

into the surrounding wild landscape, following routes where ecologists have identified existing animal activity. “Along the edges of these corridors we proposed to fell existing pine trees that have been affected by the pine beetle [a prolific pest],” Zoli explains. “The felled trees are then arranged along the edge of the corridor to serve as both habitat and as a natural obstruction, eliminating the need for conventional fencing.”

MVVA, Van Valkenburgh says, was “essential in merging the imperatives of structural design with the imperatives of ecological systems.” In particular, his firm “provided the landscape framework for the structure developed by HNTB, found low-impact ways to accommodate the grade change on both sides, and created the appropriate conditions for plants and trees to thrive and grow.” MVVA had not designed a wildlife bridge before, he says, but is often called upon to build landscape connections across infrastructure, minimize environmental impact, and work creatively within ecological parameters: “The unusual part was that these concerns were much more in the foreground, whereas the social and cultural use of the landscape, which is usually very important to the projects we undertake, was not really a determining factor.”

Outwardly, the five final designs looked strikingly similar. But the winning proposal, one juror wrote, “is not only eminently possible; it has the capacity to transform what we think of as possible.” Specifically, Waldheim says, the HNTB design “prioritized the flora and fauna over the other considerations, yet the transportation engineering was equally strong and thoroughly integrated—you didn’t see a compromise in which wildlife was secondary to bridge design, or vice versa. The outcome was greater than the sum of individual components.”

~JANE ROY BROWN

MICHAEL VAN VALKENBURGH E-MAIL ADDRESS:  
[michael@mvvainc.com](mailto:michael@mvvainc.com)

MICHAEL VAN VALKENBURGH ASSOCIATES  
WEBSITE:  
[www.mvvainc.com](http://www.mvvainc.com)

CHARLES WALDHEIM E-MAIL ADDRESS:  
[waldheim@harvard.edu](mailto:waldheim@harvard.edu)  
ARC COMPETITION FINALISTS’ DESIGNS  
[www.arc-competition.com/finalists.php](http://www.arc-competition.com/finalists.php)

## The “Water Cooler” Effect

**C**HATTING around the water cooler may yield more than office gossip; it may help scientists produce better research, according to Harvard Medical School (HMS) investigators.

The benefits of collaboration are well accepted in the scientific world, but researchers with the HMS Center for Biomedical Informatics wondered whether physical proximity affects the quality of those collaborations: Do scientists who have more “face time” with colleagues produce higher-impact results? To test the hypothesis, they examined data from 35,000 biomedical science papers published between 1999 and 2003, each with at least one Harvard author. The articles appeared in 2,000 journals and involved 200,000 authors.

After analyzing the number of citations each paper generated (a standard way to gauge article quality) and the distances between coauthors, they concluded that personal contact, especially between an article’s first and last authors,

still matters—even in an age of e-mail, social networking, and video conferencing. (Their analysis, “Does Collocation Inform the Impact of Collaboration?” appeared in the online journal *PLoS ONE* in December.)

“Our data show that if the first and last authors are physically close, they get cited more, on average,” says research assistant Kyungjoon Lee. As that distance grew, citations generally declined. (Typically, the first author is a graduate student or postdoctoral fellow and the last is a more senior faculty member; they are often affiliated with the same lab, but do not necessarily work closely together.) The effect didn’t hold true for other author combinations, such as first and third; in fact, the middle authors normally don’t interact much on a project, Lee notes. The team also found that, on average, a paper with four or fewer authors based in the same building was cited 45 percent more than one with authors in different buildings—“So if you put people who have the potential to collaborate close together,” he says, “it might lead to better results.”

Lee was first author on the study; the principal investigator was center co-director Isaac Kohane, the Henderson professor of pediatrics and health sciences and technology. Kohane had long suspected that proximity promotes collaboration, despite a lack of hard evidence, so he secured funding

**In this 3D representation of the relationship between collaboration and mean citation impact in the Longwood Medical Area, each building’s height reflects the number of citations of papers originating in the building, while the color gradient (from gray/low to blue/high) represents the proportion of publications originating from that building in which both first and last authors work in the building.**



