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## ProPhase Labs (NASDAQ: PRPH)

February 1, 2021

### BUY: We Visited the New Facility – Primed & Ready to Process

*ProPhase announced last week the opening of its newest facility, 25,000 square ft in Garden City, New York. We visited the facility and left “comforted” that the systems, personnel, and facility are in position to process samples. This instilled confidence that our estimates can be realized. The new lab features state-of-the-art technology and offers a wide range of laboratory testing services for diagnosis, screening and evaluation of diseases, including COVID-19 and Respiratory Pathogen Panel Molecular tests. We share some photos from our walk-through of the facility.*

**The COVID Diagnostic Opportunity:** We present some basic assumptions in our model on the market size (U.S.) for COVID. Suffice to say: it’s a multi-billion-dollar market. As such, even a small piece of the market has the ability to be transformative to a company such as ProPhase. Recognizing the opportunity, the company acquired a CLIA lab (October 2020) capable of processing 1,000 samples in 24 hours (& now expanded to 10k/day). We visited the newest facility in Garden City, which is set to come on-line with the capability to process up to 50,000 samples per day. Please see photos on the pages that follow from our walk-through.

**A Saliva-Based RT-PCR Diagnostic: COVID & Beyond.** A saliva-based test with a high specificity and sensitivity rate coupled with a quick turnaround is ideal. No one likes nasal testing versus a saliva swab. We view testing as critical towards opening up the economy and the globe. We also see the potential for this testing to move beyond COVID to Flu and other respiratory disorders. Our models, for the moment, do not assume other respiratory disorders.

**OTC Business Offsets Expenses.** The company’s current revenues are mainly from the contract manufacturing of OTC healthcare products (principally cold remedy products) combined with the sale of ProPhase’s dietary supplement products. The company has developed strong marketing capabilities as represented by its T.K. Supplements product line of dietary supplements. We see this as a good business and one where the management team, particularly the CEO, has demonstrated the ability to turn around both a falling business and a company. With that said, we see this business as a means to an end, with the end being diagnostics.

**Valuation:** We project detailed revenue assumptions in our model out to 2030. We apply a 70% success probability (30% risk cut) to our revenue estimates. On top of this, we apply a 30% risk rate in our Free Cash Flow to the Firm (FCFF), discounted EPS (dEPS), and Sum-of-the-Parts (SOP) models, which are then equal-weighted and averaged and rounded to the nearest whole number to derive our 12-month projected price target of \$25.00.

**Risk to our thesis** include: (1) commercial; (2) financial; (3) intellectual property; and (4) OEM and/or manufacturing. We review these risks in the Risk Analysis section of this report.

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Current Price	\$10.12		
Price Target	\$25.00		
Estimates	F2020E	F2021E	F2022E
Revenues (\$000s)	\$ 13,151	\$ 60,865	\$ 86,032
1Q March	\$ 1,888	\$ 10,834	\$ 21,108
2Q June	\$ 3,623	\$ 14,506	\$ 20,741
3Q September	\$ 3,840	\$ 16,292	\$ 21,661
4Q December	\$ 3,800	\$ 19,233	\$ 22,522
	F2020E	F2021E	F2022E
EPS (diluted)	\$ (0.13)	\$ 2.05	\$ 2.97
1Q March	\$ (0.07)	\$ 0.33	\$ 0.73
2Q June	\$ 0.01	\$ 0.48	\$ 0.71
3Q September	\$ (0.04)	\$ 0.56	\$ 0.75
4Q December	\$ (0.04)	\$ 0.68	\$ 0.77
EBITDA/Share	(\$0.13)	\$2.05	\$3.46
EV/EBITDA (x)	-1,054.3	69.0	40.9
<b>Stock Data</b>			
52-Week Range	\$1.20 - \$16.04		
Shares Outstanding (mil.)	15.2		
Market Capitalization (mil.)	\$153		
Enterprise Value (mil.)	\$142		
Debt to Capital	0%		
Book Value/Share	\$2.86		
Price/Book	-		
Average Three Months Trading Volume (K)	74		
Insider Ownership	24.2%		
Institutional Ownership	4.0%		
Short Interest (mil.)	0.6%		
Dividend / Yield	\$0.00/0.0%		



### Three Leadership Hires for the New Facility

**Steve Kamalic, Chief Operating Officer** - ProPhase Diagnostics. Steve Kamalic is a veteran operations executive with decades of experience building and growing lab processing units. At ProPhase Diagnostics, Steve will be responsible for ensuring the company meets its stated goal of 60,000 tests per day between its Garden City, New York lab and Old Bridge, New Jersey lab. Prior to joining ProPhase Diagnostics, Steve served as Chief Operating Officer and Sales Director at a substantial regional lab. He oversaw a laboratory business that significantly grew its annual revenues. He has worked at several startups and has a vision for growth and expansion. Steve holds an AAS in medical technology and a BS in Health Administration.

**Sergio Miralles, Chief Information Officer** - ProPhase Diagnostics. Sergio Miralles is an experienced IT Leader, with over 12 years of experience in enterprise level Cybersecurity, Infrastructure, and Architecture. At ProPhase Diagnostics, Sergio will be responsible for ensuring a complete end-to-end technology solution that links its lab customers' patient data via interface to efficiently process and report results. Previously, Miralles founded and led a successful IT consulting firm overseeing 18 IT consultants. For the last 5 years, his primary focus has been on the medical, lab, and diagnostics business. Sergio holds several certifications from Cisco, ISC2, and CompTIA.

**Carlos D. Brewster, Head of Molecular Lab Testing** - ProPhase Diagnostics. Carlos Brewster has over 18 years of experience in the Molecular Biology field, which started with an internship with the Federal Government in Washington DC. Carlos's current responsibilities encompass assay design, validation, implementation and training. Prior to joining ProPhase Diagnostics, he served as a Research and Development Specialist. Since the onset of the pandemic, he has received several FDA Emergency Use Authorizations for the COVID-19 Assay, which is now being utilized within the industry by numerous laboratories and has generated millions of dollars in revenue. Carlos holds a Bachelor of Science in Biology. He also holds a New York State License as a Clinical Laboratory Technologist.

**ProPhase CEO Ted Karkus commented:** *"We are privileged to welcome these three experts in their respective fields to the ProPhase team. Steve has decades of experience building out lab processing, and his knowledge will be of great value as we continue our expansion efforts. Sergio will help us to bridge the gap between lab processing and the more difficult challenge of linking to customers via an interface to efficiently upload patient data and report results in a timely and efficient manner. Carlos was instrumental in the purchase, acquisition and installation of the latest Thermo Fisher equipment for our New Jersey lab and our new New York facility. Carlos' focus will now be on helping us to expand our overall testing capacity and achieve our goal of hitting 60,000 tests per day. Together, the leadership team at ProPhase Diagnostics is coming together, and I have never been more confident in their ability to position us as a leading testing provider."*

**Exhibit 1. Collection Kit for Saliva Based Sample (left); Workstations (right)**



Source: Dawson James



**Exhibit 2. Lab Processing – Training Session – 75 Technical Staff with 50,000 daily samples possible.**



Source: Dawson James

**Exhibit 3. ThermoFisher Sample Prep System (left) and a Processing Station (right).** These machines can process a 96 well plate in 22 minutes. Seven machines are operational with expansion underway to 18.



Source: Dawson James

**Exhibit 4. Workstations.** Twelve machines are shown. Each machine can process 384 samples in one hour x 12 = 4,608 results.



Source: Dawson James

**Our Model Preference – A Population-based model.** In our population model, we can easily vary the inputs such as percent of the population that is tested (e.g., 10%, 20%, 100%, 200%) and the net revenue each test generates for the company (e.g., \$30, \$40, \$50, \$60). We assume 20% of the U.S. population is tested just once annually. We believe this is conservative. Some of us will be tested regularly. For example, many college students have been mandated to weekly testing.

We assume \$50.00 per test in net revenue. This results in 2030E revenues of \$255M. This is when washed through the same operating and valuation models (Free Cash Flow to the Firm or FCFE, discounted EPS or dEPS, and Sum of the Parts [SOP]), all at a 30% discount rate, and recall that the revenue models also have a probability of success factor of 70%, so this is like a double discount rate.

Percent Annual Testing of US Population	Inputs	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
U.S. Population		330,000,000	330,000,000	333,300,000	336,633,000	339,999,330	343,399,323	346,833,317	350,301,650	353,804,666	357,342,713	360,916,140
10% Testing (annual)	20%	66,000,000	66,000,000	66,660,000	67,326,600	67,999,866	68,679,865	69,366,663	70,060,330	70,760,933	71,468,543	72,183,228
Market Share of Testing		0%	2%	3%	5%	6%	7%	8%	9%	10%	10%	10%
No. of Tests		0	1,320,000	1,999,800	3,366,330	4,079,992	4,807,591	5,549,333	6,305,430	7,076,093	7,146,854	7,218,323
Net Margin per test	\$50	\$50	\$51	\$51	\$51	\$51	\$51	\$51	\$51	\$51	\$51	\$51
Annual Operating Income (\$M)		0	67	101	170	208	243	280	318	357	361	365
Risk Adjusted		70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Risk Adjusted Operating Income (\$M)		\$0	\$47	\$71	\$119	\$144	\$170	\$196	\$223	\$250	\$253	\$255

Source: Dawson James estimates

**20% & \$50.00:** The net result of these assumptions is a net present value of \$25.00 per share.

Net Rev. per Test	% Annual Testing						
	10%	20%	30%	40%	50%	100%	200%
\$30	\$15	\$19	\$23	\$27	\$32	\$53	\$95
\$40	\$16	\$22	\$27	\$33	\$39	\$67	\$123
\$50	\$18	\$25	\$32	\$39	\$46	\$81	\$151
\$60	\$19	\$27	\$36	\$44	\$53	\$95	\$179
\$70	\$20	\$30	\$40	\$50	\$60	\$109	\$207

Source: Dawson James estimates

**Valuation:** While we do believe the percentage of Americans that are likely to be tested could easily reach 50%, especially when we assume that some folks will be tested multiple times, we select the example above, which assumes that 20% of the U.S. population is tested annually, and we assume a higher margin per test of \$50. Our operating model applies a 70% success probability to the revenue assumptions, and the valuation models, free cash flow to the Firm (FCFF), discounted EPS (dEPS), and Sum-of-the-Parts (SOP) models use a 30% discount rate. The result is equal-weighted and averaged and rounded to the nearest whole number.

### Exhibit 5. Free Cash Flow Model

Average	\$	25
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Price Target	\$	20
Year		2021

#### DCF Valuation Using FCF (mln):

units ('000 - Cnd\$)	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBIT	(1,559)	23,933	40,688	67,799	82,268	97,063	112,194	127,669	143,498	145,796	148,190
Tax Rate	0%	0%	15%	20%	25%	28%	30%	31%	32%	33%	33%
EBIT(1-t)	(1,559)	23,933	34,585	54,239	61,701	69,886	78,536	88,092	97,579	97,683	99,287
CapEx	(2,974)	-	-	-	-	-	-	-	-	-	-
Depreciation	253	-	-	-	-	-	-	-	-	-	-
Change in NWC	-	-	-	-	-	-	-	-	-	-	-
FCF	(4,280)	23,933	34,585	54,239	61,701	69,886	78,536	88,092	97,579	97,683	99,287
PV of FCF	(5,564)	23,933	26,604	32,094	28,084	24,469	21,152	18,251	15,551	11,975	9,363
Discount Rate	30%										
Long Term Growth Rate	1%										
Terminal Cash Flow	345,793.12										
Terminal Value YE2030	32,608										
NPV	238,518										
NPV-Debt	10										
Shares out (thousands)	11,851	2030E									
NPV Per Share	\$ 20										

Source: Dawson James estimates

### Exhibit 6. Discounted EPS Model

Current Year	2021
Year of EPS	2030
Earnings Multiple	30
Discount Factor	30%
Selected Year EPS	\$ 8.38
NPV	\$ 24

		Discount Rate and Earnings Multiple Varies, Year is Constant					
		2030 EPS					
Earnings Multiple		5%	10%	15%	20%	25%	30%
	2	\$10.80	\$7.11	\$4.76	\$3.25	\$2.25	\$ 1.58
	5	\$27.00	\$17.76	\$11.91	\$8.12	\$5.62	\$ 3.95
	10	\$54.00	\$35.53	\$23.81	\$16.24	\$11.24	\$ 7.90
	15	\$81.00	\$53.29	\$35.72	\$24.35	\$16.87	\$ 11.85
	20	\$108.00	\$71.06	\$47.63	\$32.47	\$22.49	\$ 15.80
	25	\$135.00	\$88.82	\$59.53	\$40.59	\$28.11	\$ 19.75
	30	\$162.00	\$106.58	\$71.44	\$48.71	\$33.73	\$ 23.70
	35	\$189.00	\$124.35	\$83.35	\$56.83	\$39.35	\$ 27.65

Source: Dawson James estimates

### Exhibit 7. Sum-of-the-Parts Model

Sum of the Parts	LT Gr	Discount Rate	Yrs. to Mkt	% Success	Peak Sales MM's	Term Val
OTC	1%	30%	0	100%	\$28	\$98
NPV						\$4.13
COVID	1%	30%	1	70%	\$329	\$1,133
NPV						\$25.73
Net Margin						50%
MM Shrs OS						12
Total						\$30

Source: Dawson James estimates

## Risk Analysis

**Commercial risk.** The focus of the company is on successfully developing its products and bringing them to the market. Competition may be intense from external players as well as customers who choose to “build it themselves.”

**Financial risk.** The company may need to raise capital in the marketplace relatively soon. There can be no assurance that the company will be able to raise capital and do so on favorable terms successfully.

**Intellectual property risk.** The company may have to defend its patents and technical know-how, and there can be no assurances that the patents will not be infringed or will be held as valid if challenged, and the company may infringe on third parties' patents.

**Regulatory Risk.** Diagnostic testing is regulated by the government. There can be no assurances that ProPhase process could be interrupted as a result of regulatory requirements.

**OEM and or manufacturing risk.** Original Equipment Manufacturers (OEMs) may decide to make products themselves, and, as such, terminate production contracts before completion, creating revenue shortfalls. Manufacturing risks include the ability to produce and do so in a competitive, timely, and efficient way.

**Exhibit 8. Income Statement**

PRPH., Inc. Income Statement (\$000)																			
YE Dec. 31	1Q20A	2Q20A	3Q20A	4Q20E	2020E	1Q21E	2Q21E	3Q21E	4Q21E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
<b>Revenue (\$000)</b>																			
OTC Consumer Healthcare Products	1,888	3,623	3,840	3,800	13,151	3,835	2,841	3,693	3,835	14,203	15,339	16,566	17,892	19,323	20,869	22,539	24,342	26,289	28,392
Other Business																			
COVID & Flu Diagnostics						6,999	11,666	12,599	15,398	46,662	70,693	119,000	144,228	169,948	196,169	222,897	250,140	252,641	255,168
<b>Total Revenues</b>	<b>1,888</b>	<b>3,623</b>	<b>3,840</b>	<b>3,800</b>	<b>13,151</b>	<b>10,834</b>	<b>14,506</b>	<b>16,292</b>	<b>19,233</b>	<b>60,865</b>	<b>86,032</b>	<b>135,566</b>	<b>162,120</b>	<b>189,271</b>	<b>217,038</b>	<b>245,435</b>	<b>274,481</b>	<b>278,930</b>	<b>283,560</b>
<b>Expenses</b>																			
COGS	1,473	2,344	2,798	2,660	9,275	5,417	7,253	8,146	9,617	30,433	38,715	61,005	72,954	85,172	97,667	110,446	123,517	125,519	127,602
% COGS	78%	65%	73%	70%	71%	50%	50%	50%	50%	50%	45%	45%	45%	45%	45%	45%	45%	45%	45%
Gross Profit	415	1,279	1,042	1,000	3,736	5,417	7,253	8,146	9,617	30,433	47,318	74,561	89,166	104,099	119,371	134,989	150,965	153,412	155,958
Sales (Advertising & Marketing) expense	170	125	253	250	798	240	250	250	260	1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195
General and administrative	998	1,030	1,299	1,100	4,427	1,200	1,250	1,250	1,300	5,000	5,100	5,202	5,306	5,412	5,520	5,631	5,743	5,858	5,975
Research & Development	59	65	57	60	241	120	125	125	130	500	510	520	531	541	552	563	574	586	598
<b>Total expenses</b>	<b>1,227</b>	<b>1,220</b>	<b>1,609</b>	<b>1,410</b>	<b>5,466</b>	<b>1,560</b>	<b>1,625</b>	<b>1,625</b>	<b>1,690</b>	<b>6,500</b>	<b>6,630</b>	<b>6,763</b>	<b>6,898</b>	<b>7,036</b>	<b>7,177</b>	<b>7,320</b>	<b>7,466</b>	<b>7,616</b>	<b>7,768</b>
Operating Profit	(812)	59	(567)	(410)	(1,730)	3,857	5,628	6,521	7,927	23,933	40,688	67,799	82,268	97,063	112,194	127,669	143,498	145,796	148,190
Oper Margin																			
Unrealized gain on debt securities	11	11	39		61					-	-	-	-	-	-	-	-	-	-
Interest expense	3	(5)	(41)		(43)					-	-	-	-	-	-	-	-	-	-
Income discontinued ops			161		161					-	-	-	-	-	-	-	-	-	-
Other (loss)			(8)		(8)					-	-	-	-	-	-	-	-	-	-
<b>Pre-tax income</b>	<b>(798)</b>	<b>65</b>	<b>(416)</b>	<b>(410)</b>	<b>(1,559)</b>	<b>3,857</b>	<b>5,628</b>	<b>6,521</b>	<b>7,927</b>	<b>23,933</b>	<b>40,688</b>	<b>67,799</b>	<b>82,268</b>	<b>97,063</b>	<b>112,194</b>	<b>127,669</b>	<b>143,498</b>	<b>145,796</b>	<b>148,190</b>
Pretax Margin																			
Income Tax (Benefit)	-										6,103	13,560	20,567	27,178	33,658	39,578	45,919	48,113	48,903
Tax Rate											15%	20%	25%	28%	30%	31%	32%	33%	33%
<b>GAAP Net Income</b>	<b>(798)</b>	<b>65</b>	<b>(416)</b>	<b>(410)</b>	<b>(1,559)</b>	<b>3,857</b>	<b>5,628</b>	<b>6,521</b>	<b>7,927</b>	<b>23,933</b>	<b>34,585</b>	<b>54,239</b>	<b>61,701</b>	<b>69,886</b>	<b>78,536</b>	<b>88,092</b>	<b>97,579</b>	<b>97,683</b>	<b>99,287</b>
GAAP-EPS	(0.07)	0.01	(0.04)	(0.04)	(0.13)	0.33	0.48	0.56	0.68	2.05	2.97	4.64	5.27	5.96	6.68	7.48	8.27	8.26	8.38
Non GAAP EPS (dil)	(0.07)	0.01	(0.04)	(0.04)	(0.13)	0.33	0.48	0.56	0.68	2.05	2.97	4.64	5.27	5.96	6.68	7.48	8.27	8.26	8.38
Wgt'd Avg Shrs (Bas) - '000s	11,582	11,592	11,604	11,615	11,615	11,638	11,662	11,685	11,708	11,673	11,767	11,861	11,957	12,053	12,149	12,247	12,345	12,444	12,544
Wgt'd Avg Shrs (Dil) - '000s	11,582	11,618	11,604	11,615	11,615	11,605	11,628	11,652	11,675	11,640	11,663	11,687	11,710	11,733	11,757	11,780	11,804	11,828	11,851

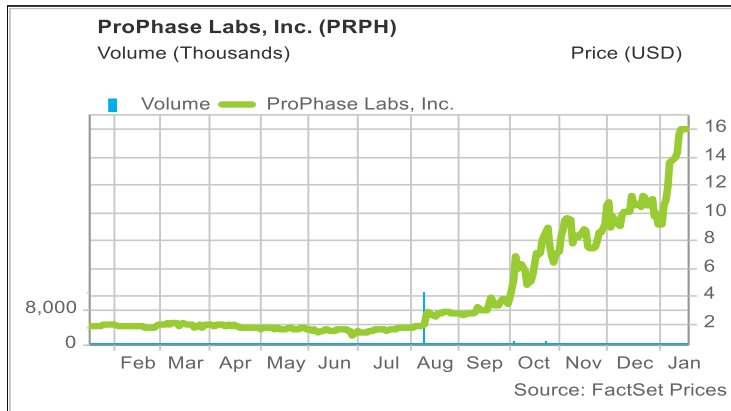
Source: Dawson James estimates, company reports



Companies mentioned in this report:

**Important Disclosures:**

**Price Chart:**



**Price target and ratings changes over the past three years:**

Initiated – Buy – January 20, 2021 – Price Target \$25.00

Update – Buy – February 1, 2021 – Price Target \$25.00

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<b>Ratings Distribution</b>	<b># of Companies</b>	<b>% of Total</b>	<b># of Companies</b>	<b>% of Totals</b>
Market Outperform (Buy)	22	79%	2	9%
Market Perform (Neutral)	6	21%	0	0%
Market Underperform (Sell)	0	0%	0	0%
Total	28	100%	2	7%

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