

Self-Evaluation: Research, Teaching, Service and Contributions to Diversity

Kenneth C. Wilbur
August 2014

1. Research

I aim to provide rigorous answers to specific questions at the intersection of advertising, media and technology. These questions are traditionally classified under the headings “media economics” and “advertising effectiveness,” although my work pushes the boundaries of both areas in new directions. I focus on advertising and media because I believe they are (i) inherently interesting, (ii) important, as measured by allocations of time and money, and (iii) experiencing rapid changes with profound implications. My work has dealt with a number of emerging issues, including how advertising influences viewing, search and purchase behavior; business models for advertising sales; fraud; and market failure. My colleagues in the field know me as an applied researcher, an expert on advertising and media, and someone who frequently introduces new research topics in those areas.

I generate numerous research questions and screen them using three criteria:

* *Theoretically ambiguous*. I should be able to make a compelling case for at least two mutually exclusive answers to a question before I start working on it.

* *Novel*. I would rather contribute a new question than continue an old debate.

* *Practical*. The answer to the question should have the potential to impact practice.

I carefully choose the appropriate method or combination of methods to answer the question at hand. Consequently, my research has employed a wide variety of methods—structural empirical models, purely analytical models, difference-in-difference regressions, descriptive econometric models (including semiparametric, panel and time-series), Bayesian econometrics, algorithms and experiments. I have frequently combined disparate databases in new ways, designed econometric models to suit particular contexts, and written my own code to estimate those models when no suitable packaged software was available.

Section 1.1 presents a brief biographical sketch. Sections 1.2 and 1.3 discuss contributions in media economics and advertising effectiveness, respectively. Section 1.4 presents work I have done on other topics. Section 1.5 gives evidence of research impact and section 1.6 discusses future research directions. Sections 2, 3 and 4 address teaching, service and contributions to diversity.

The Appendix lists 19 papers that have been published or submitted for review at time of writing. The discussion below refers to that list using numbers in brackets. For brevity, this document excludes works in progress.

The Appendix shows that I have demonstrated significant intellectual independence in my research. Of 19 papers, I wrote three solo, I am the sole lead author on three others, and I have made equal/primary contributions with my coauthors on ten papers.

1.1. *Biographical Sketch*

It took me a while to find my career niche. I attended the University of Miami with the intention to become a broadcast journalist. Shortly after, I switched to a double-major of broadcasting and economics and accelerated my college studies, graduating magna cum laude after three years. At 20 years old, I joined Andersen Consulting (a firm now known as Accenture) as a software engineer and consultant and spent two years designing and coding large-scale billing systems. Two years later, determined to find a more challenging career, I applied for a Ph.D. in Economics. I took two years of coursework and began a dissertation related to the television industry. Near the end of my third year in the program, someone suggested that I would find some relevant literature in a field called “Marketing,” which I had not previously known about. I read numerous articles in *Marketing Science*. I was attracted to this literature because it emphasized the importance of institutional context, seemed to value straightforward communication, and dealt with important and practical topics.

Before my fifth year of graduate study, I applied for faculty positions in Marketing. After numerous interviews, I visited ten universities, including Chicago, NYU, UBC and USC. I accepted an offer from USC, typically regarded as a top-10 Marketing department. It took much longer than I expected—several years—to publish my dissertation and to understand the communication nuances used by colleagues in my new field; marketing is populated by statisticians, psychologists and economists in addition to its own trainees.

In my fourth year at USC, I received a telephone call from the department chair at Duke, which most people in the field would regard as a top-5 department. She explained that her group had voted unanimously to make me a job offer, based solely on reading my articles, and that I would be the only candidate invited to visit campus that fall. I accepted their job offer, despite a preference for living in California. During my fourth year there, in 2013, the business school voted to promote me to Associate Professor (without tenure). I was told that I should interpret this as a meaningful statement that the faculty believed there was a 50% chance or greater that I would be granted tenure a few years later. In the same year, I received an offer to work at UCSD, where I could return to California and participate in building an already excellent young business school. I accepted enthusiastically and joined the Rady School in 2013.

My switch between fields has been mostly successful. I have published six articles in top Marketing journals (4 in *Marketing Science*, 2 in *Management Science*), with at least one more likely to be accepted this year. There is some evidence that my research has had impact both inside and outside the field of Marketing. I have trained three doctoral students, with all three placing at top-30 business schools, and a fourth on the academic job market this fall. The next two subsections of this document discuss my primary research interests.

1.2. *Media Economics*

American consumers watch a staggering amount of television. In telephone surveys, people self-report watching an average of nearly three hours per person per day, a figure that has risen slowly but steadily over the past ten years. Passive measurements based on television usage show even greater consumption: over five hours per person per day. I have replicated this statistic using passive viewing data from four independent sources (Nielsen, Rentrak, Google/Dish Networks and Cablevision/Kantar).

Television programming is often financed by advertising sales. In “A Two-Sided, Empirical Model of Television Advertising and Viewing Markets,” [1] I used viewing, advertising and program data to estimate a structural empirical model of television networks’ strategic choices. The model was constructed to represent theories about how viewers select television programs to watch, how advertisers select program audiences to purchase and advertise to, and how competing television networks coordinate the two sides of the market by choosing how much advertising they will sell in each program. The parameter estimates indicated that advertisers exert greater influence on networks’ programming choices than viewers; in other words, networks select programs that suit advertisers’ tastes better than viewers’ preferences. I used the structural model to conduct a counterfactual analysis of how digital video recorder (DVR) penetration would influence equilibrium advertising levels. Its prediction, which has since been corroborated by market data, was that increasing DVR penetration would increase networks’ sales of advertising time because DVRs would primarily reduce networks’ disincentives to air additional advertising. This paper won the Frank M. Bass award for the “best marketing paper derived from a Ph.D. thesis in *Management Science* or *Marketing Science*” in the previous two years and was one of three finalists for the annual John D. C. Little award for “best marketing paper published in *Marketing Science* or *Management Science*.” Both are considered among the most prestigious awards in the field. A related discussion article on how DVRs would influence advertising demand and supply was published in the *Journal of Advertising*.

Traditionally, advertising prices have been based on audience forecasts. These forecasts are, in turn, based on Nielsen’s past audience estimates, which typically have standard deviations of 1-2% of the national audience. This uncertainty becomes even more important in an era of audience fragmentation: only a handful of program audiences exceed 7% ratings in a typical week. Nielsen does not publish any audience estimate that lies within one standard deviation of zero, meaning it leaves many niche-oriented networks and programs completely unserved. Although each of these audiences is small, they collectively account for about 15% of all television viewing time. This system could be improved substantially today. About 83% of American households receive television signals through digital cable or satellite delivery systems, which can report complete information about tuning and usage to their network operators. Therefore, audience *estimates* could conceivably be replaced with near-population-level audience *measurements*. Whereas advertisers have always purchased time, they could now be charged for the actual audience exposed. This is particularly interesting because advertisers’ incentives to get noticed among a cluttered media environment may conflict with the network’s incentive to keep people watching. For example, a car dealer screaming at the camera may annoy some viewers who are not in the market for an automobile, leading them to change the channel; this would harm subsequent advertisers by reducing the number of viewers watching the network. It also needlessly annoys that part of the audience that switches the channel. This externality is exacerbated by television networks’ traditional practice of randomizing the order in which ads appear during the break. In “Correcting Audience Externalities in Television Advertising,” [10] Linli Xu, David Kempe and I introduced this problem to the academic literature and proposed algorithms to optimally select, order and price advertisements to maximize audience value in a break of endogenous length. We estimated the primitives of the algorithm using granular advertising avoidance and pricing data (provided by Kantar and Cablevision explicitly for this purpose). Simulations based on the estimates predicted that our

proposed algorithms could improve network revenues by 4-14% over the traditional practice; consistently find the globally optimal solution; and run quickly enough to implement at scale. Welfare gains were predicted to come primarily from optimally reordering the advertisements within the break. In addition to the short-run efficiency gains from subsidizing commercials that retain viewer attention, this new business model would incentivize advertisers to improve their ad copy, encouraging more entertaining advertisements.

In “Local Media Ownership and Media Quality,” [8] Adam Rennhoff and I searched for a relationship between media market structure and the quality of local news provided by a local media market. In “Market-Based Measures of Viewpoint Diversity,” [11] we searched for evidence that news outlets’ viewpoint diversity (represented by several novel, theory-driven, market-based measurements) was related to market structure. These two papers were commissioned by the US Federal Communications Commission as part of its 2010 Quadrennial Review of Media Ownership Rules, which was subsequently used to help determine whether the Commission would retain the newspaper/broadcast cross-ownership rule. We did not find any evidence that media cross-ownership degrades the quality or quantity of news provided by the market. We thought it was especially important to undertake this research in light of the perilous revenue situation facing local newspapers and the special role that newspapers play in American democracy. Both papers appeared in *Information Economics and Policy*, which is not a top-ranked academic journal, but is the only outlet that aims to reach both academics and the media regulations community.

In addition to traditional media, I am also interested in online media markets. While Nielsen serves as an arbiter of audience sizes between television networks and advertisers, the online advertising industry has not relied on any similar third party. In “Click Fraud,” [5] my student Yi Zhu and I analyzed an applied theory model to ask whether it is in the search engine’s interest to prevent fraudulent clicks on advertisers’ search ads. Search engines cannot publish their click fraud detection algorithms without giving fraudsters a recipe on how to avoid detection. This forces advertisers to trust that search engines report fraudulent clicks truthfully even though the search engine gets paid for every fraudulent click that goes undetected. The CEO of Google may have undermined this delicate balance when he publicly asked whether the search engine should prevent click fraud at all, musing that if 10% of all clicks were fraudulent, then bids would fall by 10%, washing the effects out of the system. We were able to prove the CEO’s conjecture, but only in a second-price auction without private information. Allowing for private information or adding a click-through component to the payment mechanism shows that click fraud may systematically affect the search engine’s revenue. When a keyword auction is relatively competitive, such as those for nonbranded category-related keywords (e.g., “hotel la jolla”), click fraud can decrease search engine revenues as advertisers limit their budgets to shield against high realizations of click fraud. In less competitive auctions, such as branded keywords (e.g. “Estancia la jolla”), click fraud transfers surplus from the winning advertiser to the search engine. The practitioner literature in search engine marketing shows click fraud to be a source of ongoing concern within the industry.

Firms selling digital advertising have introduced a number of new advertising business models. In “Hybrid Advertising Auctions,” [7] Yi Zhu and I considered how the option of using per-click or per-view bid options offered by Facebook and Google affected advertisers’ incentives to

invest in advertisement quality. We considered dynamic bidding strategies in an infinite-horizon game between advertisers and the search engine. The analysis disproved the conventional wisdom and publishers' public statements, which held that brand-focused advertisers should use cost-per-thousand (CPM) bidding options and direct-response advertisers should use cost-per-click (CPC) bidding. For a special case of the model, we found a payment scheme that achieves the socially optimal allocation of advertisers to slots, and showed that outside this special case, no such payment scheme exists. I presented this paper at Facebook and Google. I cannot prove any direct link but, about six months after my presentation, Facebook announced subtle changes to its auction that were consistent with our paper's recommendations.

1.3. Advertising Effectiveness

Most media programs are financed by the advertising they deliver to consumers, so it is difficult to study one topic without understanding the other. The effects of advertising on consumer demand determine advertisers' willingness to pay for audiences, thereby influencing media outlets' program investments and which viewers are best served by the media market.

The advertising effectiveness literature is vast. The archetypal paper in this literature analyzes a time-series or panel dataset of brands' sales and advertising expenditures, and runs a regression of sales on advertising. There are three typical challenges to drawing causal inferences. One is that firms and practitioners have historically been averse to randomizing their advertising expenditures, raising barriers to running field experiments. As a result, most studies in this literature are *ex post* analyses of market data. Second, advertising occurs within a noisy environment and its effects tend to be small, suggesting that very large samples are needed to reliably estimate effect sizes. Third, there are obvious endogeneity biases that may produce spurious results.

These challenges have informed all of my work in this area. I will abstract away from methodological details in this document, referring the interested reader to individual papers for discussions of how I have addressed these problems in various ways. The generic answer is that we try to understand the context that produced the data, use theory to identify and exploit features of that context that allow for causal inference, and then design the model and analysis around those features.

In "Television Advertising and Online Search," [12] with Mingyu Joo, Bo Cowgill and Yi Zhu, we investigated whether television advertising influences the search queries that consumers enter at Google. To my knowledge, this was the first paper in the marketing literature that uses raw, internal Google search query data (as opposed to several that relied on aggregate data from Google's external database at trends.google.com). We found that television advertisements for major financial services brands have two effects on consumers' search behavior: they increase the number of product category-related searches and they shift query share away from generic category-related keywords (e.g., retirement or 401K) and toward brand-related keywords (e.g., Fidelity or Charles Schwab). To the best of our knowledge, our 2010 working paper was the first field evidence indicating that traditional advertising may redirect consumers away from *category* search and toward *brand* search. This result has important practical implications, as television and search advertising campaigns are typically conducted by different agencies with little or no

coordination. Failing to account for the effect of television advertising on search will likely lead a marketer to allocate too little money to television and too much money to search.

Another project investigates how advertising effects vary across members of a distribution channel. One of the most replicated findings in the behavioral marketing literature is that offering price discounts can undermine product quality claims. The intuition underlying this result is: if the product is so good, why is it so cheap? Despite this consensus among researchers, there are many industries in which manufacturers spend large sums on price advertising (i.e., discount offers) in addition to brand advertising (i.e., quality claims). For example, pick-up truck manufacturers spend \$3 billion annually on brand advertising and \$2 billion on price advertising, while their dealers associations spend an additional \$2 billion to advertise pick-up truck prices. In “Price Advertising by Manufacturers and Dealers Associations,” [6] Linli Xu, S. Siddarth, Jorge Silva-Risso and I manipulated the source of a truck price advertisement in two experiments on a large sample of pick-up truck owners recruited through Facebook advertising and online discussion forums. Pick-up truck owners randomly assigned to the manufacturer price advertising condition reported significantly lower indicators of potential demand for the truck than those that viewed an otherwise-identical price advertisement from a dealers association. This effect held even among the subsample of truck owners who had previously owned the brand of truck advertised (Ford). We then analyzed a 5-year panel dataset of weekly pick-up truck sales and advertising, finding a consistent pattern of results: dealers’ price advertising has a greater impact on both the intercept and the slope of the truck demand curve than manufacturers’ price advertising. This suggests that the experimental result is large enough to detect in market data. A counterfactual policy analysis based on the model predicted that a vertically integrated distribution channel would shift a significant share of its advertising budget from the manufacturer to the dealers association.

In “Television Advertising and Online Shopping,” [15] Jura Liaukonyte, Thales Teixeira and I applied a quasi-experimental design to a massive dataset of brands’ television advertisement insertions, ad content, website visitations, and online sales. We started from the observation that media multitasking (e.g., simultaneous television viewing and mobile internet consumption) has become common. Most of the discussion about media multitasking has focused on its potential to compete with TV ads for attention, but we point out that it also can facilitate immediate and measurable response to television advertisements. Using data on over \$4 billion in advertising expenditures by 20 brands in four categories, we measure online shopping and purchases in the comScore internet user panel. For each ad insertion, we measure browsing and sales in brief windows of time (two minutes and two hours) prior to the advertisement’s air time (the “control” window), and again in a window of the same duration immediately after the commercial (the “treatment” window). Systematic differences between treatment and control windows are attributed to the advertisement, after controlling for a host of alternate explanations. We demonstrate conclusively that television advertising affects online shopping, and further that its effects depend on the contents of the advertisement. We are nearing completion of a second revision of this paper for *Marketing Science*. The journal’s editor described this revision request as extensive, but non-risky and ultimately minor.

Finally, in a paper [17] relating automobile recalls, automobile advertising and stock market returns, Haibing Gao, Jinhong Xie, Qi Wang and I investigate how automakers’ stock prices

respond to their advertising strategies at times of crisis. Automobile recalls are fairly common events which are known to reduce automakers' market capitalizations. Noting that automakers are privately informed of a recall's public announcement date well in advance, the marketing literature has advised reducing advertising spending prior to a recall announcement, as the recall may dampen or eliminate advertising effects. However, we question whether this general prescription applies equally to all types of recall and all types of recalled automobile. We hypothesize that, for minor hazards affecting newer models, increasing advertising prior to a recall event may send a positive signal about the car's quality to investors, softening the effect of the recall on the automaker's stock price. On the other hand, if the recall is a major hazard that affects an older model, increasing advertising immediately before the recall event may inappropriately raise investors' expectations, leading stock prices to fall even more after the public announcement of the recall. We validate these hypotheses using data on automakers' pre-recall-announcement ad spending and post-recall-announcement abnormal returns. We believe that the evidence is convincing, as it is based on hundreds of recalls that occurred over the course of eight years, and the finding is robust to various definitions of pre-recall advertising and post-recall abnormal returns, among other checks. Our data indirectly reveal that automakers do not fully understand that these effects exist, as we see numerous cases in which they increased pre-recall ad spending for older models with major hazards. This paper was recently submitted to the *Journal of Marketing*.

1.4. *Other Interests*

In addition to work on advertising and media, I have also done empirical research in another two-sided market—the retailing industry—in which retailers enable interactions between manufacturers and consumers. In “Distribution and Market Share,” [9] Paul Farris and I investigated a census of more than 79,000 stock-keeping units (SKUs) in 37 consumer packaged goods categories. We provided empirical generalizations that showed that the relationship between market share and retail distribution is convex at the SKU level. This was the first evidence that the theoretical concept of “double jeopardy” in retail distribution applies not only to small-share brands competing against market leaders, it also applies to low-share SKUs within category leaders' product lines. Further, we used holdout evidence to show that existing equilibrium relationships are predictive of share/distribution relationships for new SKUs, conditional on those new SKUs' continued success in the marketplace; for new SKUs that were ultimately withdrawn, introductory levels of retail distribution were unsustainable. This final component of the project was motivated by managers at P&G who observed that high managerial turnover and a lack of accountability led brand managers to introduce too many SKUs. Their theory was that managers frequently championed the new SKUs they developed by using unrealistically optimistic distribution forecasts to justify unprofitable go-to-market decisions. The paper offers and validates a means for product manufacturers to impartially detect excessive optimism and thereby reduce unprofitable new SKU launches. New SKU failure is one of the most expensive problems facing manufacturers today, but this potential cause had never been investigated previously.

In addition to the work discussed above, I provided significant input as a coauthor on several students' job market papers. Only one of those is currently in the review process, so I will describe that one here. In “Forecasting the Evolution of Market Structure: Structural vs.

Descriptive Models,” Linli Xu, Jorge Silva-Risso and I adapted the dynamic investment competition model of Pakes and McGuire (1994) to gauge its ability to predict out-of-sample data relative to a simpler descriptive vector autoregression model. The basic question is, which modeling framework is most useful for predicting how market structure will evolve in a “technology ladder” market? This important context features few potential quality changes and even fewer commercially successful innovations, suggesting that the equilibrium optimal investment theory underlying the Pakes-McGuire framework might be a useful addition to the few available datapoints. Across several automotive categories, we found that when brand quality estimates show little persistence over time, the simpler descriptive model predicts changes in market structure better than the structural model. However, when quality levels are more stable at the brand level, the structural model is more useful for predicting how the market will evolve. To our knowledge, this was the first test of external validity of the burgeoning dynamic oligopoly literature to be presented in any paper.

1.5. Impact

I have seen some early indicators of research impact. The most easily countable measure is citations. At the time of writing, ISI data indicate that my dissertation article had been cited 34 times by publications in peer-reviewed journals, a figure that puts it third among the 84 articles published in *Marketing Science* in 2008. “Click Fraud” is the 16th-most cited article among the 87 papers published in *Marketing Science* in 2009, and “Hybrid Advertising Auctions” was tied for 20th-most cited among the 77 articles published in that journal in 2011. Google Scholar is a messy source of citation data, but it reports 433 online citations to my research (up 60% over the last time I looked in January 2013), uniform increases over eight consecutive years, and a current h-index of 9. Another noisy but countable measure of impact is available at the Social Science Research Network (SSRN), where my papers have been downloaded over 10,700 times, and I am listed at #920 among business authors and #1,497 of 200,000+ overall. Our paper [12] has consistently appeared on the list of the “top 20 most read articles” out of several thousand available on the *Management Science* website.

My research has also been noticed outside the journals. I have presented research at 44 international conferences and given 57 invited talks, including most of the top business schools in the world, numerous economics departments, two government agencies (the Canadian Competition Bureau and twice at the US Federal Communications Commission) and several industrial research groups (Advertising Research Foundation, Facebook, four times at Google, Microsoft, P&G, twice at Yahoo Labs).

My research has been supported by a number of external organizations. Although grant funding is not very common in quantitative marketing, my co-authors and I have been awarded \$235,800 in 9 grants from the FCC, Google, the Marketing Science Institute, the NET Institute at NYU, the Wharton Customer Analytics Initiative, WPP (a global advertising agency holding company) and Yahoo.

I have also drawn some attention from senior scholars within my field of study. Last year, I was invited by K. Sudhir of Yale University to speak about “research opportunities in advertising and promotions” at a large doctoral consortium. I was also asked to write two handbook chapters in

2013, one on the economics of advertising, the other on recent developments in mass media consumption and research. I accepted the latter request, resulting in paper [19]. In August 2014, Gerry Tellis (one of the most influential scholars in advertising) invited me to coauthor a revision of his textbook “Advertising and Sales Promotion Strategy” which we would retitle “Effective Media.” I have twice been able to participate in prestigious discussion forums and coauthor invited review articles with several senior scholars (papers [3] and [14]).

Several organizations have recently approached me to offer research opportunities. Kantar shared a large TV viewing dataset with me in 2009 for the explicit purpose of testing the advertising sales algorithms proposed in [10]. In 2010, researchers at the FCC informally consulted me on the design of their quadrennial media ownership review prior to releasing it to the public and informally suggested that I submit two research proposals; I complied and both were accepted. In 2011, I received an unbidden email from the CEO of Ask.com calling my paper [18] “intriguing” and offering data. I visited Google for four months in 2011 and wrote a paper there after I was invited to evaluate some of their research on television advertising avoidance. One key manager at Google told me that the television advertisement sales algorithm presented in paper [10] was better than Google’s TV advertising sales practices (an effort that has since been discontinued). In 2013, iTVX, a leader in measuring returns on branded entertainment investments, contacted me to offer data and collaborate on a research project. Researchers at TiVo gave me a free subscription to its Stop||Watch viewing panel dataset for two years. An operations researcher at Turner Network Television invited me to participate in a session at the INFORMS Annual Meeting after reading paper [10]. I arranged a collaboration with a coauthor at Google and persuaded the three largest sellers of outdoor advertising in the US to share proprietary data on billboard locations, traffic, prices, dates and advertising creatives. In 2014, I was contacted by the CEOs of C3Metrics and Keller Fay Group regarding potential research opportunities.

Research collaborations with companies can contribute data and insights that are inaccessible without industry participation. However, successful academic/industry collaborations are rare, as they require a delicate balance between the company’s profit objective and my objectives of scientific rigor and dissemination. I do not pursue all opportunities and those that I have pursued have not all yielded publishable research. Regardless, the fact that these were unsolicited communications from outside the academy suggests that my work has obtained some visibility and impact in the private sector.

In summary, I believe my research has achieved some impact to date, and that impact has generated new opportunities to conduct impactful research. I am hopeful this pattern will continue.

1.6. *Future directions*

I am currently more focused on finishing works in progress than generating new projects, so I will only describe two broad themes which I plan to continue in coming years.

One ongoing theme in my research is the idea that advertising may change the nature of the consumer search process from category search to branded search. That is, a consumer who experiences a particular need may use a broad search to find the appropriate product. However, if

the same consumer has recently been exposed to brand advertising, she may instead use a narrow search to find the advertised brand. As a specific example, instead of searching the keyword “hotels los angeles” at google.com, a consumer might instead enter “holiday inn los angeles.” This small shift has dramatic ramifications for marketing strategies, competition among brands, market outcomes and consumer satisfaction. The consumer who engages in a narrow search will consider fewer alternatives, reducing direct competition among available brands. My papers [12] and [18] provide some evidence that this effect might be important. I hope to provide a cleaner test of this idea using the billboard dataset mentioned above. Another work in progress seeks to measure these effects by relating local consumer search activity at autotrader.com (an automotive product search engine) to automakers’ local television advertisements. A number of important questions remain to be explored: in which product categories does advertising influence search and why? Which types of consumers will be most subject to these effects and why? How does one brand’s advertising influence searches for its competitors’ products? What implications do these effects have for marketing strategies such as pricing, product quality and retail distribution? What implications do they have for the financing of consumer media programs?

In a second theme, I hope to develop empirical generalizations about advertising effects on consumers’ awareness and perceptions about major brands. In an ongoing project, my coauthor and I have combined databases of weekly consumer brand surveys, weekly brand advertising expenditures in 22 different media, and brand characteristics. The dataset includes 3.5 million consumer surveys and \$215 billion in spending by 1,033 brands over five years, making it uniquely suited to developing generalizable insights. The goal is to understand how advertising media characteristics, brand characteristics and current consumer brand attitudes interact to influence future brand attitudes. I expect that this will be a high-impact paper.

These projects typically take years to complete, as they require breaking new ground in terms of measurement and model development, but this discussion should provide some idea of what my research will look like over the next two to three years.

2. Teaching

As a teacher, my primary goals are to motivate student interest in the material and to develop students’ ability to make business decisions in real-world settings. I use participatory teaching methods (cases, discussions and in-class exercises) and I deliver them in ways that attract and retain student interest (concrete stories and examples) in every class.

At Rady this past year, I taught the core marketing class. This is the first marketing class in the MBA program and the only one that is required for all students. I particularly enjoy the challenge of engaging with non-marketing-focused students, many of whom enter the course with little interest or understanding of the topic. One of the ways my course differs from traditional class content is that I regularly highlight recent evidence from scholarly literature.

Course evaluations are imperfect measures of instructional quality but should reflect some level of student satisfaction. My course evaluations this past year may be even noisier than most: I did not allocate class time for students to complete the online evaluation, and only 44% of the full-

time section and 25% of the flex-weekend section responded. The Rady School focuses on four key indicators, given in the following table: (all are on a five-point scale)

	Overall rating	Instructor performance	Instructor knowledge	Student knowledge gain
2014 FTMBA	4.10	4.25	4.65	4.35
2014 FWMBA	3.80	4.00	4.83	4.83

For comparison, here are the evaluations for the same course in the year before I joined Rady:

	Overall rating	Instructor performance	Instructor knowledge	Student knowledge gain
2013 FTMBA	4.22	4.44	4.68	4.28
2013 FWMBA	4.83	4.87	4.91	4.87

The “overall rating” and “instructor performance” scores dipped in 2014, while “instructor knowledge” and “student knowledge gain” were fairly similar across the two cohorts.

I am hesitant to draw strong conclusions from this year’s numbers because of the low response rates and because I believe that my performance was adversely affected by a death in my immediate family that occurred shortly before the winter quarter.

I expect that my class evaluations will be significantly better in 2015, for three reasons. First, my course ratings at previous employers (USC and Duke) rose significantly from my first year to my second, and my teaching ratings were always above my colleagues’ averages at both institutions. Second, I continue to invest in developing significant amounts of new class material. Third, the differences between the student body at UCSD and Duke were larger than I expected. For example, Rady students are much better prepared on average but also far quieter in class—both attributes surprised me. I will redesign several aspects of the class and the grading incentive structure based on my new understanding of these differences. If my expectation of improved performance is not realized, then I will invite the MBA program to move me into an elective if it prefers.

3. Service

I feel fortunate to have this career, so I try to repay the kindness that so many people have shown me by performing service to the school, doctoral students and the field.

3.1. *Service at UCSD*

I place a high value on being part of a research-oriented culture at Rady and act accordingly. I attend nearly all research seminars in marketing, many in strategy, and some in operations. I frequently meet with our seminar speakers and often join them for dinner. I try to be friendly and approachable and help my colleagues whenever I am able, for example, giving detailed comments on several colleagues’ papers.

I also help to arrange research seminars and share in other faculty duties in the marketing area. I organized numerous seminars in the past year. I took the lead on pre-screening quantitative marketing Ph.D. applications and evaluating them in greater depth. I invested substantial effort into recruiting an excellent Ph.D. student this past year (unfortunately, we lost him to Berkeley), and I organized our first-round AMA interview screening and scheduling.

I have offered services to the Rady School and UCSD whenever asked. Most significantly, I initiated and am continuing a conversation between Rady's (non-academic) marketing team, Admissions and Dean's Office, with the goal of using Admissions' student information system to help evaluate the school's external marketing efforts. If successful, we will gain the ability to estimate the number and quality of prospective student leads accruing to each of our external marketing efforts (though this process is uncertain and requires some changes to existing processes). I have also participated in two webinars for admitted students and one evening session evaluating students' lab-to-market business projects.

I have frequently spoken with and advised full-time MBA students and alumni. I have helped several students secure internships and interviews, advised others on how to prepare for similar opportunities, I oversaw one independent study project, and I gave advice on how to complete major marketing job functions to several students. In all I would estimate that I have taken 15 non-class-related student meetings in the past six months, which is about typical of the rate at which I received those requests over the past 5 years.

I have been quoted on the radio program *Marketplace* by American Public Media three times in the past year. I do not notice any personal benefit from doing these interviews, but I take them because it helps publicize the school's existence and gives the school's marketing practitioners something to promote in social media.

At my previous employers, I was similarly committed to serving my students and peers. For example, I voluntarily assumed a lead advisory role for a student team competing in the National Student Advertising Competition, guiding it to third- and eleventh-place finishes among more than 200 competing universities; these results have not been duplicated since I left the school. At Duke, I advised the MBA Marketing Club and participated in numerous associated events each year.

This is only a partial list. Compiling a complete list of my ad hoc service activities would be a significant effort, as they have been numerous. I expect to continue to contribute actively to the marketing area within Rady, and the university at large, in coming years. I am excited about the challenge of helping to build this new school's already-burgeoning reputation.

3.2. *Doctoral Student Advising*

I have been significantly involved with eight doctoral students. I co-advised Linli Xu and Yi Zhu at USC, Mingyu Joo at Syracuse, and Yiting Deng at Duke. These students' successes and placements have been my most satisfying professional accomplishments. I co-advised all four students remotely in collaboration with professors at their local institutions. I served as the

primary advisor for Linli and Mingyu. Yi worked closely with Anthony Dukes as well as with me, and Yiting Deng is co-advised by Carl Mela.

Linli joined the University of Minnesota as a tenure-track assistant professor of marketing in 2012. Her husband, Yi, received an identical offer from Minnesota in July 2012 prior to the AMA summer conference, where he had been invited to interview with 45 universities. This was the first case I had heard of in which a rookie job offer was made prior to the summer job market. Minnesota was ranked #10 among North American schools by publications in the top 4 marketing journals between 2007 and 2011, and I believe that these were the two best placements by USC marketing doctoral students within the past 10 years. Linli and Yi have both received many awards. Perhaps the most prestigious was Yi's recognition by the Chinese government as one of the top 10 Chinese doctoral candidates studying abroad *in any field*. This award included a \$10,000 fellowship and a ceremony at the Chinese consulate in Los Angeles.

Mingyu Joo defended his dissertation at Syracuse and joined Ohio State as a tenure-track assistant professor of marketing in 2012. Ohio State was ranked #27 among North American business schools in terms of research productivity overall and is #46 for publishing in the top 4 marketing journals (Syracuse was ranked #90 and #71, respectively). Mingyu's placement is the best in the history of the marketing doctoral program at Syracuse.

Yiting Deng recently completed 30 first-round interviews at the AMA Summer Educators' Conference in August 2014, a high number that included places like Yale and Stanford. She so far has been invited to visit four universities' campuses for second-round interviews. I expect she will receive multiple offers from top-30 marketing departments.

In addition to co-advising these four students, I have been on the dissertation committees of four other students. Three of those students earned academic placements at research universities (Florida, Rotterdam and UNSW), and the fourth (Matt Goldman of UCSD Economics) will enter the market in 2015.

3.3. *Service to the Profession*

I am an active participant in the peer review process and at conferences. I evaluate about 20 articles each year as a peer reviewer for a variety of journals in advertising, communications, economics and marketing. Overall I have reviewed for 23 different journals, including numerous assignments from top marketing journals. I have reviewed 19 papers for *Marketing Science*, 22 papers for *Journal of Marketing Research*, 27 papers for *Management Science*, and 10 for *Journal of Marketing*. In 2011 I was recognized as a "Meritorious Reviewer" by *Management Science*. In 2012, the editor of the *Journal of Marketing Research* sent me a personal note to say "thanks for the off-the-charts review."

I have recently started to help organize conferences. I have been on the scientific committee and organized special sessions at the ZEW Workshops on Economics of Information, Communications and Technology in Mannheim for the past two years. I helped to organize the Structural Econometrics workshop that was held at Duke in 2011 and the Quantitative Marketing and Economics Conference that was held here in 2012. I have given annual suggestions for

invitees at Simon Anderson's annual conferences on media economics and the economics of advertising for the past five years. I developed a session proposal on structural models of multicategory demand that was accepted by the prestigious 2013 Choice Symposium in Noordwijk. I reviewed numerous papers for the second annual field experiments conference at Rady in 2014, as well as the associated special issue of the *Journal of Marketing Research*.

4. Contributions to Diversity

I strongly support efforts to increase diversity in all forms. I have experienced feelings of being an outsider and a minority in various contexts, at least to some degree, and those personal experiences gave me a visceral understanding of how perceptions of group membership can impact behavior, motivation and performance. Promotion of diversity would ideally be measured in terms of day-to-day behavior, but this is difficult to quantify, so I provide just a few concrete examples here.

As a teacher, I judiciously call on specific students to contribute to class discussions, to ensure that a diverse array of student opinions are aired. I am careful to protect people who are initially reluctant to contribute in front of their peers. I privately encourage quiet students to speak up and discuss with them any challenges they may face in doing so. These encouragements are typically met with relief, appreciation, and excellent contributions in class.

As an advisor, I have successfully mentored two female doctoral students in the subfield of quantitative marketing, where female faculty are severely underrepresented. One earned a highly-ranked academic placement, and the other appears to be on track for a similar result later this year.

In my research, specifically papers [8] and [11], my coauthor and I conducted research for the Federal Communications Commission into the ways in which minority ownership of television stations and other market structure variables impacted media market outcomes, including measures of viewpoint diversity.

5. Summary

In summary, I expect to continue producing research at the intersection of advertising, media and technology. I will continue my focus on answering specific questions that are theoretically ambiguous, novel and have the potential to influence practice. I look forward to teaching well, promoting diversity, and serving my students, colleagues, employer and profession for many years to come.

Appendix. Kenneth C. Wilbur's Publications and Submitted Papers

Downloadable at <http://kennethwilbur.com>

1. K.C. Wilbur. 2008. A Two-Sided, Empirical Model of Television Advertising and Viewing Markets. *Marketing Science*, 27 (3): 356-378.
2. K. C. Wilbur. 2008. How the Digital Video Recorder Changes Traditional Television Advertising. *Journal of Advertising*, 37 (1): 143-149.
3. K. Ailawadi, et al., K.C. Wilbur, J. Zhang. 2009. Empirical Models of Manufacturer-Retailer Interaction: A Review and Agenda for Future Research. *Marketing Letters*, 21 (3): 273-285. (Invited)
4. P.W. Farris, D.J. Reibstein, K.C. Wilbur. 2009. Distribution and Market Share. In *Empirical Generalizations about Marketing Impact*, ed. by Mike Hanssens, Marketing Science Institute.
5. Wilbur, K.C., Y. Zhu. 2009. Click Fraud. *Marketing Science*, 28 (2): 293-308.
6. A.D. Rennhoff, K.C. Wilbur. 2011. The Effectiveness of Post-Release Movie Advertising. *International Journal of Advertising*, 30 (2): 305-328.
7. Y. Zhu, K.C. Wilbur. 2011. Hybrid Advertising Auctions. *Marketing Science*, 30 (2): 249-273.
8. A.D. Rennhoff, K.C. Wilbur. 2012. Local Media Ownership and Media Quality. *Information Economics and Policy*, 24 (3-4): 231-242.
9. K.C. Wilbur, P.W. Farris. 2013. Distribution and Market Share. *Journal of Retailing*, 90 (2): 154-167.
10. K.C. Wilbur, L. Xu, Kempe, D. 2013. Correcting Audience Externalities in Television Advertising. *Marketing Science*, 32 (6): 892-912.
11. A.D. Rennhoff, K.C. Wilbur. 2013. Market-Based Measures of Viewpoint Diversity. *Information Economics and Policy*, 26: 1-11. (Lead article)
12. M. Joo, K.C. Wilbur, B. Cowgill, Y. Zhu. 2014. Television Advertising and Online Search. *Management Science*, 60 (1): 56-73.
13. Xu, L., K.C. Wilbur, S. Siddarth, J. Silva-Risso. 2014. Price Advertising by Manufacturers and Dealers. *Management Science*, in press.
14. Berry, S., A. Khwaja, V. Kumar, A. Musalem, K.C. Wilbur, et al. 2014. Structural Models of Complementary Choices. *Marketing Letters*, in press. (Invited)
15. J. Liaukonyte, T. Teixeira, K. C. Wilbur. 2014. Television Advertising and Online Shopping. *2nd (minor) revision requested by Marketing Science*.
16. L. Xu, K. C. Wilbur, J. Silva-Risso. 2014. Forecasting the Evolution of Market Structure: Structural vs. Descriptive Models. *Revision resubmitted to Journal of Marketing Research*.
17. H. Gao, J. Xie, Q. Wang, K. C. Wilbur. 2014. Adjusting Advertising Spending When Anticipating a Product Recall? The Marketing-Finance Interface in Product Crisis Management. *Submitted to Journal of Marketing*.
18. M. Joo, K. C. Wilbur, Y. Zhu. 2014. Effects of TV Advertising on Keyword Search in the AOL Dataset. *2nd revision resubmitted to International Journal of Research in Marketing*
19. K. C. Wilbur. 2014. Developments in Mass Media Consumption and Research. *Revision requested by Handbook of Media Economics (eds. S. Anderson, J. Waldfogel)* (Invited)