Climate Risks and Resilience at Dickinson College: Strategies for College Finances

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TABLE OF CONTENTS

1. Introduction

As climate change becomes more volatile in magnitude, frequency, and intensity, it will have adverse effects on the economy, health and wellbeing of people, the environment, infrastructure, and more. It will incur significant costs to individuals, households, businesses, and governments and thus it is of utmost importance to build financial resilience. The following report will investigate climate induced risks to Dickinson's finances, identify strategies for building resilience, and conduct a thorough analysis of selected strategies to support recommendations for building financial resilience, and thus climate resilience, at Dickinson College.

2. Climate risks

Climate change and climate hazards can have direct financial consequences such as physical damage to infrastructure, increased maintenance, increased income variability, and decreased agricultural yields (Larsen et al., 2014; Bloomberg et al., 2014). It can also have indirect consequences, including increased insurance risk premiums, increased uncertainty, and decreased student enrollment all of which can cause significant financial risk to a college institution (Larsen et al., 2014; Bloomberg et al., 2014).

Climate change can have micro- and macroeconomic effects on the overall economy which can further exacerbate a college institution's financial risk (Brunetti et al., 2021). Climate hazards such as storms, floods, wildfires, hurricanes, etc. can result in sudden change in

economic conditions and the value of real or financial assets based on perception of risk and expectations (Brunetti et al., 2021). This can impact the cost or availability of credit (such as student, mortgage, and bank loans, etc.), the timing and stability of cash flows, valuation of assets, etc. (Brunetti et al., 2021).

Although there is a plethora of literature reviewing the causes, trends, and general consequences of climate change, it is only in recent years that the implications of climate change on economic and financial systems have been studied (Panfil & Victor, 2022). The particularity of climate change consequences based on geography, region, population demographic, and distinct environmental challenges poses difficulty in analyzing its financial implications (EPA, 2016). As a result, climate hazards can pose significant financial risks to individuals and households which will impact an institution's ability to generate revenue while also incurring additional operating costs. This literature review examines climate related risks to college finances.

2.1. Infrastructure

Climate change and related hazards can have direct financial risks to infrastructure through increased infrastructure damages and increased insurance costs. According to the FEMA National Risk Index, the building Expected Annual Loss (EAL) in Cumberland County, PA is estimated to be around $9 million (Federal Emergency Management Agency, n.d.). The building EAL represents the annual average economic loss of value of buildings resulting from natural hazards. The same index estimated building EAL rate to be $1 per $6,000 of building value. This

means that in the case of a natural disaster, a building valued at $10 million is expected to incur an average economic loss of $1,666 annually. In comparison, Hillsborough County – a county in Florida that was devastated by Hurricane Milton and Helene – has a building EAL of $427 million and a building EAL rate of $1 per $476.5 of building value (Federal Emergency Management Agency, n.d.). This means that in the case of a natural disaster, a building valued at $10 million is expected to incur an average economic loss of $21,000 annually. Studies predict that climate related infrastructure damage and associated costs will continue to rise in the future (Pudyastuti & Nugraha, 2018; McKinsey Global Institute, 2020). Though Cumberland County is a moderately low risk area (Federal Emergency Management Agency, n.d.), increased frequency and intensity of climate hazards is likely to increase the average economic loss of value of buildings resulting from natural hazards.

The purchase of property insurance is a common way to protect against any unexpected infrastructure damage costs. In recent years, average property insurance premiums have increased significantly throughout the US (Keys & Mulder, 2024). According to the National Bureau of Economic Research, between 2020 and 2023, the average home insurance costs rose from $1,902 to $2,530 — an increase of 33%, or 13% when adjusted for inflation (Keys & Mulder, 2024). In Pennsylvania, homeowners' property insurance premiums increased by 16.8% between 2018 to 2023 (Bennett, 2024). This increase in premiums were much higher in areas with high disaster risks. For instance, in Florida, homeowners' insurance premiums in 2023 were 90% higher than in 2018, while in Texas, premiums increased by 50% over the same time period (Keys & Mulder, 2024). While the provided statistics above reflect trends in household property insurance, it can be assumed that similar patterns would be observed in institutional property

insurance. If insurance premium in Pennsylvania continue to rise to levels observed in Florida, Dickinson could face significant financial risk, especially if the college needs to allocate more funds toward insurance costs or becomes unable to afford the increased premium.

2.2. Workers Compensation

Climate change can have adverse effects on mental health of people including anxiety disorders, depression, dementia, increased aggression, etc. and effects on physical health such as exhaustion, cardiovascular illness, renal illness, etc. (Padhy et al., 2015). The decline of physical and mental health can cause direct financial risk through greater work-related injuries and thus, greater worker insurance coverages. In the Fifth National Climate Assessment report (Hsiang et al., 2023), it was found that when temperatures are greater than 85°F, heat related work injuries increase by 5-15% per hot day.

Insurance coverages of work injuries can directly impact the financial stability of an institution and increased instances of work injuries are likely to increase financial risk. Similar to the increased financial risk observed in property insurance, this will result in indirect financial costs through increased insurance premiums. The decline of physical and mental health can also have compounding effects on the broader economy and subsequent effects on households and institutions. As of 2017, heat exposed work contributed to about 50% of GDP in America with about 75% of the labor force involved in heat-exposed work (McKinsey Global Institute, 2020).

2.3. Student Enrollment

Climate change and hazards can directly affect student enrollment through loss of income, potential students' perception of an institution's commitment to sustainability, and perceived security of campus (Hsiang et al., 2023; McKinsey Global Institute, 2020). Student enrollment poses significant financial risk to an institution because many colleges are dependent on tuition fees for revenue sources. In 2023, tuition fees made up almost 70% of Dickinson's total revenue (MHM, 2023). When an institution is dependent on tuition fees for revenue generation, it makes the intuition more vulnerable to unstable cash flows, decreased enrollment, and price competition (Whitford, 2023). Private non-profit colleges with a tuition-dependency rate greater than 80% are especially vulnerable to financial risk (Townsley, 2023).

Student enrollment is likely to be impacted by the loss of income because of climate change and hazards. Irrespective of location, demographic, and exposure, climate change is projected to reduce individual and household future income gains compared to what would have been earned in the absence of it (Hsiang et al., 2023; McKinsey Global Institute, 2020). It is estimated that a temperature increases of 5.4°F will reduce global GDP per capita by 19.6% (Hsiang et al., 2023). Savings is also further expected to decrease as households have to spend more on utility bills, medical costs, increased food prices, insurance premiums, and more frequent repairs on assets damaged by climate hazards (Bloomberg et al., 2014).

Revenue generated through student enrollment will not only be affected by direct climate impacts but through indirect consequences such as a student's perceived attitude towards an

institution's commitment to sustainability. In recent years, more and more higher-level academic institutions around the US are seeing a call to divest from fossil fuel investments (Gillis, 2012; Ezarik, 2023). As the consequences of climate change become more significant, student movement towards a sustainable path is likely to be expected. If a student perceives that an institution is not doing enough to address climate change, it can negatively impact enrollment.

2.4. Endowment

Climate change can cause adverse financial risks to an institution by impacting its endowment fund through physical risks, such as damage on asset, and transitional risks, such as policy implementation that affect economic activity (Rudebusch, 2021). Risk to an institution's endowment fund causes significant financial risk as it is considered an emergency fund that can be used to provide financial stability, enhance student support, carry out charitable missions and more (American Council on Education, 2024).

Direct financial costs to endowment funds caused by climate hazards include increased cost of insurance for investments, devaluation/loss of assets, and the delay of investment yields (Hsiang et al., 2023). Climate hazards are likely to increase market volatility which can reduce and delay investment yields of different assets available for trading. Institutions that depend on endowment yields as additional sources of revenue will face greater financial risk as market volatility increases due to climate change (Phung, 2024). Endowment funds are also susceptible to indirect, transitional risks such as impact to asset value due to changes in policies. For example, anticipated government policies aimed to reduce carbon emissions can impact stock

prices of emissions-intensive companies (Hsiang et al., 2023). Similarly, long-term bonds issued by municipalities that are exposed to future climate risks can have increased default risks.

In 2024, Dickinson's total endowment (including pledges and bequests) was valued at $675 million (Dickinson College, 2024). The college has adopted investment policies with expected returns that exceed the endowment spending rate plus inflation while taking on a moderate level of risk (Dickinson College, n.d.-a). Furthermore, to achieve Dickinson's long-term rate of return objectives, investment returns are acquired through both capital appreciation (realized and unrealized) and current yield (interest and dividends) (Dickinson College, n.d.-a). Dickinson's endowment investment strategy has proven to be successful, evidenced by the increase of endowment from $486 million to $675 million, an increase of almost 39%, between FY 2021 to FY 2024 (Dickinson College, 2024).

3. Example of Strategies

In recent years, volatility in revenue generation and enrollment as a result of factors such as interest rates, increased labor costs, demographic shifts, decreased student demand, and more have created a challenging financial environment and led to the closure of colleges and universities all over the US (Fichman, 2024; Kraftt et al., 2023). These factors will be further exacerbated by climate change and climate hazards.

To build financial resilience Dickinson can adopt various strategies including increasing student revenue cash inflow, building the general reserve fund, reassessing the primary reserve ratio, diversifying Dickinson's revenue stream, assessing current financial framework and

optimizing operations, and creating a contingency plan. Specific to climate related financial resilience building, Dickinson can adopt strategies such as creating or redefining existing sustainability consortiums to address and discuss various strategies implemented by colleges around Pennsylvania to build financial resilience as well as keep up to date with insurance market trends to prepare for any unexpected shocks from the market.

3.1 Increase Reserve Funds

To build financial resilience toward climate change and climate hazards, it is absolutely necessary for Dickinson to increase its reserve funds — money set aside to meet unexpected costs or financial obligations that may arise in the future. Reserve funds are important because they act as safety nets in cases where emergencies arise. For example, when the roof of Spradley Young was blown off by extreme high winds in Spring 2023, the unexpected reparation costs were covered through the reserve funds (S. Witte, personal communication, Nov 2024).

Dickinson has three types of reserve funds: a general operating reserve fund, a healthcare reserve fund, and a study abroad reserve fund. Of these three, the general operating reserve fund is dedicated for any general unexpected costs such as urgent infrastructural/maintenance projects or covering operational costs during a global pandemic. The study abroad reserve fund is used to cover any unexpected costs associated with study abroad program and activities while the healthcare reserve fund is used to cover any unexpected increases in insurance premiums (S. Witte, personal communication, Nov 2024). The current level of the general reserve fund sits at $3.1 million, a number that is on the lower side of the $10 million reserve target. At its peak (FY

2014-2015), the general reserve fund was around $8.5 million which was achieved through low discount rates and budget surplus from robust tuition revenues (S. Witte, personal communication, Nov 2024). Between 2014 to 2019, the discount rate - the percentage of financial aid it provides to students compared to the total cost of tuition and fees - ranged between 30% to 40% and annual net budget surplus ranged from 1% to 2% (S. Witte, personal communication, Nov 2024).

During the COVID-19 pandemic, much of the general operating reserve fund was depleted to cover Dickinson's operating expenses. In the aftermath of COVID-19, Dickinson has struggled to increase the general reserve fund as the demand for financial aid has risen, discount rate has increased, and the budget surplus has fallen to breakeven (S. Witte, personal communication, Nov 2024). Between 2020 to 2024, Dickinson's discount rate has increased from 53% to 62% (Dickinson College, 2024). However, the percentage of students with financial need has decreased from 68% to 60%. Furthermore, between 2020 to 2024, the average institutional grant provided per student has increased by 17.5% (Dickinson College, 2024) while the comprehensive tuition fee per student has only increased by 13.5% (Dickinson College, 2024). Every year, Dickinson is spending more and more on financial aid which is not being matched by the increase in tuition fee. This could explain Dickinson's struggle to increase its general operating reserve and the fall of budget surplus to breakeven.

It is essential Dickinson increase its general operating reserve which can be done through the establishment of a reserve policy that defines how the college will increase its general operating reserve, how the reserve will be used, when the reserve can be used, and who can

access the reserve. Doing so would allow Dickinson to exist and operate in a strategic and proactive manner rather than a fear-based, resource scarce mindset, especially in the case of a climate emergency.

There are two approaches Dickinson can take to increase general operating reserves: increasing income and/or managing costs effectively. According to a report by The council of Independent Colleges, colleges around the US took steps to increase income by increasing the students enrolled, diversifying revenue streams, creating new undergraduate programs, expanding athletics programs, increasing international-student recruitment, etc. (*The Financial Resilience of Independent Colleges and Universities*, 2017, Kraftt et al., 2023). Similarly, another report for The Council of Independent Colleges found that 65% of college presidents approached achieving financial stability by containing and/or reducing costs on their campuses. Some of the steps that were taken included targeting students requiring less financial aid, leaving faculty positions unfilled, increasing faculty teaching load, increasing class sizes, restructuring academic programs, sharing programs with other organizations, etc. (Hearn & Warshaw, 2015).

There are many challenges with the approaches by which this strategy can be implemented. The main challenge will be to develop and implement steps to increase the general operating reserve while preserving Dickinson College's academic mission and the characteristics that attract students to Dickinson. For example, while reducing the amount of financial aid provided to potential students may decrease Dickinson's discount rate and contribute to the increase of the general operating reserve, this step might make Dickinson less attractive to potential students. Alternatively, targeting students who are willing to pay higher tuition would

place Dickinson in a new market of competition with bigger and more renowned colleges that have a higher financial resilience to absorb unexpected costs (Kraftt et al., 2023).

3.2. Reassessment of Primary Reserve Ratio

Dickinson must reassess its primary reserve ratio target – the amount of assets an institution can quickly spend to cover its expenses compared to its total expenses. The primary reserve ratio shows how long an institution could operate using its current reserves without generating more net assets through operations (*Financial Ratios and Trends*, 2017). It is a key indicator of an institution's financial strength and flexibility. Currently the general operating reserve target is $10 million which is about 1 month worth of Dickinson's operational costs (S. Witte, personal communication, Nov 2024). While the primary reserve ratio target has not been explicitly outlined in any of Dickinson's policies, the $10 million reserve target calculates to about 8% of Dickinson's annual operating expenses, a value that is significantly lower than the benchmark of most colleges in the US ("*Establishing a Financial Reserves Policy"*, 2014.; *Financial Ratios and Trends*, 2017.; *Primary Reserve Ratio - University of Maine System*, n.d.; *Reserve and Financial Metric Dashboard and UNP Glossary Review*, 2020).

The average benchmark for the primary reserve ratio is around 40% of an institution's annual operating budget, roughly five months of cash on hand to pay for operating expenses in case any unexpected events occur (Bowles, 2022). According to California State Polytechnic University in Humboldt, the university has a minimum of three months (25%) and a maximum of six months (50%) of Base Budget Expenditures in its reserves (University Operating Fund

Reserve Policy | Cal Poly Humboldt Policies, 2017). Dickinson must assess whether the reserve target of $10 million (target ratio of 8%) is enough to cover any unexpected costs and whether this lower target ratio puts the college at increased financial risk compared to other colleges, especially in the case of a climate emergency or any major event that requires significant capital.

The reassessment of the target reserve can either be done in house or by hiring a third-party firm. It would require setting up different climate hazard scenarios, ranging from best case to worst case scenario. An example of a best-case scenario could be that incessant rainfall has flooded a few dorm buildings and students in the basement need to be temporarily moved. An example of worst case-scenario could be that heavy rainfall floods damage major buildings such as the hub, 50% of residential buildings, and the college must shut down for 2 weeks. Ideating various scenarios will provide a rough range of reserves Dickinson would require to operate in case of a climate emergency. Climate emergency scenarios should not be the only factor in determining the reserve ratio, however, it is a factor that should be given more emphasis when estimating the ideal range of reserves.

3.3. Diversify Revenue Streams

Diversifying Dickinson's revenue stream will build financial resilience by reducing Dickinson's dependence on tuition fees and endowment to operate as an institution, which make up 70% and 15% of the college's revenue respectively (S. Witte, personal communication, Nov 2024). Though Dickinson has taken steps to increase revenue during the academic year as well as when classes are not in session, the revenue generated is not enough to increase reserve funds.

Since the COVID-19 pandemic, Dickinson has struggled to generate excess revenue resulting in the net budget making breakeven in recent years. This can be attributed to decreased enrollment from high school graduates, especially from the North-East region of US which is a primary recruiting area for Dickinson College (S. Witte, personal communication, Nov 2024). As a result, Dickinson is in greater competition with other liberal art colleges. To remain competitive, Dickinson has had to increase the financial aid provided to students which has not been matched by the increase in tuition fees. Between 2020 to 2024, the average institutional grant provided per student has increased by 17.5% (Dickinson College, n.d.-b) while the comprehensive tuition fee per student has only increased by 13.5% (Dickinson College, n.d.-c).

Dickinson must increase overall student enrollment and explore additional revenue streams to enhance the revenue generated from student enrollment while simultaneously reducing future dependency on enrollment and tuition fees as primary revenue sources. An example of a college that has leveraged strategic partnerships to grow demand for enrollment is Johns Hopkins University. The university has successfully implemented a focused strategy to grow demand by leveraging its scale in health research. By expanding its health-research faculty, creating interdisciplinary research programs, and investing in research infrastructure, the university has witnessed a 71% growth in sponsored research between 2015 and 2020 which increased enrollment demands. (Kraftt et al., 2023). It should be noted that this strategy was successful because Johns Hopkins already had a well-established reputation as a leading institution in medical research.

Similarly, Dickinson College has the potential to capitalize on its unique strengths to attract more students and enhance its academic standing. In 2025, Dickinson was ranked 10th on Princeton Review's "Top 50 Green Colleges" in the U.S. (*Top 50 Green Colleges*, 2025), highlighting its strong foundation in sustainability and environmental initiatives. While Dickinson's foundation in sustainability may not be comparable to Johns Hopkins' influence in the medical sector, its strategic positioning in the growing field of sustainability presents a valuable opportunity. By taking steps such as expanding sustainability-focused programs and academic opportunities and collaborating with relevant organizations, Dickinson can enhance its reputation in the sustainability sector and increase demand for enrollment, even if on a more modest scale.

Dickinson can further diversify its revenue streams through different action pathways such as focusing on academic-based revenue, partnership-based revenue, and/or facility-based revenue. Potential academic based revenue opportunities can include offering accelerated three-year undergrad programs, online certificates and programs, and specialty training/workshop programs that play to Dickinson's existing strengths (*Best Practices - Diversifying and Generating Revenue*, 2023). For example, Babson College established the Babson Academy for Entrepreneurship Education which provides online trainings, workshops, coaching, and faculty development opportunities worldwide for entrepreneurship educators (The Babson Academy for Entrepreneurship Education, n.d.). Potential partnership-based revenue opportunities can include the sharing of administrative tasks with other higher-ed institutions.

Lastly, potential facility-based revenue opportunities include the innovative use of campus facilities such as renting out spaces to gain extra income from underutilized space on campus. Dickinson already does this during the summer by utilizing dorm rooms for the Central Pennsylvania Youth Ballet Program, however, further utilization of spaces around campus should be explored. For instance, the Dickinson College Farm's anerobic biodigester is expected to generate an income of $50,000 annually ("Biogas Is Live! Recognition of Our Grant Supporters,", 2024). This income is most likely generated by selling electricity produced back onto the grid. It is estimated that the biodigester will produce about 200,000 – 300,000 kWh annually. Considering the cost of energy is $0.16/kWh in Carlisle, Dickinson can expect to generate about $32,000 to $48,000 annually.

A corresponding market Dickinson can tap into through the biodigester is the carbon credit market – a financial system where entities can buy and sell "carbon credits," permits that allow the holder to emit a specified amount of greenhouse gases (Daugherty, 2024). In 2024, the average price of a carbon credit was around $4.8 per ton ("Carbon Credits in 2024,", 2025), however, the carbon credit market can become a high value market if stringent policies on emissions are enforced. An analysis by Bloomberg found that in a voluntary market scenario, carbon emissions could rise to $14/ton by 2050. The same analysis found that in a market where stringent policies on carbon emissions are implemented and the integrity of carbon credits can be verified, carbon credit prices could rise from $20/ton in 2030 to $238/ton in 2050 ("Carbon Credits Face Biggest Test Yet", 2024).

The diversification of revenue streams provides Dickinson as an institution, the faculty, and the students an opportunity to be creative, think outside the box, and to think big. However, in the same way this strategy will be challenging to implement and carries a lot of risk.

3.4 Keep up to Date with Industry Trends in the Insurance Market

Being up to date with the market trends can help Dickinson build financial resilience by anticipating and accounting for increased insurance premiums, sourcing alternate sources of insurance plans, and understanding the characteristics of government-based insurance coverage. In most cases, damage costs due to climate hazards such as storms have been covered by insurance companies (Pullanikkatil, 2024). While this provides a financial safety net, places like Florida are observing increased premiums and the pulling out of insurance companies from the market which has increased financial risk of households and businesses (Duvall, 2024). Thus, to build financial resilience Dickinson must keep up to date with industry trends in the US insurance market, especially in Pennsylvania.

This strategy can be implemented by Dickinson easily and can be done by the finance and administration department. In the case of any major climate hazard around the US, the finance and administration department should follow the process of insurance compensation for damage costs. Dickinson can also consider forming a consortium with other colleges and universities to purchase insurance jointly to get lower premiums and better coverage. This is a strategy Dickinson has already adopted for workers compensation and can be implemented for insurance on buildings and assets. This strategy can provide students and faculty, as well as the

administration staff the opportunity to learn more about the insurance market and be better informed.

3.5 Discussion of Building Climate and Financial Resilience with Other Colleges

The discussion of financial resilience against climate hazards can help Dickinson anticipate financial risks, identify patterns and trends caused by climate hazards, and implement strategies more efficiently and successfully. Dickinson is already a part of the Pennsylvania Environmental Resources Consortium (PERC, n.d.); discussions pertaining to financial resilience could be proposed as a topic of focus. Alternatively, an entirely new consortium that discusses and addresses climate induced financial challenges and strategies to mitigate them could be formed.

A Pennsylvania-based consortium may be more effective because colleges within the state are likely to face similar climate-related challenges and operate under the same state policies. This consortium could examine the impact of climate change on key areas such as student enrollment, operating budgets, capital/infrastructure budgets, insurance, and more. The discussion on student enrollment could explore how climate factors have influenced enrollment trends and affected students' ability to afford college. Conversations about operating and capital budgets could help identify patterns related to how climate change and associated hazards have increased or decreased expenses. Colleges could also share data on energy usage, experiences with extreme weather events, and the costs incurred from infrastructure damage. By identifying shared challenges and discussing observations made, colleges can collaboratively devise strategies that address climate-related issues affecting higher education institutions.

To illustrate the benefit of sharing the financial challenges experienced during a climate hazard, I will be providing a case study of Warren Wilson, a college affected by Hurricane Helene. I interviewed David Gleim, the Special Assistant to the President for Grants and Innovation at Warren Wilson. My conversation with Mr. Gleim provided useful insights to how Warren Wilson college navigated the destruction left behind by Hurricane Helene, how repair costs would be funded, and what resources the college would invest in if there were another climate hazard.

Warren Wilson Case Study

Warren Wilson is a small private liberal arts college in Asheville, North Carolina. In September 2024, Warren Wilson was one of the many colleges affected by Hurricane Helene, experiencing damage from catastrophic flooding and extreme winds. Although the total repair costs were estimated to be around $7 million in October, this estimation increased to $10 million in December and is still not the final value (Atkinson, 2025). It should be noted that this value does not include the funds expended during the preparation and immediate aftermath of the hurricane.

In preparation for the hurricane, Warren Wilson spent funds on essential resources, including food and water, gasoline, renting porta potties, and purchasing equipment like chainsaws for debris removal. In the aftermath of the Category 4 hurricane, Warren Wilson lost complete access to essential resources such as running water, energy, and communication

(internet and telephone). Students were advised to stay on campus for 2 weeks while the college worked to restore communication lines with county officials, evacuation officers, and parents. The college suffered major damages to campus infrastructure. Many buildings have water related problems such as leaks, mildew, and mold, as well as wind related problems like exterior damage and roof damage from fallen trees and extreme winds. Of the total estimated repair cost of $10 million, $7.2 million will be covered by the college's insurance (Atkinson, 2025). A portion of the $2 million relief fund raised by Warren Wilson will also be allocated for repairs (Atkinson, 2025).

Although Warren Wilson took steps to prepare for the hurricane, Mr. Gleim highlighted that the loss essential resources was one of the biggest challenges the college faced. If a similar situation were to occur in the future, Mr. Gleim emphasized the need to invest more funds into these critical resources. Priority should be given to purchasing additional generators, securing backup water systems, and establishing more stable communication systems with backups in case of damage or failure.

A consortium would provide the opportunity for colleges and Dickinson to implement strategies that may not have been thought of individually and to learn from each other's mistakes. From Warren Wilson's example, Dickinson can learn that during the preparation and immediate aftermath of a climate hazard, capital will need to be allocated toward essential resources. Dickinson can identify which resources are most critical, helping to avoid unnecessary expenditures. A challenge with this strategy may be the transparency with which colleges

participate within the consortium. The college education space is a very competitive market, and colleges may be reluctant to share their resilience strategies.

4. Methods for evaluating strategies

I engaged with a wide range of resources on climate resilience solutions and used a mixed-methods approach consisting of interviews, focus group discussions, and an extensive literature review to develop and evaluate strategies focusing on building Dickinson's financial resilience towards climate hazards. Although there is limited literature on how colleges can build financial resilience to climate hazards, the fundamental principles of financial resilience remain applicable. Thus, I explored the various strategies colleges and businesses have employed to become more financially resilient and have evaluated the benefits and challenges of financial resilience strategies from a climate resilience building lens.

To form a recommendation of resilience building strategies Dickinson should adopt, I developed a set of evaluation criteria that would provide a framework of analysis. The criteria I used are as follows:

Reduction of Risk: This criterion evaluates the reduction of climate induced financial risk by considering how Dickinson will be better positioned to withstand financial shocks or unforeseen events. It also considers how each strategy might help Dickinson continue operations during uncertainty as well as protect existing assets and investments. I selected this as my top criterion because to continue as a College institution, Dickinson will have to build financial resilience to

weather unexpected costs and shocks. For these reasons, I have assigned this criterion a weight of 35%.

Cost Effectiveness: This criterion evaluates the estimated investment required for Dickinson to successfully implement the strategy. As Dickinson operates within budgetary constraints, the College will constantly have to make decisions on alternative projects and opportunities for investment. By assessing cost-effectiveness, I aim to identify strategies that are financially feasible for Dickinson to implement immediately and financially plan for the strategies that may require larger investments. I selected this criterion because it ensures resources are allocated efficiently to achieve optimal outcomes and maximize benefits. I assigned this criterion a weight of 20%.

Financial Benefit: This criterion evaluates the potential future savings or earnings Dickinson can anticipate by implementing this strategy now. It can help to identify strategies that are not only financially viable but also contribute to long term financial sustainability. This will enable Dickinson to capitalize on opportunities for building resilience by accelerating decision-making and putting into action the steps to implement impactful strategies. I assigned this criterion a weight of 20%.

Ease of Implementation: Finally, I evaluated the ease of implementation of each solution based on how easily it could be implemented at Dickinson. As a college institution, Dickinson will constantly face competing investment opportunities and priorities. Evaluating the ease of implementation can help prioritize projects that are achievable with existing resources, while

also allowing the college to plan for more complex strategies in the future. I assigned this criterion a weight of 15%.

Realization Time: Lastly, I considered how quickly Dickinson can expect to see the benefits of each strategy after implementation. This criterion helped me identify the opportunity cost of each strategy and to assess short term vs long term needs. I assigned this criterion a weight of 10%.

5. Analysis of selected strategies

Based on the evaluation criteria, I carried out a multicriteria analysis to inform my recommendations. Each criterion was given a value from 1 to 5, with 1 being the worst and 5 being the best. The exception is realization time, where shortest realization time is assigned a value of 5 while a value of 1 is assigned to the longest realization time.I explored other criteria such as scalability, flexibility, and long term sustainability. However, I narrowed it down to the selected four criteria because scalability and flexibility was not relevant to the proposed strategies, and long-term sustainability is harder to predict unless a specific strategy/project is devised.

5.1 Increase Reserve Funds

Increasing reserve funds can significantly reduce financial risk depending on the course of action taken and the subsequent consequences of those actions. Increasing income and/or managing costs effectively is likely to increase the budget surplus of the institution, helping to

build reserve fund and reducing financial risk. However, actions such as reducing number of staff members to manage costs or providing less financial aid may have negative consequences such as reducing the quality of education provided or reducing number of students enrolled which could put the college in greater financial risk. I am assigning this strategy a value of 5 because regardless of the potential negative outcomes which may put the college in financial risk, in the long run, increasing reserve ratio is the best way to build financial resilience against climate change.

This strategy could require very low to very high investments depending on the sub-strategies implemented. For example, reducing the amount of financial aid provided or leaving faculty positions unfilled would require little to no investment, however, increasing the number of students enrolled at Dickinson would incur increased operational costs and infrastructural investments. For this reason, I assigned this strategy a value of 3 for cost effectiveness. If successful, this strategy would have great financial benefit to Dickinson and for this reason, I assigned a value of 5 to financial benefit. The ease of implementation of this strategy is very low to low. It would require a lot of planning and coordination between various departments and external parties as well as a well thought of plan of implementation. For this reason, I have assigned a value of 1 for implementation feasibility. The realization time of this strategy will range between very low to very high. For instance, while reassessing Dickinson's target student demographic can help Dickinson develop an action plan relatively quickly, increasing the number of students enrolled and the financial benefit that it generates will take longer time to realize. Thus, I give this strategy a value of 3 for realization time.

5.2. Reassessment of Primary Reserve Ratio

I perceive the reduction of risk for this strategy to be 5 because it provides Dickinson with a clear goal of how much reserve to hold and can facilitate the discussion of actionable steps to achieve this target goal. The cost efficiency of this strategy is relatively very low depending on whether Dickinson hires an external party to do the assessment or does an in-house estimation. For this reason, I gave this strategy a value of 4 for cost efficiency. The financial benefit of this strategy is very high as it will prepare Dickinson for any unexpected costs in the future. For this reason, I gave this strategy a value of 5 for financial benefit. The ease of implementation of this strategy is very high and thus, I gave this strategy a value of 5. The realization time of this strategy will be high to very high as the reassessment of target reserve ratio is the first step and further steps will need to be implemented to increase the General Operational Reserve. For this reason, I gave this strategy a value of 1 for realization time.

5.3. Diversify Revenue Streams

I assign this strategy a value of 5 for risk reduction as it could help Dickinson identify alternative revenue streams, increasing future revenue and enhancing financial stability. However, the high value for risk reduction is contingent on Dickinson taking concrete actions to develop the identified revenue streams. This strategy is cost effective as the assessment of potential revenue sources can be done in house, however, investment into developing the identified revenue sources can be costly. Thus, I have assigned this strategy a value of 3 for cost effectiveness. The identification and development of alternative revenue sources could yield

financial benefits ranging from very low to very high. If the return on investment does not match expectations, the financial benefit will be minimal, and vice versa. Thus, I have assigned a value of 3 for this strategy. The ease of implementation of this strategy is low to moderate as it would require a lot of planning and strategies implemented to diversify revenue streams is not guaranteed to increase revenue. Thus, I have assigned this strategy a value of 2 for implementation feasibility. Lastly, the realization time for this strategy would be very high as it would require first identifying potential revenue sources, planning how to implement it, and finally implementing it. Thus, I have assigned this strategy a value of 1 for realization time.

5.4 Keep up to Date with Industry Trends in the Insurance Market

The reduction of risk by this strategy can be moderate to high. If Dickinson observes the patterns in the insurance market of Pennsylvania, it strategically positions the college to take action to compensate for higher risk premiums or insurance companies leaving the market. However, I do not believe this strategy alone will help build financial resilience against climate hazards, which is why I give this strategy a value of 3. The strategy is relatively cost efficient as it can be done in house. Thus, I give this strategy a value of 5 for cost efficiency. The financial benefit of this strategy is very high as Dickinson can better prepare for increased costs in the future. Thus, I assign this strategy a value of 5 for financial benefit. The ease of implementation of this strategy is very high, and I assign it a value of 5. Lastly, the realization time of this strategy is very low. While keeping up with the trends in the insurance market is likely to benefit Dickinson, this will not come into play until Dickinson is affected by a climate hazard and must file for insurance coverage. Thus, I give this strategy a value of 1 for realization time.

5.5 Discussion of Building Climate and Financial Resilience with Other Colleges

The reduction of risk by this strategy can be low to high, however, as its outcome is not certain I will give this strategy a value of 3. I give this strategy this value because whether or not the strategy actually reduces risk or not, Dickinson will benefit from the knowledge shared within these discussions. This strategy is very cost effective. If hosted in participating colleges, costs incurred would be for travel and hosting. Thus, I assign this strategy a value of 5 for cost effectiveness. The financial benefit would be moderate to high, however, similar to the cost-effectiveness criterion, the outcome of this strategy is uncertain. Thus, I assign this strategy a value of 3 for financial benefit. The ease of implementing this strategy ranges from moderate to very high, so I assign this strategy a value of 3. Some obstacles may arise in getting colleges to disclose the steps they have taken to enhance financial resilience. Lastly, the realization time of this strategy would be high to very high because colleges would have to discuss different strategies implemented and then Dickinson would implement the feasible strategies. Thus, I assign this strategy a value of 2 for realization time.

5.6 Analysis

Before performing the multi criteria analysis, my initial hypothesis was that strategies with high-cost effectiveness greater ease of implementation would rank higher. The logic behind this was that such strategies more likely to implemented and, therefore, are preferred. However, assigning weights to the criteria proved helpful in prioritizing the factors that should be

considered when deciding which strategies to implement. By performing the multicriteria analysis, I was able to rank each strategy based on overall, cumulative score. In Figure 1, the results of the multicriteria matrix are provided.

Objective: Reduce risks of financial instability due to climate change and its knock over effects.								
Actions	Criteria Weight (%)	Reduction of Risk 35%	Cost Effectiveness 20%	Financial Benefit 20%	Ease of Implementation 15%	Realization Time 10%	**TOTAL SCORE** 100%	Rank
Increase Reserve Funds	Raw score	5	3	5	1	3		
	Weighted score	1.75	0.6	1	0.15	0.3	**3.8**	3
Reassessment of Primary Reserve Ratio	Raw score	5	4	5	5	1		
	Weighted score	1.75	0.8	1	0.75	0.1	**4.4**	1
Diversify Revenue Stream	Raw score	5	3	3	2	1		
	Weighted score	1.75	0.6	0.6	0.3	0.1	**3.35**	4
Keep up to Date with Industry Trends in the Insurance Market	Raw score	3	5	5	5	1		
	Weighted score	1.05	1	1	0.75	0.1	**3.9**	2
Discussion of Building Climate and Financial Resilience with Other Colleges	Raw score	3	5	3	3	2		
	Weighted score	1.05	1	0.6	0.45	0.2	**3.3**	5

Fig 1.: Multicriteria matrix developed for each strategy

As per the matrix, the strategy that ranked highest was reassessing the reserve target ratio. Based on the literature review, having a personal safety net of emergency funds is the best way to build climate influenced financial resilience as well as overall resilience from unexpected costs. Keeping up to date with industry trends in the insurance market ranked second, followed by increasing reserve funds. When conducting the multi-criteria analysis, I expected the strategies with the greatest risk reduction to rank higher, as risk reduction had the highest assigned weight. However, considering that both cost-effectiveness and financial benefit each had a weight of 20%, it makes sense that keeping up to date with industry trends ranked second. Although this strategy had a lower value for risk reduction than increasing reserve funds, its high scores of 5 in cost-effectiveness, financial benefit, and ease of implementation compensated for

its initial shortcoming. Diversifying revenue streams ranked fourth followed last by the discussion of building climate and financial resilience with other colleges.

If the strategies were ranked solely on what I believe is to be the most important criterion – reduction or risk – I would personally rank diversifying revenue stream as the most important strategy, followed by increasing revenue funds and reassessing the primary reserve target ratio. I would rank discussion of building climate and financial resilience with other colleges fourth followed last by keeping up with insurance industry trends. This ranking does not include the cost effectiveness, financial benefit, ease of implementation, or the realization time of each strategy.

I believe that while increasing reserve funds is probably the best strategy for building financial resilience against climate hazards, this cannot be achieved within Dickinson's current financial framework. The reserve funds cannot be increased unless Dickinson increases its budget surplus and, thus, its savings. However, we know that climate change and its impacts will only worsen. As a result, more families will require financial aid, and student enrollment is likely to decline as tuition fees at private institutions like Dickinson continue to rise. This is not unique to Dickinson but is a challenge facing higher education institutions across the U.S. Given this reality, it is imperative for Dickinson to diversify its revenue streams so that its operations are not solely dependent on tuition fees and endowment income. Successfully diversifying revenue streams would allow Dickinson to generate more, preferably stable, income, thereby increasing its savings and building its reserve funds. Furthermore, reassessing the primary reserve ratio and developing a concrete plan with actionable steps would help guide the college in making

decisions to ultimately increase the reserve funds. Lastly, discussion with other colleges on building financial resilience is an important step in guaranteeing the existence of higher education institutions in the future. By participating in discussion, colleges can better prepare for the future and take strategic measures to operate proactively rather than reactively.

6. Recommendations

Implementing all the strategies mentioned above would help Dickinson build financial resilience. While the impact of each strategy is subjective and uncertain—such as the extent to which reassessing the primary reserve ratio will reduce financial risk or its cost-effectiveness—carrying out all these strategies will contribute to Dickinson's financial stability. In this section, I will recommend a timeline for phasing in each strategy.

Given the ease of implementation as well as the high financial benefit of reassessing the primary reserve ratio and keeping up with industry trends in the insurance market, I would recommend these two strategies to be implemented immediately. Thus, I would recommend Dickinson to implement these strategies in the near term (within 1-2 years). Further research must be done on the primary reserve ratio of colleges around the United States and how that has affected their ability to absorb unexpected costs. In the short term, I believe that assessing various ways Dickinson can increase its reserve funds and formulating a game plan to increase the general operating reserve fund should be developed.

I would recommend Dickinson implement the provision of a consortium dedicated to discussing building financial resilience towards climate change within the medium term (3-5 years). I believe this strategy should be implemented within the medium term because further planning might be necessary about what discussions should be done at this consortium, lobbying to get colleges to participate, and also building a report of financial challenges and strategies to resolve these challenges. I would also recommend Dickinson to start researching the various ways the college can diversify its revenue stream and implementing pilot projects to test how these alternate streams might benefit Dickinson as well as the costs that are associated with them. In this time period, Dickinson should devise a strategic plan to build up the general operating reserve according to the reassessed target ratio and test out various strategies it could implement to increase revenue retention.

Lastly, in the long term (>5 years), Dickinson should have a strategic plan to increase the reserve fund with a general idea of what sub-strategies have worked and can potentially bring in the biggest benefit. In the long term, I would give this strategy the most importance as it is key to building a sustainable financial resilient future for Dickinson. Alongside this strategy, Dickinson should start to implement its financial plan to increase General Operational Reserves according to the reassessed target ratio.

7. Conclusion

This report aims to build Dickinson college's financial resilience as part of building overall climate resilience. The report identified key risks such as increased insurance premiums

and increased infrastructural damage costs as well as decreased household income, decreased availability of government funds, and decreased student enrollment that can impact Dickinson's financial stability in the future. As a result, strategies such as increasing reserve funds, reassessing the primary reserve ratio, diversifying revenue streams, keeping up to date with industry trends in the insurance market, and discussion on building climate and financial resilience with other colleges were identified as pathways to build Dickinson's financial resilience.

It should be noted that Dickinson has a lot of financial strategies in plan that seek to build financial resilience. While this report may not provide a quantitative analysis of how projects might be implemented to increase financial resilience, it is a guiding document that provides various topics of thought and further, thorough analysis of each strategy must be done by the college. This report stands as a reminder that climate change is a variable that can have significant impacts on an institution's financial stability and the integration of unexpected costs from climate change in building financial resilience is of the utmost importance.

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9. References

Atkinson, B. (2025, January 3). A western North Carolina college president looks back on a tumultuous semester. *WUNC.* https://www.wunc.org/education/2025-01-03/western-north-carolina-college-president-warren-wilson-helene.

Best Practices—Diversifying and Generating Revenue. (2023, July). Retrieved January 19, 2025, from https://www.insidehighered.com/sites/default/files/2023-09/Best%20Practices%20-%20Diversifying%20and%20Generating%20Revenue%20%281%29.pdf.

Biogas is Live! Recognition of our Grant Supporters. (2024, August 23). *Dickinson College Organic Farm.* https://blogs.dickinson.edu/farm/2024/08/23/biogas-is-live-recognition-of-our-grant-supporters/.

Bloomberg, M. R., Paulson, H. M., Steyer, T. F., Cisneros, H., & Capital, C. (2014). *A Climate Risk Assessment for the United States.* https://riskybusiness.org/site/assets/uploads/2015/09/RiskyBusiness_Report_WEB_09_08_14.pdf.

Bowles, K. J. (2022, October 17). Reserve Funds: Stupid Simple, but Super Important. *Inside Higher Ed.* https://www.insidehighered.com/blogs/just-explain-it-me/reserve-funds-stupid-simple-super-important.

Brunetti, C., Dennis, B., Gates, D., Hancock, D., Ignell, D., Kiser, E. K., Kotta, G., Kovner, A., Rosen, R. J., & Tabor, N. K. (2021). *Climate Change and Financial Stability.* https://www.federalreserve.gov/econres/notes/feds-notes/climate-change-and-financial-stability-20210319.html.

Carbon Credits Face Biggest Test Yet, Could Reach $238/Ton in 2050. (2024, February 6). *BloombergNEF*. https://about.bnef.com/blog/carbon-credits-face-biggest-test-yet-could-reach-238-ton-in-2050-according-to-bloombergnef-report/.

Carbon Credits in 2024: What to Expect in 2025 and Beyond. (2025, January 7). *Carbon Credits*. https://carboncredits.com/carbon-credits-in-2024-what-to-expect-in-2025-and-beyond-250b-by-2050/.

Daugherty, G. (2024, October 1). Carbon Markets: What They Are and How They Work. *Investopedia*. https://www.investopedia.com/carbon-markets-7972128.

Dickinson College. (n.d.-a). Endowment (worldwide). *Dickinson College*. Retrieved January 1, 2025, from https://www.dickinson.edu/info/20082/financial_operations/1643/endowment.

Dickinson College. (n.d.-b). Enrollment Data (worldwide). *Dickinson College*. Retrieved January 1, 2025, from https://www.dickinson.edu/info/20084/institutional_research/189/enrollment_data.

Dickinson College. (n.d.-c). Finances Data (worldwide). *Dickinson College*. Retrieved January 1, 2025, from https://www.dickinson.edu/info/20084/institutional_research/196/finances.

Duvall, M. (2024, December 17). Florida insurance crisis: Why are insurance companies leaving Florida? *Insurance.Com*. https://www.insurance.com/home-and-renters-insurance/home-insurers-leaving-florida.

EPA (2016, December 22). Climate Impacts on Society [Overviews and Factsheets]. *United States Environmental Protection Agency*. Retrieved October 19, 2024, from https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-society.

Establishing a Financial Reserves Policy. (2014, April 1). Retrieved December 27, 2024, from https://www.conferences.uillinois.edu/common/pages/DisplayFile.aspx?itemId=2436

Ezarik, M. (2023). Actions and Hopes of the Sustainability-Focused Student. *Inside Higher Ed* . Retrieved October 23, 2024, from https://www.insidehighered.com/news/students/academics/2023/01/02/sustainability-actions-students-take-and-want-their-colleges.

Fichman, B. (2024, December 4). Does Your College Have a Financial Contingency Plan? *Getzler Henrich & Associates LLC*. *https*://getzlerhenrich.com/does-your-college-have-a-financial-contingency-plan/.

Financial Ratios and Trends. (2017). Retrieved January 19, 2025, from http://www.mississippi.edu/finance/downloads/ihl_systems_ratios_and_trends_(2012_-_2017).pdf.

Gillis, J. (2012, December 5). To Stop Climate Change, Students Aim at College Portfolios. *The New York Times.* https://www.nytimes.com/2012/12/05/business/energy-environment/to-fight-climate-change-college-students-take-aim-at-the-endowment-portfolio.html.

Hearn, J. C., & Warshaw, J. B. (2015). An Empirical Study of Adaptation and Change among Independent Colleges. *TIAA.* https://www.tiaa.org/public/institute/publication/2015/mission-driven-innovation-empirical-study.

Hsiang, S., Greenhill, S., Martinich, J., Grasso, M., Schuster, R. M., Barrage, L., Diaz, D. B., Hong, H., Kousky, C., Phan, T., Sarofim, M. C., Schlenker, W., Simon, B., Sneeringer, S. E., Crimmins, A. R., Avery, C. W., Easterling, D. R., Kunkel, K. E., Stewart, B. C., & Maycock, T. K. (2023). Chapter 19: Economics. Fifth National Climate Assessment. *U.S. Global Change Research Program.* https://doi.org/10.7930/NCA5.2023.CH19.

Keys, B. J., & Mulder, P. (2024, October 1). Disaster Risk and Rising Home Insurance Premiums. *NBER.* https://www.nber.org/digest/202410/disaster-risk-and-rising-home-insurance-premiums.

Kraftt, M., Denneen, J., Dretler, T., Yee, P., & Selingo, J. (2023, May 22). The Financially Resilient University. *Bain.* https://www.bain.com/insights/financially-resilient-university/.

Larsen, K., Delgado, M., Mohan, S., and Houser, T. (2014, June 24). American Climate Prospectus: Economic Risks in the United States. *Rhodium Group.* https://rhg.com/research/american-climate-prospectus-economic-risks-in-the-united-states/.

McKinsey Global Institute (2020). Climate risk and response: Physical hazards and socioeconomic impacts. *McKinsey Global Institute.* https://www.mckinsey.com/~/media/mckinsey/business%20functions/sustainability/our%20insights/climate%20risk%20and%20response%20physical%20hazards%20and%20socioeconomic%20impacts/mgi-climate-risk-and-response-executive-summary-vf.pdf.

MHM (2023, June). Consolidated Financial Statements and Supplemental Information. *Dickinson College*. Retrieved January 22, 2025, from https://www.dickinson.edu/download/downloads/id/14994/2023_financial_statements.pdf.

Padhy, S., Sarkar, S., Panigrahi, M., & Paul, S. (2015). Mental health effects of climate change. *Indian Journal of Occupational and Environmental Medicine, 19(1), 3.* https://doi.org/10.4103/0019-5278.156997.

Panfil, M., & Victor, D. G. (2022, March 29). Climate change creates financial risks. Investors need to know what those are. *Brookings.* https://www.brookings.edu/articles/climate-change-creates-financial-risks-investors-need-to-know-what-those-are/.

PERC. (n.d.). Retrieved December 7, 2024, from https://www.pagreencolleges.org/participating_institutions.

Phung, A. (2024). How Do University Endowments Work? *Investopedia.* Retrieved October 25, 2024, from https://www.investopedia.com/ask/answers/how-do-university-endowments-work/.

Primary Reserve Ratio (n.d.). *University of Maine System*. Retrieved January 19, 2025, from https://www.maine.edu/databook/ums-dashboard/primary-reserve-ratio-long-description/.

Pudyastuti, P. S., & Nugraha, N. A. (2018). Climate change risks to infrastructures: A general perspective. *AIP Conference Proceedings, 1977(1), 040030*. https://doi.org/10.1063/1.5043000.

Pullanikkatil. (2024, July 24). How parametric insurance can support improved climate resilience in the Commonwealth. *Commonwealth.* https://thecommonwealth.org/news/blog-how-parametric-insurance-can-support-improved-climate-resilience-commonwealth.

Reserve and Financial Metric Dashboard and UNP Glossary Review.pdf. (2020). Retrieved January 12, 2025, from https://www.cu.edu/doc/2020-10-21-reserve-financial-metric-dashboard-unp-glossary-reviewpdf.

Rudebusch, G. D. (2021, February 8). Climate Change Is a Source of Financial Risk. *FRBSF Economic Letter*. https://www.frbsf.org/research-and-insights/publications/economic-letter/2021/02/climate-change-is-source-of-financial-risk.

The Babson Academy for Entrepreneurship Education. Retrieved January 19, 2025, from https://www.babson.edu/professional/entrepreneurship-education/.

The Financial Resilience of Independent Colleges and Universities. (2017). *The Council of Independent Colleges.* Retrieved January 12, 2025, from https://files.eric.ed.gov/fulltext/ED580888.pdf.

Top 50 Green Colleges. (n.d.). *The Princeton Review*. Retrieved January 19, 2025, from https://www.princetonreview.com/college-rankings?rankings=top-50-green-colleges.

Townsley, M. K. (2023, June 12). FOR STRUGGLING TUITION-DEPENDENT PRIVATE COLLEGES, IT'S BASIC ECONOMICS. *Stevens Strategy—Higher Education Consulting.* https://www.stevensstrategy.com/uncategorized/struggling-tuition-dependent-private-colleges-basic-economics/.

Whitford, E. (2023, August 28). Forbes 2023 College Financial Grades: The Nation's Strongest And Weakest Schools. *Forbes.* Retrieved January 16, 2025, from https://www.forbes.com/sites/emmawhitford/2023/04/26/forbes-2023-college-financial-grades-the-strongest-and-weakest-colleges/.