

## ARTICLE

**A Mechanism for Multidisciplinary Dialogue: The *Memory & ... Series***Kristi S. Multhaup<sup>1</sup>, Scott Denham<sup>2</sup>, Hilton Kelly<sup>3</sup>, & Barbara Lom<sup>4</sup><sup>1</sup>Psychology Department, Davidson College, Davidson, NC 28035; <sup>2</sup>Center for Interdisciplinary Studies & German Department, Davidson College; <sup>3</sup>Education Department, Davidson College; <sup>4</sup>Biology Department & Program in Neuroscience, Davidson College.

Neuroscientists have long explored the mechanisms of memory from molecular, physiological, cognitive, and social perspectives. Scholars from other disciplines such as history, sociology, literature, and cultural studies, that do not traditionally cross-pollinate ideas with neuroscientists, also study memory from a variety of angles. In this article, we describe the founding of a multidisciplinary discussion series in which faculty and staff from the arts, humanities, social sciences, and natural sciences come together to explain how memory is integral to their scholarship and teaching. After panelists from different disciplines present opening comments, the floor is open for discussion with the audience that includes students, staff, and community members, as well as other faculty. Each year the series is anchored by a keynote address by an eminent scholar

engaged in cross-disciplinary memory research. We outline the benefits of such thematic discussion series, highlighting the synchrony with the academy's increasing focus on interdisciplinarity, and on the need to train scholars to speak clearly about their work beyond their own disciplinary boundaries. More specifically, we focus on the need to train scientists to communicate with non-scientists. We have experienced success with this series and believe that the format could be adapted to a wide range of issues that cross disciplines (e.g., development, language, music, environmental studies).

*Key words: multidisciplinary discussion series; memory; scientist/non-scientist dialogue; speaker series; interdisciplinarity*

Two trends make the initiation of a multidisciplinary, topical discussion series timely. The first trend is the increasing emphases on interdisciplinary projects by funding agencies and on interdisciplinary programs by higher education (Jacobs and Frickel, 2009). The second trend is the growing need to train scientists to communicate effectively with non-scientists, particularly given the alarming levels of scientific illiteracy in the general public (Mooney and Kirshenbaum, 2009).

Neuroscience faculty members are positioned well to facilitate multidisciplinary discussion series given the inherent interdisciplinarity of neuroscience, which traverses molecular, cognitive, and social levels of analysis. We believe that when neuroscientists move beyond conversations and collaboration within neuroscience to discuss their work with scholars in the arts and humanities, for example, the bounds of interdisciplinary conversations are extended even further. While such discussions allow scientists to sharpen their skills in explaining science to non-scientists, non-scientists also sharpen their skills in explaining their research to a broad audience, positioning both groups to better articulate the value of the academy to the general public. We argue that the benefits such conversations bring to faculty and students are worth the challenges associated with translating jargon across disciplines and clarifying assumptions of our disciplines that we rarely consider in conversation within our specialty areas. Before we outline the benefits, however, we will describe the first three years of a dialogue series that we organized around the topic of memory—but we emphasize that a wide range of topics could be used as an organizing topic. An overview of our process is illustrated in Figure 1.

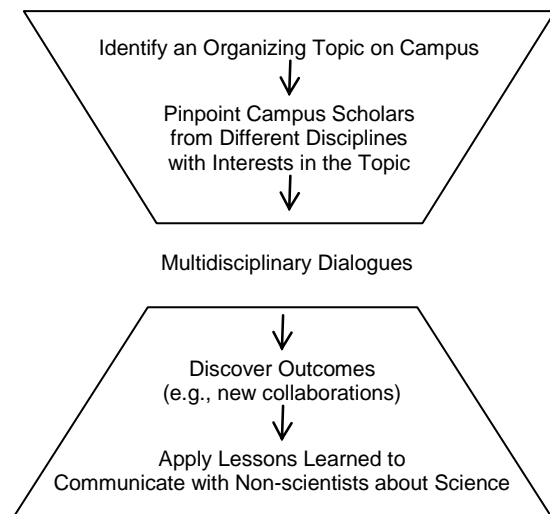


Figure 1. Preparatory steps toward multidisciplinary dialogues and example outcomes. This process can be used with a wide range of organizing topics.

**DEVELOPING A DIALOGUE SERIES****Identifying an organizing topic**

To illustrate how an organizing topic can arise, take a moment to consider the general area that your research program explores. Some readers may respond with *life-span development*; others with *time, plasticity*, or *environmental studies*. Still others may respond as we did, with *memory*. Now take a moment to consider faculty members at your institution who might use similar terms to

describe their research. When we challenged ourselves with this question, we realized that a large number of faculty members have interests that relate in important ways to memory. Given these scholars are based in a range of fields across the sciences as well as in the arts and humanities, the details of their intellectual foci and their research methods are diverse. All, however, have demonstrated scholarship related to memory that provides common ground for fruitful multidisciplinary dialogue.

**Identifying themes**

To emphasize interactions across disciplines, for each event we invited speakers from at least two of the College's three academic divisions (humanities, social sciences, and natural sciences). As we reviewed the list that we brainstormed of faculty with interests in memory, themes emerged. For example, an English professor who writes and teaches the memoir genre, a German scholar who writes and teaches about representations of memory in film, and a psychologist who writes and teaches about autobiographical memory fit together with the theme of *Memory & Self*. Similarly, an art history professor who studies French Romanticism, an English professor who specializes in disability studies, and a biology professor who studies immunology fit together with the theme of *Memory & The Body*. Table 1 lists topics and presenter departments for the first three years of the series (more information at <http://www3.davidson.edu/cms/x38455.xml>).

**Event structures**

The structure of most of our *Memory & ...* events starts with three presenters taking 10-12 minutes each to share an aspect of their research or teaching. The panel presentations are followed by an open period for audience questions and general discussion for the remainder of the hour-long event. The format used by the presenters has varied both within and across events. For example, the *Memory & Self* group coordinated their presentations into a single PowerPoint slideshow, whereas the *Memory & Evolution* group included a PowerPoint slideshow by one panelist and the other two panelists spoke without visual aids. Some panels have touched base with one another in advance, while other panels have not. The flexibility in format, communication, and formality has worked well.

An exception to this structure occurred when we invited a visiting writer, Dorothy Allison, to read from her in-progress novel that explores memory loss. The author contextualized her reading, including observations from her visits to a rehabilitation facility that serves people who have head injuries, and then read passages from her in-progress novel. As always, the event ended by opening the floor for audience questions and discussion.

Third, each year we have included a keynote address by an eminent speaker in a traditional colloquium format, co-sponsored with other campus groups. The first two keynote speakers were accomplished scholars in psychology and cultural studies; the third year, the speaker was a prominent museum professional (see Table 1 for details). To help prepare the community for one of the

Topic	Presenter Departments
<b>2008-09: <i>Memory &amp; ...</i> Series Events</b>	
<b><i>Memory &amp; African-American Culture</i></b>	Anthropology Education Religion
<b><i>Memory &amp; Narrative</i></b>	German History Anthropology
<b><i>Memory &amp; Self</i></b>	English German Psychology
<b><i>Memory &amp; Evolution</i></b>	Biology English Music
<b>Keynote: <i>Psychology's Role in Collective Memory</i></b> William Hirst (New School for Social Research)	
<b>2009-10: <i>Memory &amp; ...</i> Series Events</b>	
<b><i>Memory &amp; The Body</i></b>	Art Biology English
<b><i>Excerpts from a novel in progress about memory loss</i></b>	<i>Visiting Writer in English:</i> Dorothy Allison
<b><i>Memory &amp; The Archive</i></b>	Archives History Van Every/Smith Galleries
<b><i>Memory &amp; Madness</i></b>	Chemistry Education
<b>Small group discussion of chapters from Olick (2007)</b>	<i>Led by professors from</i> German & Education
<b>Keynote: <i>Cultural Memory</i></b> Jeffrey Olick (University of Virginia)	
<b>2010-11: <i>Memory &amp; ...</i> Series Events</b>	
<b>Alumni Address: <i>Remember Martin, but Don't Forget Malcolm: Representations of Black History Month as Collective Memory</i></b> Phia Salter (Texas A & M University)	
<b><i>Memory &amp; Forgetting</i></b>	Economics History Spanish
<b><i>Memory &amp; Desire</i></b>	Art Biology English
<b>Keynote: <i>A Call to Remember: The Creation of a National Museum</i></b> Lonnie G. Bunch, III (Smithsonian National Museum of African American History and Culture)	

Table 1. Three-year history of the *Memory &...* dialogue series including faculty and staff presenters from 15 departments. Specific panelist names and titles are available at <http://www3.davidson.edu/cms/x38455.xml>.

keynote addresses, we made two chapters of the speaker's recent book available and then held a discussion of those readings, providing a fourth format within the broader multidisciplinary dialogue series.

Finally, in our third year we expanded our event formats by coordinating with the Alumni Office to host a talk during



Figure 2. *Memory &...* joint event with Alumni office. Alumna Phia Salter '05 shared her work on cultural memory with a large audience of faculty, staff, students, and alumni coordinated with Reunion Weekend. (Photo courtesy of Davidson College)

Reunion Weekend that was part of our *Memory &...* series and their series on returning to the classroom. An alumna who studies cultural memory gave a relatively short colloquium, close to 30 minutes, to allow time for a wide-ranging discussion (see Figure 2).

In short, each year we maintained consistency and yet explored new formats (e.g., visiting writer, alumna lecture) to be responsive to new opportunities.

### Audience composition

Each event has attracted a combination of faculty, staff, students, and town residents. The Alumni talk, naturally, also attracted alumni on campus for Reunion Weekend. The audience size for the panel discussions ranged from roughly 15 to 40 people ( $M = 21$ ). Thus attendance was similar to departmental colloquia, even though incentives for attendance (e.g., course credit) did not apply for these events. Keynote and alumni addresses generated larger audiences with as many as 80+ attendees. Figure 3 illustrates audience composition by academic year and constituency. The rise in student participation in our second year may be attributed to presenters who specifically encouraged their students to attend. The number of attendees in the other groups has been relatively constant across the two years shown in Figure 3. Interestingly, faculty from the natural sciences and mathematics have been the least well represented, although that is the smallest division of the College so lower numbers are to be expected.

### OUTCOMES

One panelist wrote to thank us for organizing the dialogue series stating, "You've established a model for a low-stress, high-reward way for faculty and students to discuss topics of interest." Another panelist commented that, "A series such as this one brings together faculty who would not normally interact into a common academic purpose. Students are exposed to ideas in areas outside their own expertise. I wish more such interaction occurred regularly." Indeed, the *Memory &...* dialogue series was highlighted

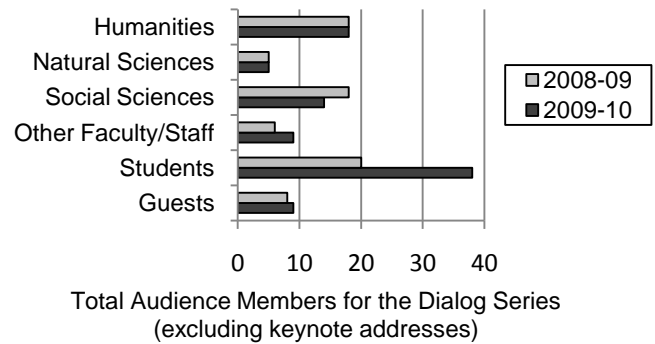


Figure 3. Total audience members (excluding keynote and alumni addresses) by year and constituency: Faculty in each of the three academic divisions of the College, Interdisciplinary faculty & staff, students, and community guests. Students were not separated by division because we could not identify all students and their majors. (For reference, Davidson College currently employs 162 full-time faculty members and enrolls 1700 undergraduates.) 2010-11 had only two panels; one had a failed attendance recording so that year is omitted from Figure 3.

as a model for future interdisciplinary curriculum development in the College strategic plan ([www3.davidson.edu/cms/x30520.xml](http://www3.davidson.edu/cms/x30520.xml)).

We asked our natural science panelists what, if any, benefit they experienced from their presentations. The responses are captured well by the following quotation:

The material I was presenting did not directly relate to my research, so I found it refreshing to have to think about a different topic in my general field. In addition, I found it challenging to present such information to an audience completely unfamiliar with the scientific jargon that I use on a daily basis. It forced me to think more globally, look at the questions from a more conceptual, "big picture" perspective and speak to that instead of minute details. I was very impressed with the caliber of the discussion that followed my presentation. All the questions were well thought out and were directly provoked by my presentation. It gave me a sense of accomplishment that I was able to communicate complex information in a way that any intelligent person would be able to understand and work with.

Additional concrete outcomes of the *Memory &...* series include: (a) a new research partnership (Kelly et al., 2009), (b) a music scholar identifying writings from Darwin to frame his book on horror music (Lerner, 2009), (c) the series organizers developing and submitting a grant application for the NSF TUES program, and (d) the faculty from Davidson's film studies concentration modeling a discussion series based on the *Memory & ...* series.

We highlight that many of these positive outcomes were unanticipated. We did not, for example, set out to inspire a music scholar to draw on Darwin's work for his new book. Regardless of the topic that organizes a multidisciplinary dialogue, we advise those who consider adopting such a framework to expect the unexpected and encourage them to share their experiences through forums such as *JUNE*.

## DISCUSSION

As noted in the introduction, trends in interdisciplinary scholarship and the growing need for scientists to communicate clearly with non-scientists are related to our goals for the *Memory &...* discussion series. We elaborate on each of these trends in turn.

### Interdisciplinarity

Throughout the article, we have used the terms *interdisciplinary*, *multidisciplinary*, and *cross-disciplinary* interchangeably. A full discussion of the nuances of those terms is beyond the scope of this article (but see Mehlenbacher, 2009). Regardless of the label applied, bringing together scholars from a variety of fields—particularly fields that do not typically interact with one another—can better position faculty and students to keep pace with changing academic landscapes than staying in their intellectual silos can. Faculty members who wish to stay current with academic trends and faculty members motivated by preparing current students to become future faculty will see the advantages of honing skills in multidisciplinary communications. Such skills include (a) explaining one's research with minimal jargon and defining any unavoidable jargon, (b) identifying common ground with scholars from a wide range of disciplines, (c) willingness to ask seemingly naïve questions, (d) awareness of the range of research approaches that can be used to address aspects of multi-faceted questions such as “*How does memory work?*” and (e) respect for scholars with a variety of backgrounds. Initiating a multidisciplinary dialogue on a topic of wide interest on campus is one way to help faculty and students cultivate skills increasingly required in academia and by funding agencies (Jacobs and Frickel, 2009).

### Communication with non-scientists

The level of scientific illiteracy in the general public is a large hurdle between our current situation and long-term solutions to problems such as global warming (Mooney and Kirshenbaum, 2009). While scientists alone cannot eradicate scientific illiteracy, they can help foster support for science by explaining what they do to non-scientists in accessible language. Unfortunately, fewer than 40% of scientists talk about their research with non-scientists (Scheufele et al., 2009). Multidisciplinary dialogues offer low-cost, easy to organize forums for scientists to engage with non-scientists and explain what they do, why it is important, and how it connects with scholarship in other disciplines. Ideally such dialogues will model the importance of conversations between scientists and non-scientists, laying a foundation for science students to view communication about their work with non-scientists as natural as sharing their work with their fellow scientists at conferences and through publications.

### Setting goals

We began the *Memory &...* discussion series with the goal of increasing meaningful interdisciplinary conversations. As is typical of pilot projects, our assessments were relatively global. Our quantitative measure was recording

who attended the events (see Figure 3 and accompanying discussion) and our qualitative measure was responses from our panelists (see Outcomes section). Future incarnations of this type of discussion series could have more specific goals, such as changing non-scientists attitudes about science, and incorporate a survey such as the Views about Science Survey (Halloun and Hestenes, 1998).

### Coming full circle: the role of neuroscience

As noted at the outset of this article, neuroscientists are well positioned to take a leading role as initiators of multidisciplinary discussions, given the inherent interdisciplinary nature of the field. One strategy could be to have a neuroscientist as part of each panel. We opted not to do that, in part because of the relatively small number of neuroscience faculty members at a liberal arts college. Instead, we opted to use a natural pairing like neuroscience and memory as the inspiration to bring a wide range of scholars from natural sciences, social sciences, arts, and humanities to the table. Each panel included at least one natural or social scientist, and each year at least one panelist approached the topic from a neuroscience perspective. For example, a chemist approached the *Memory & Madness* topic from the perspective of the chemicals used in early photography resulting in artists' mercury poisoning which results in impairment of sensory processes. A psychologist highlighted typical brain development as a mechanism related to people's lack of memories for their first years of life. A biologist approached the *Memory & Desire* topic with a discussion of how growth cones work, highlighting that there could be no memory without the “desire” of the growth cones to make connections during brain development. Thus neuroscience was present in panels each year, and typically surfaced in the open discussion period even when a neuroscientist had not presented (e.g., a question probing the short-term versus long-term memory distinction with the *Memory & The Body* panel). The extent to which neuroscience is highlighted as the “guest of honor,” as opposed to the facilitator, for the discussion among the disciplines seated at the table will be determined by the institutional environment of each group who chooses to organize such a series.

### Summary

The *Memory &...* series offers one mechanism for multidisciplinary dialogues that has been successful at Davidson College. Those who wish to adapt the series for their own institution may use a different organizing topic (e.g., aging, music, environment); indeed the organizing topic could change each semester or year. We hope that any who do so will find the experience as rewarding as we have.

## REFERENCES

- Jacobs JA, Frickel S (2009) Interdisciplinarity: A critical assessment. *Ann Rev Soc* 35:43-65.  
 Kelly H, Fairley N, Wills A (2009) “Grandma told my father, he told me, and I remember”: Vicarious memories and African

- American familial, educational, and religious traditions. National Association of African American Studies (Baton Rouge, LA).
- Halloun I, Hestenes D (1998) Interpreting VASS dimensions and profiles. *Science & Education* 7:553-577
- Lerner N (2009) *Music in horror film: Listening to fear*. New York, NY: Routledge.
- Lom, B, Denham S, Kelly H, Multhaup, KS (2009) *Memory matters: Multidisciplinary dialogs about memory at Davidson College*. Neuroscience Meeting Planner 21.18. Chicago, IL: Society for Neuroscience, 2009. Online
- Mehlenbacher, B (2009) Multidisciplinarity and 21st century communication design. SIGDOC'09: Prcd 27th ACM Intl Conf on Design of Communication:59-65.
- Mooney C, Kirshenbaum S (2009). *Unscientific America: How scientific illiteracy threatens our future*. New York, NY: Basic Books.
- Olick JK (2007) *The politics of regret: On collective memory and historical responsibility*. New York, NY: Routledge.
- Scheufele DA, Brossard D, Dunwoody S, Corley EA, Guston D, Peters, HP (2009) Are scientists really out of touch? [thescientist.com/templates/trackable/display/news.jsp?type=news&o\\_url=news/display/55875&id=55875](http://thescientist.com/templates/trackable/display/news.jsp?type=news&o_url=news/display/55875&id=55875)

Received January 17, 2011; revised May 19, 2011; accepted June 17, 2011.

This work was supported by a Mellon Faculty Renewal Grant from the Associated Colleges of the South. Portions of the *Memory & ...* series were co-sponsored by Davidson College Public Lectures Committee and over a dozen individual departments (listed in Table 1). Portions of this work were presented at the 2009 meeting of the Society for Neuroscience (Lom et al., 2009).

Address correspondence to KSM (or any of the authors) at: Davidson College, Davidson, NC 28035. Email: [krmulthaup@davidson.edu](mailto:krmulthaup@davidson.edu), [scdenham@davidson.edu](mailto:scdenham@davidson.edu), [hikelly@davidson.edu](mailto:hikelly@davidson.edu), [balom@davidson.edu](mailto:balom@davidson.edu)