Initial discussions of a “diversity research project” at the University of Maryland Libraries (UML) occurred in 1999 and led to the development of the first version of the ClimateQUAL® protocol—originally called the “Organizational Climate and Diversity Assessment” (OCDA©). For my part, I owe the staff of UML, during my dozen years as Dean of Libraries, a profound debt of gratitude. So many worked in large and small ways to be sure that the OCDA was a success and that we learned from it how to improve the organizational health of the libraries and as a result our information services to the university community. At the outset, I should mention that this paper can only provide a sketch of the overall findings of the ClimateQUAL research and that a full discussion will appear in a book this Fall published by Rowman and Littlefield—ClimateQUAL: Advancing Organizational Health, Leadership and Diversity in the Service of Libraries.
only seeking to improve the organizational climate, particularly focused on diversity issues. We were not thinking about a multi-institutional and, now, international research project. In time, we came to believe that other academic libraries could benefit from our learning. By 2007, we had turned our attention to testing the protocol with five other Association of Research Libraries (ARL) member libraries and handing the long-term management of the protocol to the ARL for general use.

In 2008 I moved to ARL as Executive Director, but we continued to cooperate with the University of Maryland Industrial Psychology program, which participated fully in further developments. Our learning at ARL about the design, automation, evolution, and refinement of the protocol is, in itself, a case study of the value that accrues from undertaking such a large and long-term project. The early research findings of the OCDA, and subsequently the ClimateQUAL project, advanced the research in substantive ways that today allow multiple perspectives on the organizational health and climates of libraries. And as the protocol matured, we began to see that the resultant large data-set gave us an opportunity for deeper learning, particularly given the IT platform that was developed at ARL to support it. ClimateQUAL was incorporated into the StatsQUAL® suite of services and became the second-most used protocol service after LibQUAL+ offered to libraries by the Association.

A number of critical and important early findings deserve mention:

• Results demonstrated empirically what has been intuitively known for a long time. A healthy organization is better able to fulfill its service mission. In short, the research provides empirical evidence for the connection between organizational climate dimensions and customer satisfaction in a library setting.
• Results also indicated that conflict that exists within an organization does have a direct negative impact on customers. In short, organizational climate (that is health) has a direct and perceived impact on the service experienced by library customers.

• Another important finding was that the climate for diversity improves the way an organization operates—this was the first time that this had been shown empirically. Similarly, findings included a significant correlation between valuing diversity and the extent to which customers say they can get the information they need.

Such results encouraged us to continue the research dimension of the project. Further research based on the current data-set is the key focus of my presentation today, emphasizing 7 specific research themes. With one brief exception, I won’t talk about individual library’s experiences with ClimateQUAL, but rather will examine several themes resulting from use of the data from 54 libraries’ experience. So, this is not a presentation about what a library may expect in a local application of the protocol.

**Theme I: the Healthy Organization—Properties of ClimateQUAL Scales**

In a real sense, the development of the new concept of the healthy organization became central to our work, encompassing, as it does, the other elements of our research, particularly the various climates (notably diversity climate) and their connection with service to customers. The key elements of the research design included methodology, aggregation statistics, and validity and reliability testing. As the protocol survey evolved, different psychometric constructs were assessed. Some were discarded along with
questions that did not provide useful information. Today there are approximately 150 questions representing the nine climate dimensions, seven organizational attitude scales, and additional demographic questions.

**FIGURE 1: CLIMATEQUAL SCALES**

<table>
<thead>
<tr>
<th>Organizational Climate Measures</th>
<th>Organizational Attitude Measures</th>
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</thead>
<tbody>
<tr>
<td>Climate for Organizational Justice</td>
<td>Job Satisfaction</td>
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<tr>
<td>Distributive Justice</td>
<td>Organizational Commitment</td>
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<tr>
<td>Procedural Justice</td>
<td>Organizational Citizenship Behaviors</td>
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<tr>
<td>Interpersonal Justice</td>
<td>Organizational Withdrawal</td>
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<tr>
<td>Informational Justice</td>
<td>Psychological Empowerment in the Workplace</td>
</tr>
<tr>
<td>Leadership Climate</td>
<td>Task Engagement</td>
</tr>
<tr>
<td>Leader-Membership Relationship</td>
<td>Work Unit Conflict</td>
</tr>
<tr>
<td>Quality</td>
<td>Interpersonal Conflict</td>
</tr>
<tr>
<td>Authentic Transformational Leadership</td>
<td></td>
</tr>
<tr>
<td>Climate for Deep Diversity</td>
<td>Task Conflict</td>
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<tr>
<td>Standardized Procedures</td>
<td></td>
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<tr>
<td>Valuing Diversity</td>
<td></td>
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<tr>
<td>Climate for Demographic Diversity</td>
<td></td>
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<tr>
<td>Race</td>
<td></td>
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<tr>
<td>Gender</td>
<td></td>
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<tr>
<td>Rank</td>
<td></td>
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<tr>
<td>Sexual Orientation</td>
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<td>Climate for Innovation: Co-worker support</td>
<td></td>
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<tr>
<td>Climate for Continual Learning</td>
<td></td>
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<td>Climate for Teamwork</td>
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<tr>
<td>Benefits of Teams</td>
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<tr>
<td>Structural Facilitation of Teamwork</td>
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<tr>
<td>Climate for Customer Service</td>
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<tr>
<td>Climate for Psychological Safety</td>
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</tbody>
</table>

There were two types of scales. We explored organizational climates—climates for distributive, procedural, interpersonal, and informational justice, team work, deep...
diversity, demographic diversity, psychological safety, continual learning, and customer service. We also focused on work attitudes—job satisfaction, organizational commitment, organizational citizenship behaviors, organizational withdrawal, task engagement, psychological empowerment, leader-member exchange (LMX), authentic transformational leadership, and conflict.

To repeat, ClimateQUAL is grounded in the our findings about the theory of the healthy organization, which proposes that organizations that foster a system of climates to simultaneously support their employees and customers will be better able to meet customer needs. The correlations among the climate scales provide us with a “big picture” look at the common baseline of libraries as organizations, which is useful for individual libraries as a comparison as well as the deeper understanding of what makes a healthy organization.

The theory of the healthy organization specifies that organizations can benefit from diversity by fostering a system of climates that prioritizes a dual concern for both employees and customers (Hanges et al., 2007). By fostering climates for justice, deep and surface diversity, continual learning and innovation, psychological safety, customer service, and teamwork, organizations communicate that they value not only their customers, but also the well-being of their employees. This dual message will not only enhance customer service, but will also allow for organizations to attract and retain a talented and diverse workforce. Sending this message should enhance the breadth and diversity of an organization’s applicant base. Additionally, by promoting and managing diversity, healthy organizations will be more responsive to the changing needs of their diverse client base.
Theme II—Leadership Matters—The ClimateQUAL® Case

The ClimateQUAL project provided an opportunity to advance our understanding of library and information science leadership by systematically studying its effects in the larger context of general studies of leadership. To say that leadership and its impact on organizations have been deeply researched is gross understatement. We know that it is tremendous advantage for organizations to align climates and cultures with critical organizational goals (e.g., productivity, service, safety, diversity). Climate and culture are two terms that are frequently used interchangeably, because they both refer to shared employee interpretations of their work environment (Ehrhart, Schneider and Macey 2014, 66-67, 296-97). Given the importance of climate and culture, it is reasonable to ask where they come from in the first place and how they can be shaped. Several researchers have pointed out the role of the CEO/founder and their top management team (TMT) as being critical for creating, sustaining, and changing organizational climates and culture (Schein, 2010, 219-58; Schneider, 1987).

Leadership research is fairly well advanced in business, psychology, and sociological literatures. Indeed, Day and Antonakis (2012, 4) stated that the accumulated knowledge regarding leadership in the broader scientific literature “now allows us to explain the nature (including the biological bases) of leadership, its antecedents, and consequences with some degree of confidence.” By contrast, the information published in the library and information science literature does not fully exploit the current state of knowledge regarding leadership in other fields.

Despite a few instances of empirical research, the professional LIS leadership literature, research and training have remained essentially hortatory. By placing LIS
research in the framework of the broader leadership research corpus, we provide a framework for demonstrating the importance of what we have learned about library leadership specifically. So, the case for placing the ClimateQUAL results in the larger literature is demonstrably strong, particularly given the void of empirical research in the LIS literature that our work begins to fill. It was very fortunate that from an early time in ClimateQUAL development, we included questions about “authentic and transformational leadership” and “leadership management exchange” (LMX). These two concepts have emerged as central to the modern study of leadership. We hypothesized that library deans or executive officers who are rated higher in terms of authentic leadership and LMX quality would be more likely to have employees who internalize the executive officer’s vision and goals. Thus, library executives who stress the importance of diversity, fairness, and/or innovation would be more likely to have many employees who internalize these goals and these employees influence the rest of the library staff regarding the importance of such goals.

As predicted by both the authentic leadership and LMX literatures, we found strong relationships between library leadership and the climate perceptions of staff members. In particular, authentic leaders and leaders with higher average LMX quality run libraries with stronger climates for fairness, diversity, psychological safety, and continual learning. We also explored the attitudes of the library staff members and found that authentic leadership has a strong positive impact on the satisfaction, commitment and psychological empowerment of staff members. It is also associated with reduced task conflict and reductions in thoughts about quitting the organization. In summary, our results demonstrated that these leadership styles are critical for libraries in both negative
and positive directions. Authentic transformational leadership is highly relevant for ClimateQUAL’s healthy organization theory.

**Theme III: Organizational Climate and Customer Service—The ClimateQUAL® and LibQUAL+® Connection**

One of the most important research objectives for ClimateQUAL was to determine how the other climates affected library service. Questions about service climate are included in the protocol. From these we learned we could assess how staff viewed the service climate interacted with other climates. So, we knew what the staff of said about service attitudes in their own library. Given that libraries are historically credited with a “service attitude,” it is really not surprising that library staff might say that they have a “good climate” for service. We needed an external measure of climate for service that drew on other demographic groups in order to improve our confidence that this finding was sound.

Our discussions came to the obvious choice of LibQUAL+. What was needed was a group of libraries that had administered both protocols so that we could test the hypothesis that ClimateQUAL measures of climate for service would be validated by LibQUAL+. In the early years of ClimateQUAL, we investigated a handful of libraries that had employed both and found a high level of congruence between the opinions of library staff about climate for service with those of library customers. Our current research extends and confirms this initial finding, exploring this topic in depth with the full data set. The first step in ascertaining the existence and strength of the connections between the two protocols was identifying libraries that had run both instruments—there were 43 in all that comprised 49,867 respondents to the LibQUAL+ survey and 6,149
respondents to the ClimateQUAL survey. The research demonstrates that the two protocols are related, with the primary driver being the LibQUAL+ “Customer Service” dimension showing that there is, indeed, a positive correlation between internal climate for service as perceived by staff and external customer perceptions of library service. The correlations between the LibQUAL+ dimensions and the other ClimateQUAL scales, such as the Climate for Demographic Diversity- Rank, Organizational Commitment, and Organizational Climate for Justice, are explored fully in our forthcoming work. An early finding of our research is worth emphasizing here—a positive climate for diversity leads to a positive climate for service. As important as this early finding was, it has been reinforced in the current research—it is validated because customers responding to the LibQUAL+ survey tell us that the climate for service is good while at the same time the ClimateQUAL survey of employees reflects a positive diversity climate. Put simply, good customer service is correlated with a good climate for diversity. It may seem that this is simply intuitive, but understanding that organizational health and climate for diversity are so strongly correlated with good service provision should lead to more effort focused on staff. Put another way, efforts at rearranging the organizational structures supporting service to users may not be the place to start when trying to improve the quality of that service. At least reorganizations of service should be accompanied by this understanding.

**Theme IV: Improvement Strategies and Organizational Change Using ClimateQUAL®**

Probably the most important challenge for any library that implements ClimateQUAL is analyzing the rich data that results and developing a plan of action for
improving the health of the organization. Our experience with ClimateQUAL partner libraries has been that the effort of protocol administration is dwarfed by that of following up with plans for improvement. But there are strategies for creating a plan—one that addresses how to review the survey results, identifies areas for improvement, develops the tailored strategies for creating change, and then presents ideas for specific strategies that are practical. Therein lies the benefit of ClimateQUAL in the local setting. Early on at the University of Maryland, we determined to use a combination of systems thinking and organizational development processes to interpret and respond to the ClimateQUAL report. The ClimateQUAL report is detailed and includes multiple tables that provide a variety of ways of looking at the data. Starting off with a plan for the review was seen as essential.

The analysis phase is followed by work to develop improvement strategies. A range of organizational development tools can be used to diagnose issues or support improvement strategies in an effort to increase understanding of a library’s climate and culture. The local environment should strongly condition the approach. For instance, even with the large amount of data ClimateQUAL provides, some libraries have made additional surveys a critical part of their process. Equally important, the ClimateQUAL “community” has grown over the years, and ARL provides support for sharing information among participants through meetings and the Website. Developing and monitoring the health of the organization should be a key strategy of every library, indeed of any organization. All library employees should be encouraged to contribute to policies, procedures, and practices to maintain a healthy organization. But the involvement of the
leadership of the library throughout is critical for ensuring that mechanisms are in place, for without this leadership, the organization will not be as successful as it could be.

**Theme V: Longitudinal Change Leads to Healthy Environments**

This leads us to ask about the longitudinal changes in climate scales of libraries that have applied ClimateQUAL more than once. Here we had only a small sample of 7 libraries to draw on, but this does begin to give us a picture of how responding to ClimateQUAL results can lead to a healthier organization. Given the effort that is required of a library to use ClimateQUAL, this is good news. For the six-year time frame of this study (2008-2014) a total of 17 scales were a part of the survey instrument and thus available for this analysis. A key part of this research involved interviews with the library’s director and staff. A variety of strategies were employed to implement the protocol. Similarly, local conditions led to different strategies for sharing the ClimateQUAL report and data. More specifically, we analyzed 12 scales for distributive justice, procedural justice, interpersonal justice, both deep and demographic diversity, authentic leadership, leader-member-relationship, innovation, continual learning, job satisfaction, task engagement, and teamwork to see how they changed over time in response to improvement strategies. While we cannot attribute causality or statistical correlation, we note that efforts on general themes positively affected general direction of underlying scales.

**Theme VI: Differences and Equity: A Reflective Analysis of ClimateQUAL®**

**Demographics and Organizational Climate**

As I have already emphasized, a core purpose of the ClimateQUAL survey is to help libraries understand their organizational climate and matters concerning diversity
and organizational effectiveness. Our analysis places in high relief how specific demographic groups differ in large and small ways in their view of the dimensions of climate in their libraries. This analysis of differing group opinion helps to balance the statistical effect of central tendency that can obscure distinct group differences and thus provides us with a deeper analysis of equity and differences among demographic groups. Put another way, we examined the relationship between demographic diversity and organizational climate as a function of the demographic composition of the groups. The demographic questions asked in the survey concern race and ethnicity, rank, biological sex, religious affiliation, sexual orientation, and disability status.

Statistical analysis of demographic group differences in ClimateQUAL averages is a rich discussion, but one that would take more time than we have here. However, it can be said in summary that there is a small but statistically significant effect for five or the six of the demographic categories: Distributive Justice, a dimension of Climate for Justice, Climate for Demographic Diversity: Rank, Climate for Continual Learning, Organizational Commitment, and Team Psychological Empowerment in the Workplace. The healthy organization theory that underlies the ClimateQUAL survey predicts that both types of diversity are needed for groups to be effective in the long run. Surface and deep diversity should be related. After all, people who have different surface characteristics (demographic characteristics such as race, gender, etc.) probably have different backgrounds and personal experiences that have affected their values, beliefs, and interests that is deep diversity (personal characteristics such as values, interests, competencies, personality, etc.). Thus, the group surface or demographic diversity probably results in some deep diversity within the group. However, the connection
between surface and deep diversity is not perfect and thus, it makes sense to measure both types as we have. Highlighting the relationships between the demographic groups and the scales in the ClimateQUAL survey is a positive first step in helping libraries better understand the experiences of their staff as well as the library’s climate for diversity. Demographic group membership emphatically makes a difference in perceptions of climate; and this knowledge is an important tool for libraries dedicated to increasing the health of their organizations so that they can continue to make a positive, lasting impact on the communities they serve.

Theme VII: ClimateQual® in the UK: Applying the Protocol in a Different Culture

Thus far, I have discussed ClimateQUAL drawing solely on the data from libraries in the US and Canada. As many in this audience will know, four libraries in the United Kingdom (UK) have test-piloted ClimateQUAL and their perspective is at once expansive and local—expansive in the sense that it places ClimateQUAL in a broader international setting and local in providing us a detailed view of how one UK library implemented the protocol. In a sense, this is the perfect finish for this discussion because the case study of York University Library illustrates the kind of thought and reaction that is required at each participating library about “what’s next” once the ClimateQUAL report is received. This strongly demonstrates that ClimateQUAL can be a good fit with other methodologies for analyzing and resolving problems in organizational health. None of the other themes of this paper nor the forthcoming book gives that vital perspective, focused as they are on research and analysis at a meta-level. Key points learned in the York study:

• ClimateQUAL used at sensitive time near the end of major refurbishment
• ClimateQUAL linked to new University Information Strategy

• Other staff survey evidence available for comparison

• 95% response rate

• High number of comments, many with emotional content

• Improvement plan involved a new people strategy and structure

• Succeeding investigations showed substantial improvements

What is equally interesting is that, time and again, we have seen that only a library, in which the leadership is committed to this kind of follow-on effort, will get full benefit from ClimateQUAL. In essence, administering the protocol is just the tip of the iceberg of real improvement.

Finally, I should offer a brief discussion of the entire UK context, cohort, and pilot project results.
US/Canada, UK and York University Climate Means

Note: used with permission of Stephen Town

The adaptation of the survey to a different cultural context with different management norms and terminology is a good textbook for both keeping the survey faithful to its roots and modifying it to meet a different context. It is worth mentioning here that the use of the scales in the UK proved statistically valid. A summary of results of the four UK libraries are provided by this figure. It shows the mean results of the UK cohort against the mean results of the thirty-five North American participants to 2012, and those of University of York. This radar graph reassuringly demonstrates an approximately consistent pattern of strengths and weaknesses across all participants, indicating both some general truths about libraries, and we can infer that the instrument is being interpreted in the same way in both the UK and North America.
There are a few obvious variations in the results between the UK and North America. One of the largest difference-in-mean scores is for Team Psychological Empowerment. Whether this is reflective of different team management approaches in North America that generate better self-esteem around personal contribution is worth exploring further. However the UK mean for Team Benefit is higher. The Organizational Withdrawal score is by contrast lower UK, although workforce mobility may be more common due to geographical scale, perhaps explaining this difference. Diversity scores are slightly better in the UK, but this may be because there is less of it in the workforce. Job Satisfaction and some aspects of Justice appear poorer in the UK. These are only a few of the findings I have time to mention, but they are indicative and reflect our deeper analysis.

In closing, I would be remiss if I did not give due credit to colleagues who have been involved in the research I have synopsized today. In non-alpha order they are:

- **Juliet R. Aiken**, Ph.D., Program Director of and a Clinical Assistant Professor, University of Maryland
- **Sue Baughman**, Deputy Executive Director, Association of Research Libraries
- **Paul J. Hanges**, Ph.D., Professor of Industrial Psychology, University of Maryland
- **Martha Kyrillidou**, Ph.D., Principal at QualityMetrics, LLC
- **Shaneka Morris**, Survey Coordinator and Data Analyst, Association of Research Libraries
• **Mark A. Puente**, Director of Diversity Programs, Association of Research Libraries

• **Gary B. Roebuck**, Director of Administration and Operations, Association of Research Libraries

• **Stephen Town**, most recently the Director of Information and University Librarian at the University of York, UK

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**References**


