UNC MANAGEMENT COMPANY, INC.

ANNUAL REPORT
FISCAL YEAR 2023

The University of North Carolina at Chapel Hill

FOUNDATION INVESTMENT FUND, INC.

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2023

OVERVIEW

THE FUND

The UNC Investment Fund, LLC ("Fund" or "UNCIF") is the commingled vehicle created to invest the assets of The University of North Carolina at Chapel Hill Foundation Investment Fund, Inc. ("Chapel Hill Investment Fund" or "CHIF") along with other eligible entities affiliated with the University of North Carolina System ("Members"). CHIF is the Fund's controlling Member with its Board of Directors ("Board") responsible for the Fund's governance.

In addition to The University of North Carolina at Chapel Hill Endowment, there are currently 26 other participants represented in CHIF. A complete list of participants can be found on page 27.

These entities are comprised of more than 2,000 individual underlying funds.

By investing in the Fund, CHIF receives:

- Investment management and oversight by a team of professionals dedicated to achieving the Fund's objectives and focused on protecting the Fund's assets during periods of market weakness
- Access to superior external investment management firms
- Competitive fees
- Highly diversified portfolio of investments allocated across asset classes, sectors, geographies, and investment managers
- Proven long-term investment track record generated with moderate volatility

THE INVESTMENT OBJECTIVES

Primary Objective:

Support the current and future needs of the Fund's Members by generating, in perpetuity, a predictable and stable stream of annual spending distributions while also preserving purchasing power (net of inflation) after accounting for spending distributions.

Secondary Objective:

Achieve a rate of return, net of all fees and expenses, which exceeds the Fund's primary benchmark, the Strategic Investment Policy Portfolio ("SIPP").

More information on SIPP can be found on page 11–13.

The Fund's asset allocation framework, as defined by SIPP, is principally implemented through investments with external investment managers.

THE MANAGEMENT COMPANY

The UNC Management Company, Inc. ("Management Company") has been appointed by CHIF's Board to provide investment management services to the Fund as well as Fund administration and performance reporting. The Management Company works closely with the Board and its Executive Committee to:

- Determine asset allocation
- Hire and terminate external investment management firms
- Direct purchase or liquidation of assets

A MESSAGE FROM THE CHAIRMAN OF THE BOARD

> I am proud of the Fund's long-term success made possible through the close and collaborative partnership and collective financial market expertise of the Board and the UNC Management Company. With this foundation, I am confident we can navigate the various and often challenging market environments that no doubt lie ahead.
>
> *-John L. Townsend III*

We are pleased to present the Fiscal Year 2023 Annual Report for the Chapel Hill Investment Fund which invests in the UNC Investment Fund, LLC ("Fund"). In this report we not only detail the Fund's investment performance but also highlight some of the students, faculty, and organizations it supports. We are acutely aware of the impact our investment decisions have on the University and are honored to be able to support it.

Fiscal Year 2023 was a challenging year for the Fund, recording a disappointing -0.4 percent net investment return. This return marks the Fund's first loss since Fiscal Year 2016 and only its third down year since its inception in 2002. Over the past couple of decades, many university endowment funds, including the UNC Investment Fund, have implemented the "endowment model" framework of portfolio management. Under this approach, the Fund's assets are invested in a highly diversified, multi-asset class portfolio that includes a significant allocation to private market investments. Over the long term, this investment management philosophy has served the Fund well with the Private Equity asset class producing a +20.1 percent ten-year net annualized return, more than doubling the broader global equity market's return. Returns on private market investments, however, tend to lag movements in public equity markets. This notion of lagged performance certainly held true in Fiscal Year 2023. Global equity markets returned +16.5 percent while the Fund's Private Equity asset class lost -12.3 percent reflecting the difficult market environment for equities in the prior fiscal year which saw global equities decline by nearly 16 percent. Reflecting its negative return in Fiscal Year 2023, the Fund's assets decreased by $295.5 million to finish the year at $10.1 billion. Over the past five years, however, the Fund has grown by 65 percent (nearly $4.0 billion) as a result of both investment gains and contributions from Members.

The Fund's primary objective is to maintain the purchasing power of its underlying funds after accounting for spending distributions and inflation over the long term. Annualized returns in excess of approximately +8.0 percent are deemed to have achieved this target. While the Fund's -0.4 percent return for Fiscal Year 2023 falls short of this goal in the short term, we manage the portfolio with a long-term investment horizon. With 5-, 10- and 20-year annualized returns of +10.3 percent, +9.7 percent and +9.5 percent, respectively, the Fund has been successful in achieving this important objective over longer time periods. The Fund has also performed exceptionally well compared to peers with its 3-, 5-, 10- and 20-year returns each ranking in the top quartile of the Cambridge Associates' College and University universe of endowment funds.

Despite the Fund's disappointing performance in Fiscal Year 2023, I am proud of its long-term success both in terms of meeting its return objectives and performance relative to our peers. Integral to this success are both my fellow Board members and the team at UNC Management Company. With their continued close and collaborative partnership and collective financial market expertise I am confident the Fund can navigate the various and often challenging market environments it will no doubt encounter. Speaking for the entire Chapel Hill Investment Fund Board as well as the staff of the UNC Management Company, thank you for the opportunity to support the University and its impactful missions.

CHAPEL HILL INVESTMENT FUND BOARD OF DIRECTORS

One of the distinguishing features of the Chapel Hill Investment Fund is the oversight and governance provided by its Board of Directors to the UNC Investment Fund, LLC as its controlling Member. The Board, focused on the long-term strategy of the Fund, convenes to discuss and debate asset allocation and investment policy and to monitor performance.

The Board's Executive Committee meets more frequently to review intermediate-term recommendations made by the Management Company. With its collective financial market expertise and extensive experience, the Board serves as an invaluable resource to the Management Company in its mission to deliver exceptional risk-adjusted returns.

John Townsend III*
CHAIRMAN
Board of Directors

Michael Andreasen
SECRETARY
Vice Chancellor For University Development, UNC-Chapel Hill

David Boliek Jr.
Attorney & Partner, Williford, Boliek and Frangakis, LLP

Anne Brennan*
Chief Risk Officer, Neuberger Berman

James Keith Brown
Senior Managing Director-Partner, Coatue Management, LLC

David Carroll
VICE PRESIDENT
Senior Executive Vice President, Wealth and Investment Management (Retired), Wells Fargo

David Craver*
Co-Chief Investment Officer, Lone Pine Capital LLC

John Ellison Jr.*
President & Chief Executive Officer, The Ellison Company, Inc.

Kevin Guskiewicz
Chancellor, The University of North Carolina at Chapel Hill

Stephon Jackson
Head of T. Rowe Price Investment Management

Michael Kennedy
Senior Client Partner, Korn Ferry

Nathan Knuffman*
TREASURER
Vice Chancellor for Finance & Operations, UNC-Chapel Hill

Lee Lesley
Head of Investor Relations, IPI Partners

John Preyer
Co-Founder & President, Restoration Systems, LLC

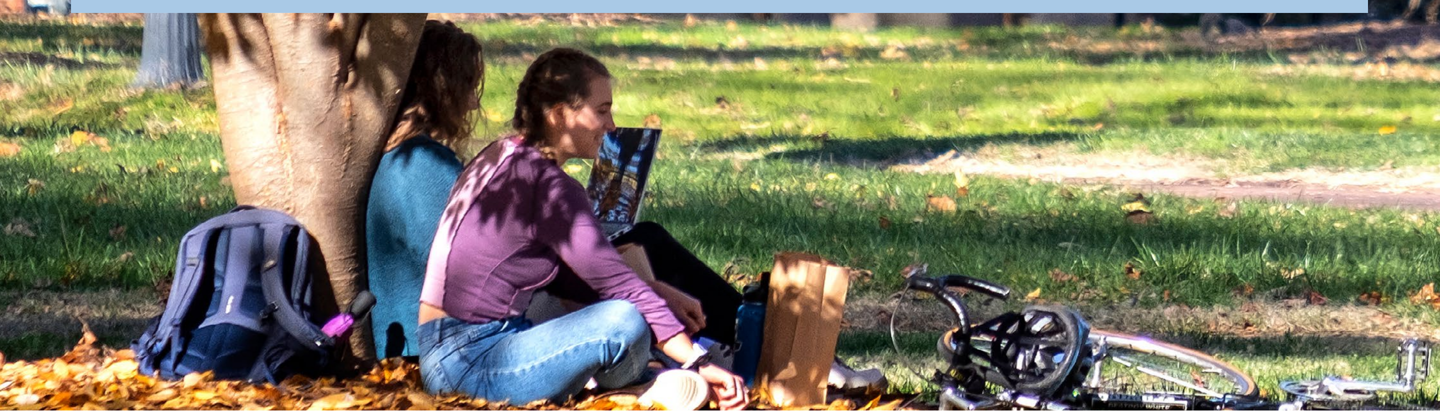
Kristen Tongberg
Chief Investment Officer, Cambridge Associates

Brien White
Chief Operating Officer, Brown Advisory

As of June 30, 2023
*Executive Committee Member

PORTFOLIO AT A GLANCE

FISCAL YEAR END • AS OF JUNE 30	2023	2022	2021	2020	2019
CHIF Market Value ($ millions)	$5,103.2	$5,245.6	$5,100.8	$3,642.4	$3,641.7
UNCIF Market Value	$10,137.9	$10,433.4	$9,964.3	$6,679.0	$6,568.9
UNCIF Return	-0.4%	4.4%	42.3%	2.3%	7.7%
SIPP Benchmark Return	*3.6%*	*0.1%*	*32.7%*	*2.1%*	*6.7%*
UNCIF Asset Allocation					
Long Equity	25.5%	23.4%	29.5%	29.5%	27.5%
Long/Short Equity	14.2%	14.2%	15.0%	17.3%	15.5%
Diversifying Strategies	9.2%	8.2%	6.4%	9.2%	9.9%
Fixed Income	6.0%	7.0%	7.0%	8.7%	9.4%
Private Equity	32.0%	34.3%	27.8%	23.6%	24.1%
Real Estate	8.1%	7.0%	5.4%	6.2%	5.8%
Energy & Natural Resources	4.6%	4.8%	3.8%	4.5%	6.8%
Cash & Other	0.4%	1.1%	5.1%	1.1%	1.1%

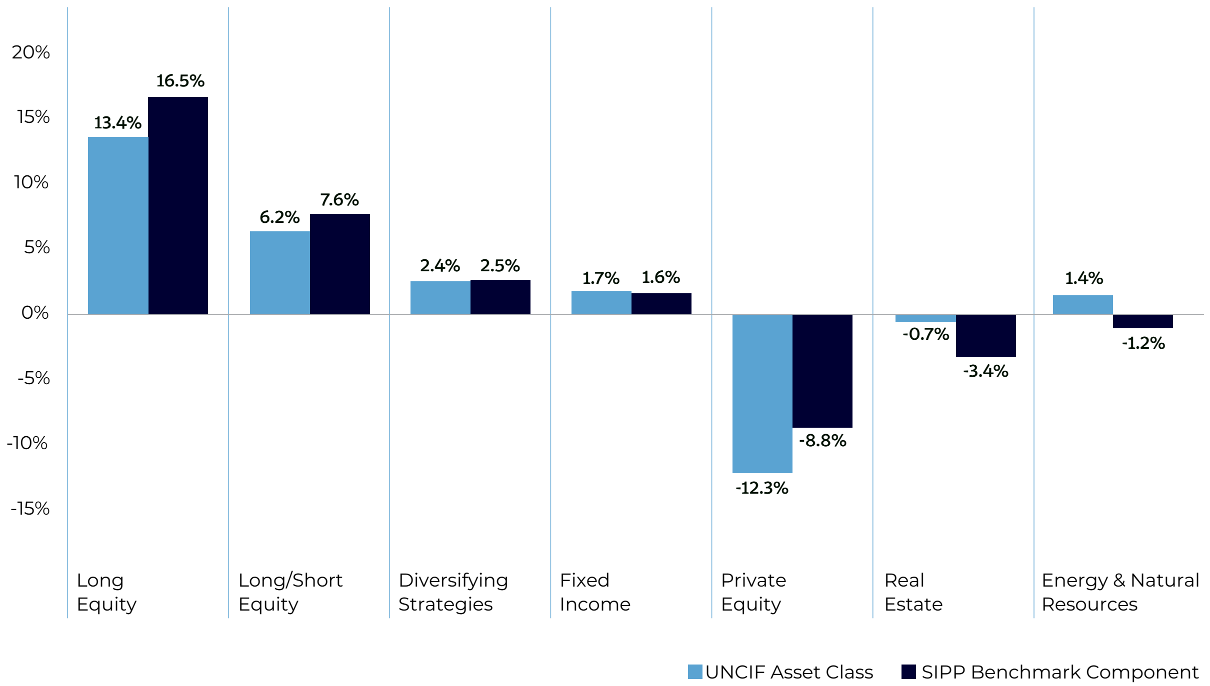


FISCAL YEAR 2023 OVERVIEW

After sinking to two-year lows in Fiscal Year 2022, global equities rallied in Fiscal Year 2023 (12 months ended June 30, 2023) boosted by evidence of economic resilience and easing inflation pressures. The year began on an optimistic note as signs emerged that the U.S. Federal Reserve ("Fed") was making progress in controlling inflation with minimal damage to the broader economy. However, after an initial rally, domestic equity markets surrendered their gains to close out the first quarter of Fiscal Year 2023 (three months ending September 30, 2022) in negative territory as inflation numbers remained stubbornly high. In the second quarter of the fiscal year (three months ending December 31, 2022) stocks broke their three consecutive quarter long losing streak, recording gains for the period. The S&P 500 Index gained +7.6 percent for the quarter though performance varied widely among benchmarks, asset styles, and sectors with sharp declines in some heavily weighted information technology and internet-related shares that left the Nasdaq Composite Index with a small loss. The rally appeared to be fueled by emerging signs that the Fed was prepared to stop raising rates early in calendar year 2023 so that they could assess how their moves were impacting the economy. Also boosting investor sentiment during the second quarter were mounting hopes that the Fed might achieve a "soft landing"—hiking interest rates to a level just enough to slow inflation without triggering a recession. In March 2023, banking contagion fears surfaced following the collapse of Silicon Valley Bank and Signature Bank and the subsequent forced takeover of Credit Suisse by UBS.

FIGURE 1 | **ASSET CLASS RETURNS VS. SIPP BENCHMARKS** · FISCAL YEAR 2023

Private Equity losses drove the Fund's underperformance in FY 2023. However, despite this weak performance in FY 2023, Private Equity remains the Fund's best performing asset class over the long term, significantly outperforming public equities.



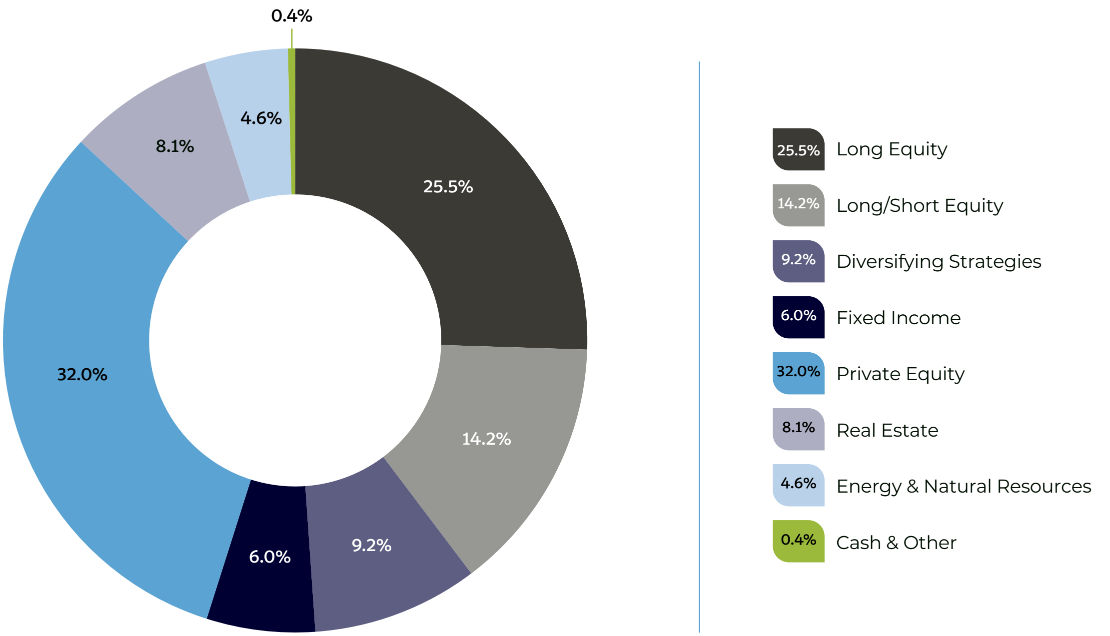
Reports of stressed balance sheets at other regional banks led to concerns that problems in the industry, a key source of financing for commercial real estate and smaller-size businesses, would result in a severe tightening in credit conditions. Despite this turmoil in the banking sector, signs of ebbing economic growth, and sustained high inflation levels, domestic equities managed to generate overall gains for the third quarter of the fiscal year (three months ending March 31, 2023). Increasingly hopeful economic signals supported the market's rally in the final quarter of the fiscal year with the S&P 500 Index gaining +19.6 percent for the full 12-month fiscal year period.

In contrast to the gains in domestic equities, bond prices declined in Fiscal Year 2023 as Fed officials expressed their resolve to raise interest rates as much as necessary to keep inflation under control. During the fiscal year, the Fed raised its target federal funds rate seven times by a total of 350 basis points, making it one of their most aggressive hiking programs in decades. Although rates were held steady in June 2023, policymakers continued to insist that inflation levels had yet to be tamed which signaled to markets that June's lack of action was more likely a "skip" rather than the widely anticipated "pause" in their rate-hiking program. Longer-term Treasury yields moved higher during the fiscal year with the yield on the benchmark 10-year U.S. Treasury note touching 4.25 percent on October 24, 2022 before finishing the year (June 30, 2023) at 3.81 percent, up 83 basis points from the start of the fiscal year (July 1, 2022). The Bloomberg U.S. Aggregate Bond Index, a measure of the broader domestic fixed income market, finished the year down -0.9 percent. (Interest rates and bond prices move in opposite directions.)

Though trailing domestic equities, stocks abroad also advanced in Fiscal Year 2023 driven by falling inflation, stabilizing interest rate outlooks, and global economic resilience. Developed markets equities outside the U.S., as measured by the MSCI EAFE Index (Europe, Australasia, Far East), gained +18.8 percent. However, emerging markets equities drastically underperformed with the MSCI Emerging Markets Index gaining just +1.7 percent on the heels of weak Chinese equity markets battered by continued perceived geopolitical risk and mounting doubts around the speed and durability of the economic recovery there.

FIGURE 2

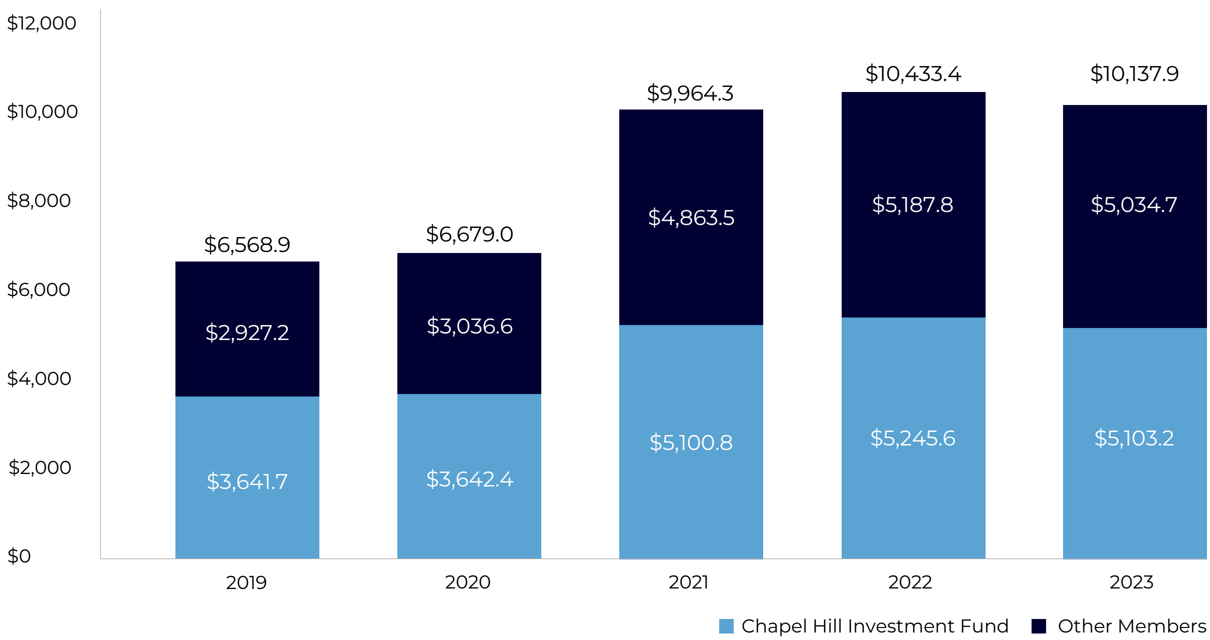
UNCIF ASSET ALLOCATION (% OF TOTAL MARKET VALUE) • AS OF JUNE 30, 2023



Following two very strong years in Fiscal Years 2021 and 2022, the Fund had a difficult year in Fiscal Year 2023, recording a -0.4 percent return. The primary cause of the weak performance was the -12.3 percent return on the Fund's Private Equity asset class. This loss offset the gains generated by the Fund's public equity holdings that benefitted from the strong performance in global equity markets. In bear markets, such as that experienced by global equity markets in calendar year 2022, public equities move downward relatively quickly while the corresponding valuation declines in the Private Equity asset class play out over an extended period. The delay in recognizing Private Equity valuation changes results from a combination of factors including the underlying uncertainties in valuing private companies and time lags inherent in the reporting process as Private Equity managers only update their valuations quarterly and generally have up to 90 days after a quarter's end to issue their reports. The Fund's public equity holdings recorded significant losses in Fiscal Year 2022, reflecting the declines in public equity markets during that time period while corresponding losses in the Fund's Private Equity portfolio carried into Fiscal Year 2023. The Fund's -0.4 percent return trails its primary SIPP benchmark's +3.6 percent return and the +11.2 percent return of a more "traditional", equity market-focused Global 70/30 Portfolio comprised of 70 percent global equities (MSCI All Country World Index) and 30 percent bonds (Bloomberg U.S. Aggregate Bond Index). Relative to peers, the Fund's Fiscal Year 2023 return ranks in the bottom quartile of the Cambridge Associates' College and University universe of endowment funds with smaller endowments tending to have a higher allocation to public equity markets which performed well over the period and a smaller allocation to Private Equity which was a significant weak spot in Fiscal Year 2023. While hurting the Fund's return in the most recent fiscal year, Private Equity continues to be the Fund's best performing asset class over longer time periods and has added significant value to the Fund's long-term performance. In contrast to the Fund's relatively weak performance in Fiscal Year 2023, its longer-term performance remains strong. The Fund's three-, five-, ten-, and twenty- year returns all exceed 9 percent (annualized) and continue to rank in the top quartile of the Cambridge Associates' Universe for each of these periods.

FIGURE 3 UNC INVESTMENT FUND MARKET VALUE ($ MILLIONS) • AS OF JUNE 30

Over the past five years, the Fund's market value increased by 65% with over $4 billion in net investment gains over the period.



INVESTMENT PRINCIPLES

The Fund's primary objective is to support the current and future needs of its Members by generating, in perpetuity, a predictable and stable stream of annual spending distributions while also preserving purchasing power (net of inflation) after accounting for spending distributions. More simply, the Fund, over the long term, needs to return approximately +8.0 percent to achieve its primary objective: the spending rate (usually around 5.5 percent) plus inflation (around 2.5 percent).

While this objective is straightforward in concept, it is a challenge to achieve in practice. To achieve this goal, the Fund's investment philosophy has been built around three core principles:

1. MAINTAIN A LONG-TERM PERSPECTIVE

By taking a long-term view, the Fund can benefit from inefficiencies that arise from the short-term focus of many market participants.

2. PARTNER WITH BEST-IN-CLASS INVESTMENT MANAGERS

The Fund invests its assets with third-party investment managers. The UNC Management Company is steadfast in its pursuit of exceptional investment managers. Our research process takes us across the globe as we seek to partner with managers that possess highly specialized skills, deep market knowledge, an ability to think independently, and who have a demonstrated track record of investment success and value creation.

3. MANAGE RISK THROUGH DIVERSIFICATION

We strive to make the best investment decisions all of the time but accept that this is not possible given the uncertainty of financial markets. Risk management is a core tenet woven throughout our investment process and diversification serves as one of our primary risk management tools. We believe that investing across asset classes, geographies, and investment managers positions the Fund to achieve long-term success by limiting drawdowns associated with poor market conditions and the occasional inability of some investment managers to meet their risk/return targets.

STRATEGIC INVESTMENT POLICY PORTFOLIO & ASSET ALLOCATION

Fundamental to the Fund's Investment Objectives is the Strategic Investment Policy Portfolio ("SIPP") established by the Board. SIPP provides asset allocation guidelines for the management of the Fund in accordance with its long-term return objectives and risk tolerance. SIPP is a broadly diversified portfolio with exposure to seven primary asset classes each of which is further divided into sub-strategies. SIPP establishes strategic asset allocation targets and tactical asset allocation ranges for the Fund's seven primary asset classes. Each asset class is measured against a benchmark index which, when aggregated, serves as a method of assessing the Fund's overall performance. SIPP reflects the long-term investment horizon of the Fund with its components reviewed periodically. Any modifications tend to be gradual and made to reflect such factors as changes in market conditions, return expectations, and market liquidity.

Key characteristics of SIPP include:

- Diversification across asset classes to allow the Fund to achieve its objectives through varying market environments
- Reliance on equity-related investments, both in public and private markets, to achieve long-term return objectives
- Significant allocation to private investments to capture the associated liquidity premium
- Emphasis on equities over fixed income securities to reflect the Fund's inflation sensitivity

FIGURE 4 STRATEGIC INVESTMENT POLICY PORTFOLIO (SIPP)

Asset Class	Fund Allocation [1]	Strategic Target	Tactical Range	Benchmark
Long Equity	25.5%	28.0%	22 – 34%	MSCI All Country World Index (ACWI)
Long/Short Equity	14.2%	15.0%	10 – 20%	Hedge Fund Research Institute (HFRI) Equity Hedge Index
Diversifying Strategies	9.2%	10.0%	6 – 14%	(50% HFRI Fund of Fund Conservative Index + 50% HFRI Fund of Fund Defensive Index) + 0.5%
Fixed Income	6.0%	8.0%	5 – 12%	Fixed Income Custom Index[2]
Private Equity	32.0%	25.0%	20 – 32%	Cambridge Associates Composite Index[3]
Real Estate	8.1%	8.0%	5 – 12%	90% NCREIF Property Index (NPI) / 10% MSCI U.S. REIT (Net) Index
Energy & Natural Resources	4.6%	4.0%	2 – 8%	50% S&P GSCI Index + (50% Consumer Price Index (All Item Seasonal Adjusted) + 3%)
Cash & Other	0.4%	2.0%	-2 – 8%	ICE BofA 3 Month U.S. Treasury Bill Index

1. As of June 30, 2023
2. 30% Bloomberg U.S. Long Gov/Credit Float Adjusted TR Index (Unhedged USD) + 30% Bloomberg U.S. Aggregate TR Value Index (Unhedged USD) + 20% Bloomberg U.S. Corporate High Yield TR Index (Unhedged USD), + 20% ICE Bank of America (BofA) 3 Month U.S. Treasury Bill Index
3. 60% Cambridge Associates Private Equity Index (U.S. & Ex. U.S. Buyout & Growth Equity), 40% Cambridge Associates U.S. Venture Capital Index

Each of the seven underlying asset classes within SIPP provides different benefits to the overall portfolio across different market environments. The Fund is allocated across the different asset classes through investments with investment managers chosen following a rigorous selection process.

LONG EQUITY

A traditional asset class characterized by ownership of publicly traded equity securities listed on global equity markets. This asset class is further divided into the following geographic sub-asset classes: domestic equity, developed markets international equity, emerging markets equity, and global equity.

LONG/SHORT EQUITY

An asset class characterized by a manager's ability to buy and/or sell short publicly listed equity securities that the manager believes the market has mispriced relative to their fundamental intrinsic value. The long and short positions are generally independent of one another and portfolios typically result in an overall net long exposure to equities. This flexibility is intended to add value and/or decrease risk.

DIVERSIFYING STRATEGIES

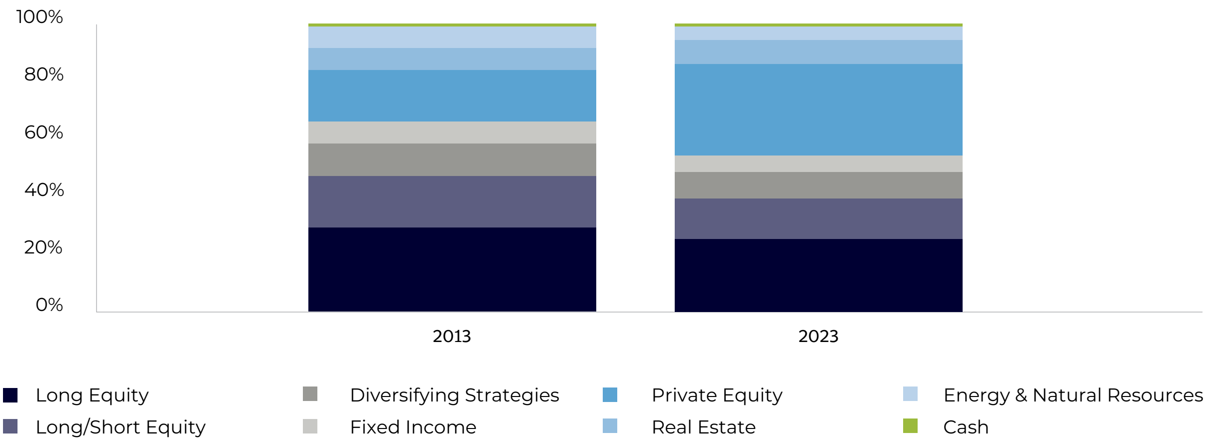
An asset class intended to complement the aggregate portfolio by including investment strategies that tend to be relatively uncorrelated with major equity and fixed income market indices.

FIXED INCOME

A broad and traditional asset class that generally comprises investment strategies (almost always including debt instruments) that are focused on income generation. The Fixed Income asset class tends to provide diversification to the portfolio acting as a complement to the Long Equity asset class.

FIGURE 5 | **HISTORICAL ASSET ALLOCATION** · AS OF JUNE 30

Over the past ten years, the Fund has maintained its diversification among asset classes. While the Fund's aggregate exposure to public equities has remained consistent, the Long/Short Equity allocation has been reduced. Over the period, the Fund's allocation to Private Equity has increased significantly.



PRIVATE EQUITY

An asset class that includes equity investments and transactions in private companies (i.e., companies that are not publicly listed on any stock exchange). As the investments are illiquid, they are expected to generate higher returns than public equity investments over the long term.

REAL ESTATE

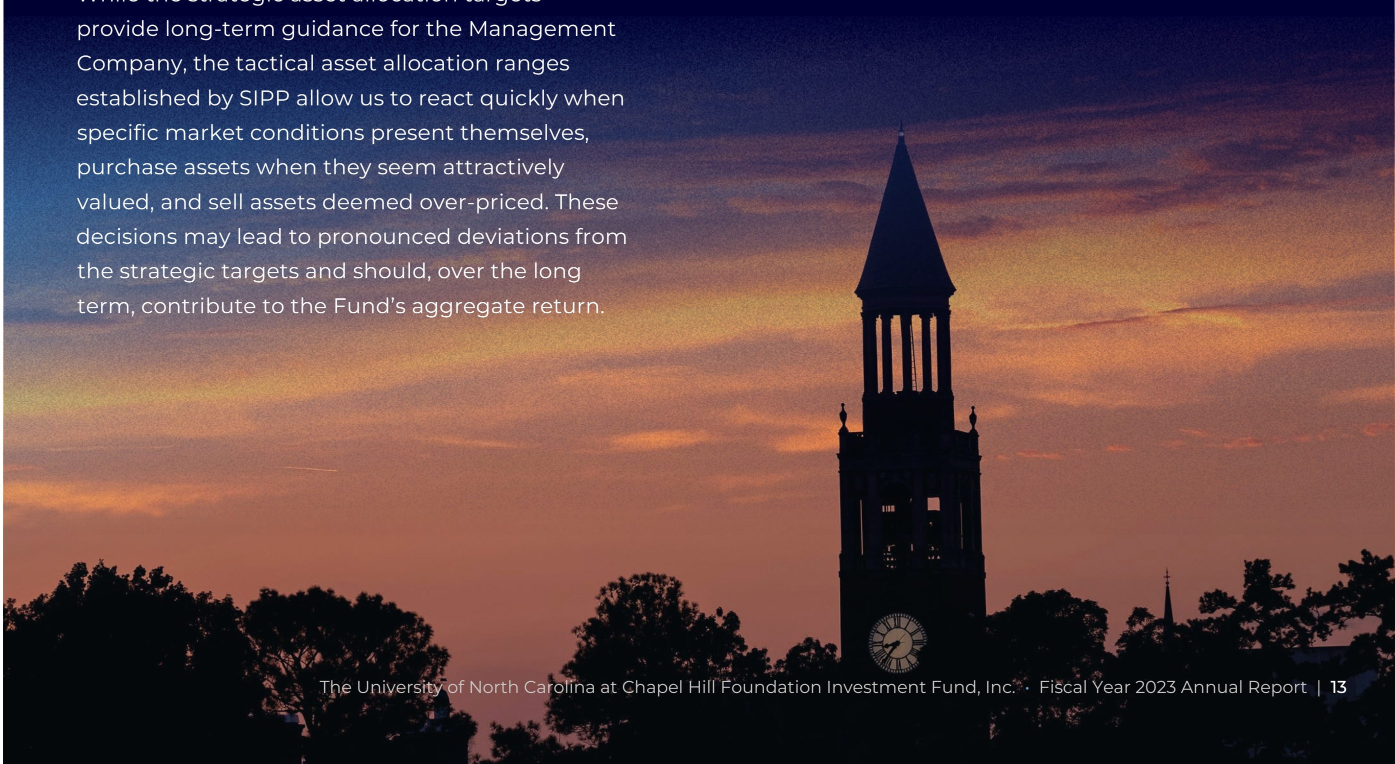
An asset class in which investment managers invest in primarily private real estate opportunities (usually commercial). Investments in Real Estate tend to provide a hedge against rising inflation, a source of current income, and diversification to the aggregate Fund. Real Estate markets can also be markedly inefficient and, as such, present the opportunity for significant investment gains.

ENERGY & NATURAL RESOURCES

An asset class comprised of investment managers that purchase oil, natural gas, power, and other commodity-related investments. Similar to Real Estate, Energy & Natural Resources investments provide a hedge against future inflation and can benefit from an inefficient market for such investments.

Decisions regarding allocations to each of the primary asset classes can have a significant impact on an investment portfolio's absolute return and ability to achieve its return objectives within a given level of risk. Asset allocation decisions also influence the Fund's ability to provide a sufficient level of liquidity to meet the annual payout to Members and other liquidity needs of the Fund. As such, establishing the strategic asset allocation targets of SIPP is the first step of the investment process utilized to construct the Fund. SIPP, including the strategic targets and tactical ranges for each underlying asset class as well as the Fund's actual allocations as of June 30, 2023, is illustrated in Figure 4 on page 11.

While the strategic asset allocation targets provide long-term guidance for the Management Company, the tactical asset allocation ranges established by SIPP allow us to react quickly when specific market conditions present themselves, purchase assets when they seem attractively valued, and sell assets deemed over-priced. These decisions may lead to pronounced deviations from the strategic targets and should, over the long term, contribute to the Fund's aggregate return.



SPENDING DISTRIBUTION POLICY

Endowment funds play a primary role in the funding of higher education and have become a crucial source of support to The University of North Carolina at Chapel Hill. Each year, CHIF participants receive a spending distribution of between 4 and 7 percent of their beginning market value to support various program expenditures. Maintaining a clearly defined spending distribution policy provides these underlying programs with a sustainable and stable source of financial support for ongoing operations and a potential source of capital for future enhancements.

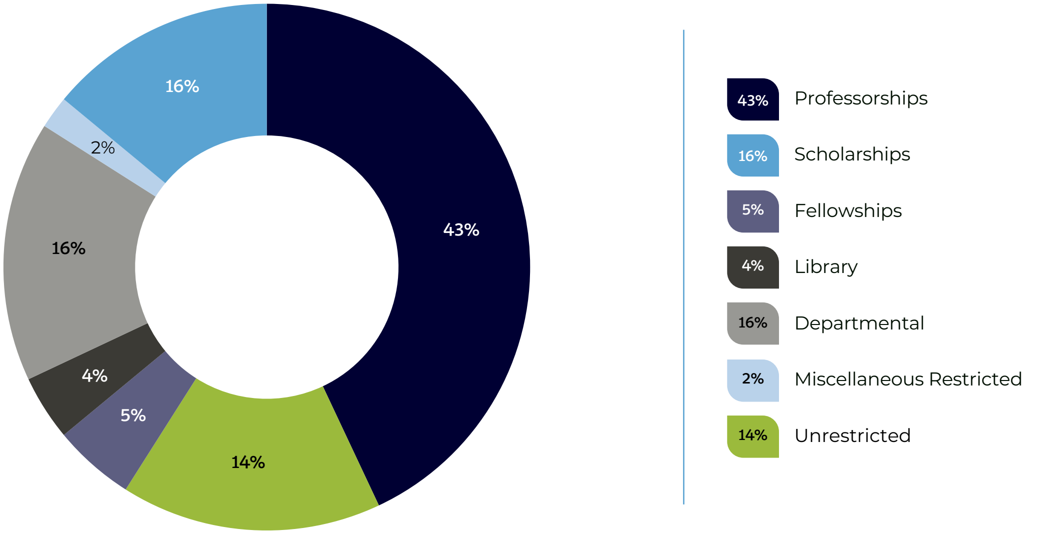
The Chapel Hill Investment Fund's spending distribution policy attempts to accomplish two objectives:

First, the policy strives to provide CHIF participants with financial support at a rate that is sustainable over the long term. The Fund's long-term investment objective is to maintain the purchasing power of its underlying assets after accounting for both spending distributions and the effects of inflation. Achieving this objective requires a spending distribution rate that can be funded by the long-term investment returns of the Fund given its risk/reward profile.

Second, the policy strives to provide CHIF participants with financial support at a rate that is stable over the long term. Stability is important as large fluctuations in year-to-year spending distribution amounts make budgeting and funding programs and awards difficult.

There is an important tradeoff to consider when selecting an appropriate spending distribution policy. When a participant elects to withdraw a dollar in the current year, it foregoes the opportunity to reinvest that dollar to provide capital for future programs. Conversely, when a participant elects to retain and reinvest a dollar, it is foregoing the opportunity to provide a benefit today in order to provide for more spending in the future. Thus, any decision regarding present versus future spending involves judgments on the benefits generated from current expenditures versus benefits received from future expenditures. Capital distributed from the Fund is done on a total return basis, which recognizes that the source of the dollars spent, be it dividends, interest, or realized and unrealized appreciation, is irrelevant. Regardless of its source, a dollar can either be spent today or reinvested for the future.

FIGURE 6 ENDOWMENT FUND OWNERSHIP · FISCAL YEAR 2023



SPENDING DISTRIBUTION POLICY

Considering the Fund's expected rate of investment return is crucial in determining and setting the spending distribution rate. Predicting the Fund's expected rate of return is extremely difficult, however, based on the Fund's asset allocation, its long-term expected real (i.e., inflation adjusted) rate of return is approximately +5.5 percent. If the distribution rate is less than the +5.5 percent rate, the Fund should maintain its real value with new gifts to the Fund representing opportunities for incremental spending rather than serving to replenish the Fund to its initial pre-spending distribution levels.

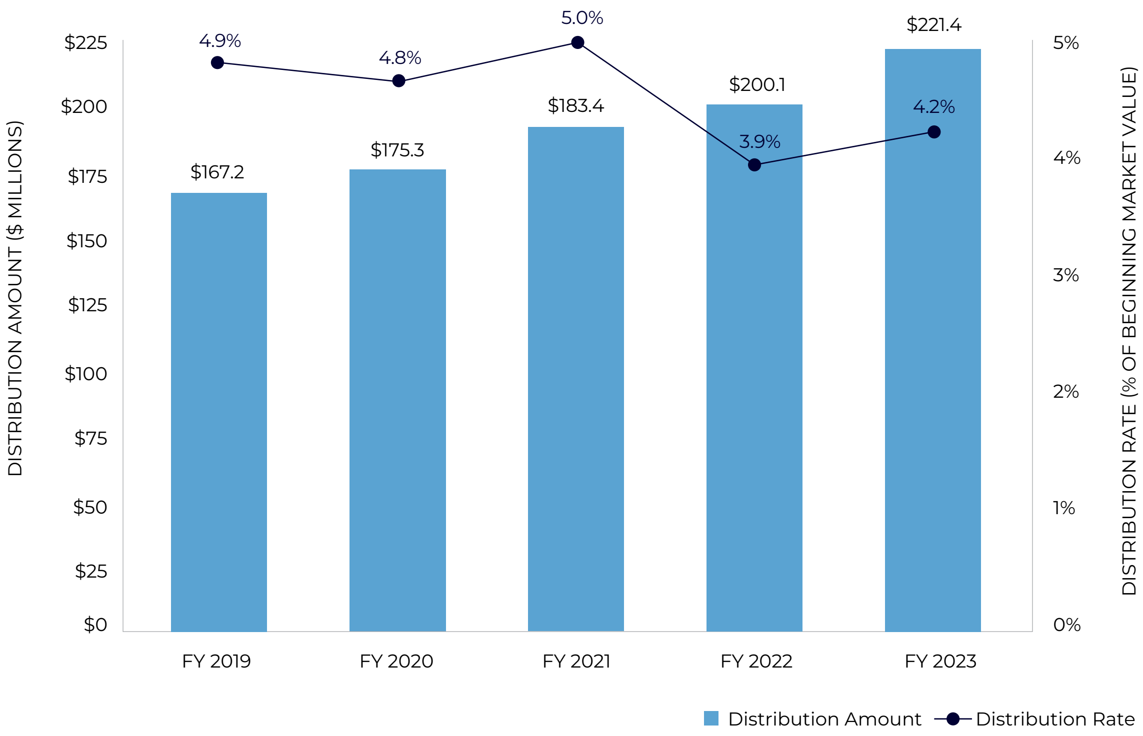
Utilizing a constant growth rate rule, the initial distribution rate for the CHIF was set at 5 percent of its beginning market value in 2000.

From year-to-year, the distribution rate is typically increased at the rate of inflation, as measured by the Consumer Price Index ("CPI"), over the preceding calendar year. The annual distribution rate, however, is generally subject to a minimum of 4 percent and a maximum of 7 percent.

The Board elected to increase the spending distribution rate by 8.1 percent from $507 to $548 per CHIF unit for FY 2023. This increase resulted in an annual distribution rate of 4.2 percent of beginning market value, falling within policy guidelines. Over the past ten years, CHIF has distributed over $1.6 billion to support University programs with its distribution rate growing in line with inflation.

FIGURE 7 HISTORICAL SPENDING DISTRIBUTION ($ MILLIONS)

While the annual spending distribution rate has fluctuated, the amount distributed from the Chapel Hill Investment Fund has grown sustainably over the past five years providing continued support to University programs.



THE FUND IN ACTION

CELL BY CELL: JEFFREY HOUPT DISTINGUISHED INVESTIGATOR

Story and photos by Elise Mahon

AT THE UNC SCHOOL OF MEDICINE, Craig Cameron studies how viral enzymes can improve treatments for disease.

It was April 1983 when Craig Cameron recalled seeing the cover of Newsweek that changed the course of his life. "EPIDEMIC" spanned the cover in huge block letters above a vial of blood marked "CAUTION KS/AIDS."

Cameron was a senior in high school at the time and hadn't really thought much about viruses and vaccines. Chickenpox and mononucleosis all seemed like rites of passage, something everyone got at some point and recovered from in a few days.

"It wasn't until I read this particular issue of Newsweek that it became clear to me that a viral infection could be a death sentence," Cameron said.

In 1994 — after graduating with his undergraduate degree from Howard University and earning his PhD from Case Western Reserve University — Cameron became a postdoctoral fellow at Pennsylvania State University, where he eventually taught biochemistry and molecular biology. He was driven to explore lab-based research rather than pursue medical school because he had a desire to provide a solution to the suffering he witnessed while volunteering in clinics working with AIDS patients. For most of his career, he has studied how viral enzymes can improve treatments for disease.

Cameron, the Jeffrey Houpt Distinguished Investigator and professor and chair of microbiology and immunology at the UNC School of Medicine, came to Carolina in 2019 and is trying to develop antiviral therapeutics and strategies for vaccine development. But there's a catch: He wants to do so without knowledge of the specific virus that's being targeted.

VIROLOGY 101

To effectively create antiviral drugs and vaccines that stop infection, it's important to understand how viruses work. The goal of any organism is to reproduce itself, Cameron explains, and the same is true of viruses.

When the viruses Cameron studies enter a cell, they deliver their genetic information in the form of RNA, a complex molecule that has been getting a lot more attention lately thanks to COVID-19 vaccines. The viral RNA is then translated by ribosomes, the tiny machines in our cells that "read" RNA to create the proteins we need. The virus hijacks this protein-making process to replicate itself and infect other cells.

Every virus has proteins called enzymes with active sites that bind biomolecules and chemically modify them. These modifications are essential for establishing infection and producing more viruses.

"If we could understand, for example, the chemistry occurring at active sites of these conserved enzymes, we might be able to tune the reactions that are happening in a manner that prevents disease," Cameron said.

SINGLE-CELL SOLUTIONS

Since the start of his career, Cameron has been interested in trying to figure out how different individuals respond to viral infections.

"Different people have different responses to SARS infection and a lot of that's probably based in genetic differences between individuals," Cameron says. "The question is: Can we tease that out in the laboratory?"

After noticing inconsistencies between experiments in test tubes and petri dishes versus ones run in animal subjects, they realized they needed a way to get more reliable results. Running random experiments in animal models while they tried to figure it out would be inefficient.

They also realized that the way most experiments were run resulted in a loss of information. The norm had been to aggregate data and draw conclusions at a population level, but since a population is made up of individuals who each have their own genetic variations, not everyone reacts to a virus in the same way. There was a lot more information buried in the population-level experiments — like how the virus was spreading.

His lab wasn't the only group to notice this problem. In 2014, researchers at University of California used polio to study the viral replication and subsequent infection in single, isolated cells. Cameron was a contributing author of a 2017 study that went further by introducing only one infected cell to one uninfected cell, allowing them to focus in on how the virus spreads on a cell-to-cell level. Now, his lab is continuing that work to discover new approaches for more accurate antiviral drugs.

"Every cell is not expressing exactly the same repertoire of genes or at the same level," Cameron said. "Our realization here was that the population experiment was not really giving us the true accurate information on when viral infections start, and even if you have virus in cells, it's not synchronous in every cell. So, we're losing information that way."

To better mimic the outcomes of viral infection in a mammalian host, the team realized they could use individual cells. Their approach would have a single virus infecting a single cell, allowing them to track how the virus enters, infects and leaves a cell.

Once the cell is isolated, they use fluorescent markers to track their infection under a special microscope. The baseline color is red. When a green-colored cell infected with a virus — usually polio — is introduced, Cameron and his team can track how the infection spreads from one cell to the other by tracking the fluorescent, emerald dot. The microscope takes an image of the cells every 30 minutes for anywhere between 24 to 36 hours.

Some of the initial observations show that some cells have an innate immunity to the virus. In other instances, the virus makes the cell permeable, allowing it to leave one cell and infect another. Most interestingly, though, is a phenomenon where the virus spreads to another cell that doesn't become permeable at all. This last observation excites Cameron, showing there are still many more discoveries to be made about the way infections spread.

A PLAN FOR FUTURE PANDEMICS

Cameron believes gaining more knowledge about how viruses replicate and spread on a single-cell level will contribute to pandemic preparedness, helping scientists create antiviral therapies and vaccines without specific information on the infection. If they can make a drug inhibit an enzyme conserved across many virus families and essential for viral replication, then they might not need to have extensive knowledge on every new virus the world faces.

continued on next page

Thanks to a grant from the National Institutes of Health, Cameron and his lab are studying an enzyme unique to coronaviruses that proofreads the RNA genome as it's being replicated. Interfering with the proofreading process could make coronaviruses sensitive to drugs developed for RNA viruses that lack this enzyme. Antiviral therapeutics to treat coronaviruses may provide the most robust response to variants capable of evading vaccine-induced immunity.

On a more reflective note, Cameron said there's an interesting parallel between what he saw and experienced during the AIDS epidemic and now. He remembers volunteering during the epidemic in the 1980s and how seeing the deadly impacts of the disease helped him decide he wanted to be part of the solution.

"I think a lot of people are actually going to be motivated to go into virology because of all this happening with COVID-19," Cameron said.

ATTRACTING EXPERTISE: A WIN FOR CAROLINA, A WIN FOR RESEARCH

Written by Angela Harwood; Photos by Jeyhoun Allebaugh

BEFORE JOINING THE FACULTY at the UNC Eshelman School of Pharmacy, Owen Fenton studied under one of the world's leading mRNA delivery researchers: Robert Langer, cofounder of Moderna. Getting Fenton from Massachusetts to Chapel Hill was a big win for the University. Fenton sees coming to Carolina as a win for his research interests, as well.

"I view the future of medicine as being very interdisciplinary, which was one of the biggest attractions in coming to UNC, where we benefit from being able to partner with amazing faculty and collaborate through groups like the Lineberger Comprehensive Cancer Center," Fenton shared.

The University's more than 50 core facilities — which offer the latest technologies and expert staff — were also a draw.

"This idea of discovery enablement is so important to next-generation therapy development, which is what our team focuses on here at UNC. If you're part of a group working to develop new types of medicine, there is no better place to be than within the UNC Eshelman School of Pharmacy."

Another important tool in recruiting Fenton to the school was Dean Angela Kashuba's ability to access flexible, unrestricted funds from an endowment to help cover startup costs for the Fenton Lab. The endowment is supported by philanthropic contributions, including a $2 million gift from UNC pharmacy alum Donna Gutterman '79, '98 (MBA).

"Due to the generosity of our donors, we have the ability to quickly access funds and capitalize on big opportunities, like supporting Owen," said Kashuba. "It's humbling to see our alums and partners eager to help us in this way. I'm so grateful to be able to invest their gifts in enriching our community and creating opportunities for significant impact."

"That flexible support was critical to rapidly build up our team," said Fenton. "To me, the most important foundation for success is a team-based environment that promotes creativity."

The Fenton Lab works broadly within the field of genetic medicine and its applications in treating diseases of the brain. Fenton's research focuses on the delivery of mRNA therapeutics, which leverage the body's own genetic code as medicine to treat neurodegenerative diseases such as Alzheimer's and Huntington's, as well as cancers including glioblastomas.

"Treating these diseases is complex and requires an interdisciplinary approach that brings together experts from diverse backgrounds," Fenton said. "Because of the critical support we received from Dean Kashuba and the University, we have already been able to bring together experts from key backgrounds. Working with this diverse team of exceptional researchers has really helped accelerate our work."

Since beginning his tenure track, Fenton has received more than $1.2 million in grants, including a grant from the National Institutes of Health for a project focused on developing new medicines that are safer and more effective than current therapies for treating skin cancer.

"Having these awards is rapidly enabling us to develop next-generation mRNA therapies and technologies," said Fenton. We are very excited to perform this research here at Carolina and look forward to advancing our research from the bench top to the clinic."

INVESTMENT PERFORMANCE

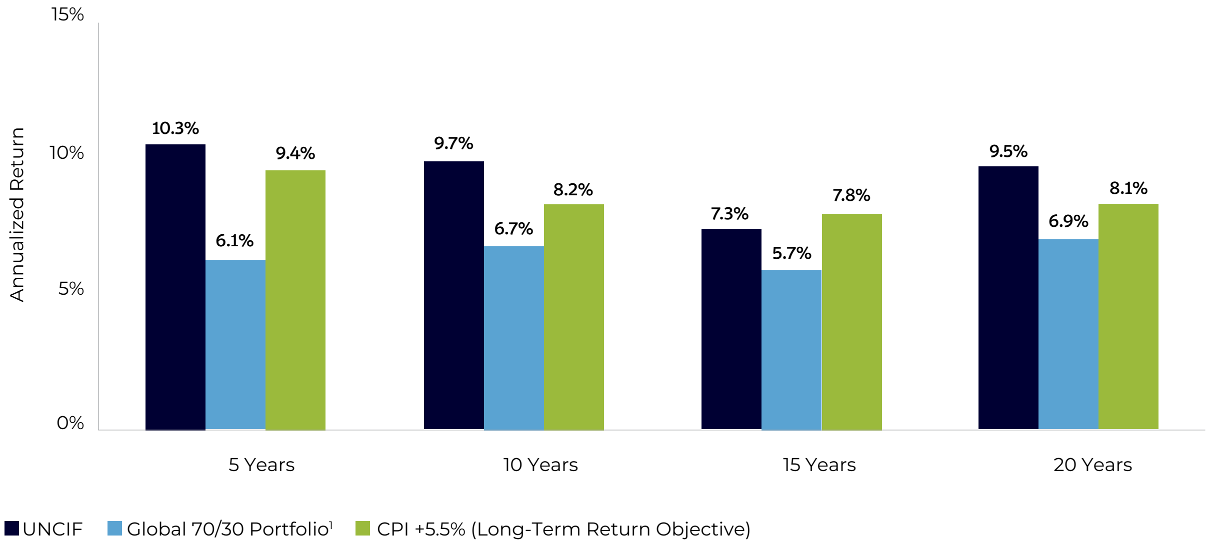
The Fund is constructed to achieve its primary investment objective over a long-term time horizon. By investing for the long term, the Fund can capture extended trends in markets and the illiquidity premiums associated with investments in private securities. Investing for the long term also allows the Fund to maintain discipline in the face of short-term market disruptions. Measured tactical tilts in asset allocation also allow short-term market dislocations to be opportunistically captured. While shorter-term performance is actively monitored, our primary focus remains on meeting the Fund's long-term return objective.

In addition to maintaining a long-term investment horizon, the Fund is constructed to protect capital in down markets while participating in market rallies. This is achieved through the extensive degree of diversification created by investing across SIPP's seven primary asset classes and through diversification among third-party investment managers within each of the asset classes. Figure 10 on page 22 displays the Fund's total returns during those periods since 2007 when the S&P 500 Index dropped more than -10 percent. This figure illustrates that during periods of market stress, like that seen in the first nine months of calendar year 2022 during which the S&P 500 Index dropped -23.9 percent, the Fund provided downside protection, sustaining just a fraction of the market's losses.

The Fund's long-term return objective is to generate a real (inflation adjusted) return in excess of +5.5 percent, thus maintaining the after-spending purchasing power of the underlying funds. By investing for the long term, tactically shifting between asset classes, and selecting top performing investment managers, the Fund has achieved this objective over both the medium and long term. Figure 8 on page 20 highlights the long-term benefits of investing in a

FIGURE 8 | **RELATIVE LONG-TERM PERFORMANCE** · PERFORMANCE FOR PERIODS ENDING JUNE 30, 2023

A traditional equity/bond portfolio fails to achieve the Fund's primary objective highlighting the need for diversification and private investments.



Note: Annualized performance for periods ending June 30, 2023

1. Global 70/30 Portfolio - 70% MSCI All Country World Index (ACWI), 30% Bloomberg U.S. Aggregate Bond Index

diversified mix of asset classes, as a more "traditional", equity market focused Global 70/30 Portfolio comprised of 70 percent equities and 30 percent bonds falls significantly short of meeting the Fund's long-term return target across all time periods.

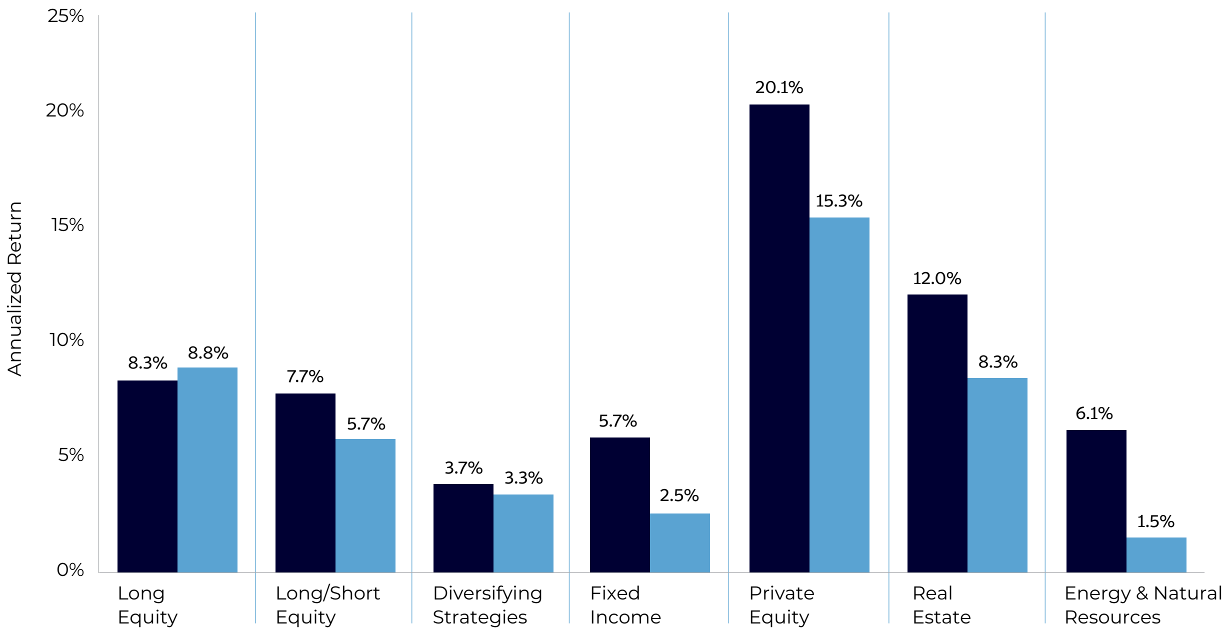
Despite the impact from the coronavirus pandemic in early 2020 and the sharp drawdown in equity markets in 2022, the Fund's ten-year annualized return to June 30, 2023 of +9.7 percent easily exceeds the +8.2 percent return of its long-term objective. Additionally, the Fund's return over the ten-year period easily exceeds both the SIPP benchmark and the Global 70/30 Portfolio which returned +7.9 percent and +6.7 percent, respectively. Over the last ten years, each of the Fund's asset classes has positively contributed to performance. Each asset class has also exceeded its benchmark apart from Long Equity which is just shy of its benchmark returning +8.3% versus MSCI ACWI's +8.8% ten-year annualized return. With consistently strong performance from both the Buyout and Venture Capital portfolios, the Fund's Private Equity asset class has generated a ten-year annualized return of +20.1 percent, leading the Fund's strong aggregate performance. Private Equity has also added significant value over public equity markets, more than doubling the +8.8 percent annualized return of the broader global equity market (MSCI ACWI) over the last ten years and highlighting the integral role private investments play in helping the Fund achieve its long-term investment objectives.

Over medium-term time horizons (three- and five-year), the Fund also easily exceeds its SIPP benchmark and the Global 70/30 Portfolio. Across both the medium and long term, the Fund has performed exceptionally well compared to its peers with its three-, five-, ten-, and twenty-year returns each ranking in the top quartile of the Cambridge Associates' College and University universe of endowment funds.

FIGURE 9

ASSET CLASS RETURNS VS SIPP BENCHMARKS · 10 YEARS ENDED JUNE 30, 2023

Over the long term, each of the Fund's seven major asset classes has produced a positive return with equities (both public and private) driving performance.



Note: Annualized performance for ten-year period ending June 30, 2023

FIGURE 10

UNC INVESTMENT FUND: DRAWDOWN PROTECTION · S&P 500 INDEX

The Fund provides significant drawdown protection during periods of market stress. The most important and difficult challenge remains striking the proper portfolio balance between upside participation and downside protection.

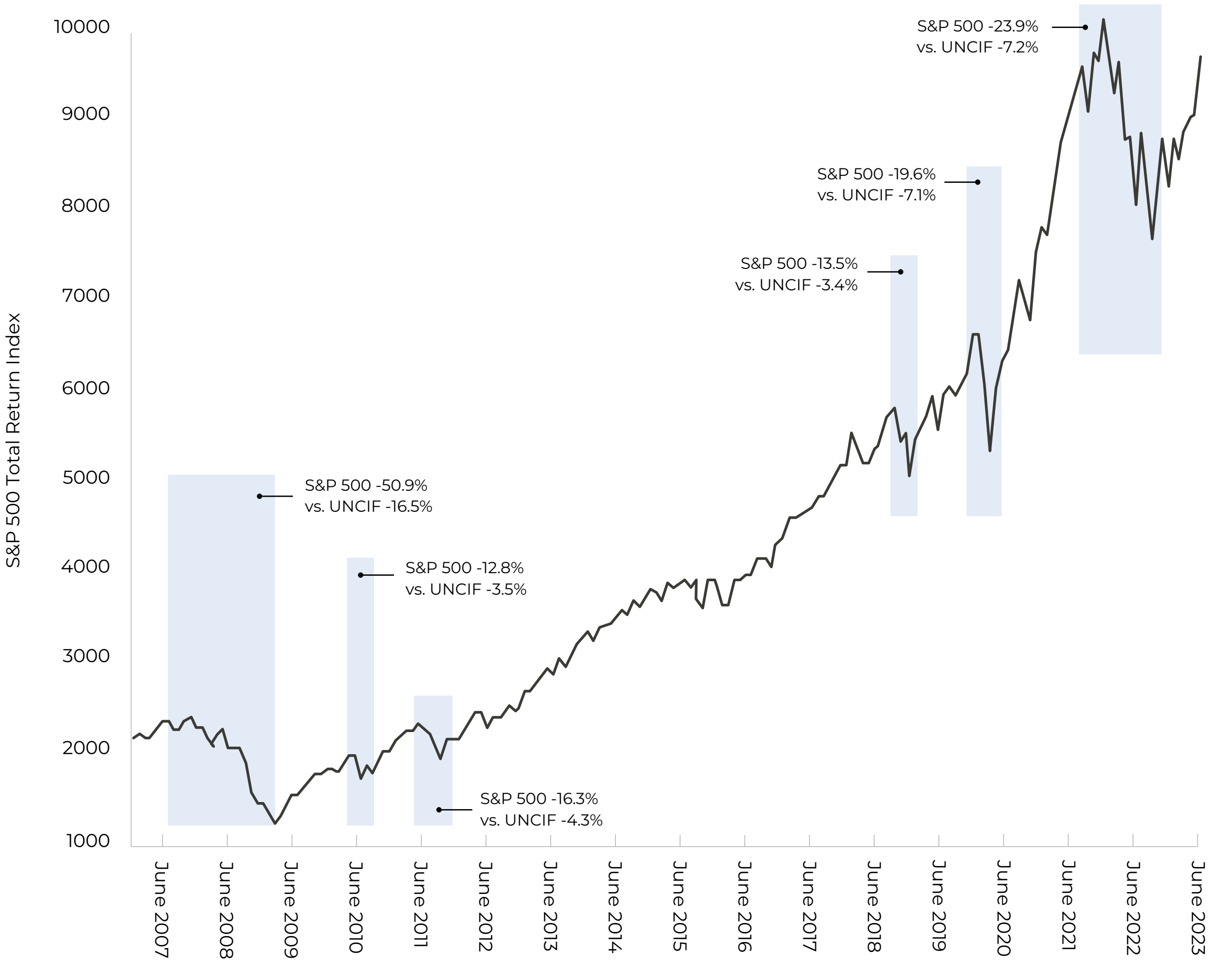


FIGURE 11

INVESTMENT PERFORMANCE · FISCAL YEAR

	2023	2022	2021	2020	2019
UNCIF Return (Net)	-0.4%	4.4%	42.3%	2.3%	7.7%
SIPP Benchmark Return	*3.6%*	*0.1%*	*32.7%*	*2.1%*	*6.7%*
Peer Universe Median[1]	6.7%	-6.6%	36.7%	2.1%	5.6%

1. Cambridge Associates universe of college and university endowments

FIGURE 12

UNC INVESTMENT FUND: FEE TABLE

	% of Investment Balance
Investment Management Fee	
First $50 million of investment balance	0.35%
Remainder of investment balance over $50 million	0.20%
General and Administrative [1]	0.02%

1. Indicative, subject to variation

UNC MANAGEMENT COMPANY, INC.

The Management Company has been appointed by the Board to provide, under its supervision, investment and administrative services to the Fund. These include identifying, analyzing, and selecting external investment managers and tactical opportunities, monitoring the Fund's performance, and serving as a liaison between the Fund and its Members through regular communication and performance reporting.

The Management Company was formed under Section 501(c)(3) of the Internal Revenue Code as a nonprofit organization. With 38 employees, the Management Company is divided across four functional areas: Investment Management, Investment Strategy & Risk Management, Operations & Finance, and Investor Relations & Communications.

Photos from left to right

Row 1: Keegan Alston, Nick Bailey, Kimberly Baker, Anita Barber
Row 2: Chris Bartholomew, Elaine Brim, Timothy Burch, Janine Vanzetta Burke
Row 3: Jeffrey Chamberlain, Kimberly Woodlief Eddins, Angela Elam, Deana Griffin
Row 4: Rodgers Harshbarger, Ed Hetherington, Margaret Holder, Elaine Jeffries
Row 5: Jonathon King, Matt Lesesky, Juddy Mair, Chris Mattke
Row 6: Meredith Mayer-Salman, Jay Mehalek, Virginia Morse, Angus O'Rourke
Row 7: Sarah Rivera, Chris Rudolph, Joshua Shapiro, Ellie Sullivan
Row 8: Benjamin Wendt, Bobby Williams

Not pictured: Alexander Cook, Sunmeet Gulati, Trena Martelon, Angela Moss, Celeste Reed, Clay Robinson, Susan Smith, Gina St. Phillips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FC SERIES
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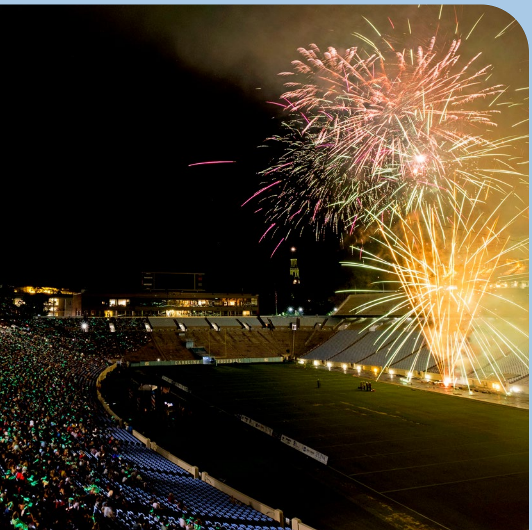
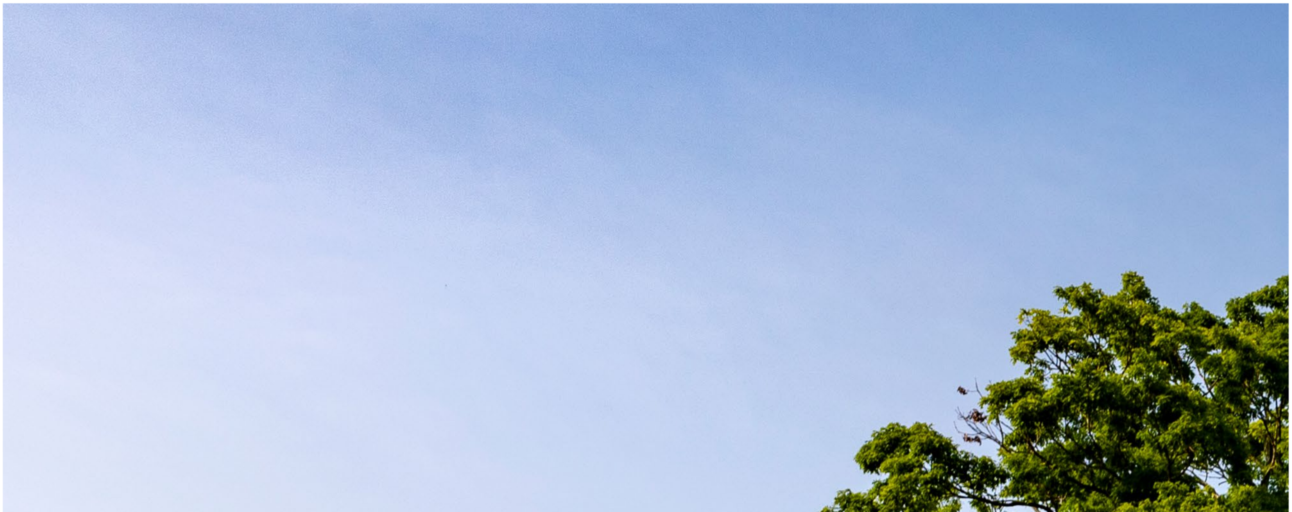
17:04
WREXHAM
CHELSEA

CHAPEL HILL INVESTMENT FUND PARTICIPANTS

1. CFK Africa
2. Dental Foundation of North Carolina, Inc.
3. Educational Foundation, Inc.
4. Kenan-Flagler Business School Foundation
5. Morehead-Cain Foundation
6. Morehead-Cain Scholarship Fund
7. North Carolina Botanical Garden Foundation, Inc.
8. North Caroliniana Society, Inc.
9. Order of the Golden Fleece Foundation
10. Order of the Grail-Valkyries Foundation, Inc.
11. UNC Eshelman School of Pharmacy Foundation
12. UNC General Alumni Association
13. UNC Gillings School of Global Public Health Foundation, Inc.
14. UNC Health Foundation
15. UNC Hussman School of Journalism and Media Foundation, Inc.
16. UNC Law Foundation, Inc.
17. UNC School of Dentistry Alumni Association
18. UNC School of Education
19. UNC School of Government Foundation, Inc.
20. UNC School of Nursing
21. UNC School of Social Work
22. University of North Carolina at Chapel Hill Arts and Sciences Foundation, Inc.
23. University of North Carolina at Chapel Hill Endowment Fund
24. University of North Carolina at Chapel Hill Foundation, Inc.
25. University of North Carolina at Chapel Hill Foundation, Inc. Gift Annuity Program
26. University of North Carolina at Chapel Hill Temporary Pool
27. WUNC – North Carolina Public Radio


2023





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