhD – Independent Director

Managing Partner, Channel Group; Former President, Quest Diagnostic Ventures. He has over 30 years of pharma services and clinical diagnostic experience. Executive Smith-Kline Beecham Labs with responsibility of over \$1.5B in revenue. Former CEO of Vaxigenix and Aureon laboratories.



moleculera labs

*Changing How Medicine is Practiced for
Neuropsychiatric and Behavioral Disorders*

Thank you for your interest in our mission and vision!

For More Information Contact:
Craig Shimasaki, PhD, MBA
shimasakic@moleculera.com
www.MoleculeraLabs.com
(405) 239-5250