

SPRINGTIME FOR SMALL CAPS: IS THE LONG-AWAITED SHIFT IN MARKET LEADERSHIP FINALLY EMERGING?

Joseph W. Garner

Director of Research & Portfolio Manager

Stephen Amsterdam

Portfolio Manager & Senior Research Analyst

Erik Cianci

Research Analyst

Derek Fisher

Director of Technology Research

Nathan Jones, PhD, MBA

Director of Technology Research

Terry M. Smith, PhD, MBA

Director of Life Sciences Research

Scott Blumenthal

Director of Industrial Research

Ori Elan

Portfolio Manager & Research Analyst

Peter Garner

Research Analyst

Steven Russell, Esq.

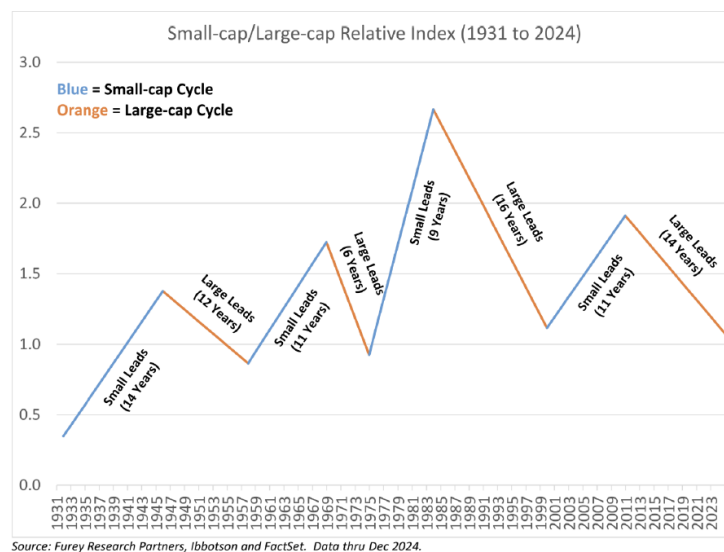
Portfolio Manager & Senior Research Analyst

Nishit Trivedi, PhD, MBBS, MBA

Director of Life Sciences Research

According to the Oxford Dictionary, springtime is “the early part or first stage of something.” Whether it applies to the seasonal re-emergence from the dark, cold winter months, budding new relationships, or a long-awaited cyclical rotation, it implies change, freshness, and revitalization. After a 14-year market leadership cycle for domestic large cap stocks (Figure 1), the second longest on record, the domestic equity markets are nearing an inflection point, potentially leading to a multi-year period of outperformance for small caps. In 2025, we believe earnings growth for small caps will approach, and likely exceed, that of large caps. The small cap market will be revitalized by a new generation of companies from a rebounding initial public offering (IPO) market. Merger & acquisition (M&A) activity will continue to rise with small caps being the most frequent targets and greatest beneficiaries. All this combined with near-historic small-cap valuations relative to large caps sets the stage for a potentially meaningful leadership change in the domestic equity markets – **A Springtime for Small Caps!**

Figure 1. An Extended Large Cap Cycle Nearing an End?



A Change in Earnings Growth Leadership?

Earning growth drives stocks and it also drives market cycles. The period of large cap market leadership has been supported by relatively strong earnings growth for large caps. This dynamic is changing, and we appear to be setting up for a period of earnings growth outperformance for small caps. Small cap earnings growth appears to have troughed in mid-2024 and is now inflecting positively. (Figure 2) According to FactSet, the I/B/E/S sell-side consensus EPS growth estimate for the S&P 600 small cap index is **19.4%** outpacing the S&P 500’s estimated growth rate of **13.2%**, as of January 28, 2025. **Furey Research Partners** sees a wider gap emerging with earnings growth for the Russell 2000 estimated at **24.9%** using their capitalized losses approach which attempts to

adjust for the loss generating companies within the small cap universe. (Figure 3) The basis for small cap earnings growth leadership is a broadening economic expansion, rising capital spending behind Artificial Intelligence infrastructure buildouts, innovation driven opportunities in areas such as health care, software, and industrial technology, accessible capital markets, a solid employment backdrop, a healthy consumer, and relatively easy financial comparisons.

Figure 2. Earnings Growth is Inflecting Positively

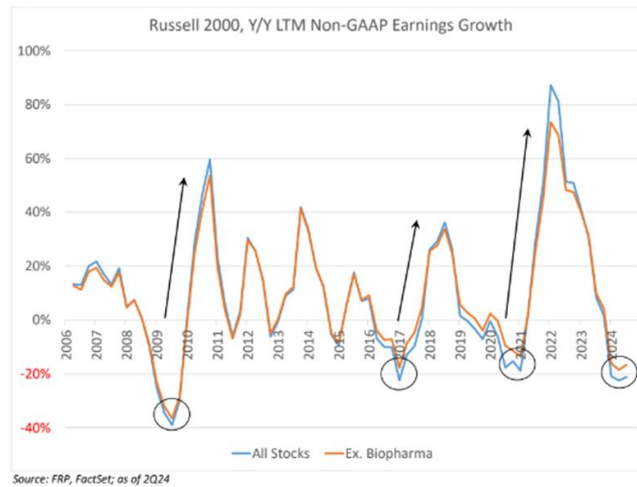
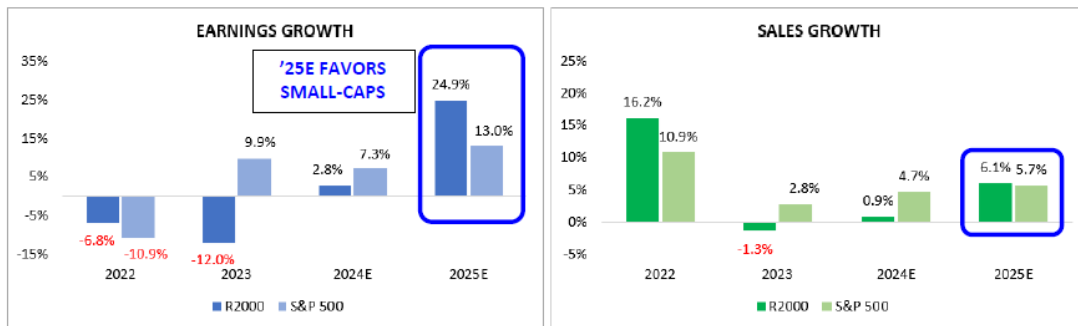


Figure 3. Earnings Growth Leadership Poised to Change?



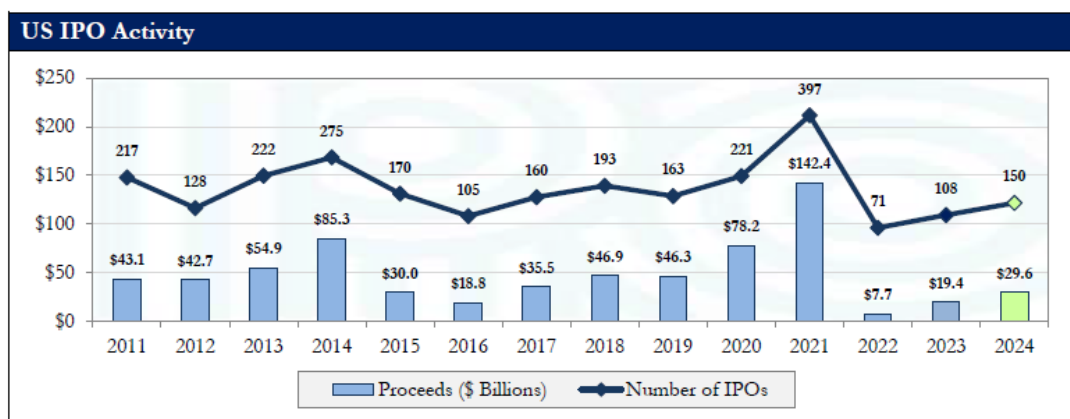
Source: Furey Research Partners and FactSet. Data as of 12/31/24. Based upon our "capitalized losses" earnings model using historical constituents.

A Revitalized Market Driven by a New Wave of IPOs

The recovery in the IPO market is poised to continue in 2025, driven by a growing pipeline of IPO candidates, a broadening economic environment, and increasing investor appetite. According to **Renaissance Capital**, in 2024 total U.S. IPO proceeds grew **53% y/y** to **\$29.6 billion** on a **39%** increase in deal volume to **150** IPOs but remained soft by historical standards. (Figure 4) In 2025, we believe that we will see a continuation of the IPO market recovery with IPO volumes likely approaching or exceeding the trailing 10-year average of **183** IPOs. This is supported by a steady

rise in IPO filing activity, which increased **20%** y/y in 2024 to **219** filings, marking the third consecutive annual increase and fourth highest total in the last decade. The pipeline is also broadening, encompassing innovative new public company candidates in a wide range of areas such as biotechnology, medical devices, software, consumer goods, financial services, industrials, and energy. A healthy IPO market has the potential to revitalize small caps, by introducing a new generation of companies with innovative product offerings and business models, presenting a new set of growth opportunities to investors.

Figure 4. IPO Market in Early Stages of Recovery

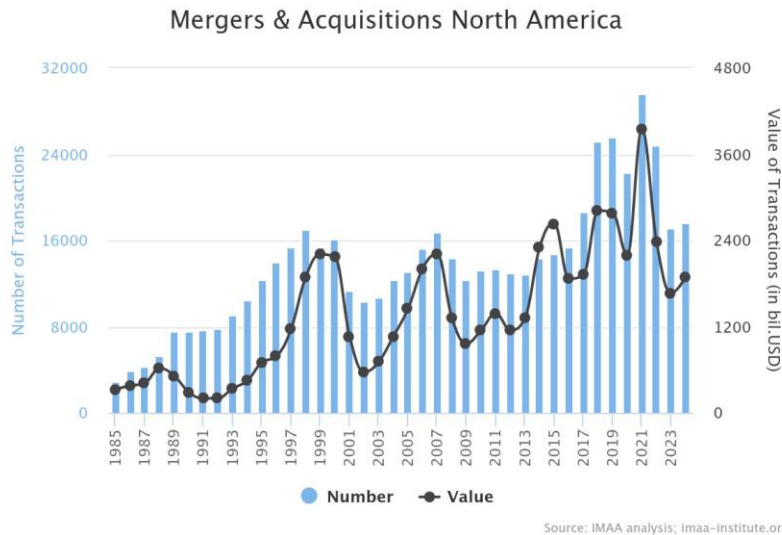


Source: Renaissance Capital. Data includes IPOs and direct listings with a market cap of at least \$50mm and excludes closed-end funds and SPACs.

Merger & Acquisition Activity on the Rise

According to the **Institute for Mergers, Acquisitions & Alliances (IMAA)**, merger & acquisition (M&A) activity picked up modestly in 2024 with the number of deals in the U.S. rising **3%** to **15,217** on a **17%** increase in total dollar value to **\$1.69 trillion**. (Figure 5) This marked the first increase since 2021 when M&A activity peaked at **25,170** deals totaling nearly **\$3.5 trillion**. We see the potential for deal volume to rise further based on improved confidence in the economic outlook, expectations of a more favorable regulatory environment, relatively strong corporate balance sheets, meaningful benefits from scale in a wide range of industries, and attractive valuations in the small- and micro-cap portions of the market. **Morgan Stanley Strategist Andrew Sheets** is forecasting an approximately **50%** rise in M&A activity in 2025, according to a November 2024 report. A rise in M&A activity is particularly positive for small cap stocks as approximately **90%** of all public M&A transactions occur in the small- and micro-cap space, according to **Furey Research Partners**. Similarly, **Steven DeSanctis**, Equity Strategist for Jefferies, in a December 2024 report noted that **58%** of all M&A transactions involve companies with valuations under **\$1.0 billion**, currently the cheapest part of the (equity) market.

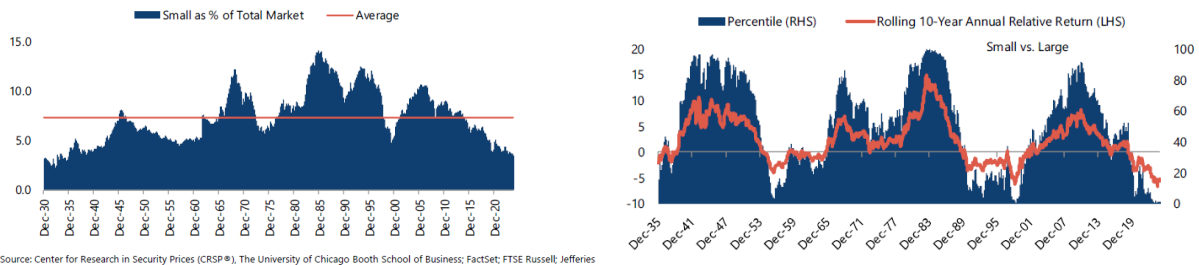
Figure 5. Merger & Acquisition Activity Showing Signs of a Rebound



Small Cap Valuations are Compelling

According to **Steven DeSanctis** of **Jefferies**, the valuation of the small-cap market represents only **4%** of the overall domestic equity market representing a near historic low, while the 10-year trailing returns for small caps relative to large caps are in the **1st** percentile. (Figures 6 & 7) This severe valuation disparity is characteristic of an extended cycle of large cap leadership and illustrates the upside opportunity as small caps are poised to play catch up in their next multi-year cycle of outperformance.

Figures 6 & 7. Small Cap Valuations at or Near Historically Low Levels



Springtime for Small Caps - A Bottom-Up Perspective

In the following sections, Emerald’s **15-person** investment team examines key sector level factors driving a shift in market leadership in key areas such as Financial Services, Health Care, Industrials, and Technology. The factors range from renewed or improving earnings growth, ongoing waves of

innovation, growing IPO pipelines, and/or prospects for rising M&A activity. These insights are an outgrowth of our 10-step research process featuring approximately **2,000** company meetings annually and proprietary channel checks with customers, suppliers, competitors, and distributors to identify emerging growth trends and the companies leading them. We are ***Driven by Research*** and focused on innovation, because ***Innovation Starts Small!***[®]

Springtime for Small Caps Health Care

Nishit Trivedi, PhD, MBBS, MBA & Terry M. Smith, PhD, MBA

Health care is one of the largest and most innovative sectors in the U.S. economy. In 2022, health care spending grew **4.1%** to reach **\$4.5 trillion**, representing **17.3%** of gross domestic product (*GDP*). The **CMS Office of the Actuary** estimates health care spending will approach **20%** of *GDP* by 2032. The growth of the health care sector is being driven by an aging population and a growing wave of innovation in the field of life sciences. Life sciences involves the study of living organisms and utilizing the knowledge gained to improve the quality and duration of life. The sequencing of the human genome has led to a greater understanding of the root causes of diseases, resulting in the development of innovative new diagnostic technologies to detect and monitor disease states and therapies to treat or cure them. **These life saving and life enhancing innovations are expanding existing markets and creating new ones, leading to the development of a new generation of investment opportunities via the IPO pipeline, and presenting compelling merger and acquisition opportunities for larger companies to leverage their global scale and expansive distribution networks.** We believe these opportunities are best realized in the small cap portion of the health care sector.

Biotechnology - The Innovation Engine of Medicine

The sequencing of the human genome in 2003 resulted in the identification of over **8,000** genetic diseases and sparked a wave of innovation that continues unabated today. Leading biotechnology companies have become adept at tying genetic data to the cause of diseases, enabling them to develop drugs targeting the disease at the source. This process results in higher odds of technical success and a smoother regulatory path. Artificial intelligence and the use of in silico modeling is in the early days, but the pieces are in place for this to further improve efficiency within the next decade.

Biotechnology companies translate innovative science into drugs. We define an emerging biopharma company as one with **<\$500 million** revenue and that spends **<\$200 million** per year on Research and Development (*R&D*). We define mid-sized biotech companies as companies between **\$500 million** and **\$10 billion** in annual sales. There are approximately **800** publicly-traded biotechnology companies, the majority of which have no revenue. As these companies are consuming cash, they issue new equity to fund their next set of experiments. It costs **\$800 million** to **\$2.3 billion** to develop a drug to FDA approval according to recent estimates. The lower end of the range does not account for the investment on other drugs that never reach the finish line. Due

to the high levels of innovation and the risk associated with drug development, the reward for a successfully developed drug is lucrative—most biotech drugs have gross margins in excess of **80%**.

According to a February 2024 report by **IQVIA Institute**, emerging biopharma companies were responsible for two-thirds of the clinical trials initiated in 2023. Mid-sized companies were responsible for **11%** of the starts, and large pharmaceutical companies were responsible for only **27%** of the clinical trial starts. The agility, focus, and lack of bureaucracy of small companies allow them to outperform deep-pocketed pharmaceutical companies in the drug development process: *Innovation Starts Small*SM.

Large pharmaceutical companies have drugs which generate **>\$300 billion** in annual revenue projected to face generic competition by the end of this decade. They will need to acquire external innovation to fill this hole. Fortunately, pharmaceutical companies are well-capitalized and **Goldman Sachs** estimates if each company was willing to lever up to **2.5x** EBITDA, the industry would have **\$490 billion** in balance sheet capacity. Pharmaceutical companies and biotech companies have an important dynamic: biotech companies develop drugs in early-stage clinical trials, while pharmaceutical companies acquire the most lucrative drugs as they progress through clinical trials. The acquisition allows investors in biotech to recycle the capital to form new companies.

A Promising Diagnosis for Diagnostics

The medical diagnostics industry is a vital market in the field of life sciences, totaling **\$85 billion** in size and growing at an estimated **6%** rate. Innovations in diagnostic technology are allowing for enhanced screening tools to enable earlier detection of diseases such as cancer. They also enable physicians to more effectively and efficiently monitor the benefits of particular therapeutics in treating or eradicating a disease. We believe two of the most compelling growth opportunities within diagnostics are (1) the use of liquid biopsies in cancer detection and management and (2) the development of new blood-based biomarkers in the detection and treatment of neurological diseases.

Traditionally, the diagnosis and treatment of cancer required a pathologist to evaluate a biopsy obtained from a surgical procedure. With advancements in science over the past decade, there has been a major transformation in the ability to detect cancer earlier because of the advancements in a technique called liquid biopsy. A liquid biopsy is a non-invasive test which analyzes any liquid sample (*typically blood, urine, or saliva*) to detect cancer or other conditions. As a tumor grows, it sheds DNA fragments and cancer cells that travel in the blood stream. It is this circulating tumor DNA (*ctDNA*) and circulating tumor cells (*CTCs*), which are interrogated using modern technology to detect cancer and learn more about the nature of the tumor. Today this technology is experiencing

rapid adoption because it is easy to use and it plays a role in both identifying a tumor and in monitoring a response to therapy. Liquid biopsy tests are now approved by FDA for some cancers and several companies are conducting further clinical studies to expand their utilization into other cancer types. The global liquid biopsy market is estimated to grow from **\$9.6 billion** in 2024 to **\$58.6 billion** in 2033, according to *Fortune Business Insights*.

We also believe the discovery of new biomarkers in neurological diseases will result in the significant expansion of diagnostic testing opportunities. As life expectancy increases globally, there are several neurological conditions that will be major challenges faced by our society. Alzheimer's disease is one of the major challenges of the 21st century with an estimated **6.7 million** Americans living with the disease in 2023. According to the Alzheimer's Association, one in nine Americans over the age of 65 will be impacted. Leqembi was the first amyloid beta-directed antibody to be granted FDA approval for the treatment of Alzheimer's disease. The drug works by reducing amyloid plaques that form in the brain, a defining pathophysiological feature of the disease. This is likely to spark renewed interest among patients suffering from dementia and memory loss to evaluate their symptoms to determine if they have Alzheimer's dementia and would be candidates for these newer therapies. More patients would benefit from these treatments if their disease was identified earlier. The gold-standard for diagnosing Alzheimer's disease is PET scans. While very accurate, the expense of a PET scan limits access. We believe novel Blood-Based BioMarkers (BBBM) such as pTau-181, pTau-227, NfL protein and others will provide significant value and become a non-invasive way to diagnose Alzheimer's disease and potentially monitor the efficacy of the therapy. The overall opportunity for Alzheimer's disease is between **\$10 billion** and **\$50 billion** according to various industry reports.

Artificial Intelligence in Healthcare

Artificial intelligence (AI) technology is likely to have a profound transformative impact on the health care sector over the course of the next decade. According to *Grand View Research*, the global market for AI applications in health care will grow at a **38.5%** compounded annual growth rate from **\$19.3 billion** in 2023 to **\$187.7 billion** in 2030. The impacts are likely to be widespread with the following being some of the most compelling applications:

- **AI in Drug Discovery and Development** – AI has the potential to meaningfully accelerate the drug discovery process. AI-incorporated biotechnology companies have shown the ability to take a drug from initial conceptualization to clinical testing within twelve months, a process which used to take up to five years. Using bio-simulation models and AI algorithms, researchers can now optimize lead drug development candidates by predicting their

efficacy, toxicity, and pharmacokinetic properties along with various organ toxicity prior to the start of clinical testing.

- **AI as a Diagnostic Tool** – AI has the potential to enhance the productivity of radiologists and improve the accuracy of diagnoses, particularly in the area of oncology. The FDA has already approved AI solutions for reading mammograms which will improve the cancer detection rate and decrease the recall rate. We believe AI will be used ubiquitously for screening mammograms as healthcare payors and providers see the cost savings from early detection and the resulting improved overall health outcomes.
- **AI Applications across Other Medical Specialties** – In cardiology, physicians are using AI for detecting arrhythmias and other abnormalities while analyzing electrocardiograms. Clinicians can use AI to predict fractional flow reserve or FFR from CT images. In dermatology, there is a need for better diagnostic tools for detecting melanoma and AI can be applied to image analysis of moles to determine which moles could be malignant. We also see the significant role AI will play in neurology where it can be used to predict, detect, and classify epileptic seizures. Finally, there is potential for AI in remote patient monitoring to identify patients at the greatest risk for brain injuries and the potential complications post injury.

The field of Life Sciences is experiencing a massive wave of innovation driven largely by small, emerging companies in the areas of biotechnology, medical devices, and medical technology. They are disrupting existing markets and developing new markets. The adoption of AI technology will only serve to accelerate the pace of innovation over the course of the next decade. We also expect merger and acquisition activity to remain elevated as many of the emerging leaders may represent attractive acquisition candidates for large pharmaceutical and medical technology companies looking to leverage their extensive distribution, revenue management, and production capabilities while offsetting impending patent cliffs. We also look for a rebound in IPO activity after three years of modest deal volume, presenting selective opportunities to participate in companies with compelling new product offerings and business models.

Springtime for Small Caps Technology

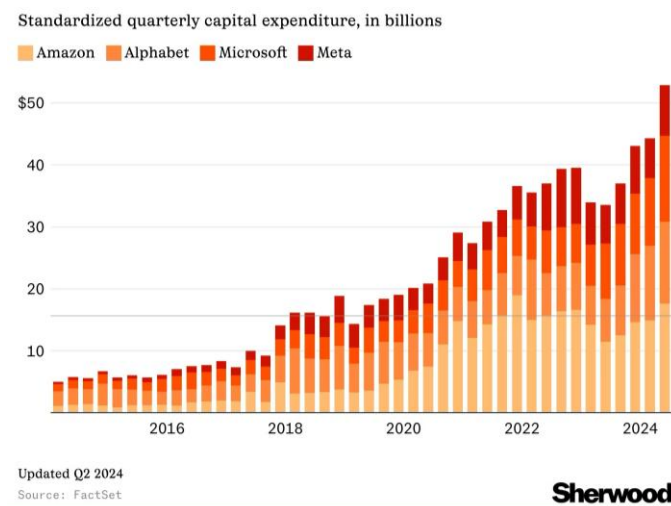
Stephen Amsterdam, Derek L. Fisher & Nathan Jones, PhD, MBA

When Emerald released our first whitepaper on the rapid evolution of artificial intelligence (*July 2023*), we postulated that secular investment opportunities would be created not only in large and mega cap equities, but in small-cap stocks as well. At the time, we argued small-cap opportunities would present themselves in some of the following areas:

- **Network Infrastructure** – optical and high-bandwidth copper, coherent optics
- **Memory** – high-bandwidth memory
- **Manufacturing** – advanced packaging, supply chain, contract manufacturing
- **Power** – compound semiconductors, industrial power, cooling technologies

Since that writing, the AI ecosystem has exploded, with mega-cap dominated hyperscalers leading the industry to build ever more powerful models – all while cautioning that return on investment may take time.

Figure 1. Quarterly Capex by the Big 4 Hyperscalers



Source: Sherwood, FactSet

The fundamental differences between traditional datacenters and AI-cluster datacenters drive a significant increase in connections between compute resources, as well as complexity. Exacerbating this issue is the size of the models themselves. In July of 2023, the ChatGPT3 model was operating at what was believed to be roughly 200 billion parameters. Today ChatGPT4 is believed to operate with over **1.3 trillion** parameters (*with some estimates meaningfully higher*).

The combination of architecture and model size in conjunction with power limitations and speed requirements is driving a meaningful proliferation of both high-bandwidth copper and optical connectivity technologies – many of which have been developed by small- and mid-cap companies. This technology transition will provide a tailwind for the foreseeable future.

The continued drive for higher processor speeds and more complex chip architectures is pressuring manufacturing yields and costs. Advanced packaging technologies are beginning to proliferate as designers are packaging multiple chips within one package. This is a high-risk strategy given that a manufacturing issue could destroy multiple chips. The industry is addressing these issues with more robust testing and new technologies – some of these technologies (*like memory stacking*) entered the mainstream through high-bandwidth memory for AI and have been ramping into more mainstream use. Other technologies such as heterogeneous logic are relatively new to the market and are expected to ramp over the next several years.

While AI-related investments have taken up most of the airtime during the past 18 months, several other areas of the semiconductor industry are beginning to thaw after a prolonged winter. We are beginning to see new design cycles in smartphones, PCs, and tablets that utilize AI-based features, apps, and even operating systems, which could cause a resurgence of growth in these markets. Given the large volumes associated with these devices, they will also drive a concomitant jump in traditional memory and storage, all of which have profound downstream impacts on small cap component vendors and equipment providers. Furthermore, after a very chilly period in the automotive, industrial, telco, and medical end markets within semis/hardware, green shoots are emerging. Much of this nascent optimism is being driven by secular growth in AI/ML-based features such as autonomous driving (*automotive*), factory automation (*industrial*), higher bandwidth (*telco*), and robotic surgery and/or remote monitoring (*medical*). For many of these end markets, specialized small cap vendors are producing key components that are enablers of disruption. As edge device proliferation continues, we believe it will drive increasing adoption of novel software applications and architectures.

After a three-year post-COVID hangover, enterprise software spending appears poised to grow in 2025 as organizations approach the end of their software optimization initiatives and begin to shift focus to new investments. This increased level of spending will likely be centered on driving three main priorities: accelerating their digital transformation projects, launching customer engagement initiatives and realizing operational efficiencies across their organizations.

Over the past two years, we have seen a number of companies leverage generative AI to build out their technology platforms. Many applications have been centered on enhancing customer service and engagement through tools like chatbots and virtual assistants, improving both efficiency and

responsiveness. AI has also been used to accelerate software development by automating the coding process through AI code generation and development tools, reducing development time and cost.

Most large enterprises are still testing the waters with proof-of-concept projects. The market does not yet have many AI solutions running at-scale or in production. However, we see a significant shift coming, largely thanks to agentic AI architecture, which allows systems to make their own decisions, figure out how to accomplish goals, and work alongside other systems. These agents learn from experience and adjust their approach to get better results. We believe this architectural shift will be a game-changer, especially for smaller software companies, once enterprises start moving from experimentation to full-scale production.

The recent public introduction of **DeepSeek**, a Chinese AI model, has roiled markets due to aggressive claims regarding the development time, cost, and power requirements of the system. While as of this writing, it is too early to make any definitive decisions regarding the long-term impact of this product, there are several things to be considered. First and foremost, the claims made by DeepSeek's creators are unverified and very aggressive; additionally, the demand for increased speed, bandwidth, connectivity, and power is inexorable and will drive continued technology transitions at the infrastructure and platform level; and finally, IF the claims are verified and this represents a step-function in efficiency, we contend that it would simply mark a transition from the first phase of the AI compute cycle and its emphasis on hardware and infrastructure to a greater focus on software and applications.

To summarize, there are three main phases to any compute cycle: infrastructure build, platform development, and application deployment. We have seen numerous small cap hardware, semiconductor, and equipment manufacturers that are benefitting from the infrastructure buildout. While the platform development phase will largely occur among the hyperscalers, individual companies - from large enterprises all the way down cap to start-ups - will also be developing their own models and platforms. As these platforms develop, we will see greater proliferation of applications and a push towards the edge for AI technology, including specific AI-based vertical market applications. **We continue to believe there will be an abundance of opportunities for innovative small cap companies throughout all three phases of the compute cycle.** The wave of AI-focused innovation is resulting in a sizable flow of capital into the startup and small cap universe, which we believe will lead to a renewed set of IPOs after a 2+ year pause. In addition, while some of these infrastructure, platform, and application developers will become large cap companies over time, many more will be acquired as we enter a period of AI-related M&A over the next several years. This is indeed an exciting time to be a small cap technology investor!

Springtime for Small Caps Financial Services

Steven E. Russell, Esq. & Ori Elan, MBA

There are many “green shoots” emerging for the banking sector as a Springtime for Small Cap banks and financial services companies nears. These “green shoots” are emerging from an improving environment for banks driven by increased mergers and acquisition (M&A) activity, reduced deposit and funding costs leading to stronger net interest margins (NIM), deposit growth, earning asset growth resulting in net interest income (NII) growth, and modest credit quality normalization (*a regression to the pre pandemic mean*). The shift in investor sentiment for banks reflects optimism about the NII outlook, looser regulation under the Trump administration, and fading worries about credit costs that were a center of focus only a year ago. We are generally confident about bank earnings growth, supported by a steeper yield curve and firming capital markets activity.

According to the **S&P Global Markets Intelligence’s** Q4-2024 US Bank Outlook Survey, **77.1%** of the respondents expect their institution’s deposits to grow over the next 12 months, up from **70.9%** in the Q3-24 survey and the highest mark since the Q4-22 survey. Additionally, according to the S&P survey, **82.8%** of bankers expect loans to grow at their institution over the next twelve months, up from **65.8%** in the Q3-24 survey and **62.1%** in the Q4-23 survey.

While the market anticipates fewer Federal Reserve rate cuts than they did a few months ago, the outlook for bank NII still looks quite positive given deposit performance and better reinvestment rates. We believe US banks will continue to expand their net interest margins and reduce their deposit costs in 2025 as the rate-cutting cycle continues, albeit at a slower pace. NIMs of US banks began to expand in the second and third quarters of 2024 as the Federal Reserve cut rates for the first time in four years. Banks will continue to experience NIM expansion from both sides of the balance sheet as we start to see some benefit from increased loan and security yields, as well as lower interest-bearing deposit costs. The pressure on NIMs from the cost of bank deposits is easing as deposit growth accelerates and deposit costs appear to have peaked. Deposit mix has become increasingly important, and banks are starting to shift toward noninterest-bearing deposits. The high-rate environment over the last couple of years led to depositors moving money more aggressively into higher interest-paying accounts. When the Fed was lifting rates at a rapid clip in 2022 and 2023, bank customers moved hundreds of billions of dollars into accounts that offered better returns than traditional savings accounts. Many kept opening new accounts as banks competed to offer the loftiest rates. Banks often require customers to deposit or maintain certain balances to get the advertised rate. Now, with rates coming down, banks appear more comfortable repricing their deposits even if it leads to deposit outflows as customer behavior normalizes.

We believe banks' wholesale borrowing will continue to fall in 2025 as deposit flows strengthen and the sector looks ahead to funding cost reductions. Industrywide wholesale funding levels rebounded after massive pandemic-era deposit inflows dried up, but so far have settled in below pre-pandemic norms. Brokered deposits, one of the largest categories of wholesale funds, have declined for three consecutive quarters as banks express confidence in their deposit strategies and NII outlooks.

We believe NIM growth will be positive for bank stocks in 2025. We estimate NIMs will expand at an increasing pace through the year as rate cuts are absorbed, deposit costs continue to fall, and fixed asset repricing accelerates. We favor those regional and community banks with large concentrations of indexed and exception-based pricing deposits, as well as high levels of low-yielding earning assets, as they are better positioned for NIM defense or expansion in the near-term. Improvements in NIM and NII will likely lead to better earnings growth and improved valuations for banks.

We expect merger and acquisition (M&A) activity to increase in the **banking industry**. Bank M&A warmed up in 2024 after experiencing a 30-year low in the total number of deals in 2023. M&A volume improved to **122** deals in 2024 but was below the historical norms of about **200** or more deals per year prior to the pandemic. In fact, 2024 marked the fifth consecutive year with less than 200 deals. However, we are optimistic that 2025 will see a resurgence in bank M&A activity. Our outlook for increased M&A activity is partially driven by a change in the presidential administration and a more favorable regulatory environment. Additionally, we believe there is significant pent-up demand following five years of lower activity, improved bank valuations, strong capital levels and the benefit from improved interest rate marks on sellers' assets. We believe lower fair value loan marks could spur a pickup in M&A activity. Fair value loan marks have decreased from elevated levels and have become more manageable. Ongoing loan payoffs will likely reduce any upward pressure on loan marks in future quarters even if Treasury rates increase. Finally, we expect to experience shorter regulatory approval times due to reduced regulatory pressures under the new administration.

We believe *Innovation Starts Small*[®], and our expectation is for small-cap **fintech M&A activity** to rebound in 2025 as a new presidential administration takes office and interest rates fall globally. In the global fintech and payments industry, the number of deals reached **255** as of December 13th, down from **275** in 2023, according to **S&P Global**. The total value of fintech deals more than doubled to **\$61.35 billion**, versus **\$30.18 billion** in 2023 and **\$37.97 billion** in 2022, offering hope for a rebound. M&A activity in 2024 was muted as a result of macroeconomic conditions. The two most recent deals are **Upbound Group Inc.'s** proposed acquisition of financial health app provider **Brigit** and **Gen Digital's** proposed acquisition of consumer finance platform **MoneyLion**. The deals for

neobanks Brigit and MoneyLion are early indicators of the return of M&A activity in banking technology. In 2023, we expected many fintech startups to sell their operations at significant discounts to their peak valuations due to an unforgiving stock market and declining cash reserves. Recently, though, they are finding strategic buyers and securing favorable valuations. The Upbound-Brigit deal is the 13th-largest fintech deal of 2024, at \$460 million, while the Gen Digital-MoneyLion deal is the sixth-largest, at **\$1.35 billion**.

We also expect to see private equity more involved in fintech deals in 2025, with such firms using M&A to unlock value for mature, late-stage companies. Fintech M&A activity appears poised to rise driven by lower interest rates, availability of more attractive financing, expected streamlining of regulation, more openness to M&A by the incoming administration, and greater receptivity by regulators to banks participating in M&A and expanding into new products. We believe M&A has become a key strategic option for mature fintech providers seeking to gain market share. We expect consolidation in the payments sector and deal making in the data analytics, digital assets and regulatory technology fintech verticals, as well as fraud prevention and anti-money laundering verticals in 2025.

We remain optimistic about the performance of banks and financial services stocks in 2025 and beyond, as the “green shoots” we see in the fundamentals will likely lead to stock performance in the future. In bank investing, we believe there is a strong correlation between share price performance and three key performance metrics: revenue growth; fully diluted EPS growth; and tangible book value per share accretion, all of which we expect to realize in the coming year.

Insurance

Small cap Property & Casualty (P&C) insurance companies posted a solid year in 2024 due to continued robust premium growth and better than expected underwriting margins resulting from improved expense structure and lower losses. Despite global insured catastrophe losses once again exceeding **\$100 billion** in 2024 (*seven out of the last eight years*), mostly as a result of severe convective storms and hurricanes, years of property and casualty premium increases have already factored in higher catastrophe losses and a return to a normal or even light catastrophe year could translate into earnings upside for insurance carriers.

In personal lines, insurers were able to push through successive rate hikes over the past three years, while inflationary pressures such as materials and labor costs subsided. While there is some increased competition, we believe that the industry is disciplined with an interest in maintaining healthy ROEs, attractive combined ratios, and strong balance sheets with adequate reserve

positions. In 2025, we expect rates to stabilize and even decrease in personal property lines (*auto in particular*) as carriers achieve adequate profitability and shift strategy to increase market share, focusing on premium-in-force (*PIF*) and policy count growth.

In commercial lines, we believe that the pace of rate increases has peaked. We expect rate trends to vary by insurance line with some areas such as property and directors & officers (*D&O*) starting to see more competition. Certain areas of casualty should experience additional rate firming due to social inflation concerns, which could last for several additional quarters. We are monitoring any additional deterioration in prior years' reserve development in casualty lines. However, most commercial casualty insurers have taken steps to strengthen their balance sheets and implement changes to their underwriting processes such as rate increases, tightening terms and conditions, and reducing or exiting unprofitable risk exposure.

We see the biggest potential upside for small cap Excess & Surplus (*E&S*) insurers. The shift of business from the standard market to the E&S market is ongoing as risk becomes more complex and severity is rising. Also, the broadening of wholesale distribution is making risk placements easier and faster, which supports at least high-single- to low-double-digit growth in the overall E&S market, and mid- to high- teens growth for small cap insurers in this space through 2026. While the overall growth rate in this market is expected to slow from the torrid pace of successive rate increases in the past three years, quoting submissions growth remains elevated and underwriters are increasingly comfortable with their underwriting returns and margins.

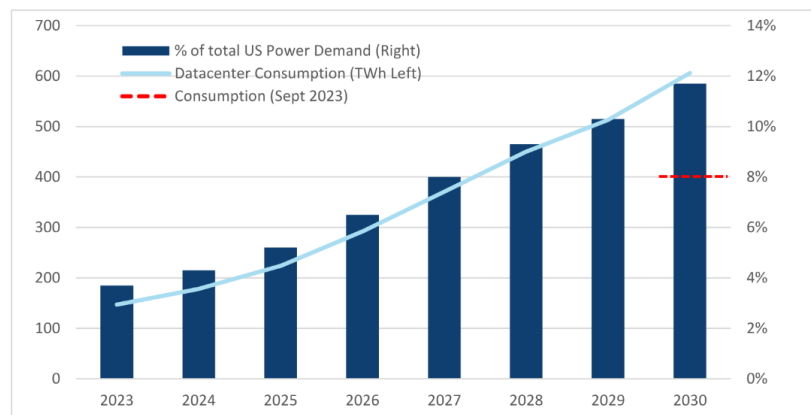
The P&C insurance industry is mature and defensive in nature. Insurers would likely fare relatively better than the broader market if the economy materially slows down, and in addition, the industry is typically not sensitive to interest rate changes. We hold a constructive view on the insurance market in 2025 and while rate deceleration may start to surface in additional product lines during the year, rate increases continue to be above loss cost trends in most insurance lines. The combined ratios, ROEs and earnings should stay at attractive levels in 2025 but probably peaking towards the end of the year. Premium growth and Net Interest Income (*NI*) should be healthy but below the growth rates of recent years. We expect capital return to come into greater focus with more buyback and dividend announcements emerging in 2025. We believe that the insurance industry will continue to be highly profitable and offer attractive returns to investors.

Springtime for Small Caps Industrials

Scott B. Blumenthal, Erik Cianci & Peter Garner

The Magnificent Seven, comprising some of the world's largest technology companies, have ambitious plans for the coming decade, particularly with the anticipated proliferation of AI-driven products and services. Realizing these aspirations will require substantial investments, including billions of dollars dedicated to building data centers and upgrading the electrical grid to meet the demands of these power-intensive facilities.

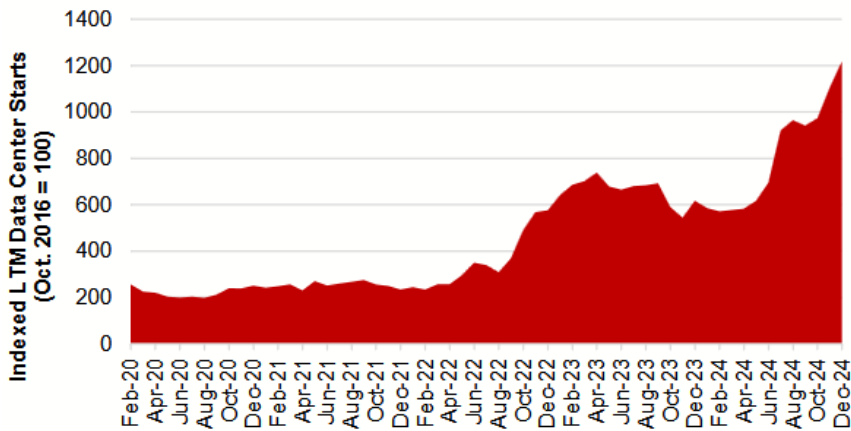
While much of Wall Street's attention is focused on the tech giants leading the charge, we believe there are significant opportunities to be found elsewhere in the value chain. The spotlight often shines on the semiconductors powering servers within data centers, but the broader ecosystem demands extensive investment in less glamorous yet equally critical components. These include backup generators, power distribution units (PDU), uninterruptible power supplies (UPS), switchgears, transformers, computer room air conditioners (CRACs), computer room air handlers (CRAHs), and advanced cooling solutions like air and liquid-cooled chillers, among others. Collectively, these components represent hundreds of millions of dollars in investment opportunities.



Source: McKinsey data center demand model (October 2024)

A **McKinsey** study from October 2024 forecasted **+60GW** 2024-2030 demand growth accelerating in 2025+ (9-11GW annually 2026-2029). Adding **75-80TWh** per year or **~2%** per year on a **~4,000TWh** base. Additionally, **KeyBanc** highlights that indexed LTM data center starts have grown at a **~36%** CAGR over the last five years and reaccelerated in 2024 after plateauing in 2023.

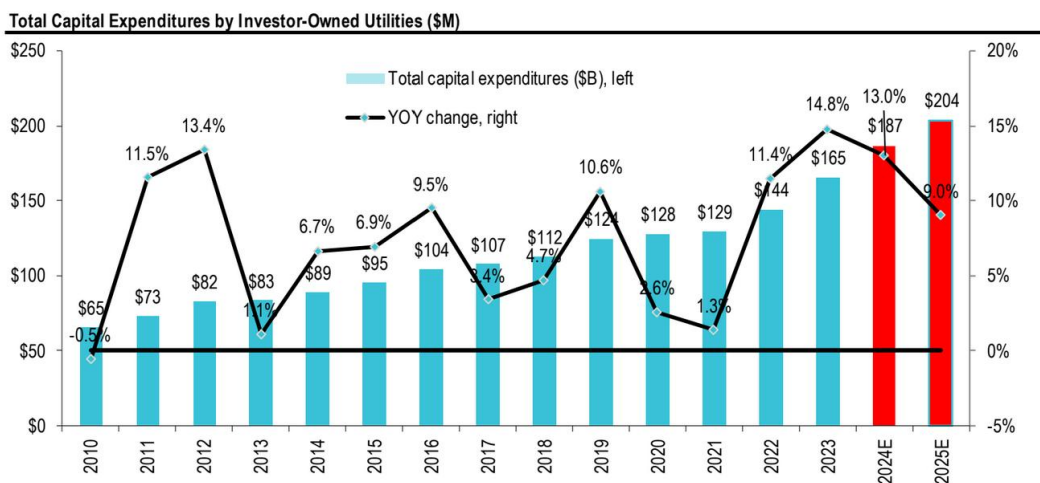
Indexed LTM Datacenter Have Recently Reaccelerated to New Highs After a Slowdown in the Beginning of 2024



Source: KeyBanc Capital Markets Inc., Dodge Construction

Simultaneously, the modernization and expansion of the electrical grid will be a crucial enabler of these data center developments. Billions of dollars will be required to enhance power generation and transmission infrastructure. At the building level, hyperscalers are exploring diverse power sources, including nuclear energy, to ensure a reliable supply. Utilities, in turn, will need to invest heavily in transmission lines, substations, and distribution systems to support these advancements.

Utility capital expenditures are on the rise, currently around **\$165 billion** annually and growing at over **10%** per year. Historically, most utility capex has been allocated to generation and distribution, particularly low-voltage infrastructure serving end users. Looking ahead, a greater portion of utility investments is expected to shift toward high-voltage transmission infrastructure, which could



account for approximately **20%** of total utility capex.

Source: Baird, FactSet Research Systems

A recent report from **Baird** highlighted the backlog for grid interconnection grew by **~30%** in 2023, dominated by solar, wind, and energy (*battery*) storage projects, **~2,600** gigawatts (*GW*) of generation and storage capacity seeking grid interconnection. It can take ten years from conception to completion to permit a new electric transmission line.

The buildout of America's energy infrastructure in-turn requires expansion of production of high-performance specialty metals. Niobium, exotic steels, nickel-based and titanium alloys are critical components in energy generation systems, including nuclear power. Power generating natural gas turbines must be built to withstand sustained periods of high temperatures, conditions under which traditional steel-based alloys, fail. A handful of companies in the United States have the knowledge base and capability to produce these high-performance metal systems, and these represent additional, unique small-cap opportunities.

The recent public introduction of **DeepSeek**, a Chinese AI model, has caused market fluctuations and heightened uncertainty, but our industrials data center investment thesis remains intact. Hyperscale customers are not likely to indefinitely delay capital expenditures, and while future cost efficiencies may impact spending, it could be offset by growing colocation demand. Even if the density of HVAC and electrical components in mega data centers declines, the overall breadth of infrastructure could expand. Additionally, our growth projections have never relied upon widespread adoption of liquid or immersion cooling—these remain optional enhancements and a source of additional upside in a sector driven by robust, long-term demand.

We see data centers and AI as a decade-long secular growth story. By looking beyond the Magnificent Seven and exploring the broader landscape of supporting industries, investors can uncover compelling opportunities. Perhaps it's time to shift focus to what we might call the *"Spectacular Small Caps."*

Springtime for Small Caps Summary & Conclusion

Long-rooted market trends often die hard and the exact timing of a shift in market leadership can be elusive, similar to a groundhog's prediction of six more weeks of winter. But springtime eventually arrives, harboring in a period of revitalization and renewal. **Whether it be six more weeks of winter or an early spring, we see the factors aligning for a *Springtime for Small Caps* across a number of economic sectors and macro market indicators.** The earnings outlook for small caps is the most robust since 2021, positioning them to approach or exceed large cap earnings growth for the first time in three years. The broad-based drivers ranging from disruptive innovations in the areas of AI, life sciences, and fintech, rising capital spending, a more business-friendly economic environment, a solid employment backdrop, and a healthy consumer provide optimism that small caps may be setting up for a multi-year period of outperformance. Further, a rise in merger & acquisition activity and a new wave of IPOs provides further impetus for a change in market leadership. **The key to capitalizing on the changing market dynamics will be fundamental, bottom-up research focusing on the emerging market leaders with the fastest growing and most innovative businesses, many of which are not widely covered by Wall Street.** We call this research-driven approach to small cap investing the **Emerald Advantage!**

IMPORTANT DISCLOSURE

This report is furnished for the use of Emerald Advisers, LLC, its affiliates and its clients and does not constitute the provision of investment, legal or tax advice to any person. It is not prepared with respect to the specific investment objectives, financial situation or particular needs of any specific person. The information contained in this report was obtained from sources deemed reliable. Such information is not guaranteed as to its accuracy, timeliness or completeness by Emerald. Any opinions contained in this report represent the judgment of the authors as of the publication date. The information contained in this report and the opinions expressed herein are subject to change without notice. Past performance is no guarantee of future results. Neither the information in this report nor any opinion expressed herein constitutes an offer nor recommendation to buy or sell any security or financial instrument. Accounts managed by Emerald's affiliated advisory firms may take positions from time to time in securities discussed in its reports.



Joseph W. Garner

Director of Research &
Portfolio Manager

Mr. Garner is Director of Research and a member of the Small Cap Growth Portfolio Management team. He is also a Portfolio Manager of the Emerald Growth Fund. Mr. Garner's research efforts are primarily focused on small- and mid-sized firms in the Consumer Staples, Industrials, and Technology sectors. He has appeared on Bloomberg Television and CNBC. He also has been quoted in Fortune, Bloomberg Business News, USA Today, Dow Jones News Service, Standard & Poor's, MarketWatch, Investor's Business Daily, Wall Street Journal, and other media. Mr. Garner previously served as President of the Board of Directors and Chairman of the Investment Committee for the Millersville University Foundation. Prior to joining Emerald in 1994, Mr. Garner was the Program Manager of the PA Economic Development Financing Authority (PEDFA) and an Economic Development Analyst with the PA Department of Commerce's Office of Technology Development. Mr. Garner received an MBA from the Katz Graduate School of Business, University of Pittsburgh, and graduated magna cum laude with a BA in Economics from Millersville University.



Stephen Amsterdam

Portfolio Manager &
Senior Research Analyst

Mr. Amsterdam is a Portfolio Manager of the Emerald Mid Cap Growth and Emerald Growth Opportunities portfolios. He is also a Senior Research Analyst and a member of the Emerald Advisers Technology Research Team. He has been with Emerald since 2001 and currently focuses his efforts on network infrastructure, optical technologies, embedded electronics, and unified communications. Prior to joining Emerald Asset Management, Mr. Amsterdam spent a decade investing in, and advising, early stage technology companies as a founding managing director of PA Early Stage Partners, a \$50M early stage venture capital fund and senior associate of TLVentures, an \$800M venture capital fund associated with Safeguard Scientifics, Inc. He is a graduate of Lehigh University.



Scott Blumenthal

Director of
Industrial Research

Mr. Blumenthal serves as a Senior Research Analyst for Emerald Research. He focuses his research efforts on the Capital Goods, Industrials, Materials, Aerospace, Construction, and packaging industries. Prior to joining Emerald, Scott had eight years of experience in senior financial positions with various emerging growth companies and technology startups. He also served as a Business Consultant with Deloitte & Touche LLP. He has been involved in business transactions as diverse as raising venture capital, taking a company through a troubled debt restructuring, and three private company sales. Scott received an MBA from the Katz Graduate School of Business, University of Pittsburgh and graduated cum laude with a BSBA in Operations Management and Business Logistics from Ohio State University.



Erik Cianci

Research Analyst

Mr. Cianci is a Research Analyst for Emerald Advisers. He joined the research team in March 2020, and was previously an intern with Emerald from 2015 to 2016. Prior to joining Emerald, Mr. Cianci worked for Armstrong Flooring, Inc. He held various roles such as Assistant Plant Controller, Treasury Analyst, and FP&A Analyst. Mr. Cianci also serves as a board member and the treasurer for the Literacy Council of Lancaster-Lebanon. Mr. Cianci graduated in 2016 from Elizabethtown College with a B.S. in International Business.



Ori Elan

Portfolio Manager &
Research Analyst

Mr. Elan is a Vice President and Research Analyst with Emerald. He previously was Managing Director and Portfolio Manager of Elessar Investment Management. He was hired in 2004 as an equity analyst on the small cap value team managed by Mr. Giesen at National City Bank. Prior to joining National City Bank, he was a financial analyst and chemical engineer at Air Products and Chemicals, Inc. Mr. Elan received a B.S. degree in chemical engineering from the City College of New York in 1991 and an MBA from the Tepper School of Business at Carnegie Mellon University in 2003.



Derek Fisher

Director of Technology
Research

Mr. Fisher is a Senior Analyst, for Emerald Research. Mr. Fisher focuses his research efforts on emerging growth companies in the Computer Software, Information Technology, Professional Services, Healthcare Services and Medical Devices industries. He began his career at Emerald as an intern in 1995. Due to his generation of ideas, networking and due diligence skills, he progressed to Research Analyst in 1996 and to Senior Research Analyst in 2000. Prior to joining Emerald, Mr. Fisher attended the University of Delaware.



Peter Garner
Research Analyst

Mr. Garner is a Research Analyst for Emerald Advisers. He formally joined the research team in 2020 after having served as a research intern from 2016 to 2020. Mr. Garner received a Bachelors' of Science in Economics with Minors in Business and the Liberal Arts and History from the Pennsylvania State University. He also served in various leadership roles, including Vice President, for the Penn State University Economics Association.



Nathan Jones, PhD, MBA
Director of Technology
Research

Dr. Jones is a Senior Research Analyst for Emerald Advisers, focusing on Technology. He joined the firm in the summer of 2013 after a postdoctoral fellowship in melanoma research and nanotechnology at the Penn State College of Medicine. Dr. Jones received his PhD in Pharmacology in the spring of 2012 from the Pennsylvania State University, Hershey Medical Center. He has authored papers in the fields of pharmacogenetics, cancer research, nanotechnology, and drug metabolism. He received his MBA from the Pennsylvania State University in 2009, where he was inducted into the Beta Gamma Sigma National Business Honor Society. Dr. Jones received his BS degree in Biochemistry and Molecular Biology from Penn State University in 2006.



Steven Russell, Esq.
Portfolio Manager &
Senior Research Analyst

Mr. Russell is a Co-Manager of the Emerald Finance & Banking Innovation Fund. Prior to joining Emerald in 2005, Mr. Russell founded Greenwood Advisers, LLC, a registered investment adviser. Previously, he served as Managing Director of iNetworks, LLC a private equity firm located in Western Pennsylvania. Prior to joining iNetworks, LLC, Mr. Russell served as Senior Vice President and Portfolio Manager of Emerald Advisers, where he served as Manager of the Emerald Technology Fund and co-manager of the Emerald Select Banking Fund. He was also a Principal and Founding Partner of Emerald Venture Capital. Mr. Russell served as Senior Private Equity Analyst for the Pennsylvania Public School Employees' Retirement System (PSERS), where he administered PSERS' \$1.2 billion commitment of private investments, including leveraged buyouts, distressed investments, mezzanine and growth equities. From 1996 to 1997, he administered PSERS' \$400 million Developmental Fund and \$100 million Absolute Return Program. Mr. Russell serves on the Board of Arbitrators for the Financial Industry Regulatory Authority (FINRA), and has appeared on CNBC, Bloomberg Television and other investment oriented programs. He has been quoted in various international media, including The Wall Street Journal, Smart Money Magazine, Bloomberg Business News, Dow Jones News Service and Market Watch. Mr. Russell received both his JD and MBA degrees from Temple University and a BA degree in Banking and Finance from Morehouse College. Mr. Russell is licensed to practice law in the State of New Jersey and has passed the NASD Series 63 exam.



Terry M. Smith, PhD, MBA

Director of Life Sciences
Research

Dr. Smith is a Director - Life Sciences Research for Emerald Advisers. He spent the Summer/Fall of 2005 as an Intern at Emerald before joining the firm in the Fall of 2006. Dr. Smith received his PhD in Integrative Biosciences - Molecular Toxicology at the Pennsylvania State University, Hershey Medical Center - College of Medicine, in Fall 2006. He has co-authored several research abstracts and articles on 'the molecular signaling pathways involved in hormone induced cholesterol metabolism' for the Journal of Investigative Dermatology, as well as for the Society for Investigative Dermatology's annual international meetings. He received his MBA from the Pennsylvania State University (2004), where he also was inducted into the Beta Gamma Sigma National Business Honor Society. Dr. Smith received his BS degree in Biology (with a minor in Chemistry) from Messiah College in 2000.



Nishit Trivedi, PhD, MBBS, MBA

Director of Life Sciences
Research

Dr. Trivedi is a Director - Life Sciences Research for Emerald Advisers, LLC., focusing on Biotech and Medical Device companies. Dr. Trivedi received his PhD in Pharmacology in 2005 and pursued his post-doctoral fellowship at Gittlen Cancer Foundation before joining Emerald. He has published several research articles in leading journals in the fields of oncology and dermatology and, at the 2004 Annual AACR Conference, Dr. Trivedi was the recipient of an award from the American Association for Cancer Research and AFLAC for his research efforts on melanoma. While at Penn State College of Medicine, he received the Rite Aid Graduate Fellowship Award in Pharmacology. Dr. Trivedi received both a PhD and an MBA from Pennsylvania State University. He completed his medical internship in 1999 and received his medical degree (MBBS) from Bombay University, India.

CONTACT US

Emerald Advisers, LLC

Phone: 1-800-722-4123
info@teamemerald.com

3175 Oregon Pike | Leola, PA 17540
King of Prussia, PA

**TO LEARN MORE ABOUT EMERALD OR TO SCHEDULE
A CALL WITH OUR TEAM, VISIT:**

WWW.TEAMEMERALD.COM