



### Investment Process

We seek to invest in companies that possess franchise characteristics, are benefiting from an accelerating profit cycle and are trading at a discount to our estimate of private market value. Our investment process focuses on two distinct elements—security selection and capital allocation. We overlay our investment process with broad knowledge of the global economy.

#### Security Selection

We seek to identify companies that have franchise characteristics (e.g., low-cost production capability, possession of a proprietary asset, dominant market share or a defensible brand name), are benefiting from an accelerating profit cycle and are trading at a discount to our estimate of private market value. We also assess key environmental, social and governance (ESG) issues that could impact future stock returns. We look for companies that are well positioned for long-term growth, which is driven by demand for their products and services, at an early enough stage in their profit cycle to benefit from the increased cash flows produced by the emerging profit cycle.

#### Capital Allocation

Based on our fundamental analysis of a company's profit cycle, we divide the portfolio into three parts. Garden<sup>SM</sup> investments are small positions in the early part of their profit cycle that may warrant more sizeable allocations as their profit cycle accelerates. Crop<sup>SM</sup> investments are positions that are being increased to a full weight because they are moving through the strongest part of their profit cycles. Harvest<sup>SM</sup> investments are positions that are being reduced as they near our estimates of full valuation or their profit cycles begin to decelerate.

#### Broad Knowledge

We overlay the security selection and capital allocation elements of our investment process with a desire to invest opportunistically across the entire global economy. We seek broad knowledge of the global economy in order to find growth wherever it occurs.

### Team Overview

We believe deep industry expertise, broad investment knowledge, a highly collaborative decision-making process and individual accountability are a powerful combination. Since the inception of the team, we have been committed to building a team of growth investors that retains these attributes and is solely dedicated to our process and approach.

### Portfolio Management



Craigh A. Cepukenas, CFA  
Portfolio Manager (Lead)



James D. Hamel, CFA  
Portfolio Manager



Matthew H. Kamm, CFA  
Portfolio Manager



Jason L. White, CFA  
Portfolio Manager

### Investment Results (% USD)

As of 31 December 2019	Average Annual Total Returns						
	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	Inception <sup>1</sup>
<b>Composite — Gross</b>	<b>10.44</b>	<b>41.90</b>	<b>41.90</b>	<b>23.56</b>	<b>15.42</b>	<b>16.70</b>	<b>11.38</b>
<b>Composite — Net</b>	<b>10.17</b>	<b>40.52</b>	<b>40.52</b>	<b>22.35</b>	<b>14.28</b>	<b>15.55</b>	<b>10.29</b>
Russell 2000 <sup>®</sup> Growth Index	11.39	28.48	28.48	12.49	9.33	13.00	7.97
Russell 2000 <sup>®</sup> Index	9.94	25.52	25.52	8.59	8.22	11.82	9.24

### Annual Returns (% USD) 12 months ended 31 December

	2015	2016	2017	2018	2019
<b>Composite — Gross</b>	<b>1.61</b>	<b>6.90</b>	<b>28.38</b>	<b>3.54</b>	<b>41.90</b>

Source: Artisan Partners/Russell. Returns for periods less than one year are not annualized. <sup>1</sup>Composite inception: 1 April 1995.

Past performance does not guarantee and is not a reliable indicator of future results. Current performance may be lower or higher than the performance shown. Composite performance has been presented in both gross and net of investment management fees.

**Investment Risks:** Investments will rise and fall with market fluctuations and investor capital is at risk. Investors investing in strategies denominated in non-local currency should be aware of the risk of currency exchange fluctuations that may cause a loss of principal. These risks, among others, are further described near the back of this document, which should be read in conjunction with this material.



### Investing Environment

Positive developments in trade, better-than-expected earnings results and a resilient US consumer cleared some clouds of uncertainty over the market during Q4, pushing global equity markets to record highs. For the calendar year, the MSCI AC World Index erased all its 2018 losses, delivering the best total return in a decade. In Q4, emerging markets led, followed by US markets and non-US developed markets.

Global trade tensions escalated through most of 2019, though some positive developments during Q4 helped alleviate a bit of uncertainty. The USMCA agreement neared approval in the US Senate, and the US and China announced a phase 1 trade deal. While the jury is still out on a longer-term US-China trade resolution, the phase 1 deal signaled a ceasefire.

On the monetary policy front, central banks remained dovish, and benchmark interest rates remained low or negative globally. In October, the Federal Reserve cut its benchmark rate by 25bps for the third time in 2019, while announcing in December a pause on any further rate cuts until there is a meaningful change in the economic outlook—helping soothe investor nerves about an imminent recession.

Equity market strength was broad-based during Q4, with all MSCI AC World Index sectors posting positive returns. Information technology, health care and financials led, while utilities, real estate and consumer staples lagged. Growth stocks outperformed their value counterparts in 2019, helped by tailwinds of subdued GDP growth and low interest rates.

### Performance Discussion

Our portfolio trailed the Russell 2000® Growth Index and outperformed the Russell 2000® Index in Q4. Relative weakness was driven by our information technology, health care and consumer discretionary holdings, while our industrials holdings and lack of exposure to real estate, utilities and consumer staples—areas where we tend to find fewer companies meeting our criteria for franchise strength and compelling profit cycles—were additive to relative performance.

Our biotech holdings, despite solid absolute returns, drove our relative underperformance in health care during the quarter. Biotech companies with high valuations, little or no sales and no products in phase II trials or higher—characteristics we tend to avoid—led the subsector to one of the best absolute returns in the Russell 2000® Growth Index in Q4. Though our holdings were generally out of favor in Q4, we are excited about their profit-cycle potential in the period ahead. Several have clinically de-risked products that are on their way to being commercially de-risked, setting them up nicely for growth over the next couple of years.

For 2019 overall, both absolute and relative performance were solid, thanks primarily to strong, bottom-up stock-picking. In addition to our communication services holdings, three of our four power alleys—

industrials, information technology and health care—were areas of particular strength where we expect to see further innovation and growth in 2020. Our financials holdings—which represent a relatively small share of the portfolio as we struggle to find franchises that meet our criteria—were the primary relative detractor.

Among our bottom Q4 contributors were Tabula Rasa Healthcare, Canada Goose and Cree. Tabula Rasa is a medication risk-mitigation provider primarily serving the Program of All-Inclusive Care for the Elderly (PACE) market. Its proprietary software helps these PACE organizations, which serve patients who prefer care in their own homes over a care facility, to address adverse drug events, lowering overall costs for patients with complex medical needs. Shares were recently pressured amid a one-off contract cancellation signed by a large, recently merged HMO. We believe the fundamentals remain intact and are staying patient while we watch for signs our thesis is taking hold.

Canada Goose is a premium outerwear brand focused primarily on technical parkas and other jackets. Our thesis has been predicated primarily on the company's potential to grow its brand in Asia, where already-significant consumer demand for luxury goods has been growing—which should translate into meaningful sales growth. However, we believe recent turbulence in Hong Kong has clouded the outlook there, and more generally, higher inventory levels could be indicative of waning demand. We have trimmed our position, are reviewing our thesis and are prepared to pivot accordingly.

Shares of Cree, a producer of semiconductors used in electric vehicles (EVs), have been pressured over the past couple of quarters against a backdrop of US-China trade tensions, export restrictions and a difficult EV market in China as subsidies have been rolled back. However, we still believe the global trend toward EVs remains firmly in motion, particularly given the backdrop of a broad effort to move toward a less carbon-intensive world. We remain confident in Cree's ability to be a major player in the disruption of the auto market longer term with its market leadership in silicon carbide technologies and are remaining patient for now.

Among our top individual contributors in Q4 were DexCom, NeoGenomics and Chegg. DexCom, a market leader for continuous glucose-monitoring systems (CGM), has recently made meaningful market-share gains both in the US and abroad as the company benefits from growing CGM demand, improving market access and growing manufacturing capacity. Furthermore, in late 2020, DexCom expects to launch its new G7 product—a slimmer, fully disposable CGM sensor—which we believe can open up the opportunity to gain share in non-insulin dependent type 2 diabetes and gestational diabetes, as well as in hospitals. While we believe the growth runway ahead is significant given a sizable global market and the company's leading CGM technology portfolio, we have been harvesting our position as the company has outgrown our small cap mandate, concluding a very successful campaign.

NeoGenomics is the largest oncology lab in the US with significant scale and broad distribution to pathologists and hospitals across the country, enabling the company to take share from other labs. Furthermore, the company's pharmacy services business has experienced meaningful growth over recent quarters as its access to patients both during drug development and commercialization has enabled it to build a meaningful backlog of bookings. Lastly, the company's on-track integration of recently acquired Genoptix—a cancer-focused genetic testing business specializing in hematology and solid tumor testing—and ongoing investments in next-gen molecular sequencing, should all add to future profit-growth potential. We believe the company is the pre-eminent cancer-focused genetic laboratory and added to our position throughout the back half of 2019 as we gained conviction in the profit cycle.

Chegg, a digital education company, was a bottom contributor in our portfolio in Q3 as investors took profits, though we used this sell-off to opportunistically add to our position and we were rewarded in Q4 as shares bounced back. The positive contribution to our portfolio in Q4 and 2019 has been driven by the company's solid growth in subscribers for its best-in-class online digital education platform and strong results from its international efforts. Further, testing of the company's Study Pack bundle has been promising—which should lead to higher fees over the medium term. We believe the company is positioning its education platform to be a must-have for college students in the coming years.

### Portfolio Activity

We used the broader pullback in SaaS companies during Q4 to initiate a position in Alteryx (AYX). AYX provides easy-to-use data analytics software tools that enable customers to discover, share and prep data, perform analyses—statistical, predictive, prescriptive and spatial—and deploy and manage analytic models. The tools enable both citizen data scientists—users whose primary job is not in analytics, but who generate models that use advanced analytics or predictive capabilities—and experienced statisticians to gain faster insights. As more businesses generate data, which require analysis to improve business processes and innovate, we believe AYX is well-positioned to take share in a substantial and rapidly growing addressable market for self-service analytical tools.

We concluded our campaign in ServiceMaster Global Holdings during Q4. Shares of ServiceMaster, a provider of residential and commercial pest-control services, were pressured amid a trio of disappointing updates: the departure of the company's Terminix® franchise president, pending litigation related to termite damage, and a step back in customer retention rates. While turnarounds are often not linear, we controlled for this uncertainty during our campaign with our smaller position size. Given the management turnover and unknown magnitude of legal liabilities were not consistent with our thesis, we exited our position.

In addition to the aforementioned adds of NeoGenomics and Chegg, we also added to Veracyte (VCYT) and Ollie's Bargain Outlet. Veracyte

specializes in the improvement of diagnostic accuracy utilizing a combination of RNA sequencing, machine learning and field of injury science. VCYT has approval, clinical data and reimbursement for three tests—a big hurdle for a diagnostics company—for thyroid cancer, lung cancer and idiopathic pulmonary fibrosis (a form of lung disease). These diagnostics reduce the number of surgeries performed for patients who have indeterminate test results, saving the health care system unnecessary overtreatment costs. We believe these diagnostics and a nasal swab for early detection of lung cancer in the pipeline will drive a meaningful profit cycle ahead.

Shares of Ollie's Bargain Outlet, a discount retailer, have been pressured over the past couple of quarters amid a rare bout of poor execution as an atypical pace of new store openings in the first half of 2019 stressed its supply chain, hampering its ability to stock stores. Furthermore, the company's CEO, an individual with whom we had developed a good relationship over the course of our investment and regarded very highly, sadly passed away. The company has since named a new CEO, and recent results proved inventory issues to be transitory, as we expected. Given a strong founder-led management team, limited competition and our confidence the company can scale up the business, we added to our position.

In addition to the aforementioned trim of DexCom, we also trimmed our positions in Teladoc and Webster Financial during Q4. Teladoc is the US's largest provider of telehealth, which allows patients to access health care professionals over the phone or via video. The service provides patients with more convenience—shorter wait times for both appointments and in waiting rooms, no need to drive to a doctor's office, etc.—while employers capitalize on lower medical expenses. Though the company's first-mover advantage has led to a solid profit cycle since we initiated our campaign in mid-2018, we have recently become concerned about the duration of the company's competitive advantage. Furthermore, with the share price approaching our estimate of private market value, we pared our position during the quarter.

Webster Financial Corporation is a bank holding company with one of the largest health savings account (HSA) platforms in the US and a banking subsidiary which provides a wide range of financial services to individuals, families and businesses throughout southern New England and eastern New York state. Recent results demonstrated slowing growth in the company's HSA business, and a profit acceleration in the company's banking subsidiary is highly dependent on an improved macro environment. We trimmed our position during the quarter and reinvested the proceeds in companies whose profit cycles are driven by more idiosyncratic dynamics.

### Portfolio Statistics

As of December 31, 2019, the portfolio had a 3-5 year forecasted weighted average earnings growth rate of 26%, and our holdings were selling at a weighted harmonic average P/E (excluding negative earnings) of 39X FY1 earnings and 34X FY2 earnings. The portfolio held 59 companies with 32% of portfolio capital committed to the top

10 holdings and 55% of capital committed to the top 20 positions. The portfolio's weighted average market capitalization was \$5.9 billion.

### Our ESG Journey

We view the increasing importance placed on environmental, social and governance (ESG) factors as one of the most notable investment management trends in recent years. Conversations with our clients, management teams of portfolio holdings and team members have suggested that "how business is conducted" is increasingly important. The business news media certainly took note of this trend in 2019, prompting widespread public discussion of the role of business in society.

While the consideration of ESG factors has always been an implicit part of our investment process—which is focused on identifying high-quality franchises with sustainable profit-growth drivers—we embarked on a journey at the beginning of 2019 to establish a more structured framework. We spent the first half of the year defining and understanding how we could more formally integrate ESG assessments in a way that complements our existing process without disrupting what's made our approach successful for nearly 25 years.

This journey has led us to a two-stage framework that pairs with our existing research and capital allocation process. For new investment ideas, as we work to vet a company's franchise strength and profit-cycle catalysts, we are now explicitly identifying key "ESG issues that matter" facing the business. In this stage, we're seeking to understand key ESG risks and opportunities that could impact future stock returns.

If and when a stock is added to the Garden<sup>SM</sup>, a new phase of our research begins. As always, we will continue to deepen our understanding of the franchise and profit-cycle dynamics, seeking to build conviction in (or disprove) our investment thesis before adding the stock to the Crop<sup>SM</sup> by committing significant capital. In parallel, we are now adding layers to our ESG research, with the goal of developing a good sense of whether we're willing to partner with this company by the time a stock is ready to enter the Crop<sup>SM</sup> (we're calling this stage our "partnership check").

In addition to this more formal ESG research (which we view as quite complementary to our existing process), we are beginning to selectively engage with portfolio holdings on ESG issues. While we plan to learn and evolve in this area, we suspect our perspectives on topics such as executive compensation, corporate governance, social responsibility and environmental impact will help companies improve their performance in these areas over time, which we expect can contribute positively to share-price performance.

ESG is broad and complex, and we are taking an open-minded, humble approach to our efforts. In addition to this being the right thing to do (in our opinion), we believe there is potential to enhance our assessment of investment risk and reward. For example, our work this year on climate change has already made us better appreciate the

profit-cycle opportunities for companies that may stand to benefit from global efforts to reduce emissions or manage the impact of those emissions—including Cree (electric vehicle supplier) and First Solar (a leading global producer of solar panels). We also see increasing evidence that stock valuations are being influenced by investors' perceptions of whether a business is on the good or bad side of ESG issues. And as we reflect on our team's first 25 years of stock-picking, we look back on some of our least successful investments and suspect that more rigorous considerations of ESG factors could have helped us (and our clients) avoid some painful mistakes.

We will be open about our ESG journey as we go and look forward to providing updates and specific examples of our research and engagement in future letters.

### Perspective

While very few years will prove as fruitful for equity returns as 2019, and while global macro headwinds certainly remain present, we continue to find opportunities in a number of sectors—including industrials, health care and information technology. Industrials overall were volatile through most of 2019 as recession fears ebbed and flowed; however, holdings such as Clarivate Analytics and Teledyne are executing strategies to steadily move toward higher levels of recurring revenue and software content. The steady shift away from cyclical hardware sales gave us the confidence to remain patient during the volatility and take advantage of more attractive prices to increase exposure to these franchises.

Health care stocks were also subject to volatility during 2019, largely the result of uncertainty around the insurance industry and pharmaceuticals pricing as we near the 2020 US elections. We maintained our discipline, focused on the underlying profit-cycle drivers and built conviction where appropriate—again, taking advantage of volatility to add to a number of our positions. These efforts paid off in Q4 as investor nerves about the election and a single payor system settled.

Our information technology holdings were also among our best absolute- and relative-performing sectors in 2019. While software stocks underperformed in Q4, we continue to believe there is a generational shift in how software is deployed and consumed, creating opportunities for sustained strong growth within well-positioned cloud franchises. The centralization of computing capacity into big cloud providers has dramatically lowered the cost of software systems and increased developer flexibility. Further, the proliferation of mobile devices has significantly lowered software consumption barriers—driving more business and consumer use cases. While lofty software valuations have garnered a lot of attention and recently prompted investors to take profits, we believe the leading franchises in our portfolio are attractive longer-term given their accelerating and durable cash flow generation and proven abilities to extend their growth runways via new product introductions.

While industrial tech, health care innovation and cloud software have been long-standing trends in the portfolio, we began seeing opportunities in a newer trend in 2019: clean energy. We believe we are in the very early innings of a transition to a less carbon-intensive world, which should ramp quickly in the coming years. Technology improvement and capital-cost declines have improved wind and solar economics, making them very attractive energy sources relative to nuclear, coal and natural gas. We believe renewable energy is likely to lead to a transformation in power generation in the coming decades. While many of the opportunities the other three growth strategies have pursued are too big for our small-cap mandate, it is possible this trend will feature more prominently within our small-cap portfolio over time.

While many macro concerns subsided during Q4, trade tensions, political instability and slowing GDP growth still pose risks to the current bull market. We have no unique ability to project whether these risks or others will come to fruition in 2020, and we remain less interested in businesses for whom global GDP growth is the primary catalyst. We continue to focus on finding high-quality franchises with secular and internal drivers of multi-year profit cycles and think these investments should continue to be preferred within a slow-growth global economy. Even within a very strong year for equity returns, 2019 featured a number of volatile swings for the market and for specific sectors. We have cited examples of our team's ability to use that volatility to our advantage and will look to do the same in 2020.

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Our capital allocation process is designed to build position size according to our conviction. Portfolio holdings develop through three stages: Garden<sup>SM</sup>, Crop<sup>SM</sup> and Harvest<sup>SM</sup>. Garden<sup>SM</sup> investments are situations where we believe we are right, but there is not clear evidence that the profit cycle has taken hold, so positions are small. Crop<sup>SM</sup> investments are holdings where we have gained conviction in the company's profit cycle, so positions are larger. Harvest<sup>SM</sup> investments are holdings that have exceeded our estimate of intrinsic value or holdings where there is a deceleration in the company's profit cycle. Harvest<sup>SM</sup> investments are generally being reduced or sold from the portfolios.

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# Artisan U.S. Small-Cap Growth Strategy

Quarterly Contribution to Return (% USD)

As of 31 December 2019

Top Contributors	Average Weight	Contribution to Return	Ending Weight
DexCom Inc	3.77	1.60	3.82
NeoGenomics Inc	1.86	0.81	2.34
Chegg Inc	3.03	0.75	3.13
Gardner Denver Holdings Inc	2.54	0.71	2.72
Ascendis Pharma A/S	1.77	0.70	2.12
Argenx SE	1.70	0.61	1.93
ACI Worldwide Inc	2.37	0.47	2.51
Iovance Biotherapeutics Inc	0.95	0.42	1.24
Teledyne Technologies Inc	4.99	0.41	4.49
Tyler Technologies Inc	2.51	0.35	2.59
Tactile Systems Technology Inc	0.71	0.34	0.83
John Bean Technologies Corp	2.58	0.34	2.70
HealthEquity Inc	1.18	0.33	1.34
Acceleron Pharma Inc	1.03	0.31	1.14
Coupa Software Inc	2.27	0.30	2.22
Teladoc Health Inc	1.09	0.28	0.78
Monolithic Power Systems Inc	1.91	0.27	2.04
Halozyme Therapeutics Inc	1.66	0.23	1.78
Ollie's Bargain Outlet Holdings Inc	1.71	0.22	1.68
Webster Financial Corp	1.57	0.20	1.61
Blackline Inc	2.48	0.19	2.60
The New York Times Co	1.37	0.18	1.34
Veracyte Inc	0.95	0.18	1.40
Novanta Inc	2.14	0.18	2.12
Zynga Inc	2.88	0.18	2.70
BWX Technologies Inc	1.90	0.17	1.88
Guidewire Software Inc	3.43	0.17	3.21
The Trade Desk Inc	0.39	0.16	0.00
Donaldson Co Inc	1.44	0.16	1.46
LivePerson Inc	2.86	0.14	2.80
Orchard Therapeutics plc	0.70	0.13	0.94
Neurocrine Biosciences Inc	0.37	0.13	0.00

Bottom Contributors	Average Weight	Contribution to Return	Ending Weight
Canada Goose Holdings Inc	1.55	-0.34	0.99
Glaukos Corp	2.07	-0.27	1.79
Tabula Rasa HealthCare Inc	1.41	-0.25	1.38
Sage Therapeutics Inc	0.42	-0.23	0.23
RealPage Inc	1.12	-0.20	0.99
Radius Health Inc	0.80	-0.19	0.66
Cubic Corp	1.52	-0.15	1.34
ServiceMaster Global Holdings Inc	0.16	-0.14	0.00
Cree Inc	1.72	-0.11	1.60
First Solar Inc	1.40	-0.07	1.34
Ambarella Inc	0.80	-0.06	0.83
World Wrestling Entertainment Inc	1.07	-0.04	1.32
Floor & Decor Holdings Inc	1.15	-0.03	1.18
Bright Horizons Family Solutions Inc	1.83	-0.03	1.75
Zscaler Inc	1.01	-0.01	1.00
Virtu Financial Inc	0.92	-0.00	0.84
Clarivate Analytics PLC	1.40	-0.00	1.38
PROS Holdings Inc	0.57	0.01	0.78
Cash Holdings	2.26	0.01	2.55
Agios Pharmaceuticals Inc	0.17	0.01	0.00
Altair Engineering Inc	0.60	0.02	0.61
Ingevity Corp	1.35	0.02	1.42
Mesa Laboratories Inc	0.56	0.03	0.61
Morningstar Inc	0.83	0.04	0.82
Coherent Inc	0.58	0.05	0.58
Insulet Corp	0.36	0.05	0.00
Alteryx Inc	0.52	0.06	0.72
Q2 Holdings Inc	4.12	0.06	4.12
LiveRamp Holdings Inc	0.72	0.09	0.73
Cognex Corp	0.76	0.11	0.79
Glu Mobile Inc	0.55	0.11	0.55
HubSpot Inc	2.44	0.11	2.46
Avalara Inc	1.14	0.11	1.23

Source: Artisan Partners/FactSet. Performance is historical and is not a reliable indicator of future results. As of 31 Dec 2019. These investments made the greatest contribution to, or detracted most from, performance during the period based on a representative account within the strategy Composite. Upon request, Artisan will provide: (i) the calculation methodology and/or (ii) a list showing the contribution of each holding to overall performance during the measurement period. Securities of the same issuer are aggregated to determine the weight in the portfolio. % Contribution to Return is calculated by FactSet by multiplying a security's weight in the portfolio by its in portfolio return for the period referenced and does not take into account expenses of the portfolio. Purchases/sales are accounted for by using end of the day prices, which may or may not reflect the actual purchase/sale price realized by the portfolio.