

**Drew Jones, Analyst**

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Changes	Previous	Current
Rating	--	Overweight(Vol)
Target Price		\$14.00
Price:		\$9.60
Fully Diluted Shares Out (mil.):		21.49
52-Week High:		\$19.00
52-Week Low:		\$9.14
Market Cap (mil.):		\$206.3
Fiscal Year End:		Dec
Average Daily Volume:		118,740
Float (mil.):		6.8
Debt/Cap:		8.0
Cash/Shr:		\$3.37
Dividend/Yield:		NA/NA
Book Value/Shr:		\$2.10

EPS	2013A	2014E	2015E
Mar	(\$2.26)A	(\$0.32)A	NE
Jun	(\$2.00)A	(\$0.31)A	NE
Sep	(\$6.59)A	(\$0.36)	NE
Dec	(\$1.42)A	(\$0.40)	NE
FY	(\$6.15)A	(\$1.39)	(\$1.19)
P/E	NM	NM	NM
Rev.	\$21.9M	\$37.8M	\$62.0M

**Veracyte, Inc.** is a molecular diagnostics company that discovers, develops, and commercializes molecular diagnostic solutions that enable physicians to make more informed treatment decisions early.

**Veracyte, Inc.**

VCYT – NASDAQ

**Overweight (Volatile)****Reason for Report:** Initiation of Coverage**Initiating Coverage With OW/Vol, \$14 PT****INVESTMENT CONCLUSION:**

We are initiating coverage on VCYT with an **Overweight/Vol.** rating and \$14 price target. We believe the company's molecular cytology platform enables it to target areas of healthcare where invasive surgeries are currently required for effective diagnosis. VCYT's initial test for indeterminate thyroid FNAs (Afirma) checks all the boxes for what we look for in medical technologies: better medicine for docs, it benefits the patient (via reduced diagnostic surgeries), and lowers costs for payers. Our belief is the expansion of the enabled sales model will lead to full buy-in of both endocrinologists and cytopathologists, resulting in meaningful penetration of this sizable market over the next 3-5 years. Longer term, our favorable view is bolstered by a compelling pipeline (lung - 2016 launch; Allegro acquisition).

**KEY POINTS:**

**Initial Test Fits Unmet Need:** We are enthusiastic about the ramp of VCYT's initial Afirma test, which has the potential to reduce diagnostic surgeries on thyroid nodules by 50%. A high number (15%-30%) of thyroid Fine Needle Aspirate (FNA) biopsies results in cytopathologists being unable to make a call of benign or malignant. To date, these patients undergo diagnostic surgeries, but VCYT's Afirma GEC test has proven to be an effective tool for identifying benign nodules (94% negative predictive value).

**Sizable Market, Cost Saving Potential to System With Afirma GEC:** We estimate that the total Afirma GEC market is ~\$300 mil annually. Further, we believe broad adoption of the test could drive \$300+ mil in annual cost savings to the system via reduced diagnostic surgeries.

**Reimbursement Improving, Sales Channel Clearing:** Afirma currently has a dedicated Z-code from CMS (~\$3200) and has 120+ mil covered lives with commercial payers. We look for continued gains going forward, ultimately resulting in broad-based contracted agreements for the test. We believe the improved reimbursement and expansion of the enabled model will be key drivers for Afirma penetration LT. Note that currently, the enabled model is fairly limited (academics, large systems) and that the majority of the market (community providers at 50%+) have to commit their FNA volumes to TCP to gain access to Afirma GEC. Additionally, the company is expanding its direct sales effort to ~24 reps which will be a nice addition to its Genzyme relationship.

**Valuation Compelling:** We believe it is likely that VCYT will be able to capture ~50% of the GEC mkt (concentrated doc channel for both endocrinologists and cytopathologists) within the next 3-5 years, which implies a per share valuation of \$14 - \$20.

**Risks to Achieving Target Price:** 1) Reimbursement - A significant portion of VCYT's revenues are dependent upon CMS

**See important disclosures and analyst certification on pages 39 - 40 of this report.**

reimbursement. Thus a decrease in CMS's ability to pay, or other governmental uncertainties could cause a significant impact to VCYT's revenues. 2) Competition - The molecular diagnostics space is highly competitive, with rapid technology obsolescence and heavy R&D investment. If an easier to use, more widely adopted product moves into the marketplace its presence could lead to share erosion for VCYT. 3) Channel Conflict - There is potential for conflict between clinicians and pathologists in their choice of diagnostic for thyroid cancer. If this conflict is significant there is a possibility VCYT will be unable to take share in the markets in which it competes. 4) Product Pipeline - We believe that though there is a large potential market, there is not enough published evidence yet to be fully confident in the lung segment of the business. Heavy investment in these products could prove fruitless and negatively impact earnings of VCYT.

## Company Overview

**Veracyte is a molecular diagnostics company focused on creating and commercializing solutions to improve patient outcomes and lower healthcare costs.**

- VCYT's first solution, the Afirma Gene Expression Classifier, is a proprietary panel of 142 genes that more accurately diagnoses thyroid nodules than traditional methods in order to reduce the number of unnecessary surgeries, better inform necessary surgery decisions, and reduce healthcare costs
- Addition of GEC Malignancy Classifiers in May 2014 allows physicians to preoperatively determine if patients have MTC, an aggressive form of thyroid cancer, and adopt the surgical/ treatment plan accordingly
- With the acquisition of Allegro Diagnostics (August 2014), VCYT has accelerated the expansion of its molecular diagnostics platform into preop diagnosis of lung cancer.
- Long term, VCYT is looking to expand its portfolio of diagnostics for other diseases where there are significant unmet needs for better, cost saving clinical diagnoses

### Key Statistics:

- Headquarters: South San Francisco, CA
- Founded in: February 2008
- Public Since: October 2013
- PE holders:
  - ✓ Versant Venture Mgmt.— 16.8%
  - ✓ TPG Capital – 16.5%
  - ✓ Kleiner Perkins – 16.2%
  - ✓ Domain Associates – 14.4%
- Float: 7.86 million shares (35%)

### Estimates:

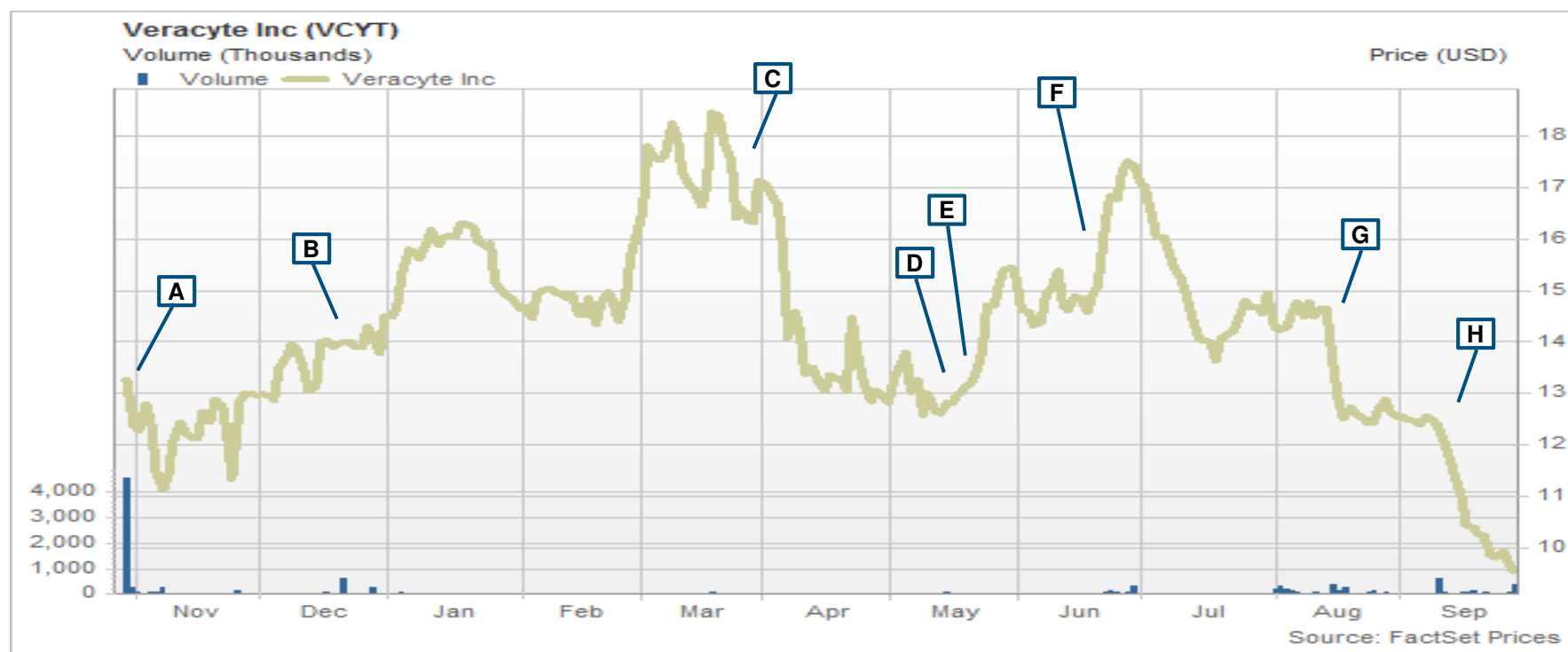
	Stephens Inc.			Consensus		
	3Q14	FY2014	FY2015	3Q14	FY2014	FY2015
<b>Revenues</b>	\$9.0 mil	\$37.8 mil	\$62.0 mil	\$9.7 mil	\$38.6 mil	\$69.8 mil
<b>GAAP EPS</b>	(\$0.36)	(\$1.39)	(\$1.19)	(\$0.35)	(\$1.32)	(\$0.98)

Source: Company Documents, FactSet Estimates, and Stephens Inc.

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## Historical Price Chart



- A. VCYT IPO (\$58 million, \$13 per share)
- B. Cigna announces coverage of Afirma GEC
- C. 4Q13 Revenue beat (\$300K); Earnings Miss (\$0.07)
- D. 1Q14 Revenue Beat (\$400K)

- E. American Thyroid Association Preliminary Guidelines Released
- F. Afirma Malignancy Classifiers Launched
- G. 2Q14 Revenue Miss (\$700K)
- H. Acquisition of Allegro Diagnostics Announced

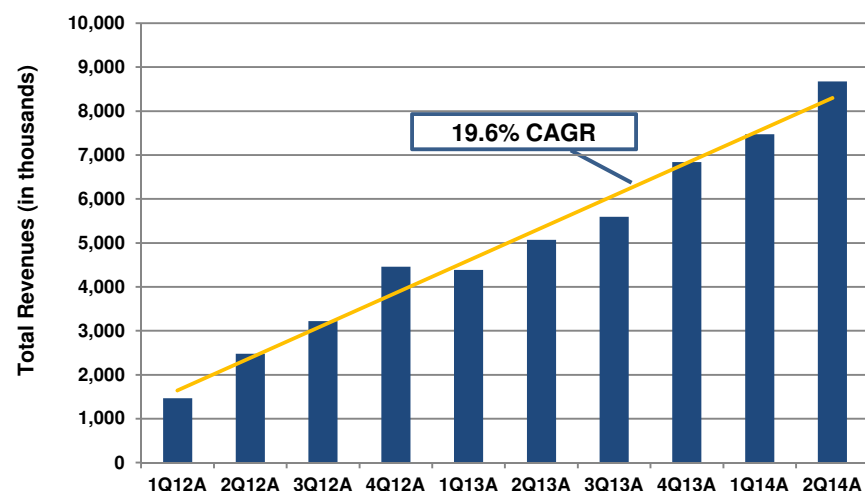
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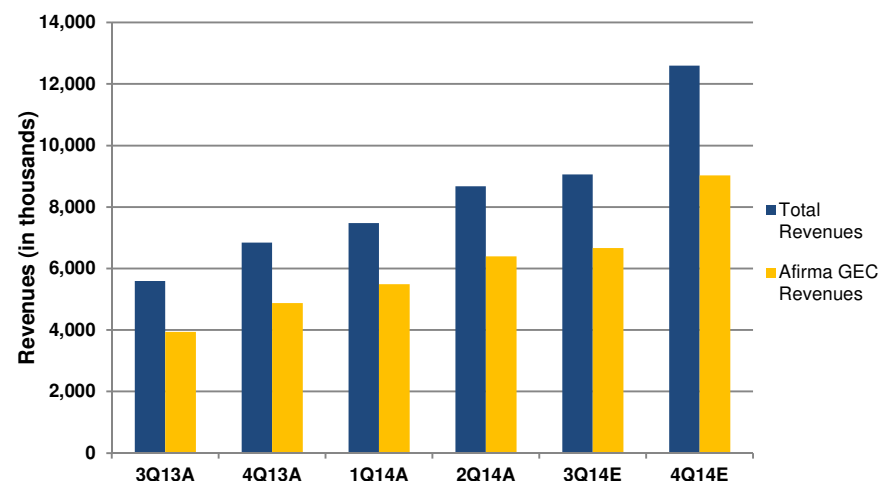
## Recent Results/ Growth Trends

Recent Results				
	Actual		Consensus	
	1Q14	2Q14	1Q14	2Q14
Revenues	\$7.5 mil	\$8.7 mil	\$7.1 mil	\$9.4 mil
EPS	(\$0.32)	(\$0.31)	(\$0.31)	(\$0.33)
GAAP EPS	(\$0.32)	(\$0.31)	NA	(\$0.31)

VCYT Revenue Growth (2012-2014)



Recent Growth: Total Revs vs. Afirma GEC Revs



### YoY Revenue Growth:

- 2013A – 88.2%
- 2014E – 72.8%
- 2015E – 64.0%

Source: Company Documents, and Stephens Inc.

## Our Thesis

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### 1 Initial Test Fits an Unmet Need

- Current diagnostics leave surgery as the option of choice

### 2 Sizeable Market and Cost Saving Potential to Healthcare System

- Better screening has increased the patient population
- Unnecessary diagnostic surgeries can be significantly reduced

### 3 Improving Reimbursement Outlook; Sales Channel Clearing

- Guideline inclusion driving favorable payment decisions
- Expansion of sales model should lead to increasing share

### 4 Valuation

- Undervalued vs. comps in the Oncology space given its growth profile (73% estimate for 2014)
- Pathway to 50% market share implies \$14 – \$20 price

## Test Matches an Unmet Need - Traditional Diagnosis

Until the late 2000s, we had not discovered the genetic mutations that suggest thyroid cancer, thus biopsies and diagnostic surgeries were the only form of consistent diagnosis

### Imaging Tests

These tests are usually performed both **before and simultaneously with FNA biopsies**

#### Ultrasound

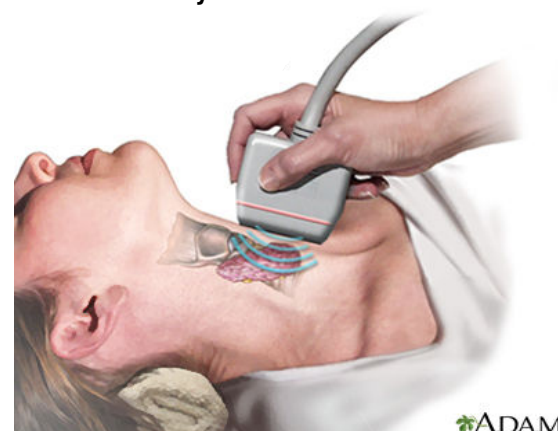
- Utilizes sound waves to create a black and white two-dimensional image of the thyroid
- Often used during biopsies to guide the needle into the correct thyroid nodules for sampling
- Can also help determine if nearby lymph nodes are enlarged due to spread of the cancer

#### Radioiodine Scan

- Often used in people already diagnosed with differential thyroid cancer
- After the thyroid absorbs the iodine a camera detects the location of the iodine
- A lack of radioactivity found in the thyroid by this test would suggest thyroid issues, possibly cancer; iodine in various parts of the body can suggest the spread of the cancer

X Rays, CT, MRI, and PET scans are also used to find cancer and check for its spread, though significantly less often than the preceding two scans

Thyroid Ultrasound

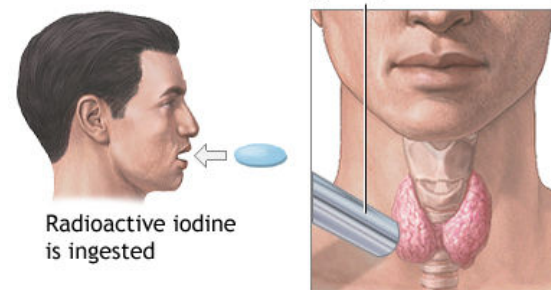


ADAM.

Source: NIH Website

Thyroid Radioiodine Scan

Gamma probe measuring thyroid gland radioactivity



Radioactive iodine is ingested

ADAM.

Source: NIH Website

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## Test Matches an Unmet Need - Traditional Diagnosis

Until the late 2000s, we had not discovered the genetic mutations that suggest thyroid cancer, thus biopsies and diagnostic surgeries were the only form of consistent diagnosis

### FNA Biopsy/ Cytopathology

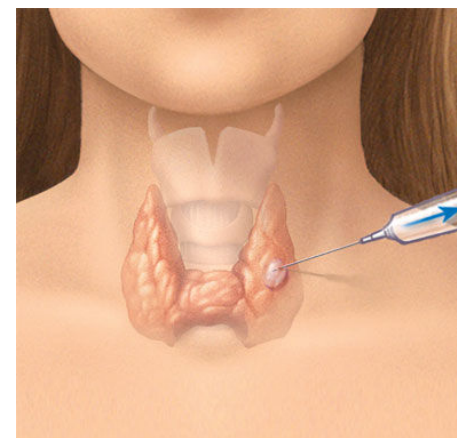
- This combination of these tests is the standard diagnostic for Thyroid cancer
- Cells from the suspicious nodules of the thyroid are removed, usually in several places along the nodule
- Samples are then sent to a pathology lab where the cells are viewed under a microscope to determine the presence of cancer
- FNA biopsies are sometimes repeated due to a lack of cells gathered in the sample
- Cancer is clearly diagnosed in only ~5% of FNA biopsies

FNA biopsies are sometimes challenging to interpret and produce indeterminate results in 15% - 30% of cases

### Diagnostic Surgery/ Lobectomy

- Removal of one lobe of the thyroid through open surgery on the neck
- **These surgeries are traditionally the diagnostic of choice for ~100,000 newly tested patients annually**

### Thyroid FNA Biopsy (usually guided by an ultrasound)



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**VCYT estimates 50% of  
diagnostic thyroid surgeries  
can be eliminated by using  
its Afirma solutions**

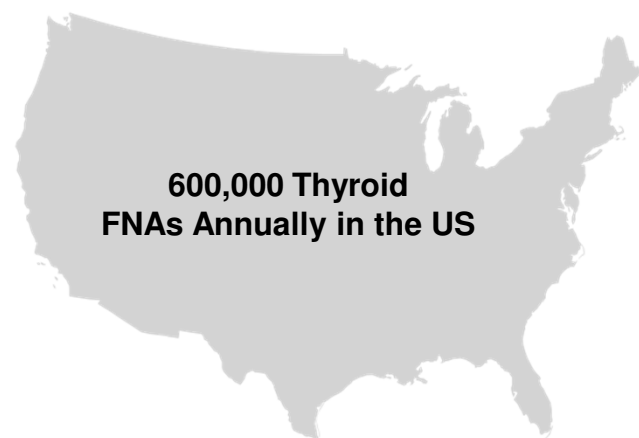
Source: Company Documents, ACS Documents, and Stephens Inc.

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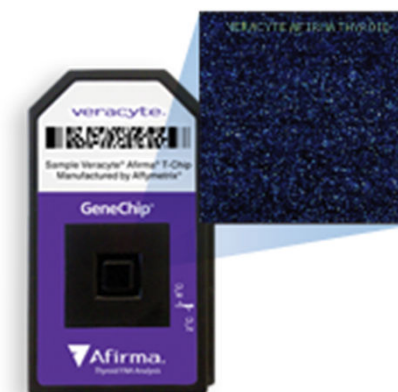
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## Thyroid Cancer Market Size Is Significant



15% Indeterminate FNA



90,000 Potential GEC Tests

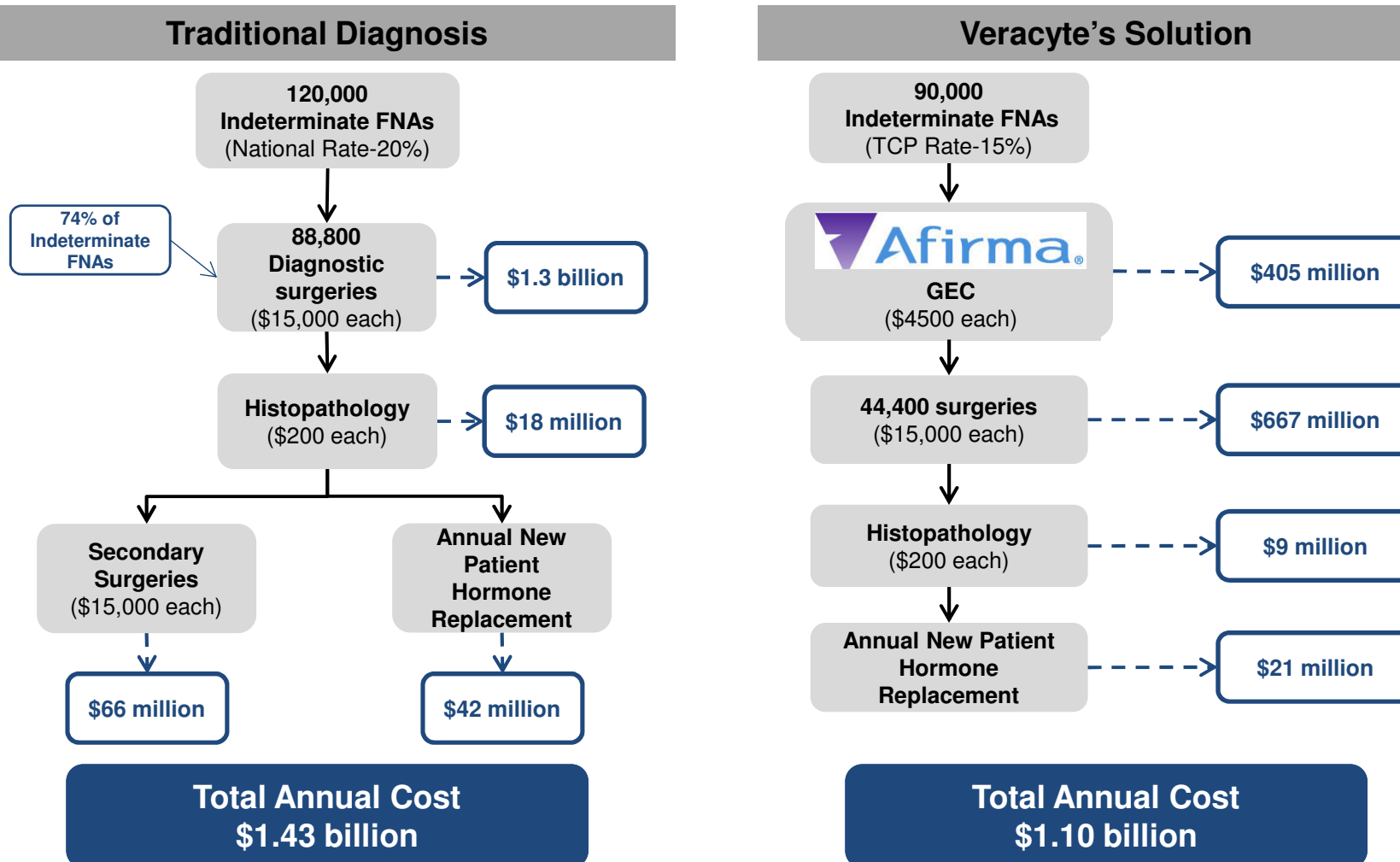
Afirma GEC: \$3200  
Afirma MTC Classifier: \$500  
90,000 Potential Tests  
**\$300 million Annual Market Opportunity**

50% market penetration  
within 3-5 years  
**\$150 million in Projected  
Annual Revenues**

Source: Company Documents, and Stephens Inc.

## Decreasing Costs to Healthcare System

**Veracyte could reduce cost to the healthcare system by \$300+ million annually**



Source: Company Documents, and Stephens Inc.

## Guideline Inclusion Drives Favorable Reimbursement Outlook

### Reimbursement

**Veracyte's Afirma GEC is the only molecular diagnostic solution for thyroid cancer which has full reimbursement from CMS (\$3200)**

Clinical Lab Fee Schedule:

- Z code: ZB846

CMS Reimbursement:

- CPT code: 84999

VCYT has over 135 million covered lives as of July 2014, including coverage by:

- CMS
- United Healthcare
- Aetna
- Humana
- Cigna

### Guideline Inclusion

**National Comprehensive Cancer Network (NCCN) – 2014 guidelines**

“Molecular diagnostic testing to detect individual mutations (eg, BRAF, RET/PTC, RAS, PAX8/PPAR [peroxisome proliferator-activated receptors] gamma) or pattern recognition approaches using molecular classifiers may be useful in the evaluation of FNA samples that are indeterminate to assist in management decisions.”

**American Thyroid Association (ATA) – Preliminary guidelines (Finalized by EOY 2014)**

**Recommendation 8**

- (a) The use of molecular markers (e.g., BRAF, RAS, RET/PTC, Pax8-PPAR, or galectin-3) may be considered for patients with indeterminate cytology on FNA to help guide management. Recommendation rating C.

**American Association of Clinical Endocrinology (AACE)**

**These guidelines suggest that for indeterminate biopsy results, a molecular panel, such as Afirma GEC, may be a useful alternative to going directly to surgery. Guideline inclusion is one of the factors which has traditionally driven clinical usage by docs and favorable reimbursement**

Source: Company Documents, NCCN documents, ATA documents, AACE documents and Stephens Inc.

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## Sales Channel Improvement – Afirma enabled Model

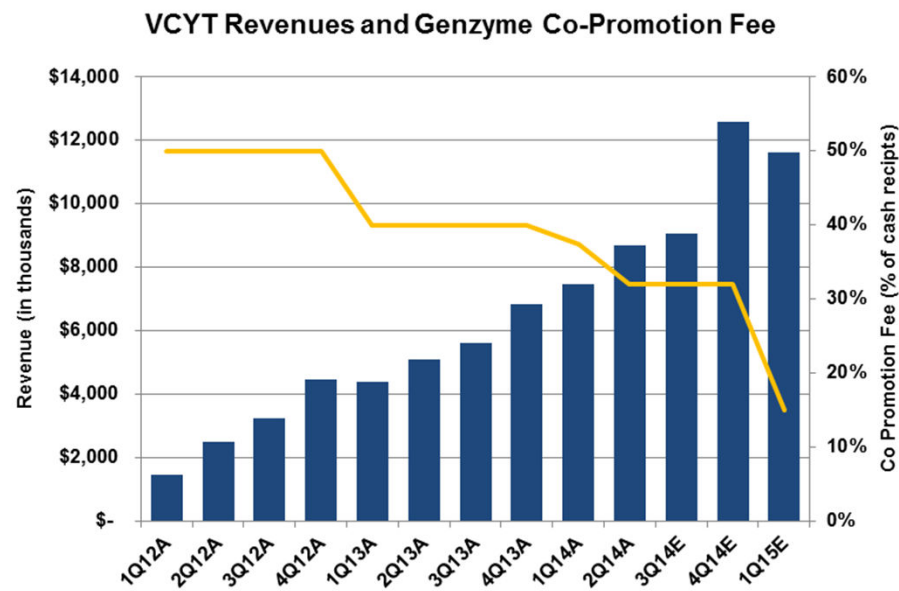
- Muddled sales channel with multiple doctor specialities
  - Endocrinologist, Head/Neck specialist, Oncologist
  - Cytopathologist is important – controls the FNA evaluation and assists with choices for additional testing methods (Afirma and others)
- Afirma enabled model addresses this problem
  - Allows for local cytopathologist to conduct the FNA biopsy; collect the payment
  - If indeterminate, an additional sample is sent from the cytopath to VCYT
    - VCYT runs the GEC test; collects technical component
    - Local cytopathologist receives the report; collects the professional component
- Enabled model targeted towards large institutions/ academics
  - Allows docs to use their trusted, in-house cytopathologist
  - Builds a partnership between endocrinologist, cytopathologist, and VCYT
  - Fastest growing part of business
    - Increasing GEC-only volumes as a % of total

**Accelerating growth of the Afirma enabled model allows for a concentration of the doc channel and favorable mix shift to the higher-margin GEC product**

Source: Company Documents, and Stephens Inc.

## Sales Channel Improvement - Genzyme Co-Promotion Agreement

- VCYT entered a co-promotion agreement with Genzyme for the Afirma solution in the U.S. and 40 named countries (January 2012)
  - VCYT received \$10 mil up-front fee
  - Genzyme receives a % of cash receipts from Afirma sales (at right)
    - Jan. 2012 – Dec. 2013: 50%
    - Jan. 2013 – Feb. 2014: 40%
    - Mar. 2014 – Dec. 2014: 32%
    - Jan. 2015 forward: 15%
- Leveraging Genzyme's Thyrogen sales force
  - Thyroid cancer specialists
  - International market expansion
  - Launched in Brazil through a partnership with Fleury Medicine and Health (Early 2014)
- August 2014 – Agreement amended to focus Genzyme reps in targeted markets
- VCYT sales force has increased from 8 to 14 reps in 1H2014
  - Looking to add up to 10 additional reps by EOY 2014



Source: Company Documents, and Stephens Inc.

## Valuation

Despite its attractive growth profile, VCYT is the cheapest oncology play in our space

VCYT Comps. Val. Table

(In millions, except per share data)

Oncology			Price	Shares	Mkt	Ent	Calendar Sales			2014	EV/Sales			Calendar EPS			P/E		
Company	Ticker	Rating	10/1/14	Out	Cap	Val	2013	2014E	2015E	sls G	2013	2014E	2015E	2013	2014E	2015E	2013	2014E	2015E
Exact Sciences Corp.	EXAS	OW/V	\$ 18.76	82.05	\$1,539	\$1,306	\$ 4.1	\$ 1.3	\$ 75.2	-67.6%	315.4x	974.6x	17.4x	\$ (0.69)	\$ (1.08)	\$ (1.03)	NM	NM	NM
Genomic Health, Inc.	GHDX	EW/V	\$ 28.54	31.33	\$ 894	\$ 789	\$261.6	\$283.9	\$309.2	8.5%	3.0x	2.8x	2.5x	\$ (0.42)	\$ (0.70)	\$ (0.42)	NM	NM	NM
Myriad Genetics, Inc.	MYGN	OW/V	\$ 38.30	77.68	\$2,975	\$2,789	\$737.2	\$748.9	\$814.4	1.6%	3.8x	3.7x	3.4x	\$ 2.33	\$ 1.94	\$ 2.01	16.4x	19.7x	19.1x
Neogenomics, Inc.	NEO	OW/V	\$ 5.14	53.73	\$ 276	\$ 281	\$ 66.5	\$ 83.1	\$ 94.7	25.0%	4.2x	3.4x	3.0x	\$ 0.04	\$ -	\$ 0.09	128.5x	NM	57.1x
Average							\$267.3	\$279.3	\$323.4	4.5%	81.6x	246.1x	6.6x	\$ 0.32	\$ 0.04	\$ 0.16	12.4x	NM	NM
Veracyte, Inc.	VCYT	OW/V	\$ 9.24	21.24	\$ 196	\$ 143	\$ 21.9	\$ 37.8	\$ 62.0	72.8%	6.5x	3.8x	2.3x	\$ (6.15)	\$ (1.39)	\$ (1.19)	NM	NM	NM

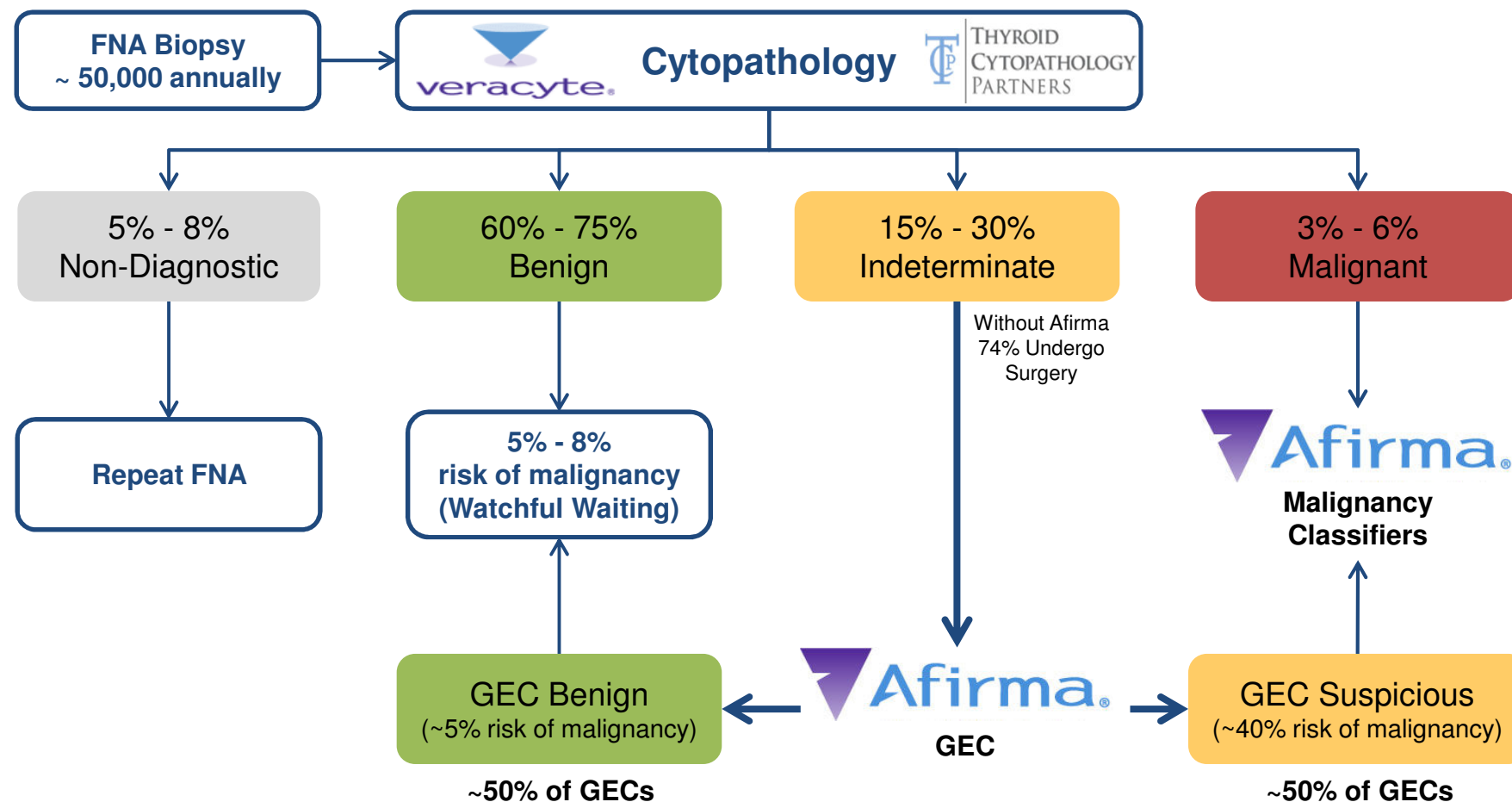
### Market Penetration DCF

U.S. FNAs Annually <b>600,000</b>	→	Est. Indeterminate <b>15%</b>
<b>Total GEC Mkt (Vol)</b>		
GEC Average Reimbursement		<b>90,000</b>
Plus MTC Classifier (on 10% of volume)		\$3,200
Total Annual GEC Mkt Opportunity		\$500
Assumed Penetration		\$292,500
		50%
<b>Projected Annual Revenue (in 000s)</b>		<b>\$146,250</b>
Annual Discount Rate		25%
Terminal Multiple		5.0x
EV in \$000s		
<b>Discounted Value 3 Years Out</b>	<b>Enterprise Value</b>	<b>Share Value</b>
<b>Discounted Value 4 Years Out</b>	<b>\$374,400</b>	<b>\$20</b>
<b>Discounted Value 5 Years Out</b>	<b>\$299,520</b>	<b>\$17</b>
	<b>\$239,616</b>	<b>\$14</b>

- Comps were chosen from other oncology plays in our coverage universe
- VCYT is currently trading at 2.4x our CY15 sales estimate; median for group is 3.4x
- We believe VCYT should be valued at least at 4.0x our CY15 estimate given superior growth profile (as we project 66% growth in 2014)
  - **Implies \$14 per share**
- The TAM for VCYT is estimated to be 90K indeterminate FNAs annually based on historic data
- Assuming a conservative \$3200 ASP and 50% market share (currently ~10%), our annual revenue opportunity is \$146 million
- Assuming a 3-5 year time line to reach \$146 million **implies \$14-\$20 per share**

Source: Company Documents and Stephens Inc. Estimates

## Clinical Diagnostic Flowchart



**Afirma provides a solution for reclassifying indeterminate cytopathology results which would normally result in diagnostic surgery**

Source: Company Documents

## Thyroid Cancer Overview

The **thyroid** is a gland located on both sides of the esophagus, below the Adam's apple in the neck. Cancers of the thyroid are categorized as differentiated or other thyroid cancers

### Differentiated Thyroid Cancers

Cells in these cancers appear similar to normal thyroid tissue

#### *Papillary carcinoma*

- Slow growers, but often spread to lymph nodes
- Most often treated successfully; rarely fatal

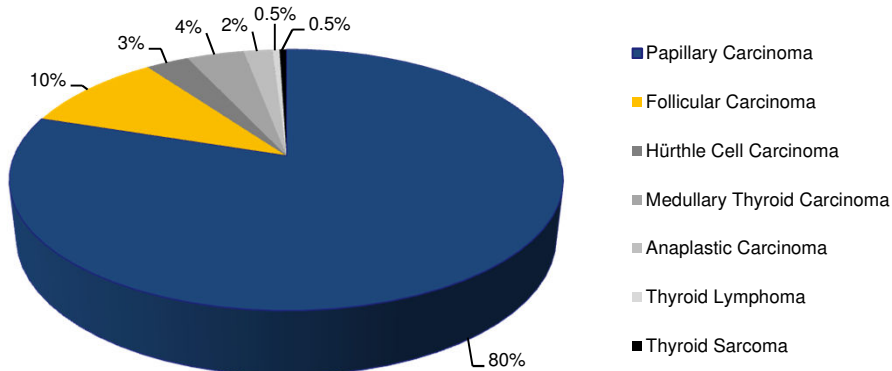
#### ➤ *Follicular carcinoma*

- More common internationally where people have iodine deficiencies in their diet
- Prognosis not as good as in papillary, but still very good

#### ➤ *Hürthle cell carcinoma*

- Harder to find and treat than others because it doesn't react to iodine

Incidence of Thyroid Cancer Types



### Other Thyroid Cancers

Occur much less frequently and develop from various thyroid cells

#### ➤ *Medullary thyroid carcinoma (MTC)*

- Associated with elevated calcitonin levels
- One type of MTC is hereditary while one is not

#### ➤ *Anaplastic carcinoma*

- Cells do not look similar to normal thyroid tissue under a microscope (undifferentiated)
- May develop from other thyroid cancers
- Quickly metastasizes and is very hard to treat

#### ➤ *Thyroid lymphoma:*

- Very uncommon; develops from cells in lymph nodes in the thyroid gland

#### ➤ *Thyroid sarcoma*

- Aggressive, hard to treat, and rare; develops in the supporting cells of the thyroid

**Five-year survival rate from thyroid cancer has remained stable at ~98% since 2006**

Source: National Cancer Institute and American Cancer Society

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# Thyroid Cancer Statistics

## Key Points

### United States

- 600,360 people living with a thyroid cancer diagnosis (Jan. 2014)
- Diagnosed at a relatively young age for adult cancers (Median Age: Women 49, Men 54)
- Most rapidly increasing cancer in the US
  - Increased use of thyroid ultrasound has enabled detection of smaller nodules

NCI US Thyroid Cancer Statistics (2014 Estimates)

New Cases			Fatalities		
Male	Female	Total	Male	Female	Total
15,190	47,790	62,980	830	1,060	1,890

Source: National Cancer Institute

### Outside of the US

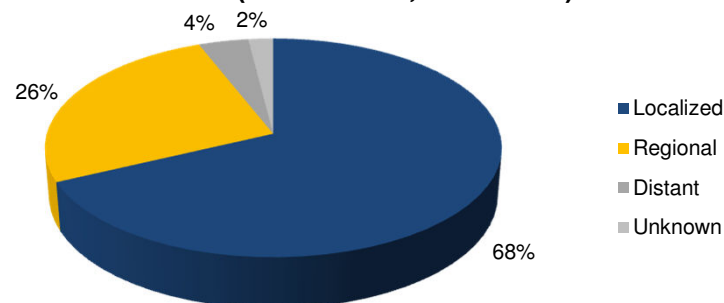
- ~ 1 million patients diagnosed within the past five years are still living (Jan. 2014)
- Overall five-year survival rate at 75%-80% is significantly lower than in the U.S.
- Less developed HC systems are a main cause of the difference in survival rates

Rest of World Thyroid Cancer Statistics (2014 Estimates)

New Cases			Fatalities		
Male	Female	Total	Male	Female	Total
57,823	200,605	258,429	12,366	27,352	39,718

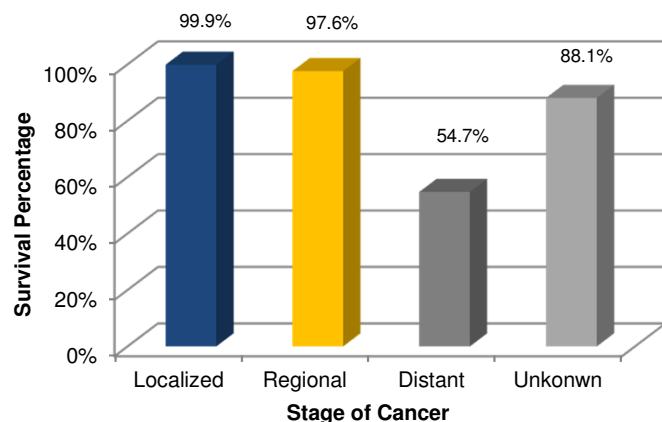
Source: WHO Globocan website and Stephens Inc. estimates

Percent of Cases by Stage of Cancer  
(US Patients, 2004-2010)



Source: National Cancer Institute

5-Year Relative Survival Rate by Stage  
(U.S. Patients, 2012)



Source: National Cancer Institute

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## Technology Overview – Existing Services

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### **Cytopathology:**

- Used for preliminary screening (FNA samples)
- Study stained cells under a microscope to check for abnormalities against healthy thyroid tissues
- High level of ambiguity, as some cells in benign nodules may appear similar to malignant ones

**How do cells appear/ function independently (more detailed)**

### **Gene Expression (microarray):**

- Proprietary algorithm “reads” the genetic information taken from the FNA (secret sauce of VCYT)
- Expression of the genes on the patient’s GEC chip are compared with known expression of genes from benign nodules
- More rigorous test than cytology, thus produces clearer results

### **Histopathology:**

- Screening method for tissues, especially those taken from surgery
- Look at thyroid tissue/nodules for changes or deformities that may be caused by disease
- Typical way to determine if nodules are benign or malignant (post op)

**How do cells function within the structure of tissues (more general)**

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The logo for Stephens, featuring the word "Stephens" in a serif font.

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## Product Overview – Afirma FNA

This first step in the diagnostic process is used to determine the classification of thyroid nodules as quickly and least invasively as possible

FNA biopsy performed in doc's office



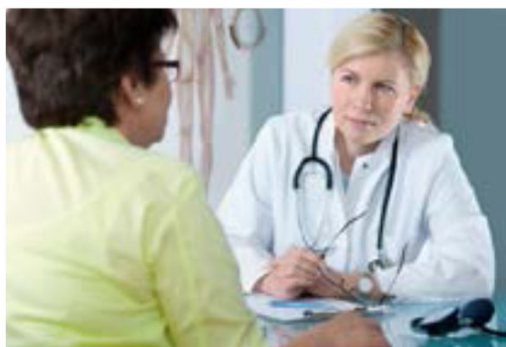
Source: Company Documents

Sample sent to pathology lab



Source: Company Documents

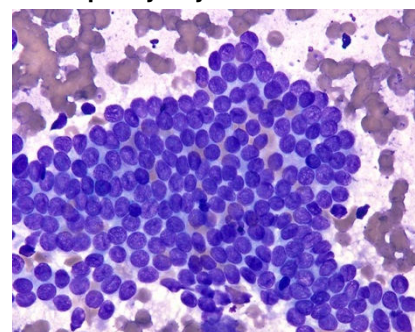
Results returned to doc for review and treatment decision-making



Source: Company Documents

Cells are viewed under a microscope to look for differentiation from healthy thyroid cells

**Papillary Thyroid Carcinoma**



Source: The John Hopkins University School of Medicine

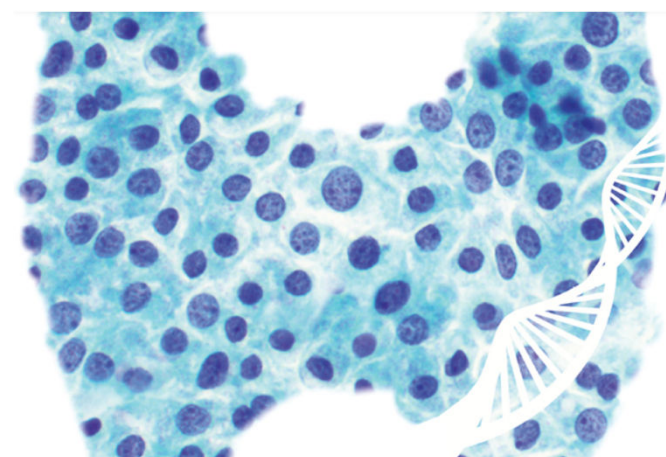
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## Thyroid Cytopathology Partners

TCP conducts cytopathology assessments exclusively on thyroid nodule FNA samples which have been submitted for VCYT's Afirma Thyroid FNA Analysis

- High Volume Lab - > 4,000 FNAs tested per month
- TCP has penetrated 10% of the U.S. thyroid FNA market since its partnership with VCYT began in 4Q 2011
- VCYT controls FNA sample flow
  - VCYT receives samples and sends one to TCP for cytopathology
  - Enabled model (GEC only) – TCP never receives the FNA samples
- VCYT treats TCP as a “variable interest entity” and thus doesn't consolidate TCP
- Service agreement through EOY 2015, renews annually thereafter unless prior termination occurs
- TCP is paid on a fixed price per test schedule (~\$65 per test)
  - Included in COGS
- TCP leases space in VCYT's Austin facility for ~\$80K annually
  - Recognized as other income



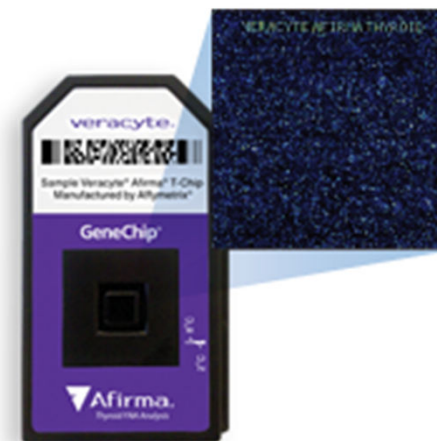
Source: Thyroid Cytology Partners Website and Stephens Inc. estimates

## Product Overview – Afirma GEC

The flagship product of VCYT, the Gene Expression Classifier uses a proprietary gene panel to reclassify indeterminate thyroid cytological results as either malignant or benign

- Developed by discovering over 3,000 “Thyroid Genes” and then testing these to find the final 142 genes that are screened through a locked algorithm
- VCYT holds two U.S. patents and two UK patents around the IP for this tech
- A major study, published in the NEJM in August 2012, was the catalyst for validation of the GEC; findings included:
  - >94% negative predictive value when identifying benign nodules among cytologically indeterminate nodules
  - Surgery recommendations would have been reduced by ~90% when utilizing the GEC after reclassifying nodules as benign from cytology-indeterminate
- For patients with benign GEC results (~74% tested)
  - The time to final diagnosis is decreased from over 60 days to 14 days, on average
  - The total cost of diagnosis including surgery (~\$15,000) is reduced to the cost of the FNA and GEC test only (~\$3,500)

**The Afirma GEC significantly reduces diagnosis time (60 to 14 days), diagnostic surgeries (up to 90%), and costs to the system (\$300+ mil annually)**



Source: Company Documents and Stephens Inc.

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## Product Overview – Afirma Malignancy Classifiers

Launched in March, these classifiers test for specific types of thyroid cancer based upon a patient's results from either an Afirma GEC test or their original FNA biopsy.

### *Medullary Thyroid Carcinoma (MTC) - \$975 retail price*

- Test is included on every Afirma GEC test ordered
- Aggressive type of thyroid cancer that is not definitively diagnosed by cytopathology about half of the time
- Currently ~40% of patients with MTC do not undergo the recommended treatment (central neck dissection) on their first surgery, resulting in additional surgeries and extension of the treatment time line

### *BRAF V600E Genetic Mutation - \$475 retail price*







- Only performed when ordered specifically by the physician
- The occurrence of this mutation differs greatly depending upon cytopathology and GEC results, but it enables doc to better guide treatment in all cases
- Prevalence based on cytology results
  - Indeterminate: 1%-2%
  - Suspicious for Malignancy: 19%-51%
  - Malignant: 45%-75%

**Afirma Malignancy Classifiers have been verified to preoperatively identify both MTC and BRAF V600E mutation status, thus guiding surgical decision-making and reducing unnecessary surgeries**

Source: Company Documents and NIH Documents



## Competitive Marketplace

Company	Test	Release Date	Description
	 Afirma <sup>®</sup> Thyroid FNA Analysis	GEC Early 2011  Malignancy Classifiers May 2014	<ul style="list-style-type: none"> <li>• <b>Afirma GEC</b> utilizes a proprietary algorithm which analyzes 142 specific genes to <b>classify nodules as benign (90%-95% of all thyroid nodules)</b></li> <li>• 94% NPV when identifying benign nodules among the cytologically indeterminate population</li> <li>• <b>Afirma Malignancy Classifiers</b> further assess malignant FNA and GEC suspicious results to <b>better inform surgical decisions moving forward</b></li> <li>• Clinically validated with a 49 site study, published in NEJM</li> <li>• 6 additional real world studies with similar findings to NEJM, including one on economic feasibility</li> </ul>
	 miRInform <sup>®</sup> Thyroid	Late 2011	<ul style="list-style-type: none"> <li>• Panel of 17 molecular markers that screen for malignancy in thyroid nodules with indeterminate cytology (Sensitivity 80%-90%)</li> <li>• Tests indeterminate nodules for malignancy (NPV 92%) - <b>Best for detecting cancer in high-risk patients</b></li> <li>• Developed; not yet clinically validated</li> </ul>
	<b>Thyroid Neoplasia</b> (Test currently in development)	Expected By EOY 2015	<ul style="list-style-type: none"> <li>• Utilize microRNA expression levels to differentiate malignant and benign nodules</li> <li>• Joint development with Moffitt Cancer Center</li> <li>• Expectations for a slide-based test would mean <b>less tissue sample necessary per test</b></li> </ul>
	<b>ThyroSeq v2</b>	June 2014	<ul style="list-style-type: none"> <li>• ThyroSeq v2 is an NGS panel that detects hundreds of point mutations and gene fusions in more than 60 genes associated with thyroid cancer</li> <li>• Partnership with CBL Path provides FNA analysis along with the NGS panel</li> <li>• Initial data results for v2 (September 2014) are promising (90% sensitivity, 93% specificity, 83% PPV, and 96% NPV)</li> </ul>

- All tests included in guidelines as they all use molecular markers for testing
- Afirma is the only test with studies supporting better clinical efficacy, cost effectiveness and better patient outcomes
- Afirma is the only test verified by multiple (6) multi-center studies for clinical efficacy
- Afirma is the only test with CMS reimbursement (\$3200)

Source: Company Websites, NIH Website, UPMC Website, and Stephens Inc.

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## Risks

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### Reimbursement:

- A significant portion of VCYT's revenues (~35%) are dependent upon CMS reimbursement. Thus a decrease in CMS's ability to pay, or other governmental uncertainties could cause a significant impact to VCYT's revenues.

### Competition:

- The molecular diagnostics space is highly competitive, with rapid technology obsolescence and heavy R&D necessary. If an easier to use, more widely adopted product moves into the marketplace its presence could lead to share erosion for VCYT.

### Channel Conflict:

- There is potential for conflict between the clinicians (endocrinologists, oncologists, etc.) and pathologists in their choice of diagnostic for thyroid cancer. If this conflict is significant there is a possibility that VCYT will be unable to take share in the markets in which it competes.

### Product Pipeline:

- We believe that though there is a large potential market, there is not enough published evidence yet to be fully confident in the lung segment of the business. Heavy investment in these products could prove fruitless and negatively impact earnings of VCYT.

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# Financials – Income Statement

## Veracyte Inc.

### Income Statement

(in 000s except per share data)

Fiscal Year Ends Dec. 31

	FY 2011	FY 2012A	Mar-13 1Q13A	June-13 2Q13A	Sep-13 3Q13A	Dec-13 4Q13A	FY 2013A	Mar-14 1Q14A	June-14 2Q14A	Sep-14 3Q14E	Dec-14 4Q14E	FY 2014E	FY 2015E
<b>Total Revenues</b>	<b>\$ 2,645</b>	<b>\$ 11,628</b>	<b>\$ 4,384</b>	<b>\$ 5,068</b>	<b>\$ 5,594</b>	<b>\$ 6,838</b>	<b>\$ 21,884</b>	<b>\$ 7,476</b>	<b>\$ 8,677</b>	<b>\$ 9,063</b>	<b>\$ 12,599</b>	<b>\$ 37,816</b>	<b>\$ 62,030</b>
Cost of Product Revenues	2,925	7,584	2,773	3,231	3,132	3,471	12,607	3,607	3,966	3,988	5,418	16,979	24,812
Gross Profit	(280)	4,044	1,611	1,837	2,462	3,367	9,277	3,869	4,711	5,076	7,182	20,837	37,218
Operating Expenses													
Research and Development	6,680	6,608	2,010	1,902	2,028	1,870	7,810	2,126	2,243	2,719	3,150	10,238	16,133
Selling & Marketing	2,934	8,447	2,703	2,615	3,291	3,931	12,540	4,336	5,101	5,619	6,930	21,986	25,393
General & Administrative	5,372	7,918	2,791	2,737	3,244	3,328	12,100	3,982	3,928	4,532	5,670	18,111	21,555
Non-Recurring Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	14,986	22,973	7,504	7,254	8,563	9,129	32,450	10,444	11,272	12,870	15,749	50,335	63,081
Operating Income (Loss)	(15,266)	(18,929)	(5,893)	(5,417)	(6,101)	(5,762)	(23,173)	(6,575)	(6,561)	(7,795)	(8,568)	(29,498)	(25,863)
EBITDA	(14,655)	(18,223)	(5,696)	(5,186)	(5,812)	(5,480)	(22,174)	(6,311)	(6,284)	(7,518)	(8,291)	(28,403)	(25,863)
Interest Income (Expense), net	-	-	-	(5)	(126)	(97)	(228)	(111)	(113)	-	-	(224)	-
Other Income (Expense), net	821	280	(1,002)	(1,068)	(76)	(33)	(2,179)	12	19	-	-	31	-
Income Before Taxes	(14,445)	(18,649)	(6,895)	(6,490)	(6,303)	(5,892)	(25,580)	(6,674)	(6,655)	(7,795)	(8,568)	(29,691)	(25,863)
Tax Expense (Break)	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Income	\$ (14,445)	\$ (18,649)	\$ (6,895)	\$ (6,490)	\$ (6,303)	\$ (5,892)	\$ (25,580)	\$ (6,674)	\$ (6,655)	\$ (7,795)	\$ (8,568)	\$ (29,691)	\$ (25,863)
Reported EPS	\$ (24.90)	\$ (7.17)	\$ (2.26)	\$ (2.00)	\$ (6.59)	\$ (1.42)	\$ (6.15)	\$ (0.32)	\$ (0.31)	\$ (0.36)	\$ (0.40)	\$ (1.39)	\$ (1.19)
<b>Pro Forma EPS</b>	<b>\$ (24.90)</b>	<b>\$ (7.17)</b>	<b>\$ (2.26)</b>	<b>\$ (2.00)</b>	<b>\$ (6.59)</b>	<b>\$ (1.42)</b>	<b>\$ (6.15)</b>	<b>\$ (0.32)</b>	<b>\$ (0.31)</b>	<b>\$ (0.36)</b>	<b>\$ (0.40)</b>	<b>\$ (1.39)</b>	<b>\$ (1.19)</b>
Fully Diluted Shares Outstanding	580	2,601	3,052	3,251	956	4,159	4,159	21,148	21,237	21,490	21,540	21,354	21,665
<b>Margin Analysis</b>													
Gross Profit	-10.6%	34.8%	36.7%	36.2%	44.0%	49.2%	42.4%	51.8%	54.3%	56.0%	57.0%	55.1%	60.0%
Research and Development	252.6%	56.8%	45.8%	37.5%	36.3%	27.3%	35.7%	28.4%	25.8%	30.0%	25.0%	27.1%	26.0%
Selling & Marketing	110.9%	72.6%	61.7%	51.6%	58.8%	57.5%	57.3%	58.0%	58.8%	62.0%	55.0%	58.1%	40.9%
General & Administrative	203.1%	68.1%	63.7%	54.0%	58.0%	48.7%	55.3%	53.3%	45.3%	50.0%	45.0%	47.9%	34.7%
Operating Income	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
EBITDA	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Income Before Taxes	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Tax Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Net Income	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
<b>Growth Analysis</b>													
Revenues	---	339.6%	198.6%	104.4%	73.5%	53.4%	88.2%	70.5%	71.2%	62.0%	84.3%	72.8%	64.0%
Gross Profit	---	NM	652.8%	150.6%	98.5%	81.3%	129.4%	140.2%	156.5%	106.2%	113.3%	124.6%	78.6%
Research & Development	---	-1.1%	35.7%	13.4%	17.3%	8.7%	18.2%	5.8%	17.9%	34.1%	68.4%	31.1%	57.6%
Sales & Marketing	---	187.9%	122.5%	42.9%	40.2%	28.7%	48.5%	60.4%	95.1%	70.7%	76.3%	75.3%	15.5%
General & Administrative	---	47.4%	58.0%	47.8%	54.3%	51.5%	52.8%	42.7%	43.5%	39.7%	70.4%	49.7%	19.0%
Operating Income	---	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pretax Income	---	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Net Income	---	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Reported EPS	---	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

\* Pro forma EPS excludes non-recurring expenses and stock-based compensation.

Source: Company reports and Stephens Inc. estimates.

Analyst: Drew Jones (501) 377-2369

## Financials – Revenue Build

### Veracyte Inc. Revenue Model

(in thousands, except per share data)

	Sep-13 3Q13A	Dec-13 4Q13A	FY 2013A	Mar-14 1Q14A	June-14 2Q14A	Sep-14 3Q14E	Dec-14 4Q14E	FY 2014E	FY 2015E
<b>Affirma FNA Tests</b>									
FNA Samples Received	12,417	14,059	49,670	14,373	16,458	15894	21089	67813	103635
YoY Growth	76.1%	51.1%	91.9%	33.6%	32.5%	28.0%	50.0%	36.5%	52.8%
Market Opportunity (in tests)	144,703	144,703	578,813	151,938	151,938	151,938	151,938	607,753	638,141
Penetration	8.58%	9.72%	8.58%	9.46%	10.83%	10.46%	13.88%	11.16%	16.24%
<b>Cytometry Only Tests</b>									
Tests Received	10,294	11,516	40,729	11,553	13,214	12,747	16,830	54,343	82,649
YoY Growth									
ASP	\$ 161	\$ 171	\$ 173	\$ 172	\$ 172	\$ 172	\$ 172	\$ 172	\$ 172
Commercial ASP		185	185	185	185	200	200	193	185
Medicare ASP		145	145	145	145	150	150	148	145
Cytometry Only Revenues	\$ 1,657	\$ 1,969	\$ 7,046	\$ 1,989	\$ 2,275	\$ 2,195	\$ 2,898	\$ 9,358	\$ 14,232
<b>Affirma GEC Tests</b>									
% FNA Tests	12.6%	13.7%	14.5%	15.4%	14.9%	15.0%	15.4%	15.2%	15.5%
Total Affirma GEC Tests	1,408	1,733	6,482	1,992	2,207	2,146	2,930	9,275	14,458
YoY Growth									
ASP	\$ 1,911	\$ 1,971	\$ 1,973	\$ 1,997	\$ 2,027	\$ 2,172	\$ 2,172	\$ 2,092	\$ 2,172
Affirma GEC Revenues	\$ 2,691	\$ 3,416	\$ 12,789	\$ 3,978	\$ 4,474	\$ 4,662	\$ 6,365	\$ 19,479	\$ 31,406
<b>Affirma Enabled (GEC Only) Tests</b>									
% FNA Tests	6.4%	6.4%	5.5%	6.4%	7.0%	7.0%	7.0%	6.9%	7.0%
Total Affirma Enabled Tests	715	810	2,459	828	1,037	1,001	1,329	4,195	6,528
YoY Growth									
ASP	\$ 1,750	\$ 1,800	\$ 1,800	\$ 1,825	\$ 1,855	2000	2000	\$ 1,920	\$ 2,000
Affirma Enabled Revenues	\$ 1,251	\$ 1,458	\$ 4,426	\$ 1,511	\$ 1,924	\$ 2,002	\$ 2,658	\$ 8,095	\$ 13,056
<b>Total GEC Tests</b>									
% FNA Tests	19.0%	20.1%	20.0%	21.8%	21.9%	22.0%	22.4%	22.0%	22.5%
Total GEC Tests	2,123	2,543	8,941	2,820	3,244	3,147	4,259	13,470	20,986
YoY Growth									
Total GEC Revenues	\$ 3,942	\$ 4,874	\$ 17,215	\$ 5,490	\$ 6,398	\$ 6,664	\$ 9,023	\$ 27,573	\$ 44,462
<b>Total Malignancy Classifiers</b>									
Total Malignancy Classifiers						318	1054	1,372	5,181
YoY Growth									
Blended ASP						644	644	644	644
Total Malignancy Revenues						\$ 205	\$ 679	\$ 884	\$ 3,337
<b>Total Revenues</b>	<b>\$ 5,599</b>	<b>\$ 6,843</b>	<b>\$ 21,661</b>	<b>\$ 7,479</b>	<b>\$ 8,673</b>	<b>\$ 9,063</b>	<b>\$ 12,599</b>	<b>\$ 37,815</b>	<b>\$ 62,030</b>

Source: Company reports and Stephens Inc. estimates.

Analyst: Drew Jones (501) 377-2369

## Financials – Balance Sheet

### Veracyte Inc. Balance Sheet

(in 000s)

Fiscal Year Ends Dec. 31

	Dec-11 4Q11A	Dec-12 4Q12A	Mar-13 1Q13A	June-13 2Q13A	Sep-13 3Q13A	Dec-13 4Q13A	Mar-14 1Q14A	June-14 2Q14A	Sep-14 3Q14E	Dec-14 4Q14E	Dec-15 4Q15E
<b>Assets</b>											
Cash and Cash Equivalents	\$ 7,566	\$ 14,002	\$ 7,072	\$ 20,683	\$ 15,426	\$ 71,220	\$ 64,237	\$ 57,998	\$ 50,297	\$ 44,968	\$ 26,135
Accounts Receivable	229	569	464	991	714	1,143	1,191	1,430	1,450	2,016	3,191
Inventory	279	1,050	737	770	1,392	2,567	2,721	3,300	3,353	4,662	7,379
Prepaid Expenses and Other Current assets	519	710	854	1,398	2,938	1,477	1,014	1,450	1,631	2,268	3,590
Restricted Cash	-	50	-	-	-	-	-	-	-	-	-
Total Current Assets	8,593	16,381	9,127	23,842	20,470	76,407	69,163	64,178	56,733	53,914	40,295
Property and Equipment Net	1,687	2,446	2,826	3,025	2,826	2,952	3,028	3,312	3,362	3,412	3,212
Restricted Cash	168	118	118	118	118	118	118	118	118	118	118
Other Assets	3	122	108	174	157	153	145	142	181	252	399
<b>Total Assets</b>	<b>\$ 10,451</b>	<b>\$ 19,067</b>	<b>\$ 12,179</b>	<b>\$ 27,159</b>	<b>\$ 23,571</b>	<b>\$ 79,630</b>	<b>\$ 72,454</b>	<b>\$ 67,750</b>	<b>\$ 60,394</b>	<b>\$ 57,696</b>	<b>\$ 44,024</b>
<b>Liabilities</b>											
Accounts Payable	\$ 550	\$ 1,888	\$ 1,651	\$ 1,906	\$ 5,604	\$ 5,294	\$ 7,214	\$ 8,539	8,701	12,095	19,145
Accrued Expenses and Other Current Liabilities	1,336	4,020	3,168	5,387	4,416	7,594	5,267	5,128	6,344	8,820	13,960
Deferred Genzyme Co-Promotion Fee	-	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Current Portion of Long-term Debt	-	-	-	-	-	-	467	940	-	-	-
Preferred Stock Liability	-	583	1,585	-	-	-	-	-	-	-	-
Total Current Liabilities	1,886	8,991	8,904	9,793	12,520	15,388	15,448	17,107	17,545	23,415	35,606
Long-term Debt, Net of Current Portion	-	-	-	4,826	4,863	4,899	4,467	4,031	4,031	4,031	4,031
Deferred Rent, Net of Current Portion	35	61	71	264	250	286	260	223	223	223	223
Preferred Stock Warrant Liability	-	-	-	175	252	-	-	-	-	-	-
Deferred Co-Promotion Fee, Net of Current	-	5,114	4,489	3,864	3,239	2,614	1,989	1,364	1,364	1,364	1,364
Total Liabilities	1,921	14,166	13,464	18,922	21,124	23,187	22,164	22,725	23,163	29,033	41,224
<b>Stockholder Equity</b>											
Convertible Preferred Stock	49,296	63,372	63,372	79,025	79,022	-	-	-	-	-	-
Common Stock	1	1	3	4	1	21	21	21	21	21	21
Additional Paid-in Capital	653	1,597	2,304	2,663	3,181	142,071	142,592	143,982	143,982	143,982	143,982
Accumulated Deficit	(41,420)	(60,069)	(66,964)	(73,455)	(79,757)	(85,649)	(92,323)	(98,978)	(106,773)	(115,340)	(141,203)
Total Stockholders' Equity	8,530	4,901	(1,285)	8,237	2,447	56,443	50,290	45,025	37,230	28,663	2,800
<b>Total Liabilities and SE</b>	<b>\$ 10,451</b>	<b>\$ 19,067</b>	<b>\$ 12,179</b>	<b>\$ 27,159</b>	<b>\$ 23,571</b>	<b>\$ 79,630</b>	<b>\$ 72,454</b>	<b>\$ 67,750</b>	<b>\$ 60,394</b>	<b>\$ 57,696</b>	<b>\$ 44,024</b>

Source: Company reports and Stephens Inc. estimates.

Analyst: Drew Jones (501) 377-2369

## Financials – Cash Flow

### Veracyte Inc.

#### Cash Flow Statement

(in 000s)	FY	Mar-13	June-13	Sep-13	Dec-13	FY	Mar-14	June-14	Sep-14	Dec-14	FY	FY
Fiscal Year Ends Dec. 31	2012A	1Q13A	2Q13A	3Q13A	4Q13A	2013A	1Q14A	2Q14A	3Q14E	4Q14E	2014E	2015E
<b>Operating Activities</b>												
Net Income (Loss)	\$ (18,649)	\$ (6,895)	\$ (6,490)	\$ (6,303)	\$ (5,892)	\$ (25,580)	\$ (6,674)	\$ (6,655)	\$ (7,795)	\$ (8,568)	\$ (29,691)	\$ (25,863)
Depreciation and Amortization	706	197	231	289	282	999	264	277	277	277	1,095	-
Change in Assets	(1,352)	324	(1,104)	(1,885)	(143)	(2,808)	261	(1,254)	(255)	(2,510)	(3,759)	(5,214)
Change in Liabilities	7,105	(87)	889	2,727	2,868	6,397	60	1,659	438	5,870	8,027	12,191
<b>Net Cash From Operating Activities</b>	<b>(12,190)</b>	<b>(6,461)</b>	<b>(6,474)</b>	<b>(5,172)</b>	<b>(2,885)</b>	<b>(20,992)</b>	<b>(6,089)</b>	<b>(5,973)</b>	<b>(7,334)</b>	<b>(4,931)</b>	<b>(24,328)</b>	<b>(18,886)</b>
<b>Investing Activities</b>												
Purchase of Property and Equip.	(1,462)	(556)	(385)	29	(420)	(1,332)	(124)	(780)	(500)	(500)	(1,904)	(3,700)
Change in Other Long-Term Assets	(69)	14	(66)	17	4	(31)	8	3	(39)	(71)	(99)	(147)
Fixed Asset Adjustment	(3)	(21)	(45)	(119)	12	(173)	(216)	219	173	173	349	3,900
<b>Net Cash From Investing Activities</b>	<b>(1,534)</b>	<b>(563)</b>	<b>(496)</b>	<b>(73)</b>	<b>(404)</b>	<b>(1,536)</b>	<b>(332)</b>	<b>(558)</b>	<b>(366)</b>	<b>(398)</b>	<b>(1,654)</b>	<b>53</b>
<b>Financing Activities</b>												
Change in Debt	5,140	(615)	4,569	(525)	(805)	2,624	(1,083)	(1,098)	-	-	(2,181)	-
Proceeds/ (Costs) from Convertible Pref. Stock Issuance	14,989	(52)	13,050	(53)	-	12,945	-	-	-	-	-	-
Proceeds/ (Costs) from Common Stock Issuance	-	-	-	-	59,285	59,285	(129)	-	-	-	(129)	-
Proceeds from Stock Option Exercise	76	247	73	154	78	552	27	448	-	-	475	-
Change in Shareholder's Equity	(45)	514	2,889	412	525	4,340	623	942	0	0	1,565	0
<b>Net Cash From Financing Activities</b>	<b>20,160</b>	<b>94</b>	<b>20,581</b>	<b>(12)</b>	<b>59,083</b>	<b>79,746</b>	<b>(562)</b>	<b>292</b>	<b>0</b>	<b>0</b>	<b>(270)</b>	<b>0</b>
<b>Net Increase/Decrease in Cash</b>	<b>6,436</b>	<b>(6,930)</b>	<b>13,611</b>	<b>(5,257)</b>	<b>55,794</b>	<b>57,218</b>	<b>(6,983)</b>	<b>(6,239)</b>	<b>(7,701)</b>	<b>(5,329)</b>	<b>(26,252)</b>	<b>(18,833)</b>
<b>Beginning Cash</b>	<b>7,566</b>	<b>14,002</b>	<b>7,072</b>	<b>20,683</b>	<b>15,426</b>	<b>14,002</b>	<b>71,220</b>	<b>64,237</b>	<b>57,998</b>	<b>50,297</b>	<b>71,220</b>	<b>44,968</b>
<b>Ending Cash</b>	<b>\$ 14,002</b>	<b>\$ 7,072</b>	<b>\$ 20,683</b>	<b>\$ 15,426</b>	<b>\$ 71,220</b>	<b>\$ 71,220</b>	<b>\$ 64,237</b>	<b>\$ 57,998</b>	<b>\$ 50,297</b>	<b>\$ 44,968</b>	<b>\$ 44,968</b>	<b>\$ 26,135</b>

Source: Company reports and Stephens Inc. estimates.

Analyst: Drew Jones (501) 377-2369

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# Appendix

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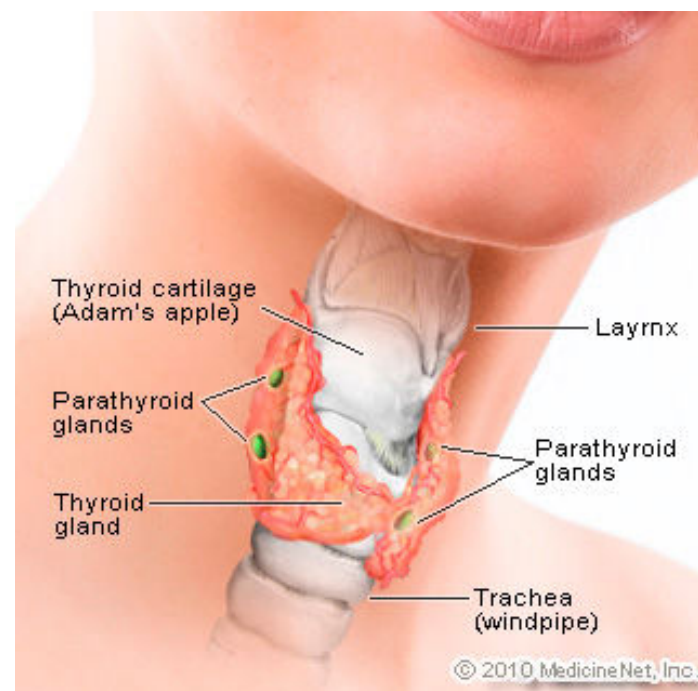
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## Thyroid Gland Overview

The thyroid is a small, butterfly shaped gland located around the trachea just below the Adam's apple

- Consists of three parts, the left and right nodes and the isthmus that connects the halves
- Creates a variety of hormones that serve several purposes throughout the body, such as:
  - Regulates the body's growth and development, esp. in children and teens
  - Regulates the rate of chemical reactions in the body (metabolism)
  - Calcitonin – involved in calcium metabolism and stimulating bone cells to add more calcium
- Parathyroid glands
  - Located on the back of the thyroid gland
  - Regulate the body's levels of calcium and phosphate within a narrowly defined range
  - Necessary for proper functioning of the nervous and muscular systems



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## Thyroid Cancer Treatment

### Invasive Surgery

- Virtually always the first choice of treatment

#### *Total Thyroidectomy*

- The removal of the entire thyroid
- 84% of patients with indeterminate cytology results undergo this surgery
- May be followed up by radioactive iodine treatment to destroy inoperable cancer in other parts of the neck or body
- Patients must rely on thyroid hormone replacement drugs for the rest of their life

#### *Partial Thyroidectomy (Lobectomy)*

- Usually consists of the removal of an entire lobe (half) of the thyroid
- An additional 13% of those with indeterminate cytology results undergo this treatment
- Hormone replacement based upon post surgery testing
- ~5% of all surgery patients have serious complications (~5,000 patients annually)

### Radioactive Iodine Treatment

- Similarly to usage in diagnosis, the radioactive iodine is swallowed in pill form, or injected
- This iodine contains significantly more radioactive material than that used for diagnosis
- Radioactivity destroys all thyroid cells (including cancerous), which absorb the iodine with little effect on the rest of the body
  - Considered the standard in treatment of differentiated cancer that has spread to the neck or other parts of the body

Source: NIH Website and American Cancer Society Documents

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## Technology - Cytopathology

The study, usually under a microscope, of cells collected from a part of the body (in this case an FNA biopsy of the thyroid), which are evaluated for the presence of disease

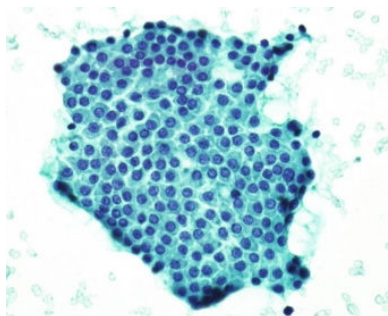
- First, cells are scanned for abnormalities in their physical appearance
- Additionally scanned for irregularities in their formation and functioning while under the microscope

Source: NIH Website

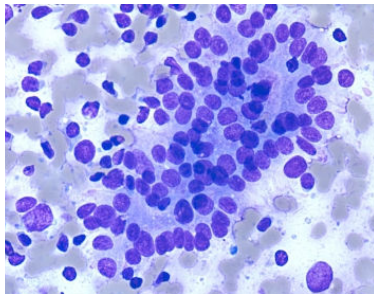
This test is most often used to look for cancers and precancerous changes in cells, but it can also be used to look for viral infections in these cells

Examples of Thyroid FNA Cytopathology Findings:

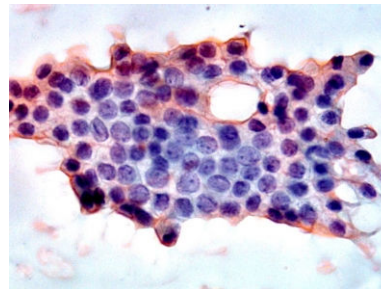
Benign



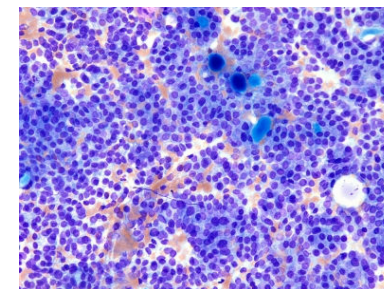
Indeterminate



Suspicious



Malignant



Source: Papanicolaou Society of Cytopathology Image Atlas

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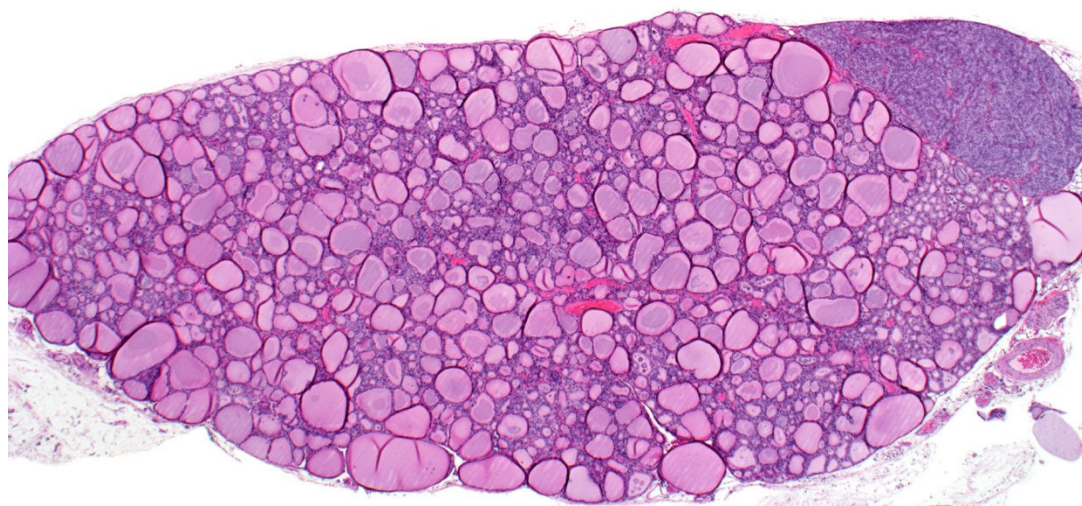
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## Technology - Histopathology

Science concerned with the minute structure of cells, tissues and organs in relation to their functions, especially regarding their roles in disease

- In practice this occurs through the study of these tissues, usually gathered through diagnostic biopsies, under a microscope by a pathologist
- Histopathology serves two main functions:
  - Diagnostic – after an indeterminate cytopathology finding, tissues from a lobectomy would be assessed to determine the next steps in treating the cancer
  - Confirmatory – once treatment surgeries have been completed, histopathology is performed to confirm the type, stage, and likelihood of spread for the thyroid cancer



Source: NIH Website

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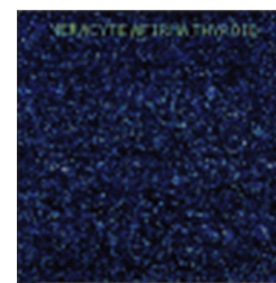
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## Technology – Gene Expression

Gene expression is the biological process used by the Afirma GEC to classify benign thyroid nodules based upon their biopsy sample

- Process by which the information stored in one's genes is translated into proteins, which serve various functions throughout the body
  - Cell reads the genetic sequence in groups of 3 bases which form amino acids (20 different acids)
  - Amino acids form a protein (acid chain) as they are read
- The resulting proteins show which genes may have mutations that suggest disease
- These proteins are “expressed” by emitting a fluorescent color on a gene chip (shown below)
- This chip is read by an analyzer that prints reports which can be clinically interpreted and reported on to the patient

Afirma GEC chip



Source: NIH Website, Company Documents

## VCYT Volume Breakdown

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### Key Markets:

- Physician Office (over 50% of FNA Volumes) – 20%-30% YE penetration
  - Murky sales channel with multiple doc groups ordering (Endocrinologists, Head/Neck, Ambulatory, Radiology)
  - Endocrinologists are most important channel
  - Focused on largest group practices first
- Non-Academic, Large Institutions – 5% YE penetration
  - Less focus on this area originally
  - Expansion in this market through the use of the Afirma Enabled model
- Academic Market (~10% of FNA Volumes) – 30%-40% YE penetration
  - Focused on studying patients with thyroid cancer, not usually for diagnostic use
  - KOLs in this area are important, as they are those who do research to verify testing procedures

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Source: Company Documents and Stephens Inc.

## Platform Expansion Into Lung Diagnostics

**September 4, VCYT announced the purchase of Allegro Diagnostics to accelerate its expansion into the lung sector of molecular diagnostics.**

### Quick Facts

- \$ 21 million transaction
  - ~\$7.8 mil in cash
  - \$13.2 mil in VCYT stock
- Allegro previously venture-backed and privately held
- Lung Cancer Diagnostic – Classifies lung nodule patients following a non-diagnostic bronchoscopy for further diagnosis by:
  - CT scan monitoring (watchful waiting)
  - Invasive diagnostic surgeries
- Test in pre-commercial stage
- Two prospective multi-center clinical validation studies completed

**Meaningful revenue contribution not expected until 2017**

### Lung Cancer Market Opportunity

- CT screening recommended for 8 million high-risk individuals
- ~250K bronchoscopy procedures annually for suspicious nodules
- ~40% non-diagnostic (100K patients)
  - Physicians decided on invasive diagnostic procedures
- 40% of diagnostic surgeries result in a benign diagnosis for the patient (unnecessary surgeries)
- Early stage product development for Idiopathic Pulmonary Fibrosis (IPF) diagnostic

**The lung cancer diagnostic seeks to cut healthcare costs and improve patient outcomes by reducing the number of unnecessary surgeries**

Source: Company Documents

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## Management Team

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**Bonnie H. Anderson**  
*President and CEO*

- Lead the VCYT team since its creation in 2008
- 30+ years in diagnostics and life sciences industry
- Served as a strategic consultant to VC firms and early-stage life science businesses
- 18 years in leadership positions at Beckman Coulter

**Shelly D. Guyer**  
*Chief Financial Officer*

- Joined Veracyte as CFO in April 2013
- Over 25 years in finance and life science industries
- Served as CFO at iRhythm Technologies, a med device and services company
- 17 years at J.P. Morgan Securities

**Christopher M. Hall**  
*Chief Operating Officer*

- Named Chief Commercial Officer in March 2010 and Chief Operating Officer in September 2014
- Served as Senior VP of Celera Corporation
- Former chief Clinical Operations Officer and VP Marketing for Berkeley HeartLab

**Giulia C. Kennedy, Ph D.**  
*Chief Scientific Officer, SVP of R&D*

- Began in April 2008 with Veracyte
- Led the Genomics Collaborations and Genotyping Technology R&D groups at Affymetrix, Inc.
- Served as a scientific leader for the colon cancer and breast cancer gene discovery efforts at Chiron Corp.

Source: Company Website

## Companies Mentioned

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### Public Companies

- Aetna (AET, \$81.49)
- Cigna (CI, \$90.59)
- Humana (HUM, \$128.92)
- Rosetta Genomics (ROSG, \$3.52)
- Sanofi ADR (SNY, \$54.75)
- United Healthcare (UNH, \$86.02)

### Private and Foreign Companies

- CBL Path
- Domain Associates, LLC
- Grupo Fleury
- Interpace Diagnostics
- Kleiner, Perkins, Caufield, & Byers
- TPG Capital
- Versant Venture Management, LLC

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Source: Company Website

## APPENDIX A

### ANALYST CERTIFICATION

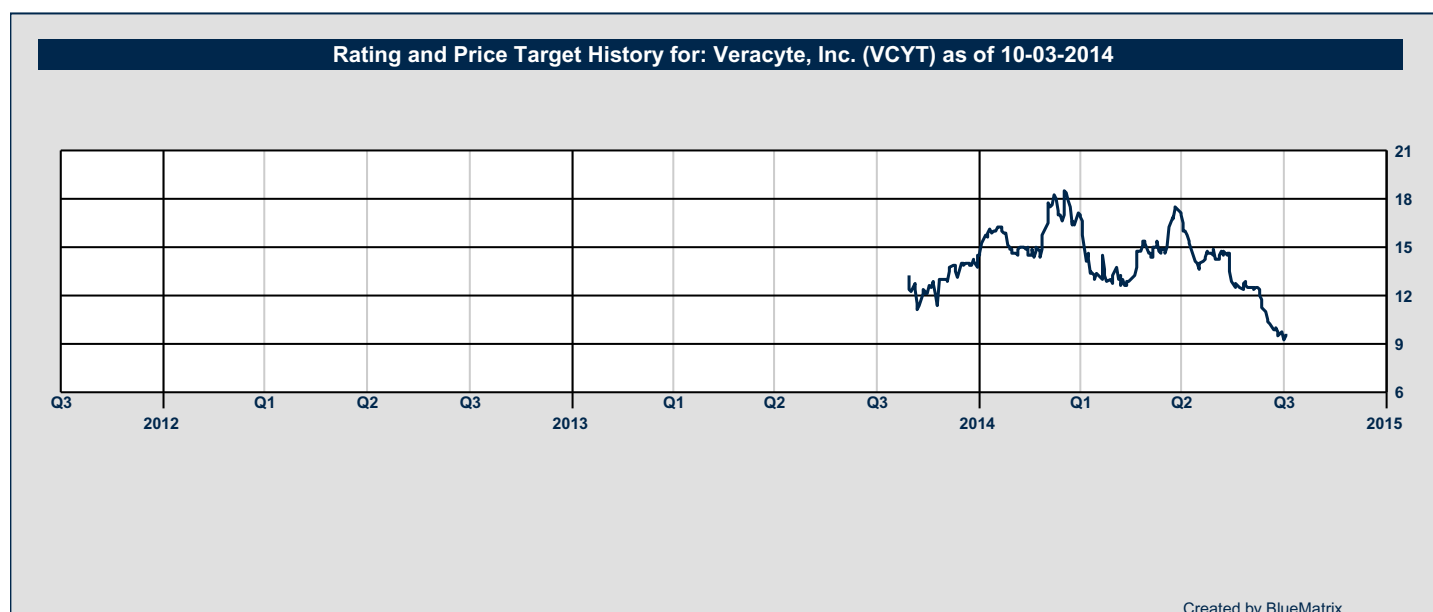
The analyst primarily responsible for the preparation of the content of this report certifies that (i) all views expressed in this report accurately reflect the analyst's personal views about the subject company and securities, and (ii) no part of the analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by the analyst in this report.

### REQUIRED DISCLOSURES

The research analyst principally responsible for preparation of this report has received compensation that is based on the firm's overall revenue which includes investment banking revenue.

Stephens Inc. maintains a market in the common stock of Veracyte, Inc. as of the date of this report and may act as principal in these transactions.

Stephens Inc. expects to receive or intends to seek compensation for investment banking services from Veracyte, Inc. in the next three months.



### Valuation Methodology for Veracyte, Inc.

We value VCYT on a blended basis using comparable companies analysis and a market share discounted cash flow analysis.

### Risks to Achievement of Target Price for Veracyte, Inc.

Key risks for investors to note when evaluating shares of VCYT include 1) reimbursement risk, 2) share loss due to competition, 3) potential for channel conflict between customers, and 4) potentially dilutive products in the pipeline.

### Ratings Definitions

OVERWEIGHT (O) - The stock's total return is expected to be greater than the total return of the company's industry sector, on a risk-adjusted basis, over the next 12 months. EQUAL-WEIGHT (E) - The stock's total return is expected to be equivalent to the total return of the company's industry sector, on a risk-adjusted basis, over the next 12 months. UNDERWEIGHT (U) - The stock's total return is expected to be less than the total return of the company's industry sector, on a risk-adjusted basis, over the next 12 months. VOLATILE (V) - The stock's price volatility is potentially higher than that of the company's industry sector. The company stock ratings may reflect the analyst's subjective assessment of risk factors that could impact the company's business.

## Distribution of Stephens Inc. Ratings

Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [OW]	259	58.33	57	22.01
HOLD [EW]	180	40.54	19	10.56
SELL [UW]	5	1.13	0	0.00

## OTHER DISCLOSURES

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