

Advancing Philanthropy through Data Analytics

Grant making organizations can know more, learn more and accomplish more

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Most foundations are engaged in the art of the possible. They invest in organizations and programs aimed at transforming current realities into better possibilities and in ideas that “push the envelope” in ways that test the edges of what could be.

But few foundations are taking advantage of a proven tool for expanding the possible in their own grant making and mission effectiveness: data analysis. Analytic methods are routinely used and considered essential in nearly every other sector of the economy. In healthcare, retail and financial services, to name just a few hotbeds, analytics has dramatically affected what—with a given amount of time and money—is possible to measure, to manage, to learn, to change and to achieve.

The foundation world—which holds over USD \$1.5 trillion in assets globally and \$646.1 billion in the U.S. alone, with annual grant making of approximately \$100 billion globally and \$46.9 billion in the U.S.¹—uses analytic methods to assess, select, monitor, and report on its capital market investments for the 95% of its corpus that generates revenue. These very same methods, with even the introduction of the most basic analytic techniques, will provide demonstrable gains for the remaining 5% of the corpus that is distributed for charitable purposes. Foundations can gain visibility into how resources are allocated across their organization, view grant distribution compared to per capita need and explore outcomes data... among many other uses.

For grant making organizations, analytics are a key that can be used to unlock answers to vital questions such as:

How well does our grant making align with our strategy and stated tactics?

Which grantees produce the best outcomes in support of our mission and strategy?

Has this intervention strategy been tried before and, if so, how well did it work?

Does this strategy merit replication, and is there evidence that it can be replicated and/or scaled?

If we committed the same grant making budget differently, could we produce a greater impact?

Board members gain visibility into the execution of top-level strategies and timely enough operational feedback to actually refine their strategic plans and, therefore, better influence desired outcomes in alignment with their mission. Foundations leaders and senior managers gain insights into what is working and clear indicators of where improvements are needed. Program managers gain time-saving tools that simplify their work and help them steer toward grant making objectives. Data analysis also improves communication and coordination by helping all participants arrive at a clear and common understanding of what types of grants and/or investments are being deployed and how they are influencing outcomes. Moreover, improved transparency enables stakeholders and the community at large to better see what investments are accomplishing.

This paper looks at some of these early achievements in our work with The California Endowment (TCE). It also discusses where we’re headed in the implementation of more advanced analytic methods that will yield even greater benefits.

A few caveats before proceeding. While TCE is among the largest foundations, many of the concepts outlined here are accessible to mid-sized foundations today and will become accessible to smaller foundations as the field evolves and these analytics become embedded within common tools. Moreover, foundations need not have sophisticated internal IT departments to take advantage of analytics, as there are analytics providers and cloud-based applications able to support these efforts.

¹ *Foundation Growth and Giving Estimates*, Foundation Center, June 2012; “A conversation with Rosa Gallego and Bradford Smith,” @Illiance Volume 17, Number 3, September 2012; *Global Philanthropy*, Natalie Ambrose, Council on Foundations, November 2005

Ultimately, for organizations moving along this path, the possibilities for improvement are immense. As Robert Kaplan and Allen Grossman point out in their seminal article “The Emerging Capital Market for Nonprofits,”² data analysis is the key to establishing more robust channels between nonprofits and funders, which will provide sustainable funding at a scale that is commensurate with social needs and can really make a difference.

We can see this kind of development in the emergence of social impact bonds (SIBs) and human capital performance bonds as a new way for communities to drive social change. These are potential tools for rewarding nonprofit organizations that create a positive impact and helping them scale up their efforts. Under these “pay for success” models, high-performing nonprofit organizations qualify to participate in the programs and receive payments based on quantifiable results. Widespread use of these instruments, however, will require sophisticated actuarial analytics (insurance risks and premiums computations), platforms for collecting and tracking outcome data, and frameworks for measuring and consistently evaluating impact.³

Other relevant developments setting the nonprofit and philanthropy world abuzz are discussed in *Impact Investing* by Antony Bugg-Levine and Jed Emerson. They include new frameworks for pursuing impactful social investments, additionality (investments that would otherwise not be made by private investors) and blended value (organizations create both positive and negative economic, social and environmental value). To realize the potential of these developments, however, and get away from making decisions that are “more about the convictions of the judge than the facts we can bring to the case,”⁴ we must have standards for measuring social impact. Until the nonprofit and philanthropy sector has these standards and becomes more instrumented to measure outcomes against them, we can’t fully know if an investment is making the intended positive difference.

Clearly there are considerable investments to be made in standardization and metric development. Collaborative efforts must be focused on common problems and common opportunities if foundations of all sizes are going to be able to participate.

This paper is an invitation to collaborate. In it we share what we’ve learned so far, in hopes that our first steps will spark others to become inspired and join us.

² “The Emerging Capital Market for Nonprofits,” Robert S. Kaplan and Allen S. Grossman, *Harvard Business Review*, October 2010

³ “The NON NONPROFIT”, Steve Rothschild, Jossey-Bass, A Wiley Imprint, 2012

⁴ “Impact Investing”, Antony Bugg-Levine and Jed Emerson, Jossey-Bass, A Wiley Imprint, 2011

How does analytics advance philanthropy's mission?

Initially, there are three key ways data analysis can advance the missions of foundations and other grant making organizations. Even basic analytic techniques can begin to help organizations:

1. Know more about current grant making activity

Enabling:

- Better alignment of strategy with grant making
- More effective program development and management
- Process improvements for operational efficiencies

see page



2. Rationalize grant portfolios

Enabling:

- Better decisions about the range and depth of grant making
- More intentional experimentation
- Improved baselines for measurement and comparison of results

see page



3. Learn readily about what is working and why

Enabling:

- Assessment of new applications in the context of similar grant methods and outcomes
- Replication of successful programs
- Continuous performance improvement by propagating effective program elements across grant portfolios
- Concentration of support on the most effective organizations and assistance to other organizations in cultivating these characteristics

see page



In each of these areas, analytics essentially works by providing answers to questions. These questions may be as simple as “How many awards are we making to new grantees?” or “How long is it taking us to make this category of grant?” They may be as complex as “Is there an inflection point for this type of grant where more funding begins to produce a discernibly better or worse return on investment?”

Generally, the more advanced the analytics, the wider the range of questions that can be answered and the degree of complexity they can encompass. Complexity is one of the reasons analytics is so helpful to decision makers: Our brains can consider three to seven factors at once. Some analytic techniques can take into account dozens of factors, producing a clear, simple answer or recommendation that decision makers can readily understand and act upon.

Data analysis also provides helpful alternative views. While the judgment of experienced grant makers is one of a foundation's most valuable assets, it is not infallible. Numerous studies of human cognition have shown that our brains may mislead us—by giving undue weight to information that confirms our assumptions, by being overly influenced by the first information we consume, by perceiving patterns where they don't exist.⁵

Data analysis provides a corrective jolt to our thinking. It helps decision makers weigh facts and options more evenly, reconsider assumptions, ask new questions and consider other possibilities.

⁵ “Don't Trust Your Gut,” Eric Bonabeau, *Harvard Business Review*, May 2003

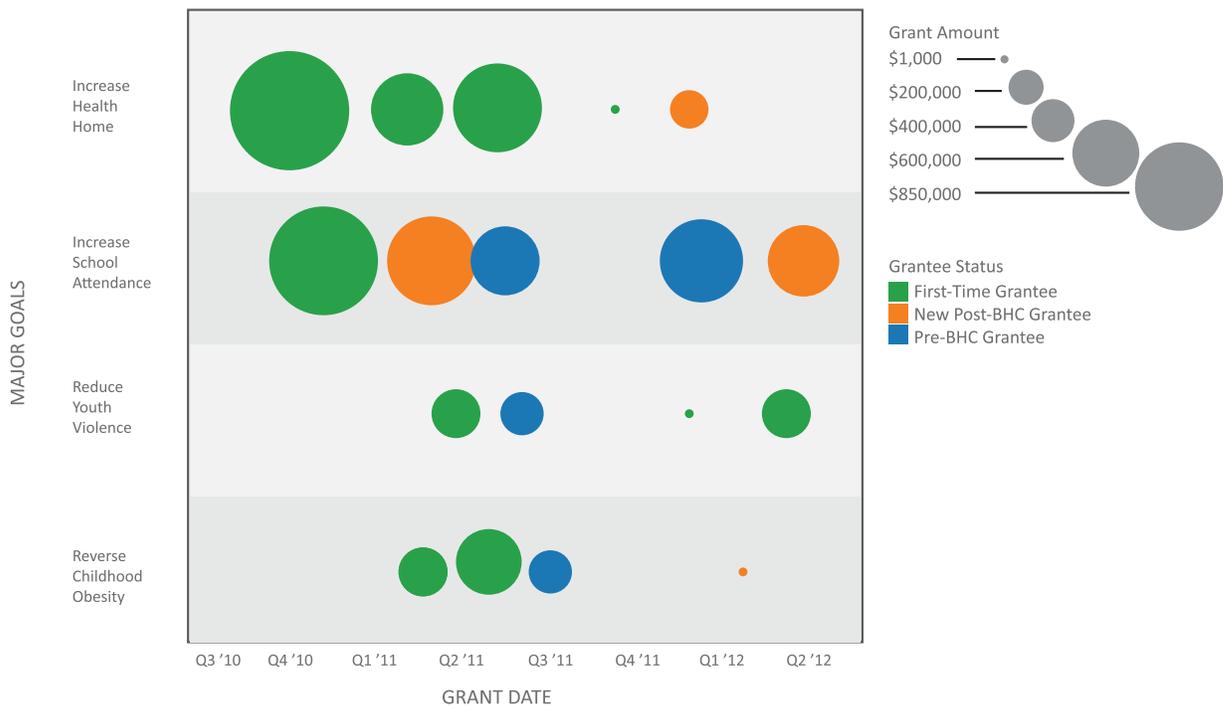
Know more about current grant making activity

As a first step to reaping the benefits of analytics, foundations can aim for the “low-hanging fruit” from adopting basic analytics to deliver more timely and useful business intelligence to their staff, management and board of directors. Every foundation has a boatload of data, and typically it hasn’t yet been analyzed. Where analysis has been done, results may be buried in reports that aren’t easy to access or formatted for rapid absorption.

Basic data analysis with results delivered in visual form pulls data together into summary views or slices it apart into component views that enable decision makers to quickly understand the key takeaways. For example, a typical foundation goal is to “raise all boats” through seeking out and cultivating relationships with applicant organizations that have not previously been funded. Suppose that before their next meeting, staff, management and board members could open an analytic dashboard and see a bubble chart like the one in Figure 1 below. They would instantly have the answer to the question: “How much progress have we made creating these new relationships?”

Figure 1: Quick Assessment and Tracking of Strategy Execution

Example: Grant History and Grantee Comparison Community 1



This bubble chart uses color to show grants given to first-time applicants (green), relatively new grantees (orange) and long-established grantees (blue). At a glance, it also communicates the size of the grant (circle diameter), which of TCE’s major results goals (Y axis) it is intended to serve and when the grant was made (X axis). This particular view shows a multi-month time window, but an interactive dashboard enables users to extend or move the window to get a sense of progress over a specific period.

There is a fair amount of complexity captured in one picture. As information design pioneer Edward R. Tufte has pointed out, the advantages of visualization include presenting many numbers in a small space, making large amounts of data coherent, encouraging the eye to compare different pieces of data and revealing data at several levels of detail.⁶ If decision makers had to flip through multiple reports to find these results in separate lists or tables, it would be much more difficult to absorb and relate the information.

⁶ *The Visual Display of Quantitative Information*, p13, Edward R. Tufte, Second Edition, 2001, Graphics Press LLC

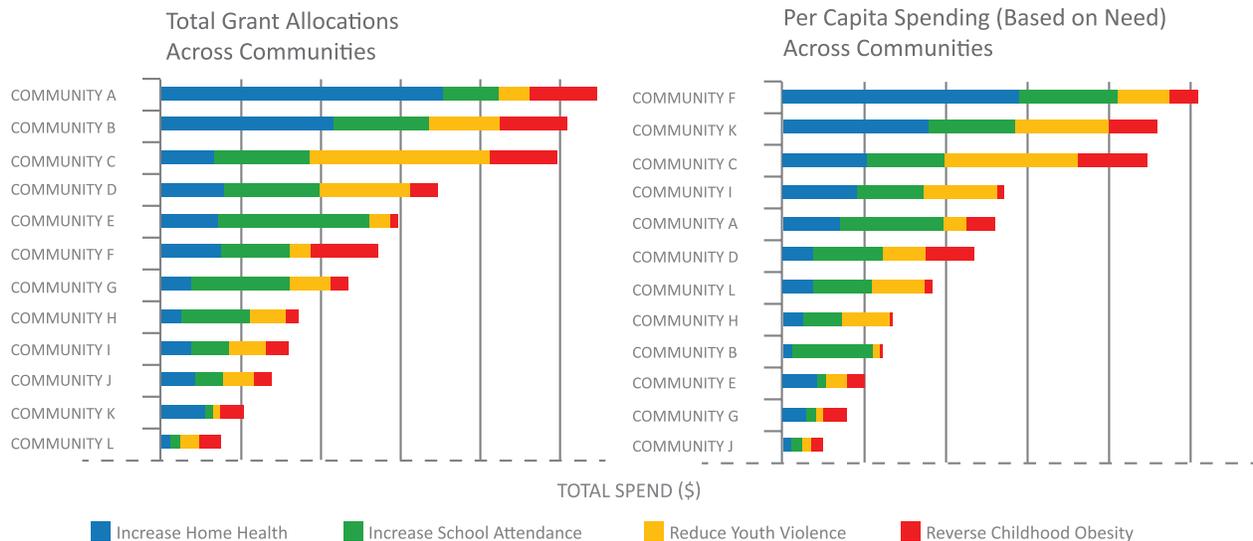
For foundation senior managers, the ability to slice into overall results like these to see strategy execution at a more granular level helps to identify where more management assistance is needed. Figure 2 shows bubble charts for two communities where progress toward new grantee relationships has been quite different. Clearly, Community 2 is engaging many more new grantees than Community 3. There may be a good reason for this, and now that the data are clearly visible, a productive discussion can begin.

Figure 2: Identifying Where Improvement is Needed



By slicing and filtering analytic results to present different views, foundations can also get a rapid reading for the degree of coverage they're achieving across their target constituencies and if there are any issues of over-concentration or under-serving starting to emerge. Figure 3, for instance, shows grants made across a group of target communities by total grant amount (left) and by per-capita (in poverty) spending (right). Simple operational feedback like this can help senior managers improve program performance while helping boards ask them the right questions.

Figure 3: Assessing Coverage and Concentration

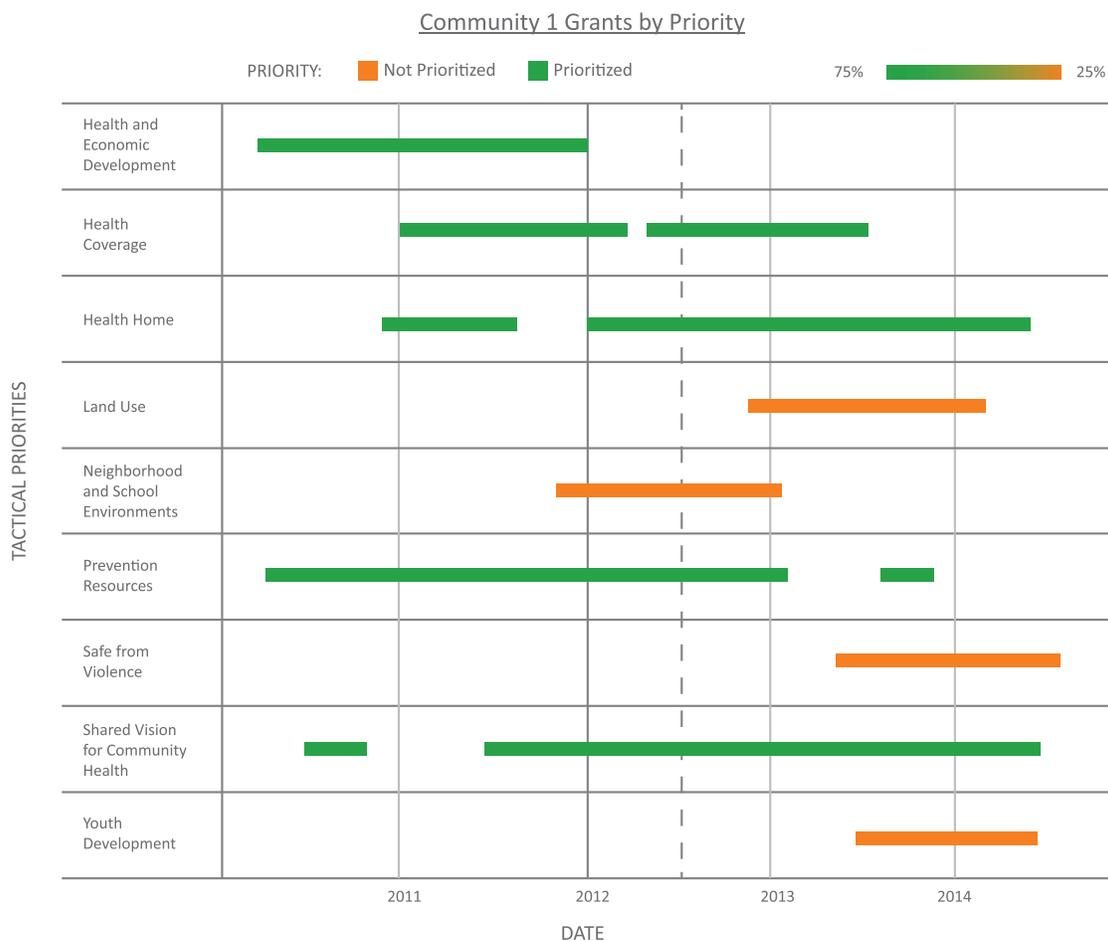


Here we see that the allocation across communities is spread unevenly. This may be intentional. Either way, it can spur discussion and enable course correction.

For the folks actually making day-to-day grant decisions, analytic dashboards are a powerful tool for charting and steering their programs. Figure 4, for example, is a line graph that gives TCE program managers a quick visual sense of how much funding they have awarded (left of the dotted line) and plan to award (right of the dotted line) in the tactical outcome objective categories they have selected as their own priorities (green bars). Interactive dashboards enable them to click on the bars and see the individual grants they comprise.

It is important to note that changes in funding can be signals of learnings in the field. When deviance from plan is occurring, field staff may be electing to go off the set course for good reasons. There may be a need to modify the plan. The goal is to understand what is happening so a productive discussion can take place.

Figure 4: Steering Toward Identified Priorities to Achieve Outcomes



Data analysis also helps grant makers and senior managers better understand the operational challenges they face and work together to meet these more effectively. At TCE, for example, staff experienced a significantly increased workload at the end of the fiscal year. Leadership was concerned that some grants were taking too long to approve and that these delays were not only aggravating the year-end push but might be causing problems for grantees. Additionally, there was concern that fatigue from the concentrated workload might be contributing to less than optimal grant making decisions.

With analytics, we were able to go behind such anecdotal evidence to sort out and reveal useful facts. Data analysis showed that both the number of approved grants and the amount of money granted increased steadily throughout the fiscal year until the fourth quarter, when it surged. It showed that while some of this pattern was driven by underlying cyclical in application submissions, much of it was the result of TCE processes and, therefore, potentially within the foundation’s prerogative to change. Analytics also revealed different average lag times for grant approval in different TCE grant categories, pointing senior management to where process improvements would have the most impact and to which types of grantees might be experiencing duress from long waiting periods.

Rationalize grant portfolios

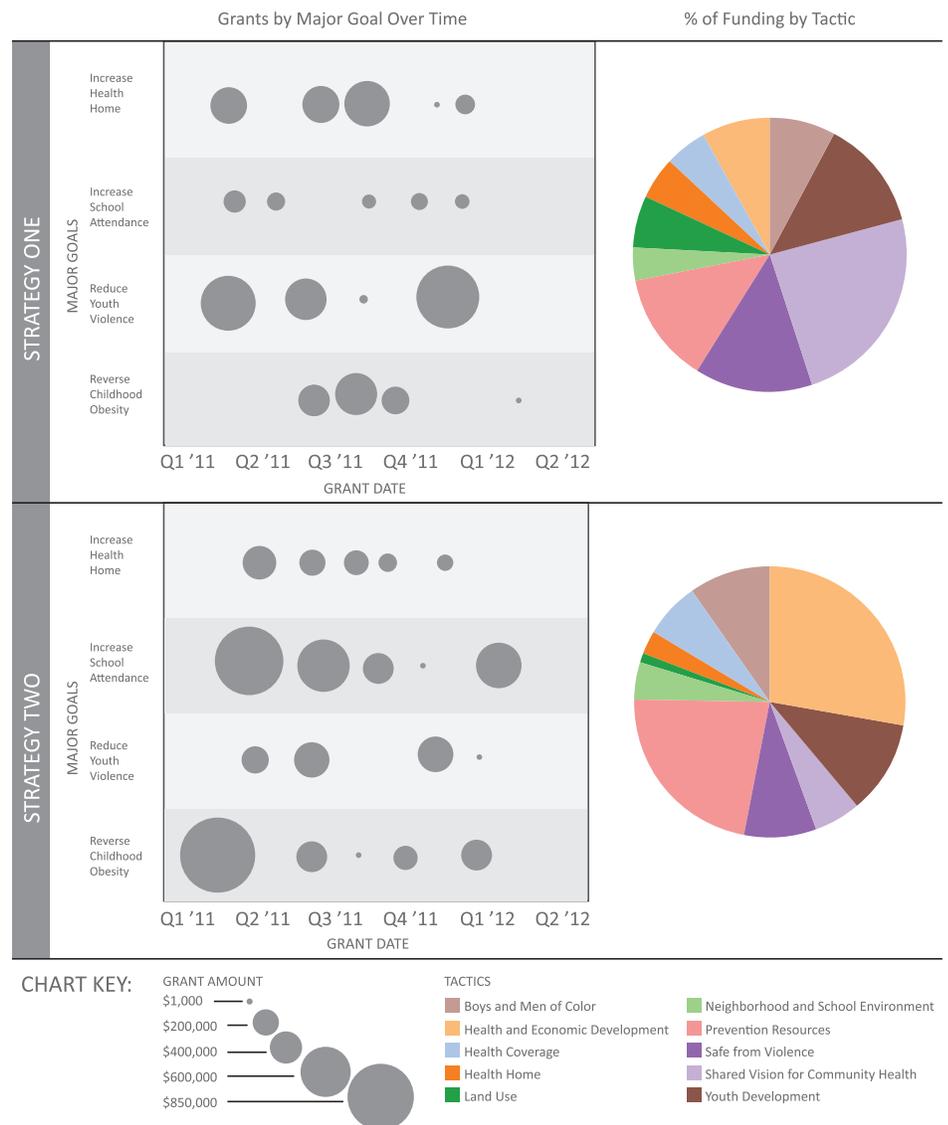
Since data analysis enables us see what we are actually doing vs. what we think we are doing, it’s an invaluable tool for helping foundations rationalize their grant making portfolios.

Figure 5, for example, has visual depictions of grants made in two different TCE target communities. In both communities, grants are aimed at the same TCE major results goals. But the grant making strategies are markedly different. These differences are apparent both in terms of which goals (bubble chart Y axis) are receiving the most funding and which tactical outcome objectives (pie chart slices) are favored for reaching the goals.

Looking at these kinds of strategy visualizations can prompt foundations to ask questions such as: “Are these the strategies we want to be supporting or testing?” and “Do we have the right number and range of strategies given our aims and resources?”

But for analytics to prompt the right questions and help point to the answers, the data being analyzed has to be accurate. If you’re not getting an accurate picture of what you’re currently doing, you have no reliable baseline from which to question or change it. In fact, one of the most helpful things analytics can do for an organization in the early stages of adoption is to reveal data quality issues. Solving these greatly increases the value of the data organizations are collecting, the insights analytics can derive from it and the prospects for using those insights to advance the philanthropic mission.

Figure 5: Visualizing and Comparing Grant Making Strategies



A couple of factors have a big impact on data quality: 1) how accurately data categorization schemes reflect real-world grant making activities; and 2) to what degree are those inputting data correctly tagging for those categories?

At TCE, data visualizations were a real eye-opener for senior management. For example, by viewing the data in this way, they discovered that almost 10% of grants were being assigned to the category of “Other.” In many cases, grants and related outcomes were classified as “cross-cutting,” meaning that they spanned multiple categories and were not delineated. These were reviewed to determine if “other” was actually appropriate or if more specific coding could more precisely describe the work.

These classification problems prompted some rethinking at the executive level. Perhaps TCE was not defining the right buckets, or enough buckets. For instance, TCE gives millions annually to HUB grants (place-based collaborative management grants), which don’t fit into any of its four top goals or ten outcome categories. If the endowment excludes those grants, we’re missing an important part of its story; if these categories are included, we’re forcing inaccurate categorizations. As a result of the analytics, this is now an issue on the table for discussion.

Many of TCE’s program managers were surprised by what they saw. Among the responses: “I haven’t been able to visualize my portfolio before.” “While the information was in dense reports it has really not been so easy to get at and understand.” “Wow, I can see how I can use a tool like this to plan for the next 1-2 years out.” When these program managers discovered that their own tagging of grant categories had been the sole determinant of how the charts were created, a light bulb turned on. “Ah-ha... I get it!”

Grant makers finally understood through a virtuous feedback loop why it’s important to tag applications with the correct category code. Some indicated that, not having perceived much value in the activity, they had often given little attention to it, perfunctorily checking off categories in a “close enough” manner or even based on alphabetical order or top-of-list placement. Now, motivated by the desire to see dashboard graphs that accurately reflect their program priorities and efforts, they’re taking more care.

Improved understanding and attention are important for increasing data quality, but what if analytics could help make data input more accurate and less burdensome? In TCE’s case, the process is especially challenging because the foundation is attempting to categorize and distinguish many important aspects of its grant areas. Analytics enables TCE to simplify coding and reduce the burden on grant makers. At the same time, automated text analysis minimizes coding errors.

Text analytics is a proven technique for extracting common characteristics or patterns from unstructured data. Fireman’s Fund Insurance Company, for instance, turned to text analysis to help it understand new types of homeowner and auto claims that had emerged and were rising in the early part of the last decade. These claims were not fully described by the structured data collected by the company, but the additional information needed to accurately analyze them was available in adjuster notes and other unstructured texts.⁷

In an initial experiment for TCE, we analyzed the text in the descriptive summaries required from all applicants as well as in the comments added by program managers. To build categorization models to analyze these texts, we first “decoded” the thinking of one of TCE’s best program managers, who categorized a small sample set of previous grants. Based on this real-world “model,” we created an analytic model for each of four top-level TCE goals: Increase Health Home, Increase School Attendance, Reduce Youth Violence and Reverse Childhood Obesity.

Each model generates a score (from 0 to 100%) indicating the likelihood that an incoming application falls into its category. In day-to-day use, the program manager would be presented with these scores as recommendations. In Figure 6, we’ve illustrated one approach, where the scores are displayed on slider bars that enable program managers to adjust the percentages if need be. The dashboard application would capture these adjustments, much like an online retailer captures the behavior of its customers, and these inputs would provide additional data for continuously improving the models.

⁷ “Text Mining Improves Business Intelligence and Predictive Modeling in Insurance,” Dan Sullivan and Marty Ellingsworth, Information Management, July 1, 2003

Figure 6: Simplifying Complex Categorization Tasks



The ability to accurately categorize grants and identify common characteristics among them is the essential underpinning to one of the most exciting aspects of applying analytics to grant making: figuring out which investments are likely to deliver the highest returns in social impact.

The results of the initial experiment were promising. The next step is to tap the brains of a wider range of internal and external human experts for refinement of category characteristics and to work with a large enough data sample set to support training and statistical validation of robust models.

While this focus on accurate categorization might seem banal, it is anything but. In fact, the ability to accurately categorize grants and identify common characteristics among them is the essential underpinning to one of the most exciting aspects of applying analytics to grant making: figuring out which investments are likely to deliver the highest returns in social impact and which experiments in new approaches are most worth funding. Equally important—since foundations are in the business of funding ideas—these analytics can show whether foundations are funding the right mix of new ideas along with replication and scaling of proven ideas.

Learn readily about what is working and why

With the ability to accurately categorize grants, foundations can more effectively compare them, at both the application and reporting stages.

When new grant applications come in, the program manager’s dashboard could provide a list of similar past grants. This listing would draw grants from within comparable categories. For example, in the case of TCE, if a prospective grant relates to reversing childhood obesity, the list would include similar past grants pertaining to this topic. Other types of analytics, such as cluster analysis, could be employed to examine a wide range of other factors (population characteristics, proposed services characteristics, requested funding levels, projected costs, etc.) in order to identify the, say, five or ten past grants most similar to the application at hand.

Program managers could then review application summaries and progress reports for some of these grants and compare them with the new application. In addition, dashboard graphs would provide quick visual comparisons along particular performance dimensions as well as at the “big picture” level.

There is enormous value in building analytics like these into the workflow of foundations. It is one thing to have read or been briefed on a study or close-out report produced months or years ago; it’s altogether more valuable to have the results at the right time, organized by precisely what is most essential to support decision making.

Let’s look at some examples.

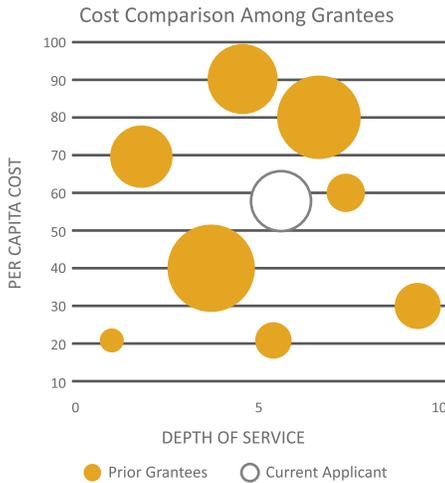


Figure 7: Comparison of Cost for Different Types of Grantee Services

The chart in Figure 7 is based on a straightforward calculation of the price per person served (Y axis) by the depth of service. Grants aimed at reducing the incidence of whooping cough, for example, might range from an advertising campaign for inoculation (low depth) to setting up inoculation centers (high depth). This chart would help program managers get a quick sense of how extensive and expensive the proposed solution is compared to other approaches that are being proposed or have been tried.

Figure 8: Comparison of Change Projected/Achieved

Figure 8 also presents a relatively simple calculation. In this case, the X axis shows the amount of change in capacity (e.g., numbers of children that can be fed at a preschool healthy breakfast program) projected by the current application compared to the amount of change achieved by past grantees.

We can go beyond these basics to assess more qualitative aspects of change as well as to compare grants that might not, at first glance, seem directly comparable. This process, called normalization, involves converting data into a common format or set of units so that it can be compared.

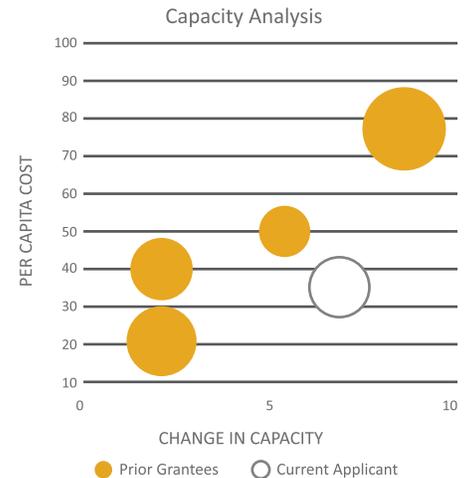


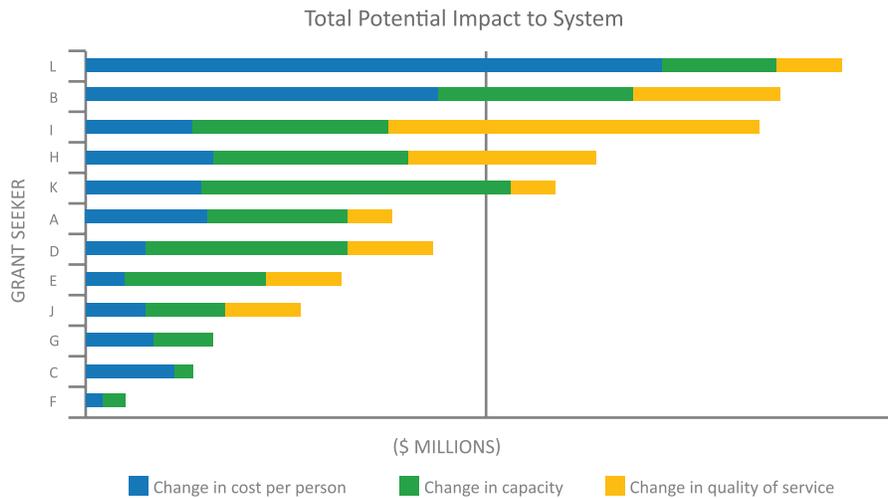
Figure 9: Comparison of Quantitative and Qualitative Change

To produce the chart shown in Figure 9, we've performed this conversion by building two analytic models. The first model (Y axis) analyzes the projected impact of the current application and the actual impacts of past grants on reducing the price per person served (e.g., for an anti-obesity program or preschool education). It generates a score based on a scale where 100 represents a large reduction in cost and 1 represents a small reduction.

The second model (X axis) examines the impact on quality of service. This analysis could take into account multiple factors, such as an increase in depth of service or an improvement in the expertise of service providers (e.g., nurse practitioners, physicians, certified nutritionists). And while the model may consider numerous factors, it produces a single quality of service score, which can then be used to compare and rank the grants.

The scores from various models can be brought together into summaries. Figure 10 shows the total potential impact.

Figure 10: Comparison of Total Grant Impact



With these kinds of tools, program managers considering new grant applications can assess the potential relative investment and relative return on investment. In addition, by running analytics on batches of similar past grants, foundations can identify top performers and some of the characteristics they have in common. Such insights would make it much easier for foundations to replicate successful projects. They would also help in the design of experiments that, by deliberately introducing variation into otherwise similar projects, could improve results or, at minimum, yield learning about what works and what doesn't.

This kind of systematic experimentation is often called champion/challenger testing. The idea is to set up a contest between a current "champion," such as the best-performing anti-obesity strategy, and a proposed "challenger" that modifies the champion strategy in one or more ways. Challengers that outperform their rivals are then promoted to champion status, and a new challenger is matched against them in the next contest. In this way, champion/challenger testing continuously yields learning to drive better and better results.

While minimizing the number of characteristics changed in a challenger strategy makes it easier to understand the underlying cause-and-effect relationships driving results, it's also a good idea to invest in some extremely novel challengers. Novelty, of course, has a high value among foundations, given their dedication to pushing the edges of social possibility, but it also has worth from a scientific point of view because it introduces "controlled variation." If all challenger strategies are close to what an organization is currently funding, that limits what can be learned from results data. If, however, some challengers are far afield of what is currently being done, the results will introduce variation into the data and increase what can be learned from it.

Analytics can help foundations identify novel grant applications. In Figure 11, a model scores proposed grants for novelty. This would be based on the same type of analysis that generates the list of similar past grants. In this case, however, grant applications would receive a higher score if there were no or few similar grants.

Of course foundations considering investing in a novel experiment want to know the chances that it will be successful. As we've said, *a successful experiment could be one that delivers superior results, but it could also be one that delivers abundant learning*. Achieving either kind of success, however, depends greatly on the capabilities and experience of the grantee organization.

Figure 11 shows a chart that would represent "nirvana" to foundations. If one could generate a score that would predict the likelihood of grantee execution success (X axis), foundations would be much more comfortable opening their purse strings to bold, new ideas.

But, alas, how to quantify and compare degrees of success across grants is the central problem in data analysis for the sector. Fortunately, there are many smart, determined people working on solving it, and sharing what they're learning. Foundations can look to The Hewlett Foundation's Expected Return modeling, the University of Pennsylvania's Center for High-Impact Philanthropy's formula for calculating Cost per Impact, the Center for Effective Philanthropy's Indicators of Effectiveness worksheet and the Center for What Works/Urban Institute's Outcome Indicators Project framework. The Robin Hood Foundation translates results from all its programs into two standard metrics—*increase in discounted present value of a program participant's lifetime income stream and quality-adjusted life years*. The Center for High-Impact Philanthropy and Wharton Program for Social Impact have launched a joint initiative to develop new analytic approaches.

These and other admirable efforts aimed at measuring the economic value of philanthropic activity will make more headway now that hundreds of the nation's largest foundations, including TCE, have agreed to begin sharing (donor-anonymous) grant data. While there is more to do to get to the level of detail needed, the leadership and philosophical desire to share has been clearly demonstrated. We look forward to the day when we will all be able to see this kind of data from within our organizations and combined with data from other funders. At that point the prospects for accelerated learning and collaborating will be transformational.

With this data sharing, we will enter the expanded realm of so-called "Big Data." It's a buzzword that essentially means the analysis of very large datasets incorporating a wide variety of different types of data from multiple sources. Inherent in the concept is the notion that analytics applied to Big Data can generate from this vast complexity, simple, usable insights, such as scores, that can improve the day-to-day operational decision making of organizations.

"Clearly, social investing can't be reduced to simple formulas. Investors must make judgments. The metrics we have advanced are intended to sharpen and support social investment decision making."

Figure 11: Comparison of Likely Execution Success for Novel Grants



Size of bubbles = Grant Amount Sought
Number inside bubbles = Potential Impact Ratio

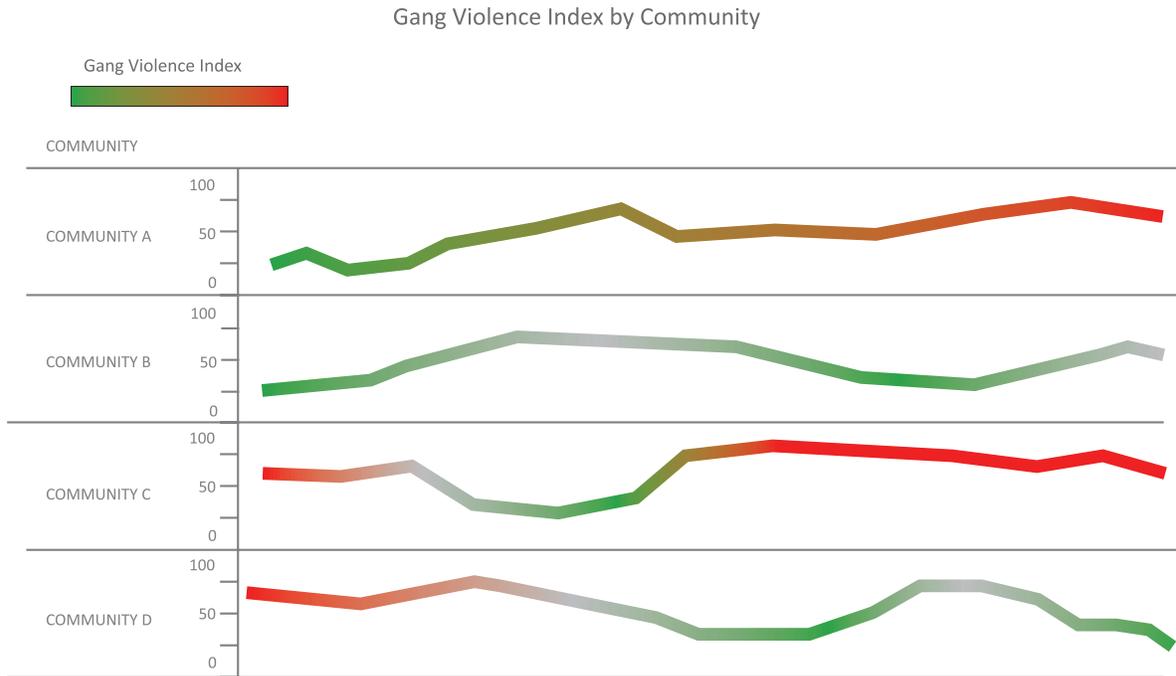
"Quality nonprofits create benefits to society by addressing social problems, and virtually all the social benefits they create have monetary or economic value that can be identified and measured."

***Steve Rothschild
Founder and Chairman of the Board
Twin Cities RISE!
2012***

***Guide to Effective Social Investing
David E.K. Hunter, Independent Consultant
Steve Butz, Founder/President, Social Solutions
July 2009***

Some examples of work underway (Figure 12) include looking at trending information in a near-time way through analytics designed to comb media (news copy, television, radio, Twitter, Instagram, etc.) for indications of “social weather” by topic and geographic location of interest.

Figure 12: Illustrating Impact Trends



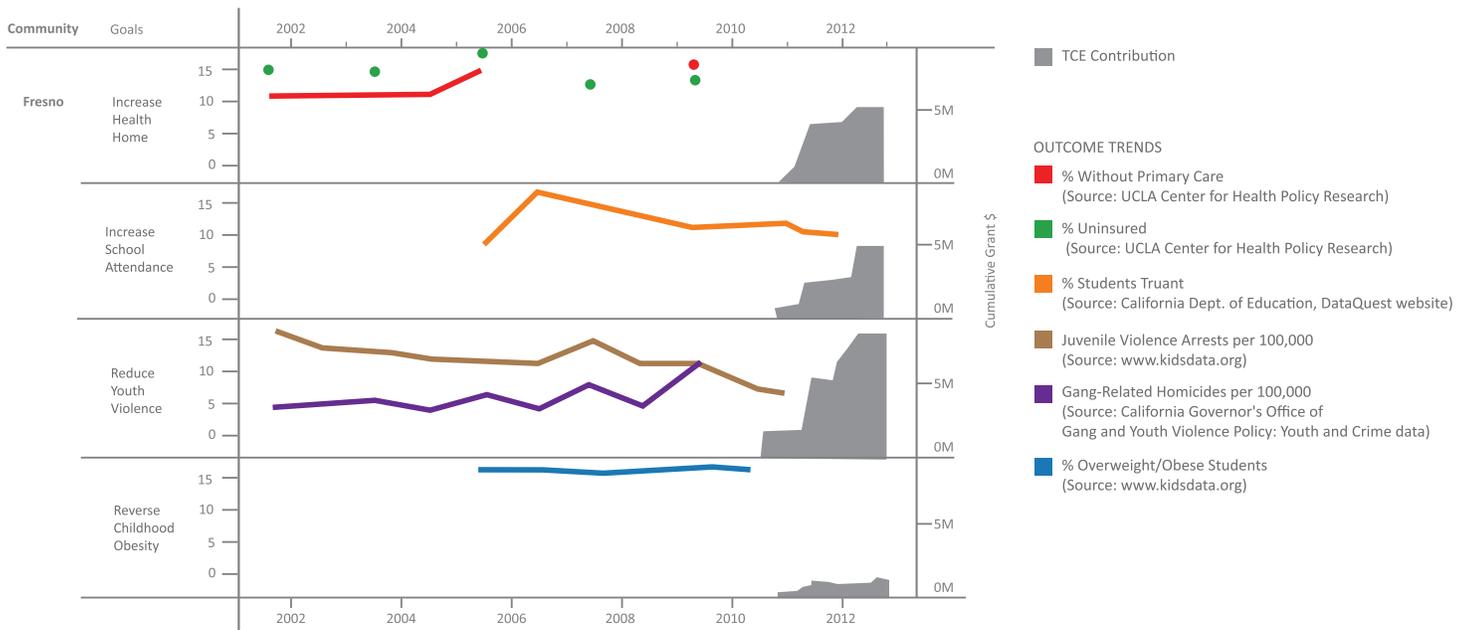
Another example includes layering these types of indicators with individual foundation grant making investments. While this method doesn’t establish a cause-effect linkage or even a clear correlation between the trends and investment levels, it can be a powerful visual aid to support grant planning and foundation direction discussions.

For example, if a trend is moving positive at a time when the foundation is making little or no investment, it might be useful to investigate what other factors are in play. If a trend line is moving negative despite meaningful investment, this situation is likely to spur discussion that could lead to a deeper understanding of the work being done and its outcomes. Where trend lines reveal a high degree of variability (volatility), this may indicate elasticity—the problem is sensitive to one or more changing factors and therefore potentially malleable. If a line is static despite deep and ongoing investment, it’s likely that current interventions are not yet solving the problem, so novel approaches might be important to explore.

In fact, these types of analytics may initially spur more questions than they answer. This is a good thing, since when questions arise, we focus our energies on getting to the answers.

TCE is beginning to examine trends and investments in this way as a first step to furthering understanding. Figure 13 below is an early example of data from one site.

Figure 13: Environment and Grantmaking



A limitation in the currently available trending data is revealed here, as too often the data lags intervention/investment periods and renders a less than optimal feedback loop.

Ideally, we'd be seeing these trends in near real time and be poised to learn along the way and make course corrections where appropriate. As Big Data techniques advance and become widely adopted by government, academia and industry, we'll be able to track these indicators, and extrapolate them through analytics, in a more timely manner.

Large, varied, timely data sets are also important because they will enable analytics to produce statistically reliable answers to a wider range of questions, including complex problems such as "Is there an inflection point for this type of grant where more funding begins to produce a discernibly better or worse return?" Many individual foundations, especially those that make grants across a wide range of concerns, don't have a sufficient quantity of data on similar grants to develop, train and verify analytic models.

Big Data will also give foundations and nonprofits the opportunity to reach beyond the limitations of the characteristics in the data they have individually collected. The benefits of doing so have been proven in the for-profit world. In the financial services, for instance, banks routinely manage enormous volumes of credit card transaction data. Many of them also share data about fraudulent transactions with a consortium of other banks. Consortium members benefit because their analytic models are able to identify many more fraud behavior patterns from this expanded data set than would be possible working from their own data alone. And because of this broad exposure, models can detect fraud schemes that are new to a particular bank, though they have been tried at other banks.

This kind of expansion of the learning pool is exactly what we need to build more useful analytics for grant making. It could help us identify similar characteristics across grants—advanced data mining techniques like data spiders and genetic algorithms can discover similarities of which human experts are completely unaware. It could enable analytics to point to the causes of variations in results across similar grants. It will be essential for making real progress in finding ways to measure and compare grant outcomes across dissimilar projects. And, these techniques can point evaluation and research staff to the areas most likely to expand knowledge and insight.

As such, collaboration across the field, essential for bringing forth the full power of analytics, is also essential for realizing the full potential of the philanthropic sector. The big problems we are attempting to solve in philanthropy are multi-layered and often seem intractable. The efforts we make are often caught up in a sea of different systemic actors, so that it feels like we cannot reasonably know our impact. Our vision is of a sector that is instrumented—both within individual foundations and at the field level—to know more, learn more and accomplish more. To realize this vision, sharing data and using analytic science must become an integral part of our everyday operations.

We are at the beginning of a new era in which the expanded prospects for philanthropy to make more impact on society are nothing less than thrilling. Data analytics is a powerful tool that will enable foundations to advance their missions at a faster pace. It's science that will transform and reinvigorate the art of the possible.

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“We’re really just getting under way. But the march of quantification, made possible by enormous new sources of data, will sweep through academia, business and government. There is no area that is going to be untouched.”

Gary King
Director, Institute for Quantitative
Social Science, Harvard University,
quoted in *The New York Times*,
Feb 2012

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Elizabeth Dreicer is a humanitarian and entrepreneur. Her passion lies in information and decision science and a core belief that overall we make better choices in the face of better information. These improved choices have the ability to improve lives and society. Since 2006 she has been CEO of Kuity, an advanced analytics company specializing in econometric, information assurance, environmental sustainability and foundation solutions enabling organizations to gain understanding of the factors and metrics that drive and optimize performance. Dreicer has a background in healthcare, including top executive roles with firms in medical analytics, healthcare technology service organizations, community health, managed healthcare, medical group purchasing, healthcare publishing and pharmaceutical distribution industries. Dreicer received her Bachelor's of Science degree in Organizational Leadership from The Pennsylvania State University. Additionally, she has been a Trustee of the Alliance Healthcare Foundation for the past decade, including, serving on the Program Committee and Finance/Investment Committee, where she is the immediate past Chair (2003-2011). Dreicer is a co-founder of Consuli, a organization that is organizing the world's medical knowledge and making it accessible to consumers and clinicians globally. She is also a member and Co-Chair of the San Diego E2 (environmental entrepreneurs) chapter.



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B. Kathlyn Mead, a veteran healthcare industry administrator, has been executive vice president and chief operating officer for The California Endowment since May 2007. Prior to joining The Endowment, Mead was the CEO of the Council of Community Clinics in San Diego. Mead has served as vice president of the CalPERS sector for Blue Shield of California and as CEO for Sharp Health Plan, where she developed and implemented the highly successful FOCUS program, a subsidized premium insurance product designed to expand access to affordable, quality health coverage for employees of small businesses. Mead was also vice president of managed care at Children's Hospital San Diego. In addition, she has served as the director of operations for MetLife Healthcare Network, and manager of provider networks for Blue Cross of California. Her commitment to community service has been recognized by San Diego's KGTV-10 News, which awarded her its Organizational Leadership Award. Mead is also the recipient of the Twin Award from the YWCA of San Diego. She currently serves as a board member of Hispanics in Philanthropy and is on the Board of Trustees for the Alliance Healthcare Foundation.