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Research Statement

My research applies the tools of industrial organization to study health care markets. The health care sector is one of the largest in the economy and represents a particularly rich setting for industrial organization research, due to several distinctive features—information frictions, expert intermediaries, imperfect competition, complex vertical relationships, and pervasive government intervention. I develop and estimate empirical models using novel datasets, combining reduced-form and structural approaches to analyze policy-relevant questions. In this document, I summarize three research themes that have guided my work since joining the University of Wisconsin-Madison: (1) incentives, information, and competition in health care supply chains; (2) insurance design and welfare; and (3) quality measurement and production in long-term care.

1. Incentives, Information, and Competition in Health Care Supply Chains

Health care supply chains entail formal and informal relationships between firms that have different information sets, misaligned incentives, and varying degrees of market power. My research on this theme builds on earlier work documenting wide unexplained variation in hospitals' input prices and investigating its sources. In one paper, my coauthors and I examined the role of transparency in business-to-business bargaining. We showed that making benchmarking information available to hospitals lowers prices negotiated with suppliers, and that the reductions are driven by reduced asymmetric information rather than stronger incentives ("Transparency and Negotiated Prices," Grennan and Swanson, *Journal of Political Economy*, 2020). In another, we presented new evidence on the effects of buyer mergers on contracting outcomes, showing that hospital mergers generate surprisingly small reductions in negotiated input prices due to the net effects of increased buyer power and countervailing forces such as managerial disruption ("Mergers and Marginal Costs," Craig, Grennan, and Swanson, *RAND Journal of Economics*, 2021). My recent work turns to two related questions concerning misaligned incentives in complex contracting relationships: how financial relationships between manufacturers and physicians affect clinical decisions and welfare, and how hospital-physician integration affects competition and negotiated prices.

Pharmaceutical and medical device manufacturers spend billions each year cultivating relationships with physicians through meals, speaking fees, and other payments. Physicians are expert intermediaries whose prescribing and purchasing decisions affect both patient welfare and firm revenues. Whether manufacturer payments inform or distort clinical decisions has important implications for patient welfare and health care costs. In "No Free Lunch? Welfare Analysis of Firms Selling Through Expert Intermediaries" (Grennan, Myers, Swanson, and Chatterji, *Review of Economic Studies*, 2025), we study how manufacturers target and influence physicians in the pharmaceutical industry, focusing on a case study of statins, an important class of cardiovascular drugs. A key empirical challenge is identifying the causal effect of payments on prescribing. We address this with a strategy based on plausibly exogenous variation in spillovers from academic medical centers' conflict-of-interest policies. Such variation allows us to compare otherwise similar physicians who are more or less exposed to regional heterogeneity in firm sales activity. Using an empirical specification that combines machine learning and marginal treatment effect methods, we establish that firms target physicians with large patient panels and high expected responsiveness to payment. We embed these estimates in a structural model of demand and

pricing that accounts for how payments affect equilibrium drug prices and for potential decision errors, which take the form of deviations between physician recommendations and patient-optimal prescribing. Our welfare analysis shows that whether payments harm or help consumers hinges on the degree of baseline under-prescribing. For our study of statins, we calibrate decision errors using clinical trial data and find that payments benefit consumers in this specific case study due to under-prescribing.

Medical device manufacturers present a related but distinct case: as we documented in prior work, payments to physicians are larger than in pharmaceuticals and more heavily oriented toward training and innovation. In "Lobbying Physicians: Payments from Industry and Hospital Procurement of Medical Devices" (Bergman, Grennan, and Swanson), we examine how these payments affect hospital purchasing decisions. We merge newly available data on device industry payments with hospital purchasing records covering top device categories. This linkage enables, for the first time, direct analysis of the payment-procurement relationship at scale. Using large payment shocks and new synthetic difference-in-differences methods for our primary specification, we find that increases in payment relationships are associated with substantially higher hospital expenditures on paying firms' devices, and that these expenditure patterns deviate systematically from the choices of top academic medical centers, a plausible expert benchmark. Together with the statin results, these findings suggest that the welfare effects of payments are context-dependent.

Hospital acquisitions of physician practices have transformed health care delivery, nearly doubling the share of physicians working for hospitals over the past decade and a half, yet have faced virtually no antitrust scrutiny due to the small size of each individual transaction. Meanwhile, antitrust authorities are increasingly concerned about competitive harms due to non-horizontal mergers such as these. In "Are Hospital Acquisitions of Physician Practices Anticompetitive?" (Cooper, Craig, Epanomeritakis, Grennan, Martinez, Scott Morton, and Swanson; revisions requested, *Quarterly Journal of Economics*), we construct the first comprehensive retrospective study of the competitive effects of such acquisitions. We combine administrative data with machine learning algorithms to create a new panel dataset tracking physician practice ownership, overcoming the significant measurement error challenges of prior proxy methods. We then merge the ownership data with claims data from a large national insurer. Focusing on childbirths, the most common privately insured admission, we find that these mergers led to price increases for both hospitals and physicians, with no discernible effects on quality. Using demand estimation to characterize substitution patterns, we construct mechanism tests showing that price increases are concentrated in transactions with greater scope for foreclosure and recapture, two focal anticompetitive mechanisms raised in the theoretical literature on non-horizontal mergers. We also show how serial transactions increase prices via more traditional horizontal concentration. Our results suggest that the costs of hospital-physician integration have been substantial, and our mechanism tests offer a template for identifying transactions that warrant antitrust scrutiny.

2. Insurance Design and Welfare

Health insurance markets are shaped by interactions between well-known frictions—adverse selection, moral hazard, and imperfect competition—and institutional features such as subsidies and selective contracting. These interactions generate market outcomes that can diverge from socially optimal benchmarks. In earlier work with Amanda Starc (*American Economic Journal:*

Economic Policy, 2021), we showed that selective pharmacy contracting in Medicare Part D reduces drug costs but involves meaningful tradeoffs with consumer access. My recent work examines how insurance design interacts with market power and bargaining in new institutional settings.

Choice frictions can dampen competition, but can also have beneficial effects in the presence of other market failures such as adverse selection. In "Inertia, Market Power, and Adverse Selection in Health Insurance: Evidence from the ACA Exchanges" (Saltzman, Swanson, and Polsky, forthcoming, *Review of Economics and Statistics*), we study how inertia—the tendency to stick with a previously chosen product even when better options are available—interacts with firm market power and adverse selection. Our empirical setting is the California individual health insurance exchange established under the Affordable Care Act (ACA). We show that insurance enrollees are highly inertial, but this inertia is partially dampened by exogenous "churn" in eligibility for different insurance options. We estimate an equilibrium model of plan selection and oligopoly pricing using consumer-level data covering nearly ten million plan choices over five years. The model and rich data allow us to separately identify the contributions of inertia, market power, and selection. We establish that inertia costs lead to large welfare losses and higher firm markups, and find that inertia amplifies firm market power far more than it interacts with adverse selection. We also explore a range of policy alternatives and mechanisms. For example, using unique data on doctor networks, we present evidence that doctor attachment is a primary driver of switching costs. This finding highlights network design as a policy lever alongside more traditional choice architecture interventions.

Making innovative drugs affordable and accessible is a pressing global challenge, and centralized price negotiation has emerged as an increasingly popular policy tool. Yet its welfare effects depend critically on implementation details—how negotiations are structured, what outside options exist, and how insurance is designed. In "A Double Dose of Reform: Insurance and Centralized Negotiation in Drug Markets" (Barwick, Swanson, and Xia; revisions requested, *American Economic Review*), we examine China's National Reimbursement Drug List (NRDL) Reform, which combines centralized negotiation with expanded insurance coverage. Using comprehensive drug sales data across China, we document that the program caused sharp reductions in retail prices and out-of-pocket costs alongside large increases in utilization. At the same time, a quarter of negotiations failed, and the benefits of the program were uneven due to regressive provincial subsidies. To better understand the welfare effects of the program as implemented as well as alternative feasible programs, we estimate a flexible structural model featuring heterogeneous households, bargaining with potential breakdowns, and a government objective that trades off consumer surplus against insurance spending. A key innovation is our ability to recover the shadow cost of the government's budget constraint, using data on both successful and failed negotiations with a novel maximum likelihood estimator. Our counterfactual analysis shows how choices about outside options, centralization, and insurance generosity shape welfare. We find that an improved policy pairing market-access negotiation with an optimal coinsurance schedule would yield a 20% increase in social surplus.

3. Quality Measurement and Production in Long-Term Care

Long-term care for the elderly is a large and rapidly growing sector. Over 15,000 skilled nursing facilities serve more than a million patients in the United States annually, with spending approaching $170 billion per year. Despite substantial regulatory oversight and public quality

reporting, care quality varies widely across facilities, and the determinants of this variation are poorly understood. In ongoing work funded by the National Science Foundation ($557K, 2025-2028), "The Measurement and Production of Quality in Long-Term Care Facilities in the US" (Backus, Olenski, and Swanson), we apply tools from industrial organization to study the supply side of long-term care. We analyze rich administrative data from CMS's Minimum Data Set covering the universe of nursing home residents over multiple years. We use a random forest to extract a unidimensional health measure from frequent, high-dimensional patient assessments; use observed changes in patient health over time to estimate facility quality while controlling for selection of patients into facilities; and estimate a production function that maps multidimensional labor and capital inputs into outcomes, addressing standard concerns regarding simultaneity and measurement error. We then recover each facility's implicit preferences over quality versus quantity of care.

Our results reveal that quality variation is driven far more by differences in facility preferences than by differences in productivity or inputs. These preferences vary systematically; for example, for-profit facilities weight quantity more heavily than quality relative to their non-profit counterparts. Despite this heterogeneity, reallocation of patients across facilities contributes little to improvements in outcomes, as capacity constraints limit potential gains from directing patients to higher-quality providers. Our future work will build on these findings: we will construct a new dataset of SNF ownership changes to estimate causal effects of ownership conversions on quality and the mediating roles of preferences and productivity, and extend the production function to accommodate the distinct post-acute and long-term care services provided within the same facilities. These extensions will allow us to study the objectives and tradeoffs faced by these important multiproduct firms.

4. New Directions

Outside of health care, I recently completed a long-running collaboration with Glenn Ellison on high academic achievement. "Dynamics of the Gender Gap in High Math Achievement" (Ellison and Swanson, *Journal of Human Resources*, 2023) builds on previous work on the gender gap in math competitions and on heterogeneity in school effects. We developed new panel data from the American Mathematics Competitions to show that the gender gap among high-achieving students is large by ninth grade and widens over high school. We also quantify a discouragement effect: students who narrowly miss qualifying for a prestigious second-stage exam are more likely to drop out of future competition, and the effect is stronger among girls.

Within my primary research fields of health economics and industrial organization, I have been invited to contribute a chapter to the next edition of the *Handbook of Health Economics*, a widely cited reference work used extensively in graduate teaching. Coauthored with Pierre Dubois (Toulouse) and Matthew Grennan (Emory), the chapter will present a synthesis of frontier research on "Competition and Integration in Health Care Markets."