Research Proposal and Budget:

"Plasma Donation as an Alternative Financial Service: The Consequences for Individuals and Non-Bank Lenders"

Summary:
My research will explore the individual financial effects of access to plasma donation centers, using as outcomes individual payday loan use, total debt, and delinquencies. I will determine whether plasma centers predominately serve as complements or substitutes for payday loans and other forms of non-bank financial services. I will also evaluate broader local economic outcomes, such as unemployment, poverty, and hospitalization rates, after plasma storefronts open in a locality. The goal is to better understand the costs and benefits of current US policy, which is extremely permissible of plasma sales relative to other countries.

Research questions:

- *Stylized facts*: When and why do individuals sell plasma? For example, does incurring a financial shock (e.g., a car repair) make an individual more likely to donate? What factors predict plasma sales? Similarly, how often are individuals donating? Is donation correlated with self-reported health status?
- *Causal analysis at the individual level:* What is the impact a plasma center opening in a neighborhood on individual debt balances, delinquencies, and interest costs? Do individuals sell plasma as a substitute for payday loans? Or, is plasma sale more of a compliment (rather than a substitute) to non-bank lenders, allowing people to take out bigger loans and pay them back through plasma sales?
- *Causal analysis at the aggregate level*: What are the local economic impacts when a plasma storefront opens in a neighborhood? Do we see changes in the sales volume and closure rates of non-bank lenders (e.g., payday loan storefronts)? What, if any, identifiable effects are there on aggregate local outcomes, such as poverty, unemployment, and hospitalization rates?

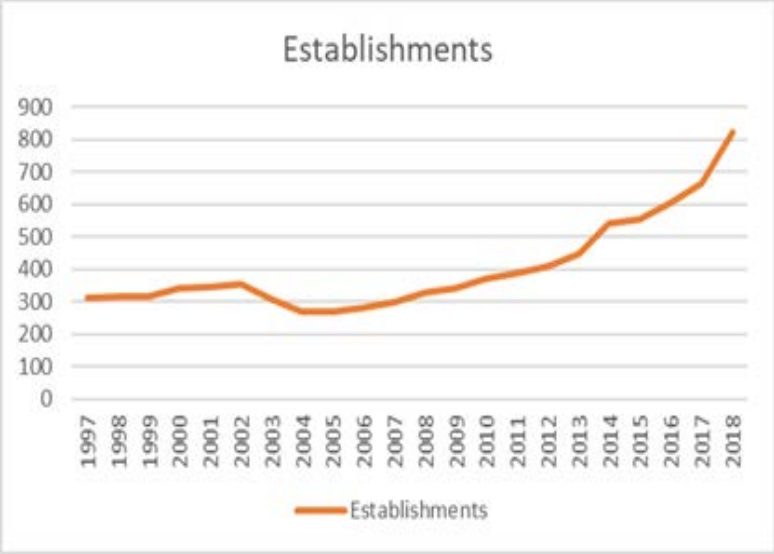
Background:
A person can earn up to $400 per month or $50 per visit by "donating" (henceforth, "selling") plasma without violating any U.S. regulations. Plasma centers have started marketing themselves around their financial benefits, offering prepaid cards as well as "frequent donor" bonuses.[1] My research aims to use rigorous statistical techniques based on a natural experiment to adjust the lens through which society and policymakers view plasma sales. I hypothesize that plasma sale is essentially an under-researched and unregulated form of alternative financial service, similar to payday loans and auto title loans. However, unlike payday loans, we know little about when or why people sell plasma nor do we understand the financial and health consequences of sales. This lack of understanding is particularly troublesome given the exponential growth of plasma storefronts in the U.S., particularly in low-income areas, since the financial crisis.

Plasma is part of the human immune system and is primarily used in pharmaceuticals for antibody deficiencies. Plasma has become a $24B business and a growing U.S. export.[2] Plasma centers are primarily owned by foreign companies. These companies harvest the plasma of (primarily) low-income people in the U.S. and then export the majority of it abroad. The U.S. provides 70% of the world's plasma. This business model relies on the fact that plasma sale is largely unregulated in the US, unlike in other developed countries. Figure 1 shows the number of plasma storefronts in the US. Growth has been exponential since

[1] For examples, see https://www.biolifeplasma.com/us/#/ and https://www.cslplasma.com/
[2] For more information see https://www.theatlantic.com/business/archive/2018/03/plasma-donations/555599/

2008. Despite the expanding importance of this source of funds for low-income households, I know of not a single economics or finance publication on the topic.

Figure 1: The number of plasma sale storefronts in the U.S. over time



Source: Authors' tabulation of ReferenceUSA data.

Contribution:

I am not aware of any study that has formally estimated the individual financial or local economic effects of the rise in plasma sales in the US. The literature on plasma has primarily focused on transfusion-transmissible infections (James and Cameron, 2004), the ethics and motivation of blood and plasma donation (Farrugia, Penrod, and Bult, 2010; Lacetera, 2016), understanding societal support for compensating donors (Lacetera and Macis, 2018), and the immediate health effects (McLeod et al., 1998). There has also been a sociological study around the social stigma of selling plasma (Chen, 2014).

I view my research as contributing primarily to the literature on payday loans and other forms of non-bank loans. Melzer (2011) finds that payday loan borrowers are more likely to report delaying health care and being delinquent on bills. Skiba and Tobacman (2019) present evidence that payday loans increase bankruptcy rates. Morse (2011) finds evidence that households use payday loans to absorb disaster losses, documenting that access to payday loans reduces foreclosures in areas affected by natural disasters.

My study, in contrast, will explore the individual financial effects of access to plasma centers, using individual outcomes such as payday loan use, total debt, and delinquencies. Moreover, I will determine whether plasma centers predominately serve as complements or substitutes for payday loans and other forms of non-bank financial services. I will also evaluate broader local economic outcomes, such as employment rates, house prices, and poverty rates, after plasma storefronts open in a locality.

These findings will have several policy implications in terms of understanding the cost/benefit of regulating plasma centers like a financial service (CFPB) rather than simply as a blood center (FDA). For example, a discovery that plasma centers act as complements to payday loan stores, leading to more use of both services when in proximity to each other, may lead state officials to more tightly control where and how many plasma storefronts open. A discovery that plasma centers reduce delinquencies and total interest charges may lead officials to conclude that there is some benefit to leaving these establishments lightly regulated.

Data and empirical method:

I have completed preliminary analyses on this topic using questions I added to an annual survey of TurboTax Freedom Edition tax filers (2017 and 2018 tax filers). Around 4% of the 25,000 participants report donating plasma in a 6-month period, roughly equivalent to the share that reports using auto-title loans and 1 percentage point less than the share that reports taking a payday loan.[3] Of those who donated, that average frequency was once per month. The dominating reason for donating was to cover normal expenses.

Plasma sales are also highly correlated with having experienced a recent expense shock (e.g., a car repair). A recent expense shock is associated with a 2.8 percentage point increase in the probability of donating. The shocks most predictive of plasma sales include car repairs, legal fees, and loss of a job/income. I also find that proximity to plasma centers is significantly correlated with individual plasma sales. Instrumental variables tests show that donating plasma (instrumented by proximity) causes *less* use of payday loans and pawnshops. All of these findings are consistent with plasma sales acting as a substitute for payday loans.

Proximity is an imperfect instrument, however. To paint a fuller picture of the role of plasma sales on individuals and local economies, I will use data from ReferenceUSA (already purchased) on all openings/closings of plasma centers.[4] Using openings/closings as the instrument helps to overcome the endogeneity concern that neighborhoods with plasma centers are different in unobservable ways than those without plasma centers. Information on openings and closings of plasma centers allows for a quasi-experiment (specifically, a *difference-in-difference* design) in which I can compare individual and local economic outcomes before and after a plasma center opens nearby with the same outcome variables in similar areas where a plasma center did not open.

An important control is a neighborhood's exposure to non-bank financial services (e.g., payday loan storefronts). I will acquire this information (not yet purchased) from the National Establishment Time-Series (NETS). This information can also serve as an outcome of interest: looking at establishment level trends in the sales volume and closures of nearby payday lenders, pawnshops, and auto title lenders.

Finally, I need individual-level credit data. Experian recently purchased Clarity, a payday loan aggregator. With this data, I can determine the relationship between access to plasma centers and individuals' use of payday loans. I can also study total (non-payday) debt balances and delinquencies to get a sense of whether access to plasma centers affect local borrowing and interest charges. I can do all of this using a much longer time-series than what is currently available to us through the TurboTax survey (i.e., 10-years of quarterly panel data versus 2 years of annual cross-sections).

If I am unable to get enough grant money (see the budget below), I will purchase Experian's Clarity data only. For individual credit data, I will, instead, use the NYFed/Equifax Consumer Credit Panel (CCP), which has some disadvantages, but I already have free access to the CCP.

Budget:

Data costs:

10-years of Experian data costs: $50,000

8-years of Experian's Clarity (available back to 2012) data costs: $20,000

[3] Note that the TurboTax Freedom Edition sample skews towards the white, young, and educated portion of low-income households. As such, we might expect the donation frequency to be higher in the broader low-income population.

[4] We have validated the coverage rate of ReferenceUSA data against FDA data (which is available in electronic form only after 2018).

10-years of NETS non-bank lender establishment data costs: $5,000
10-years of ReferenceUSA plasma center data: $2,500 (already purchased)
Total = $77,500

Other grants already obtained and not yet used to purchase data:
St. Louis Fed, Center for Household Financial Stability: $5,000
Center for Consumer Financial Decision-Making (U. Colorado): $5,000

Net financial need:
Minimum (if I use CCP instead of Experian for credit data): **$15,000**
Ideal (if I use Experian for credit data): $67,500*
*Note that I have applications out for other grants but none have come through so far.

Timeline for completion:
Working paper to be completed 1-year from date of data access. Publication in a top economics or finance journal within 2.5 years.

Data sharing:
All of the data discussed here is proprietary (must be purchased). Therefore, it is unlikely that I will have the right to make any of it public. However, I began scraping FDA plasma data in 2019. Unless FDA objects, I would like to post this scraped FDA data publically on my website going forward.

Researcher:
PI: Emily Gallagher is an assistant professor of finance at the University of Colorado Boulder. On top of other publications, she has published papers on the links between health and household financial wellbeing in the *Journal of Public Economics* and the *Journal of Financial Economics*. She has experience analyzing large datasets, including credit bureau data. Please find her CV below and her website here: https://sites.google.com/site/emgallag/

References:
Chen, Xi, 2014. Identification of Stigma Behavior through Social Networks: Blood Plasma Donation, Peer Effects and Status Seeking. Yale University working paper, 2014.

Farrugia, A., Penrod, J. and Bult, J.M. (2010), Payment, compensation and replacement – the ethics and motivation of blood and plasma donation. Vox Sanguinis, 99: 202-211.

James, R. and Cameron A. Mustard, 2004, Geographic Location of Commercial Plasma Donation Clinics in the United States, 1980–1995. American Journal of Public Health, 94, 1224-1229

Lacetera, N. (2016). Incentives and ethics in the economics of body parts National Bureau of Economic Research, Inc, NBER Working Papers: 22673.

Lacetera, N., & Macis, M. (2018). Moral NIMBY-ism? understanding societal support for monetary compensation to plasma donors in canada National Bureau of Economic Research, Inc, NBER Working Papers: 24572.

McLeod, B.C., Price, T.H., Owen, H., Ciavarella, D., Sniecinski, I., Randels, M.J. and Smith, J.W. (1998), Frequency of immediate adverse effects associated with apheresis donation. Transfusion, 38: 938-943.

Melzer, B. T. (2011). The real costs of credit access: Evidence from the payday lending market. The Quarterly Journal of Economics 126(1), 517–555.

Morse, A. (2011). Payday lenders: Heroes or villains? Journal of Financial Economics 102(1), 28–44.

Skiba, P. M. and J. Tobacman (2019). Do payday loans cause bankruptcy? Journal of Law and Economics, forthcoming.

EMILY A. GALLAGHER

DEPARTMENT ADDRESS & CONTACT INFO

Leeds School of Business
995 Regent Dr., Mailbox #51
Boulder, CO 80309

Tel: # 303-735-4465 (office)
Email: emily.a.gallagher@colorado.edu
Web: https://sites.google.com/site/emgallag/

ACADEMIC EMPLOYMENT

2018-Pres.	University of Colorado Boulder – Leeds *Assistant Professor of Finance*	Boulder, CO
2017-Pres.	Federal Reserve Banks of St. Louis & Philadelphia *Visiting Scholar*	St. Louis, MO Philadelphia, PA
2016-2018	Washington University in St. Louis – Olin *Postdoc*	St. Louis, MO

EDUCATION

Ph.D.	Paris School of Economics (Sorbonne), 2016 Economics	Paris, France
B.B.A	University of Michigan (Ross School of Business)	Ann Arbor, MI

RESEARCH INTERESTS

Household finance, housing markets, consumer protection, mutual funds, insurance

REFEREED PUBLICATIONS

"Medicaid and Household Savings Behavior: New Evidence from Tax Refunds," with Sabat, J., Gopalan, R., & Grinstein-Weiss, M.; *Journal of Financial Economics* (2019, forthcoming) LINK

"Investor Information Acquisition and Money Market Fund Risk Rebalancing During the 2011-12 Eurozone Crisis," with Schmidt, L., Timmermann, A., & Wermers, R.; *Review of Financial Studies* (2019, forthcoming) LINK

"The Effect of Health Insurance on Home Payment Delinquency: Evidence from ACA Marketplace Subsidies," with Gopalan, R., & Grinstein-Weiss, M.; *Journal of Public Economics* (2019) Vol. 172, 67–83. LINK

"Assessing the Credit Risk of Money Market Funds During the Eurozone Crisis," with S. Collins; *Journal of Financial Stability* (2016) Vol. 25, 150–165. LINK

"Money Market Funds and the Prospect of a U.S. Treasury Default," with S. Collins; *Quarterly Journal of Finance* (2016) Vol. 06, No. 01. LINK

WORKING PAPERS

"Let the Rich Be Flooded: The Unequal Impact of Hurricane Harvey on Household Debt," with Steve Billings & Lowell Ricketts LINK

"Rules of thumb in household savings decisions: Estimation using threshold regression," with Sabat, J. LINK (Press coverage: *MarketWatch; CNBC; Money Life with Chuck Jaffe; Morningstar; Business Insider; AARP Magazine)*

"Can Pre-Commitment Increase Savings Deposits? Evidence from a Tax Time Field Experiment" with Stephen Roll, Michal Grinstein-Weiss, and Cynthia Cryder LINK

"Health Insurance as an Income Stabilizer: Evidence from the ACA Marketplaces" with Nathan Blascak, Stephen Roll, Michal Grinstein-Weiss LINK

RESEARCH IN PROGRESS

"Get Out While the Getting's Good? A Test of First-Mover Behavior in Bond Funds," with Collins, S.

"Thirsty for Credit: Mortgage Lending During the Flint Water Crisis," with Nathan Blascak

"Student Debt and Human Capital After a Natural Disaster," with Steve Billings & Lowell Ricketts

PRESS COVERAGE

MarketWatch LINK LINK; *The Atlantic, CityLab* LINK*; The Daily Mail* LINK*; AARP Magazine; Aspen Public Radio* (radio)*; Vox.com "The Weeds"*(podcast) LINK*; Bloomberg* LINK*; Consumer Affairs* LINK*; New America Foundation Weekly* (Op-ed) LINK; *CNBC* LINK LINK; *Missourinet* (radio interview); *National Affairs; WalletHub.com; Pacific Standard Magazine* LINK*; The Seattle Times* LINK*; Money Life with Chuck Jaffe* (podcast, Oct 17, 19) LINK*; Morningstar* LINK; *San Francisco Chronical* LINK; *Business Insider* LINK; *Colorado Public Radio* (radio); *MedicalExpress.xom* LINK;

RESEARCH PRESENTATIONS & DISCUSSIONS

2020 (includes scheduled)
American Finance Association (AFA); Claremont Mckenna – Finance Dept.; University of Colorado Denver – Econ. Dept; Midwest Finance Association (MFA); University of Kentucky Finance Conference

2019
Yale Junior Finance Conference; Consumer Financial Protection Bureau (roundtable with Director of CFPB); American Finance Association (AFA); U. of Michigan – Ross; Urban Economics Association (UEA); Northern Finance Association (NFA); Academy of Behavioral Finance & Economics; St. Louis Fed; U. of Kansas – Econ; Boulder Summer Conference on Consumer Financial Decision Making (plenary session speaker); Association for Public Policy Analysis and Management (APPAM); Southern Economic Association (SEA); Atlanta Fed - Credit Bureau Data Users Conference*; Chicago Fed*; Diamond-Dybvig 36 Conference*

2018
Northwestern – Kellogg; Stanford – Econ; Berkeley – Haas; Washington University – Olin; UC Irvine – Econ Dept. & Paul Merage; ASHecon; U. of Colorado Boulder – Leeds; Colorado Finance Summit; Miami Behavioral Finance*; Adolfo Ibañez University, Chile*; Midwest Finance Association (MFA)*, Southern Finance Association (SFA)*

2017
NBER Summer Institute, Health Care Program; New Perspectives on Consumer Behavior in Credit & Payments Markets; U. of Colorado Boulder – Leeds; U. of Wisconsin Madison; St. Louis Federal Reserve Bank; Wealth and Asset Management Research Conference; Boulder Summer Conference on Consumer Financial Decision Making (poster session); Washington University – Olin; Society for Financial Econometrics (SoFiE) Conference, NYU*; FRIC'17 Conference*

2015 - 2016
American Economic Association (AEA); Midwest Finance Association (MFA; American Finance Association (AFA); European Securities and Markets Authority (ESMA)*; Northern Finance Association (NFA); European Financial Management Association (EFMA); Fidelity

Investments; Oxford University; Third International Conference on Credit Risk; U. of Maryland – Smith; Rotman Liquidity Risk in Asset Management Conference*; Bank of Canada – Liquidity Risk in Asset Management*
* co-author presented

TEACHING

University of Colorado at Boulder, Leeds School of Business:
- REAL 4100: Real Estate Finance and Investment Analysis (Undergraduate: Spring, Fall 2019)
- MSBC-5610: MS Real Estate Finance (Masters: Fall 2019)

Washington University in St. Louis, Olin Business School:
- MGT 501 – Consulting Practicum (Masters: Fall 2016 & 2017)
- MGT 610 – Dissertation Research Methods Course (Doctorate: Fall, Spring 2017)

GRANTS & AWARDS

Presidential Award winner, *Russel Sage Foundation*, co-funded with the *Robert Wood Johnson Foundation*, Spring 2018: "The Effects of the Affordable Care Act on Household Financial Wellbeing," Principal Investigator, $35,000 LINK ; John A. Doukas Best PhD Paper Award finalist, 2015; Dauphine Foundation Award winner 2014, $10,000; Banque de France Research Award finalist, 2014

POLICY BRIEFS, OP-EDS & NON-REFEREED PUBLICATIONS

Reid, B., & Gallagher, E. A. (2016). An Overview of the U.S. Registered Fund Industry. *Business Economics*, Vol. 49, 271–281. LINK

Collins, S., & Gallagher, E. A. (2015) Assessing Credit Risk in Money Market Funds. Book chapter. Third International Conference on Credit Analysis and Risk Management, *Cambridge Scholars Publishing*, ISBN (10): 1-4438-7648-8, 2015. LINK

Gallagher, E. A. (2018). "Bankruptcy Rules and 'Medicaid Churn' Affect Saving of Families Planning for Medical Bills" (In The Balance, Issue-21 2018) St. Louis Federal Reserve Bank, Center for Household Financial Security. LINK

Gallagher, E. A. (2018). "Medicaid Can Increase Saving by Distressed Households" (In The Balance, Issue-20 2018) St. Louis Federal Reserve Bank, Center for Household Financial Security. LINK

Gallagher, E. A. (2017). "Cash on Hand is Critical for Avoiding Hardship" (In The Balance, Issue-18 2017) St. Louis Federal Reserve Bank, Center for Household Financial Security. LINK

Gallagher, E. A., Gopalan, R., Grinstein-Weiss, M., Roll, S. P., & Davison, G. (2017, January). "Home delinquency rates are lower among ACA Marketplace households: Evidence from a natural experiment" (CSD Research Brief No. 17-01). Washington University, Center for Social Development. LINK

Gallagher, E. A., & Roll, S. P.. Obamacare has Benefits that Extend Beyond the Hospital – and into Housing. (Op-ed) New America Weekly, Edition 148, January 12, 2017 (online print). LINK

SELECTED PROFESSIONAL EXPERIENCE

Economist, Investment Company Institute (ICI), Washington, DC, USA (2012-2016)

Research Associate, New America Foundation, Washington, DC, USA (2009)

Stock-loan Trading Analyst, Deutsche Bank, London, U.K. (2008-2009)

LANGUAGES

SAS, Stata, SQL, Excel VBA, English (native), French (advanced)