

# Rising Stars, Part II

November 01, 2007

**Kathleen McDermott**

**Washington University in St. Louis**

PhD 1996, Rice University

Specialty: Human memory

<http://memory.wustl.edu>

## **Publication Most Proud of:**

Roediger, H. & McDermott, K. (1995). Creating false memories: Remembering words not presented in lists. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 21, 803-814.

It's difficult to pick a single paper, but this one was the starting point for some of my subsequent work and has been one of my more influential papers.

## **What does your research focus on?**

My research focuses on human memory and how it interrelates with other cognitive processes (e.g., perception, imagery, and language). I have adopted a set of convergent approaches for studying these issues: behavioral methods (in the tradition of cognitive psychology), functional magnetic resonance imaging (fMRI), and by studying special populations. One of the major tenets of my research program is that remembering cannot be understood in a vacuum; a comprehensive understanding of memory will require an explicit appreciation for the interrelationships among memorial processes and other cognitive processes.

## **What drew you to this line of research? Why is it exciting to you?**

I find memory research intrinsically interesting. Initially, I was primarily interested in basic research. For example, when I began graduate school in 1990 implicit memory was an emerging topic of study, so I immersed myself in that literature. From there, I became interested in false memory and subsequently

helped develop what has become known as the DRM (Deese-Roediger/McDermott) paradigm, in which false memories are created when subjects are primed with words relating to, but not including, one “critical lure.” For example, after being presented the words night, bed, rest and dream, many people will falsely remember seeing the word sleep. My dissertation focused on this topic. After graduate school, I did a post-doctoral fellowship at Washington University School of Medicine, where I learned to use fMRI to investigate human cognition. In more recent years, I have begun to appreciate the importance of clinical and applied research and to incorporate these into my research program, as well.

### **Who were/are your mentors or psychological influences?**

I am very fortunate to have been influenced directly by many talented and generous scientists. Henry (Roddy) Roediger has been a constant source of inspiration and guidance with respect to experimental design, the foundations of cognitive psychology, and the identification of new and interesting topics of investigation. Endel Tulving encourages me to think big, pushes me to consider alternative viewpoints, and (like Roddy) helps me re-evaluate my research program to pursue the most interesting questions I can formulate. In addition, I have benefited from the expertise of Steve Petersen, Marc Raichle, and Jeff Ojemann in learning to use functional neuroimaging. And finally, I am fortunate to have been surrounded by a cohort of extremely talented peers at Washington University, and together we helped each other navigate the assistant professor years. Among these are Deanna Barch, Todd Braver, Randy Buckner, Brian Carpenter, Edith Chen, Greg Miller, and Jeff Zacks.

### **To what do you attribute your success in the science?**

In part, I have been lucky; I was not exposed to cognitive psychology as an undergraduate, so even gaining admission to graduate school was a bit of a hurdle for me. I worked extremely hard my first 10 years or so in the field, and this focus helped me to establish a solid base of research projects. I also was fortunate in that I was able to secure grant funding at an early stage in my career. I also have been surrounded by excellence: My mentors, peers, and my graduate students have all been stellar, and Washington University has provided a supportive, collegial environment and first-rate facilities in which to work.

### **What’s your future research agenda?**

Some of my future research will focus on the future, actually. Specifically, I am interested in episodic future thought, or vivid envisioning of the future, and how that capacity is similar to (yet different from) remembering. This work has been done with Karl Szpunar, a graduate student working in my laboratory. I also have become involved in a number of projects looking to apply principles of cognitive psychology to improving educational practice.

### **Any advice for someone just now entering graduate school or getting their PhD?**

For those just entering graduate school, I would suggest identification of successful role models who have just completed the PhD. Examining the CVs of such researchers can help you establish a loose mental framework for what your own CV might look like in five (or so) years. More immediately, I would say to try to emerge from the first year of graduate school with at least one solid dataset. Also, note that the formal requirements or expectations of the graduate program are just the bare minimum you will need to obtain a degree; these explicit requirements will not be sufficient for developing into a successful independent researcher. Other suggestions include working extremely hard to establish a research program on a topic you find fascinating, learning to mentor undergraduate students, and honing writing skills.

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**Elizabeth J. Marsh**

**Duke University**

PhD 1999, Stanford University Specialty: Cognitive/memory

<http://fds.duke.edu/db/aas/pn/faculty/emarsh>

**Publication Most Proud of:**

Marsh, E.J., Meade, M.L., & Roediger, H.L., III (2003). Learning facts from fiction. *Journal of Memory and Language*, 49, 519-536.

Because fictional stories often occur in familiar places and time periods, they contain information that connects to the reader's general knowledge. My interest is in what happens when stories contain factual errors, and whether those errors become integrated with related true facts in memory. What has surprised me is how difficult it is to get readers to evaluate facts for accuracy, and more generally this has led me to become interested in illusions of knowledge.

**What does your research focus on?**

Much of my research program involves studying memory errors. Human memory is impressive much of the time, but I create situations designed to trick it. The point is not just to demonstrate memory failure, but rather to understand how different factors moderate memory success in order to draw conclusions about the mechanisms underlying the errors. A second theme in my research is to link basic theoretical work to real-world problems. For example, much of what we know about human memory is relevant to learning in educational situations.

**What drew you to this line of research? Why is it exciting to you?**

I decided that I wanted to be a memory researcher when I participated in an NSF REU (Research Experiences for Undergraduates) summer program at SUNY Stony Brook, where I worked with Nancy Franklin. One of the graduate students in the lab, Linda Henkel (who is now faculty at Fairfield University), was writing a dissertation on reality monitoring and I couldn't stop reading on that topic even though I was working on something else.

**Who were/are your mentors or psychological influences?**

I have been very fortunate and have had (and still have) many terrific mentors. As a graduate student at Stanford, I had great experiences working with Barbara Tversky and Gordon Bower. Gordon still cuts out *Observer* articles on grants, careers, and opportunities and mails them to me with handwritten notes. My postdoctoral advisor, Roddy Roediger, has given me so many opportunities both during and after my time at Washington University in St Louis, and he continues to provide great advice on both science and professional issues. Many people have helped me at Duke, although I am particularly grateful to David Rubin for his willingness to comment insightfully on all things related to memory.

**To what do you attribute your success in the science?**

This is a hard question. I think success most often involves a combination of effort and luck. And in my case, I think the mentoring has been very important.

**What's your future research agenda?**

One thing I'm excited about is adding a developmental perspective to my work. This came out of conversations with Patricia Bauer, who is at Emory University; she is very persuasive about the need to integrate adult and child cognition. My graduate student Lisa Fazio and I just published our first paper with child subjects and it seems there are many interesting open questions to be answered.

**Any advice for someone just now entering graduate school or getting their PhD?**

Start writing now and write regularly. With all the daily pressures of meetings, talks, and teaching, it can be easy to push writing off to another day. I worked very hard in graduate school, but I didn't write very much — and the bottom line is that if you don't get your work published then you won't have an impact on the field. Roddy Roediger told me to buy a timer and force myself to write for three hours a day. It may not sound like a lot of time, but try it — if you actually do it, you will be amazed at how much more you've written.

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**Ian Dobbins****Duke University**

PhD 1999, University of California, Davis

Specialty: Memory

<http://dobbinslab.psych.duke.edu/>

**Publication Most Proud of:**

Dobbins, I.G., Schnyer, D.M., Verfaellie, M., & Schacter, D.L. (2004). Cortical activity reductions during repetition priming can result from rapid response learning. *Nature*, 428, 316-319.

In this paper, we challenged the idea that activity reductions in early perceptual areas play a direct role in the behavioral facilitation that accompanies repeated judgments about objects. This facilitation has been termed “repetition priming,” and neuroimaging techniques like fMRI have frequently demonstrated that quickened responding was accompanied by activity reductions in regions thought to process stimulus features, perhaps through some form of rapid perceptual “tuning.” Instead, our work suggested that observers rapidly learn associations between stimuli and previously executed decisions, which in turn obviates the need for much of the processing that was necessary on the initial encounter of the stimulus.

**What does your research focus on?**

My research examines the intersection between decision making and memory. My colleagues and I are particularly interested in the contribution of the prefrontal cortex (PFC) to memory judgments and the role of this region in the strategies and decision heuristics observers apply when trying to recover memories. To examine these questions we use a combination of behavioral research, simple statistical modeling, and fMRI of the brain during memory judgments.

**What drew you to this line of research? Why is it exciting to you?**

I’m particularly fascinated by this line of research because it highlights the complexity of cognition. Even the apparently simple task of recognizing a familiar face becomes formidable once one is forced to openly speculate on the nature of the memory representation and decision rules that people use to rapidly solve such problems. I also like memory because it is necessarily an abstraction as it is tied not to the present but to one’s unique personal past. The fact that we can take ourselves out of the present and re-experience an event that no longer objectively exists in the world is pretty remarkable.

**Who were/are your mentors or psychological influences?**

My primary mentor was Neal Kroll at UC Davis, who just retired this year. I owe him a great debt. He is a remarkable professional who always made time for chatting about data, future experiments, statistics, and programming. He represents my ideal of the scientist who is committed to learning something new every day. I also was fortunate enough to interact with Endel Tulving, whose pioneering work always pushes people to consider how their research fits into a larger perspective. Finally, Daniel Schacter and Anthony Wagner provided me with an invaluable post-doctoral research experience that led to my current interest in using fMRI to investigate PFC and memory retrieval.

**To what do you attribute your success in the science?**

I think most people can be successful if they are allowed to pursue those things that most interest them. I have been fortunate enough to have mentors who were highly supportive and allowed me to formulate many of my own research questions. This is not always the case in graduate and post-doctoral experiences.

**What's your future research agenda?**

Aside from my lab's current interest in the strategic and explicit processes that subjects use during memory attributions, we also have become interested in the more implicit and perhaps reward-linked mechanisms that may also govern memory attribution. More specifically, we recently have been examining the role of feedback in influencing how much evidence observers require before giving a positive recognition response. Being able to flexibly adjust this value, known as the decision criterion, is clearly highly desirable; yet there appear to be serious constraints and influences affecting criterion adjustment. Through subtle feedback techniques it appears that observers can learn to adaptively, and perhaps implicitly, reposition the decision criterion. Our initial data suggest that this ability is linked to stable personality traits dealing with general sensitivity to external rewards and punishments. We are continuing to investigate this criterion learning mechanism both behaviorally and using fMRI paradigms, and we also hope to examine criterion learning in the elderly and perhaps certain patient populations.

**Any advice for someone just now entering graduate school or getting their PhD?**

I'd probably tell them to really try to enjoy it. It really is neat that one can build an entire career out of learning and teaching and it is easy to lose sight of the fact that the opportunity for regular folks to become academics didn't even exist 80 or more years ago. It is understandably easy to become anxious about not "succeeding" in the field and to always fixate on the next professional hurdle. However, I'd recommend (at least once in a while) stepping back and thinking about how exciting your research and the questions it leads to are. This is pretty easy to do in psychology and indeed in the life sciences as a whole.

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**Abigail Baird**

**Vassar College**

PhD 2001, Harvard University

Specialty: Developmental neuroscience

<http://www.changingbrain.org>

**Publication most proud of:**

Bennett C.M., & Baird A.A. (2006). Anatomical changes in the emerging adult brain: A voxel-based morphometry study. *Human Brain Mapping*, 9, 766-777.

I would have to say that the recent paper with my graduate student Craig Bennett is the publication of which I am most proud. The project, examining short term neuroanatomical change among college freshmen, was an idea that I had been trying to execute for a number of years. It was not until Craig joined my lab, with his wonderful technical skills, that we were able to accomplish the innovations in imaging techniques and processing that made the study possible. It was a truly incredible collaboration, both as a scientist and a mentor, and I hope to have many more such projects with Craig in the years to come.

**What does your research focus on?**

I am interested in the specific details of how emotion and cognition learn to work together during adolescence, but I am also very interested in the larger idea of what adolescence actually *is* — and as a result, learning more about what the specific functional goals are. While a lot of folks tend to see this period of development as a bit of a crucible (understandably), I think if we knew more about the “normative” adolescent trajectory we could do a lot more to minimize pathology — not only pathology that takes place during adolescence, but also problems that get their start in puberty and then manifest in later adulthood. I see this period of tremendous and rapid neural development as a time of great opportunity to maximize what is going right and to ameliorate potential problems.

**What drew you to this line of research? Why is it exciting to you?**

I was the kid in the house who was always given the old appliances to take apart...I mean “fix.” I was completely enthralled by how things worked (and still am), and my mom was wonderful about keeping me from taking apart the things in our house still in use by keeping me sated with a steady stream of old hairdryers and popcorn poppers and stereo components to take apart and attempt to reassemble. In second or third grade, I received a copy of *Grey’s Anatomy*, largely due to my obsession with how the heart worked. After reading it a few times (I honestly did not understand much of it). I was completely shocked to read that the brain does not make new cells, but can learn new things, and a new obsession was born — “how does the brain work.” So this carried me through to college, where I was still trying to get my basics down. I also was still very focused on how everything worked and, not surprisingly, became interested in pathology. My naive view was, “well if it is just components, find what is not working and fix or replace it, no big deal,” except for that little detail that you can’t make new tissue or take stuff out, fix it, and reinstall.

While doing clinical work, I spent a lot of time with schizophrenic patients and their parents. Their parents always said the same sorts of things like, “compared to my other children, John was always different, and I took him to the pediatrician over and over, but was told there was nothing wrong. Then he went away to college and boom, the awful disease started.” Schizophrenia is a horrible disease, and one that we really need to know more about in terms of best treatments and, maybe someday, aspects of

prevention. I was hearing that these kids were never normal, but never actually diagnosable until after puberty. So the answer seemed simple: All I had to know was what was happening in their brains at puberty. Off I went to the literature. There was some fantastic work by J. Geidd and his colleagues, but little else. I rolled up my sleeves, got to work, and here I am.

### **Who were/are your mentors or psychological influences?**

I have been ridiculously fortunate to have had a number of wonderful mentors, and I can say without hesitation that I would be absolutely nowhere without them. Chief among these is Jerome Kagan. Jerry is a scientist — a real scientist, who in his seventies still graphs his own data (on graph paper with a fountain pen), does his own behavioral analysis from videotape, and knows all of the kids in his studies. He has been incredibly challenging and supportive of me, with the work always front and center. His intellectualism has no limits. For example, he is just as likely to make a point using neuroscience, quantum physics, or Shakespeare. When I was graduating from Harvard, I asked him if he could help me make a list of the journals that were critical to stay current with. This struck him as an odd question. His response was, “you have to read all of them, have one day a month that is your library day, and go and read and stay current.” Um, yeah, I don’t read quite that fast, but I know he is right. There is nothing so fun as looking at data with Jerry and learning from it and him. I guess that makes me a nerd, but I am okay with that.

I also was tremendously influenced by Stephen Kosslyn. Stephen was the first person I worked with who was equally passionate and successful in both teaching and research. He was also the most encouraging and supportive of my passion for teaching. He is ridiculously modest and available for someone who accomplishes what he does every year (I really think there might be two or three of him). Stephen ran the undergraduate tutorial program at Harvard and taught us all how to be good teachers and how important the integration of teaching and research is to academic life.

Then I graduated, and went to work for Michael Gazzaniga. Mike taught me how to put the whole thing together and actually have a career. He is one of the most generous and brilliant people I have ever known. He took the time to teach me how to build a lab and a career in science, and I know that I am not alone in this experience. Mike has that rather rare quality of being sincerely content with who he is, and this translates to an incredible ability to support, enable, and be sincerely happy for the people he works with. There are very few people who you can sit with and talk about your data, an upcoming grant, and where the next big technology fad will come from. Mike is also uncompromising when it comes to family time; he taught me that good academics also learn to protect their time. I am still working on this one.

Speaking of family, I would be totally remiss to not mention that I have always been encouraged and supported by mine, particularly my mom and grandmother. Neither of them is as science-focused as I am, but they always made me feel like my interests were “cool.” In fact, my mother set up my first laboratory for me in second grade — on a sun porch off of my bedroom. I spent many, many hours in there, and I’m still trying to get some of those early studies published.

### **To what do you attribute your success in the science?**

First of all, this is a hard question, as I do not see myself as especially successful; I see myself as lucky to do what I do. Any accomplishments I have made are largely due to the people above, combined with my colleagues and students. I feel like science, at least for me, works best in collaboration — that the



good stuff comes from team efforts — and I am spoiled to work with a number of talented people. Jennifer Richeson, Larry Steinberg, Trish Devine, and Heather Veague have been amazing to work with, and I have learned from their science and our interactions. My graduate student, Craig Bennet, is a tour de force who keeps me on my toes and amazes me constantly. Many undergraduates have made substantial contributions to the science and the lab in general. Nothing would happen without them. I am also aware that I am fortunate to have been given opportunities, and I hope that I have done well with those.

### **What's your future research agenda?**

To learn what makes the teen brain hum, and how this activity helps shape the development of the immature parts. The overarching plan is to figure out what adolescence is, and how to maximize what goes right during the process. I am increasingly interested in the emergence of identity and what factors shape this in the developing adolescent. Also critical here is the extent to which identity (even when immature) drives behavior in the adolescent.

I also want to bring a stronger rigor to fMRI data and bring more behavioral and individual difference data into consideration when applying this technique.

### **Any advice for someone just now entering graduate school or getting their PhD?**

Make sure you are passionate about what you are studying; love the process not just the product. There is no “right” path, so be open to, and ready for, different scenarios about where your interests might take you. If you are passionate and committed, it will fall into place and the specifics are simply “logistics” as long as you are doing what is important to you. My mother always reminded me that nothing can undo your education and nothing can take away your successes, so make sure to find as many ways as possible to recognize and celebrate your successes.

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**Tor Wager**

**Columbia University**

PhD 2003, University of Michigan

Specialty: Cognitive neuroscience

<http://www.columbia.edu/cu/psychology/tor/>

**Publication most proud of:**

Wager, T.D., Rilling, J.K., Smith, E.E., Sokolik, A., Casey, K.L., Davidson, R.J., et al. (2004). Placebo-induced changes in fMRI in the anticipation and experience of pain. *Science*, 303, 1162-1167.

This paper started as a side project; I initially thought it unlikely that we'd see evidence for placebo effects in the brain, but it seemed like it was worth a shot. We did, and the project was the basis for my job talk and for much of my current research. It was also a great lesson in the scientific process, with collaboration and support from a terrific group of scientists.

**What does your research focus on?**

My research focuses on the brain mechanisms underlying the cognitive control of pain and emotion. We're manipulating people's expectations about the context surrounding pain and emotional stimuli — whether the stimulus is safe, whether one has control over it, whether it will be aversive or pleasant, etc. — and looking at how this contextual information shapes pain and emotional processing. One of the major ways we manipulate expectations is by giving placebo treatments — medications that have no actual pharmacological benefit, but that patients are led to believe will block pain or anxiety. Because we're interested in interactions among brain systems, we also work on statistical methods and algorithms for understanding brain dynamics. And because we care about what brain activity can tell us about mental processes, we're working on meta-analyses of neuroimaging data that evaluate the linkages between patterns of brain activity and particular task states. Each of these forms an essential piece of the puzzle: placebo treatments and related manipulations allow us to study expectations in an experimental setting, multivariate statistics help us to understand the brain dynamics, and the meta-analyses help us interpret our results in the context of previous findings across many areas of study.

**What drew you to this line of research? Why is it exciting to you?**

I love studying the brain. It is arguably the most complex system smaller than a breadbox in the known universe, and so it presents myriad challenges for making sense of it. It demands all the creativity and problem-solving that we can muster, and I don't even think we've scratched the surface in terms of plumbing its mysteries. But at the same time, it is intimate — it is us — and our search to understand ourselves is one of the fundamental aspects of the human experience. I decided a long time ago that if I could spend my career studying anything, I'd want to study the brain. I'm very grateful to have that opportunity.

In terms of placebo effects and the cognitive regulation of affect in particular, I was drawn to this because it's central to what's important to us in daily life — how we deal with others, how we think about the circumstances of our life and fashion from them a world-view. I'm also very interested in the capabilities of the mind and brain to affect the body's physiology and health. It's an issue about which there has been so much speculation (on the banks of the Euphrates, thousands of years ago, and in homes and hospital wards all over the place today), and there is a great need for more hard scientific evidence on the role of the mind in healing.

**Who were/are your mentors or psychological influences?**

I've been influenced by so many people. I think the most important influences have been those who helped to shape my character and values, the examples of how to love science and do it with energy and integrity. Akira Miyake took me under his wing, steered me toward cognitive psychology and the study of individual differences, and exemplified the careful thinking through of issues. Randy O'Reilly was the first person who illustrated for me how parallels can be drawn between physical brain systems and psychological concepts. Ed Smith taught me to try to get to the heart of issues and focus on the fundamental questions. John Jonides was an energetic example of the process of loving science, and Kent Berridge showed me how much knowledge someone can have at their fingertips at any one time. Dave Meyer demonstrated attention to detail and the pursuit of the real truth rather than what's "close enough." Walter Mischel is an example for me of definitiveness, and Geraldine Downey of how to be both kind and direct.

**To what do you attribute your success in the science?**

Great colleagues (and now students), an upbringing that encouraged me always to think for myself and be creative, hard work, and maybe a little bit of divine intervention.

**What's your future research agenda?**

I'd like to continue with work on placebo effects and other forms of cognitive-affective interactions in the brain. One goal is to understand something about the nature of expectancies in a more formal way, bringing mathematical models to bear to describe how they behave and influence affective valuation, and to pursue further the psychological nature of expectancies. Another goal is to relate brain activity and expectancies to physiological outcome measures, and include autonomic, endocrine, and possibly immune activity into our models of brain dynamics.

**Any advice for someone just now entering graduate school or getting their PhD?**

Akira Miyake told me two things when I went off to graduate school at the University of Michigan. He said, "Do one thing at a time until you've finished it," and, "Work hard." I'd like to pass that advice along. I might also add that graduate school is difficult in unconventional ways — it (and a career in psychological research) requires self-motivation and a real inner drive, even when others seem not to care and there seems to be little external recognition of the tremendous amount of work that it (usually) takes to make even a small advance in science.

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**Jennifer Richeson**

**Northwestern University**

PhD 2000, Harvard University

Specialty: Social psychology

<http://www.psych.northwestern.edu/~richeson/index.html>

**Publication most proud of:**

Richeson, J.A., & Nussbaum, R.J. (2004). The impact of multiculturalism versus color-blindness on racial bias. *Journal of Experimental Social Psychology*, 40, 417-423.

I don't exactly have a favorite publication, but this one always makes me smile because it was my first (and so far only) publication with an undergraduate student!

**What does your research focus on?**

I study how our intergroup biases and concerns about bias affect cognition, affect, and behavior. A lot of my work has focused on the influence of interracial interactions. Broadly, the work is designed to contribute to the development of harmonious and functional diverse communities.

**What drew you to this line of research? Why is it exciting to you?**

I think that the transition from my predominantly black (and all female) high school to Brown University where I was suddenly both under-represented and somewhat academically stigmatized got me interested in how social identity group memberships affect our interactions with others as well as our self-perceptions.

**Who were/are your mentors or psychological influences?**

I've been lucky to have so many. In college, Ruth Colwill took me into her lab and taught me the basics of experimentation. She really reached out to me and I will always be thankful for that. Similarly, Fayneese Miller, a black female professor at Brown, opened my eyes to both the possibility of becoming an academic and the possibility of folding my interests in social identity into my academics (before, these interests had been expressed through extra-curricular activities). Specifically, it had never occurred to me that I could be a professor before taking her Psychology of Race, Class, & Gender class.

In graduate school, my advisors Nalini Ambady and Herbert Kelman were incredible influences. Herb taught me that it is all right to study (and care about) societal problems. Nalini pretty much taught me everything I know about being a social psychologist! I am still trying to follow her excellent example in the mentoring of my own graduate students.

Since then, there have been many other people who have helped me along in various ways (and still do!). They include Claude Steele, Jack Dovidio, Robert Sellers, Hazel Markus, Todd Heatherton, James Jones, Jim Blascovich, Trish Devine, Galen Bodenhausen, and my collaborator, Nicole Shelton.

Ok, this is starting to read like someone's Academy Awards acceptance speech and the music is certainly beginning to play to usher me off stage! Suffice it to say, it has taken a village!

**To what do you attribute your success in the science?**

I don't feel particularly successful. I mean, I'm really just getting started. How have I made it this far? A lot of hard work, a lot of luck, a lot of mentoring from advisors and senior colleagues, and a lot of

support from friends and collaborators. [*Editor's Note: She is too modest to mention it, but Richeson is a 2006 MacArthur Fellow, a.k.a. a recipient of the "genius award."* See [Observer, November 2006](#)]

**What's your future research agenda?**

To keep on keeping on. Like I said, I just got started!

**Any advice for someone just now entering graduate school or getting their PhD?**

One of the best pieces of advice that I got at Harvard was during the first month of graduate school from one of our professors, Richard Hackman. He told us all to find a research question that really interests us and then to consider it at one "level" above (i.e., at a more macro/sociological level) and one "level" below (i.e., at a more micro/biological level). This approach will shape a deeper understanding of the topic itself. (Apologies, Richard, if I am getting this a bit wrong).

I have really found this to be true and have benefited from learning about the sociological perspective on intergroup relations as well as about potential neural substrates of intergroup emotion and self-regulation, as well as biological stress systems.

Needless to say, I've found this approach to be incredibly rewarding!

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**Cynthia Pickett**

**University of California, Davis**

PhD 1999, The Ohio State University

Specialty: Self, identity, and social cognition

<http://psychology.ucdavis.edu/faculty/Pickett/>

**Publication most proud of:**

Pickett, C.L., Bonner, B.L., & Coleman, J.M. (2002). Motivated self-stereotyping: Heightened assimilation and differentiation needs result in increased levels of positive and negative self-stereotyping. *Journal of Personality and Social Psychology*, 82, 543-562.

The publication that I am most proud of is a 2002 article on self-stereotyping that appeared in the *Journal of Personality and Social Psychology*. The studies reported in this paper demonstrated that individuals will often define themselves in terms of group stereotypes — even negative stereotypes — if doing so allows them to feel more included within the group or feel distinctive as a function of their membership in that group.

**What does your research focus on?**

Although I have broad research interests within the areas of social identity, intergroup relations, the self, social cognition, and self-regulatory processes, two specific lines of inquiry represent the bulk of my research program. One line of research is devoted to understanding the motivational processes that underlie social identification. More specifically, I have been interested in the motivations that may be served by memberships in social groups and how these motivations shape individuals' perceptions of themselves and other group members. The second line of research centers on the processes through which individuals maintain social inclusion and belonging. Although a large body of work demonstrates the maladaptive consequences of rejection, relatively little is known about the adaptive mechanisms that may exist to ensure social inclusion. The goal of my research in this area has been to help fill this gap in our knowledge.

**What drew you to this line of research? Why is it exciting to you?**

I grew up in an interracial household (African-American and Filipino) and was always aware of how my identity could quickly shift depending on who was around or the topic of conversation. The malleable nature of the self is quite fascinating to me both in terms of how group memberships and significant others can shape and define the self and in terms of how our identities influence how we then relate to others.

**Who were/are your mentors or psychological influences?**

The person who played the most prominent role in my development as a psychologist is my graduate advisor, Marilynn Brewer. Although Marilynn provided a lot of direct mentorship in the form of advice and teaching, her strength as an advisor really came from the example she set for others. From Marilynn, I learned that it is critically important to be intellectually engaged and to appreciate ideas whether they are coming from a first-year graduate student or a distinguished senior scholar. Marilynn also taught me the meaning of hard work. It was difficult to feel overworked when I could see that my advisor was working twice as hard as I was. Throughout my academic journey, I have encountered numerous individuals who have provided advice and support and who have served as professional and personal role models. These individuals include Felicia Pratto, Susan Fiske, Bill von Hippel, David Hamilton, and Jack Dovidio, to name just a few. I am also lucky to have wonderful collaborators such as Wendi

Gardner and Serena Chen who excite and inspire me. Working with these women has made me conscious of how the whole really can be larger than the sum of its parts.

**To what do you attribute your success in the science?**

I have been very fortunate in terms of the mentorship I have received, the career opportunities that have been afforded to me, and the students and colleagues I have worked with. As an undergraduate at Stanford University, I took classes from professors who really inspired me to pursue an academic career in psychology and who, perhaps more importantly, gave me the confidence to believe that I could succeed in a field where rejection, disappointment, and failure are regular occurrences. In terms of succeeding in this field, I believe that it helps to love the research process. I enjoy what I do every day, from running lab meetings to attending talks. I like conducting data analyses late at night and spending afternoons thinking about how best to get a point across in a manuscript. I am curious, and I like to argue, and I think that both of these qualities have served me well as an academic researcher.

**What's your future research agenda?**

My students and I have several on-going projects. In one line of work, we are examining how people are able to maintain a sense of individuality while also striving to be included and immersed within a group identity. We are also interested in the question of how needs and goals are satisfied both within and across levels of self-representation (i.e., the personal self, relational self, and collective self). In our research program on social inclusion and belonging, our current projects are aimed at identifying the mechanisms through which individuals are able to reestablish social connectedness following social rejection. We are specifically examining processes such as cognitive and emotional perspective taking and also are investigating whether individuals become more responsive to their social environment following rejection.

**Any advice for someone just now entering graduate school or getting their PhD?**

One piece of advice that I always give to my own students is to be persistent. Success rarely comes easily for anyone in this field, and those who do succeed often do so by having confidence in their ideas and the tenacity and motivation to overcome the inevitable setbacks that occur along the way. I would also remind students that the research process should be fun. If they do not enjoy debating a topic in a graduate seminar or wrestling with a tough statistical problem or if they do not find themselves nervously analyzing their freshly entered data to uncover the results of their latest project, then they might question whether they have really found their niche. I would then encourage them to spend some time figuring out what does excite them and working to pursue those questions.

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**Keith Payne**

**University of North Carolina**

PhD 2002, Washington University in St. Louis

Specialty: Social cognition

<http://www.unc.edu/~bkpayne/>

**Publication most proud of:**

Payne, B. K. (2001). Prejudice and perception: The role of automatic and controlled processes in misperceiving a weapon. *Journal of Personality and Social Psychology*, 81, 181-192

This was my first published paper, and it really got me excited about bridging social cognition research with real life concerns. Like most papers, it also raised a lot of new questions and set the stage for my research program to follow.

**What does your research focus on?**

My research focuses on implicit social cognition. I'm interested in automatic responses — habits of thought and feeling that are so well-worn that they come to mind effortlessly and unintentionally influence perceptions and behaviors. I also study the ways people struggle, at times, to control those influences. Automatic responses and attempts to exert control are important for social attitudes. Stereotypes and prejudice, for example, sometimes cause unintentional discrimination if they are not opposed by more thoughtful responses. I am also interested in how automatic attitudes may incline people toward potentially harmful behaviors such as smoking and drinking. In all of these cases, the interaction between automatic responses and attempts to carefully control behavior is key.

**What drew you to this line of research? Why is it exciting to you?**

I was drawn to this research by the simple observation that people don't always act in line with their ideals. Whether it is discrimination by a person who values fairness or smoking by someone who believes that smoking is harmful, one way to understand these ordinary inconsistencies is to understand the conflicts people face between automatic inclinations and the challenges of controlling them. These problems excite me because they speak to conflicts that we all have experienced in one way or another in coming to terms with aspects of ourselves that are automatic or unconscious.

**Who were/are your mentors or psychological influences?**

I was fortunate to be mentored by Larry Jacoby and Alan Lambert at Washington University in St. Louis. Larry's mentorship in cognitive psychology combined with Alan's mentorship in social psychology laid the groundwork for a novel social-cognition approach that has guided my research. I have learned a great deal from their fondness for crossing the boundaries of methods and disciplines to answer interesting questions.

**To what do you attribute your success in the science?**

Whatever success I've had is the result of pursuing questions that I find exciting through whatever methods necessary. Following the examples of my mentors, I greedily grab whatever methods I can, and use them in the service of interesting questions, which is a continual source of motivation and enthusiasm.

**What's your future research agenda?**

The core theme of my research in the foreseeable future will remain the same: How do automatic



inclinations interact with attempts to control responses? But I would like to expand my circle of methods and applications. In addition to traditional laboratory experiments, my lab is incorporating methods such as quantitative models and neuroimaging to answer our core questions.

**Any advice for someone just now entering graduate school or getting their PhD?**

I think it's critical to latch on to a topic or a question that excites you. If the topic is itself a constant source of motivation, then pursuing it can help get you through the ups and downs of graduate school and academic life.

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**Lori Holt**

**Carnegie Mellon University**

PhD 1999, University of Wisconsin-Madison

Specialty: Speech and auditory perception

[www.psy.cmu.edu/~lholt](http://www.psy.cmu.edu/~lholt)

**Publication most proud of:**

Lotto, A.J., Kluender, K.R., & Holt, L.L. (1997). Perceptual compensation for coarticulation by Japanese quail (*Coturnix coturnix japonica*). *Journal of the Acoustical Society of America*, 102, 1134-1140.

It's hard to choose, but the research experiences I had as an undergraduate came full circle in this publication. Although I was well into graduate school by the time of its publication, it led me to recognize a career in science as a real possibility.

**What does your research focus on?**

Research in my lab focuses on the cognitive processes that underlie auditory processing of complex sounds, like speech. We use speech processing as a platform for investigating learning, plasticity, categorization, cross-modal processing, object recognition, memory, attention, and development in the auditory modality. Among our current projects, we are investigating the learning that occurs in acquiring the sounds of a second language and how representations of the native language interact with this

learning; how listeners “tune” their auditory perception to the statistical regularities of the sound environment; and how higher-level knowledge influences early auditory object recognition and speech categorization. The major approach we use is to study human adult (and sometimes child) participants using perception and learning tasks. In addition, we make use of eye-tracking and behavioral methods with nonhuman animals. Students in the lab also are making use of event related potentials (ERP) and magnetoencephalography (MEG) to address the neural bases of auditory processing.

**What drew you to this line of research? Who are/were your mentors or psychological influences?**

I came to this line of research quite by accident. As a sophomore undergraduate I was looking for a job over the winter break. One of my professors, Keith Kluender of University of Wisconsin-Madison, offered me a paid research position investigating speech perception in his laboratory. I worked 10-hour days running auditory experiments with a colony of birds as my only company. Surprising even to me, this experience hooked me on research.

Andrew Lotto, then a graduate student in Keith Kluender’s lab, took an active role in mentoring me. I owe him an incredible debt for helping me to see that I could pursue a career in science. After graduation, Keith became my graduate advisor, and I continued research in speech perception and auditory processing. As a faculty member, some of the most influential mentoring forums have been informal. CMU Psychology has a regular faculty “lunch group,” for example. Especially as a new faculty member, it was a big comfort to learn that successful senior colleagues encounter the same research challenges.

**Why is it exciting to you? What’s your future research agenda?**

As a student, I was drawn more to the process of research than to a specific research question or domain. Auditory processing has remained an exciting research domain for me because there is so much that is unknown. In any textbook on the topic, you can find multiple chapters on vision, but audition is usually grouped with touch, taste, and smell as “the nonvisual senses.” Speech, considered a “special” perceptual system, has long been on the periphery of traditional cognitive science and it seemed it could tell us little about general auditory processing. The theoretical and empirical motivations for separation of speech perception from general auditory science have been weakening in recent years. More and more research examines how perception of speech is influenced by working memory, attention, plasticity across different time intervals, and by peripheral processing and about general issues of human behavior. I would really like to see a truly interdisciplinary field of auditory cognitive neuroscience emerge in the coming years.

**To what do you attribute your success in the science?**

I still find research to be quite a lot of fun.

**Any advice for someone just now entering graduate school or getting their PhD?**

Don’t be afraid to seek out feedback and advice from those you respect. ?