

# Can Reducing Workload Enhance Equity at the Front-Lines? How Street-level Bureaucrats' Capacity Impacts Access to Burdensome Public Programs

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## Introduction

Administrative burdens reduce equity in access to college financial aid

- 35-50% of high school students fail to complete the burdensome FAFSA
- Lower/middle income students lose estimated \$9,700 in grant and loan aid annually (Bird et al., 2019)
- In aggregate, this complexity carries a \$4 billion price tag each year

School counselors may provide critical support to students navigating burden (Barnes, 2020; Bell et al., 2020).

- Oklahoma implemented a 450-1 student-counselor ratio policy to reduce counselor workload and increase support to students.

## Research Questions:

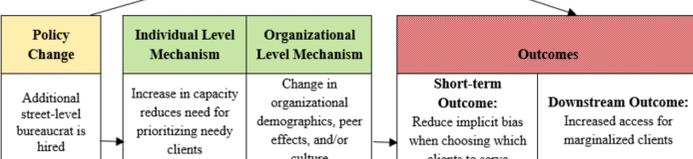
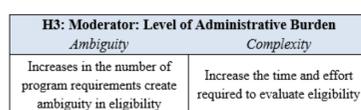
- 1) How does reducing counselor workload impact student access to burdensome means-tested college financial aid?
- 2) How does administrative burden moderate the impact of workload on equity in program access?

## Theoretical Framework

Hypothesis 1: Increasing the number of school counselors will positively impact the proportion of low-income students receiving burdensome means-tested financial aid.

Hypothesis 2: Increasing the number of school counselors will positively impact the number of low-income and racially marginalized students receiving financial aid.

Hypothesis 3: The impacts of reducing counselors' workload on low-income students will be concentrated in the years following expansions in administrative burden.



## Results

### Testing Hypothesis 1

Results: Hypothesis 1 on the Impact of Workload on Access to the Pell Grant and Promise

	Below Mean	Reduced Form	2SLS	
			Full Sample/No Bandwidth	Policy Bandwidth  s  225
Received Pell, Percent	0.272	0.068 *** (0.019)	0.462 * (0.199)	0.440 + (0.232)
Received Pell, Count	10.886	7.695 *** (2.188)	52.024 * (22.695)	60.293 + (31.300)
Received Promise, Percent	0.127	0.026 *** (0.007)	0.173 * (0.081)	0.179 + (0.099)
Received Promise, Count	4.765	2.587 *** (0.733)	17.500 * (8.130)	20.075 + (11.317)
N observations		4155	4155	1528
N schools		385	385	170

### Testing Hypothesis 2 and 3

Results: The Impacts of Workload on Racially Minoritized Student Access, by Cohort

		Pre-2008			Post-2008		
		Reduced Form	First Stage	2SLS	Reduced Form	First Stage	2SLS
Pell	All Students	-0.354 (1.728)	0.178 + (0.098)	-6.057 (42.52)	6.238 *** (1.020)	0.155 ** (0.053)	51.063 * (23.49)
	White	-0.530 (1.180)		-8.575 (31.08)	0.929 (0.621)		7.619 (8.529)
	Black	0.531 (0.535)		7.779 (18.27)	1.914 *** (0.375)		15.669 + (8.951)
	Hispanic	-0.401 (0.249)		-5.951 (10.01)	0.544 *** (0.169)		4.455 + (2.509)
	Native	0.883 (0.710)		12.790 (21.11)	2.626 *** (0.390)		21.485 * (9.258)
Promise	All Students	-0.583 (0.828)		-9.142 (21.23)	1.519 *** (0.411)		12.433 + (7.023)
	White	-0.253 (0.664)		-4.285 (15.18)	0.246 (0.287)		2.016 (3.559)
	Black	0.053 (0.149)		0.797 (3.894)	0.400 *** (0.098)		3.272 (2.020)
	Hispanic	0.216 (0.139)		3.107 (5.313)	0.258 ** (0.109)		2.111 (1.296)
	Native	-0.160 (0.308)		-2.407 (6.982)	0.590 *** (0.158)		4.827 + (2.598)
N observations		1133			3022		
N schools		381			383		

## Methods

We leverage Oklahoma Staffing Policy, which mandates 450:1 ratio, to conduct a regression discontinuity design where we estimate effects of workload reduction on equity in access to two college financial aid programs:

1. Pell Grant requires FAFSA completion, which many low-income and racially minoritized students struggle to complete
  2. Oklahoma Promise program – created in 1992 & expanded burden in 2007
- Early application/commitment (by 10th grade)
  - First dollar, AGI <=\$55,000
  - High administrative burden
  - Counselors disseminate info, monitor student progress, & certify compliance

Two Data Sources:

1. Administrative data from the Oklahoma State Regents for Higher Education, and Oklahoma State Board of Education (2005-2015)
2. Merged in data from the National Center for Education Statistics

## Conclusions

Reducing counselor workload increases equity in program access, potentially mitigating the negative impacts of administrative burden on equity

Administrative burdens could contribute to racial disparities not only by imposing costs, but also by enhancing complexity/ambiguity, which creates room for discrimination

Potential Mechanisms:

- More time with each student/fewer students in caseload develop better relationships
- Engage in more resource-intensive practices
- Reduction in discrimination
- Peer effects – learning from colleagues or increased productivity when being watched
- Specialization of duties (e.g., one counselor manage all college applications, another all behavioral management)

## References

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- Andersen, Simon Calmar, and Thorbjørn Sejr Guul. 2019. "Reducing Minority Discrimination at the Front Line—Combined Survey and Field Experimental Evidence." *Journal of Public Administration Research and Theory* 29 (3): 429–44. <https://doi.org/10.1093/jopart/muy083>.
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- Bell, Elizabeth, Ani Ter Mkrtyan, Wesley Wehde, and Kylie Smith. 2020. "Just or Unjust? How Ideological Beliefs Shape Street-Level Bureaucrats' Perceptions of Administrative Burden." *Public Administration Review* n/a (n/a). <https://doi.org/10.1111/puar.13311>.
- Bell, Elizabeth, and Kylie Smith. 2021. "Working Within a System of Administrative Burden: How Street-Level Bureaucrats' Role Perceptions Shape Access to the Promise of Higher Education." *Administration & Society*.

## Sample Descriptive Statistics

Table 1: Sample

Student Characteristics	Overall	Below	Above	Discontinuity	
				Full Sample/No Bandwidth	Policy Bandwidth  s  225
% Free or Reduced Lunch	0.57	0.58	0.51	0.05 *** (0.016)	0.05 ** (0.022)
% Special Education	0.16	0.17	0.14	0.02 *** (0.004)	0.01 + (0.006)
% Asian	0.01	0.01	0.01	0.00 + (0.001)	0.00 (0.002)
% Black	0.04	0.04	0.08	-0.01 (0.015)	0.00 (0.023)
% Hispanic	0.07	0.07	0.08	0.02 *** (0.007)	0.02 ** (0.008)
% Native	0.24	0.24	0.24	-0.01 (0.013)	0.03 + (0.018)
% White	0.64	0.65	0.58	0.00 (0.016)	-0.05 * (0.023)
School Characteristics					
Enrollment	227.34	163.75	610.11	0.00 * (0.000)	0.00 (0.000)
Counselor FTE	0.77	0.54	2.13	0.16 *** (0.047)	0.26 *** (0.062)
Teacher FTE	15.25	11.84	35.78	1.56 *** (0.287)	1.41 *** (0.404)
Special Education FTE	1.50	1.02	4.37	0.08 (0.139)	-0.14 (0.202)
Professional Staff FTE	0.79	0.62	1.86	-0.05 (0.084)	0.05 (0.116)
Administration FTE	1.26	0.97	3.04	0.14 * (0.070)	0.04 (0.101)
N School Observations	4155	3563	592	4155	1369
N Unique Schools	385	338	69	385	159

# Violent and Financial Crimes Against Older Adults

## Exploring Trends, Offender Characteristics, and Criminal Justice Processing Decisions

Julie Brancale

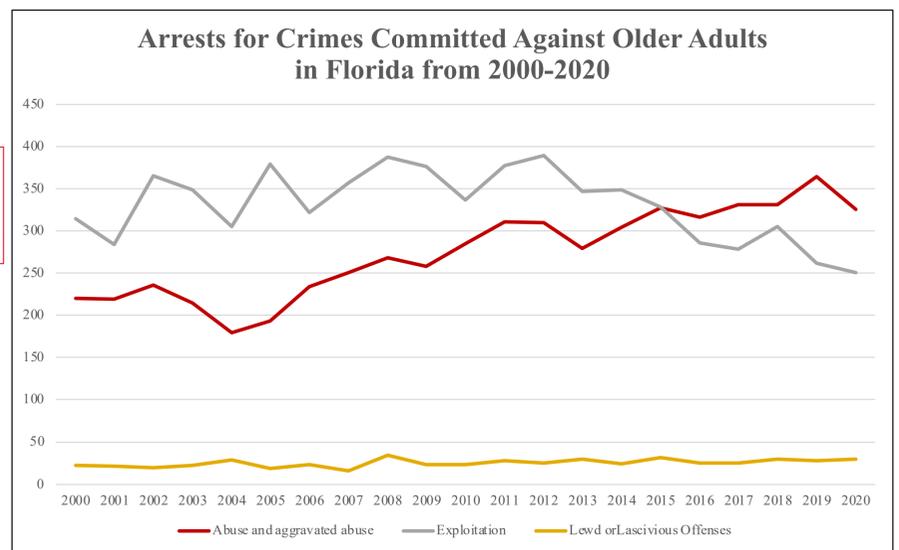
College of Criminology and Criminal Justice



### BACKGROUND

Older adults are the fastest growing segment of the United States population and represent a vulnerable target for crime. The consequences of victimization for older adults are oftentimes greater than for younger victims of crime. However, the codification of laws that define crimes committed specifically against older adults is relatively new and there is little known about the perpetrators and criminal justice system response. Understanding these factors is an important step for preventing and reducing rates of victimization of older adults.

[https://internalfunding.research.fsu.edu/media/forms/upload/form\\_8691b5c3-6d57-4d68-86c5-](https://internalfunding.research.fsu.edu/media/forms/upload/form_8691b5c3-6d57-4d68-86c5-)



### CURRENT STUDY

Using data from the Florida Office of the State Court Administrator, Office of Economic and Demographic Research, and Department of Law Enforcement, this study explores trends, offender characteristics, and criminal justice processing for violations of Florida's criminal statute for crimes against older adults<sup>1</sup>.

### RESEARCH QUESTIONS

- (1) What are the trends in arrests for crimes against older adults in Florida from 2000-2020?
- (2) What are the demographic characteristics of those arrested for crimes against older adults?
- (3) How are crimes against older adults processed by the criminal justice system?
- (4) Is there county-level variation in criminal justice processing of crimes against older adults?

### RESULTS

There were 10,386 people arrested for crimes against older adults from 2000-2020 in Florida.

#### TRENDS

- From 2000-2020, there was a:
  - 47% increase in arrests for abuse/aggravated abuse
  - 20% decrease in arrests for exploitation
  - 36% increase in arrests for lewd/lascivious conduct

#### OFFENDER CHARACTERISTICS

White males were most likely to be arrested and the average age at the time of arrest was over 40.

#### CRIMINAL JUSTICE SYSTEM PROCESSING

Most charges were dismissed by the prosecutor and those who were older and white had lower odds of having charges filed against them after arrest.

Probation was the most common punishment.

Younger, white, and male offenders had higher odds of receiving a jail or prison sentence.

There was significant variation at the county-level in prosecutorial filing decisions and punishments.

Characteristics of Offenders and Case Outcomes for Crimes Against Older Adults in Florida, 2000-2020 <sup>1</sup>									
	Abuse and aggravated abuse (n=4,455)			Exploitation (n=5,481)			Lewd or lascivious conduct (n=424)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
<i>Offender demographic variables</i>									
Age	42 (13.7)	18	90	41.1 (12.4)	18.0	90.0	47.5 (16.0)	18.0	90.0
<i>Race</i>									
Black	.3 (.46)	0	1	.24 (.43)	0	1	.29 (.46)	0	1
White	.69 (.46)	0	1	.75 (.43)	0	1	.7 (.46)	0	1
Other	.002 (.05)	0	1	.002 (.05)	0	1	.01 (.1)	0	1
<i>Sex</i>									
Female	.36 (.36)	0	1	.24 (.43)	0	1	.03 (.17)	0	1
Male	.64 (.48)	0	1	.48 (.5)	0	1	.97 (.7)	0	1
<i>Criminal justice processing variables</i>									
<i>Prosecutor Decision</i>									
Drop or dismiss charges	.57 (.5)	0	1	.47 (.5)	0	1	.38 (.49)	0	1
File charges	.40 (.49)	0	1	.53 (.5)	0	1	.62 (.49)	0	1
<i>Punishment</i>									
Probation	.17 (.38)	0	1	.27 (.44)	0	1	.22 (.42)	0	1
Jail	.12 (.33)	0	1	.10 (.3)	0	1	.09 (.29)	0	1
Prison	.08 (.27)	0	1	.15 (.5)	0	1	.17 (.38)	0	1

<sup>1</sup> n=10,386 people arrested; 26 people (.25% of cases) were arrested for violation of an injunction. These were removed from analyses.

Multi-level Logistic Regression <sup>1</sup>								
	Prosecutor Decision to Drop or File Charges				Jail or Prison Sentences			
	Model 1		Model 2		Model 3		Model 4	
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE
Age	.99***	0.002	0.99***	0.001	0.99***	0.00	0.99***	0.00
<i>Race</i>								
White	0.88**	0.04	.88**	0.05	1.13*	0.06	0.17**	0.07
Other	1.17	0.48	1.06	0.47	1.22	0.54	1.08	0.50
<i>Sex</i>								
Male	0.93	0.04	0.96	0.04	1.4***	0.07	1.5***	0.07
Constant	1.73***	0.13	1.92***	0.26	0.4***	0.03	0.36***	0.04
<i>County</i>								
Variance: Constant	-	-	0.64***	0.13	-	-	0.33***	0.08
Wald chi2		32.1		22.7		106.71		114.3

Note . Female and Black are reference categories

<sup>1</sup> n=10,386, 67 counties

\*p<.05, \*\*p<.01, \*\*\*p<.001

### CONCLUSION & NEXT STEPS

These findings are a first step in developing a profile of offenders and describing how the criminal justice system responds to crimes against older adults, which can help reduce rates of victimization among this vulnerable population.

Immediate next steps include: (1) identifying factors at the county-level that influence variation in criminal justice responses and (2) comparing the profile of those arrested for crimes against older adults with the overall offender population. A longer-term project involves conducting a qualitative assessment exploring prosecutorial filing decisions.

<sup>1</sup> Florida Statute number 825, subsections 102 (abuse/aggravated abuse), 103 (exploitation), and 1025 (lewd/lascivious conduct).

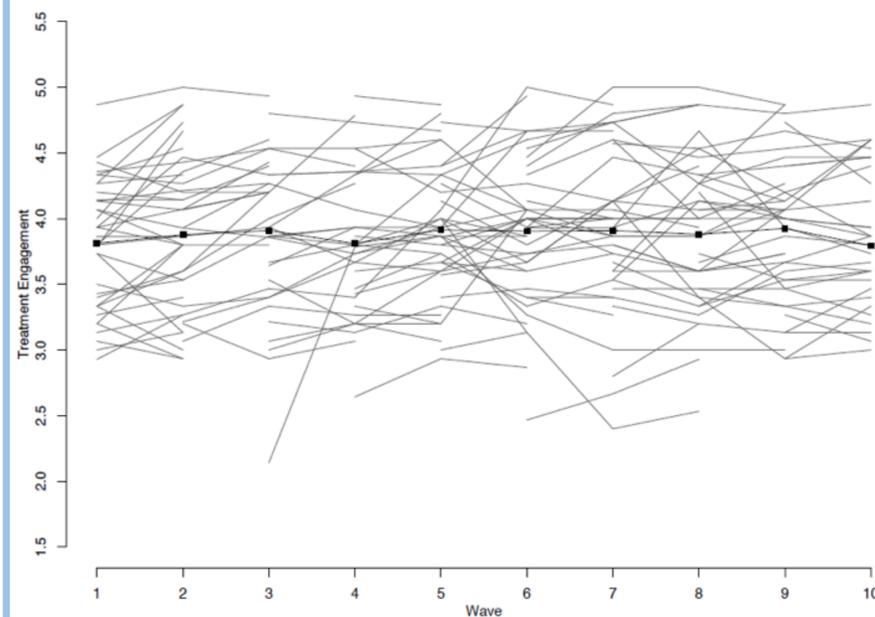
# Predicting Selection: An Empirical Assessment of Baseline Engagement in a Prison-Based Substance Use Treatment Program

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## Selection in the Prison-Based Therapeutic Community (TC)

- The prison-based TC is a treatment program for individuals with substance use disorders (SUDs) that is widely used across the US
- The TC model is based on social learning and peer influence
- Recent research on a prison-based TC shows evidence of **selection into peer groups of similarly engaged residents** as opposed to peer influence or diffusion of treatment engagement (Kreager et al., 2019)
- Within-person treatment engagement shows minimal change, further evidence of selection into stable levels of treatment engagement (Davidson & Young, 2019)
- The graph to the right illustrates within-person change in treatment engagement over time in TC treatment (up to 4 months)
- There is about 3x as much between-person variation in treatment engagement than within-person change in treatment engagement (Davidson & Young, 2019)



## Multivariate OLS Regression of Pre-Treatment Factors on Baseline Treatment Engagement (n = 135)

	Model 1 (Demographics)		Model 2 (+ TCU Drug Screen)	
	Coefficient (SE)		Coefficient (SE)	
Age	.010*	(.01)	.010†	(.01)
TCU Score	.006	(.04)		
Offense Gravity	-.001	(.00)	-.004	(.02)
Time In Prison	-.001†	(.00)	-.001†	(.00)
Highest Grade	.014	(.03)	.026	(.04)
Race (White)	-.296**	(.09)	-.272**	(.10)
TCU Item 1			-.149	(.15)
TCU Item 2			.050	(.11)
TCU Item 3			.165	(.14)
TCU Item 4			-.356*	(.14)
TCU Item 5			.188†	(.11)
TCU Item 6			.264†	(.14)
TCU Item 7			-.038	(.12)
TCU Item 8			-.064	(.13)
TCU Item 9			.006	(.14)
TCU Item 10			-.019	(.17)
TCU Item 11			-.329	(.25)
TCU Item 12			.346	(.26)
Prior Treatment			.023	(.04)
Treat. Importance			-.009	(.05)

\*\*p < .01, \*p < .05, †p < .1

## Project Aims & Initial Findings

- Given evidence of selection into stable levels of treatment engagement, positive program effects are seemingly being fueled by **selection bias**
- Understanding what pre-treatment factors predict baseline treatment engagement enables targeted intervention to increase program effectiveness for a sample of men with SUDs
- Preliminary analyses suggest that measurable pre-treatment factors are related to baseline treatment engagement in the prison-based TC, including:
  - **Age** (*positive* effect)
  - **Time in prison** (*negative* effect)
  - **Race** (identification as white has *negative* effect)
  - **Specific items in the TCU Drug Screen** diagnostic form, administered at intake (variable effects by item)
- Importantly, pre-treatment factors with no discernable relationship to baseline treatment engagement include offense severity, type of drug(s) used, educational attainment, and score (0-9) on the TCU Drug Screen diagnostic form

## Qualitative Data

Respondents were asked “what do you think of the TC so far?” Presented are themes from those with low (n = 23) & high (n = 26) baseline treatment engagement (one standard deviation above and below the mean)

### Low Engagement:

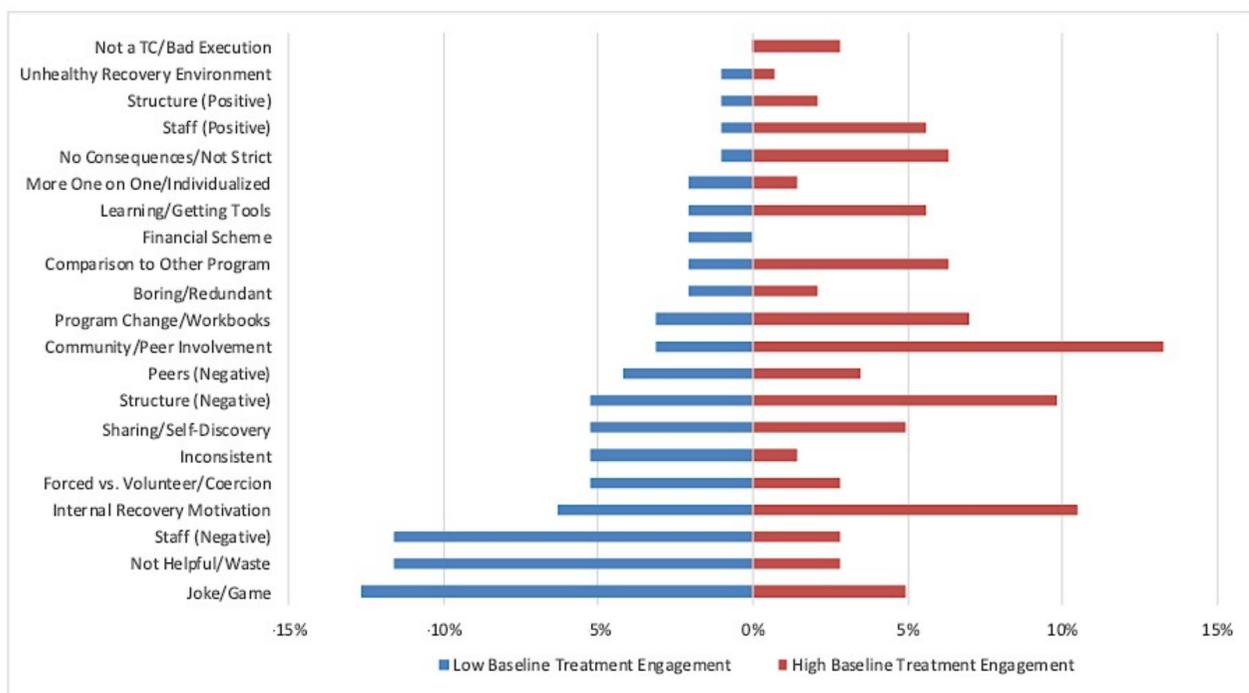
“It’s okay, the information is good but not necessarily the people who teach it. How can you teach something that you don’t know yourself?”

“It’s kind of a joke because it’s not voluntary, like court mandated rehab, so it messes it up for everyone because no one is here by choice.”

### High Engagement:

“I think it’s a very encouraging program, the way [counselor] is running it, she is very fair, open-minded, understanding, and forgiving. We respect each other as men and as equals.”

“The group sessions have you communicate with others in the program, that is a good point, because most inmates are nonsocial, I’ve seen older individuals open up...”



## Sources

- Davidson, K. M., & Young, J. T. (2019). Treatment engagement in a prison-based Therapeutic Community: A mixed-methods approach. *Journal of substance abuse treatment, 103*, 33-42.
- Kreager, D. A., Schaefer, D. R., Davidson, K. M., Zajac, G., Haynie, D. L., & De Leon, G. (2019). Evaluating peer-influence processes in a prison-based therapeutic community: A dynamic network approach. *Drug and alcohol dependence, 203*, 13-18.

# Caribbean Family Resilience: Connections between Art and Spirituality

## Background

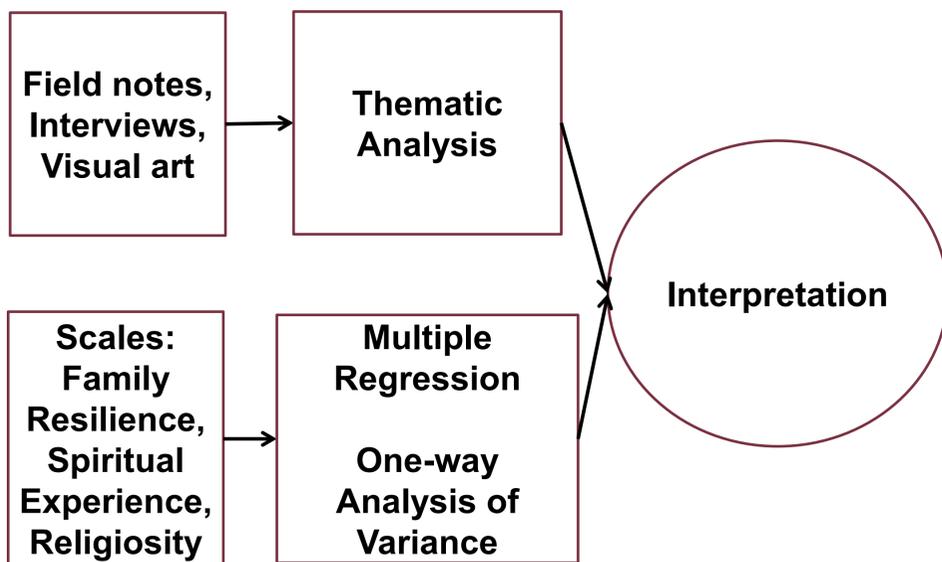
Caribbean people are repeatedly exposed to several events that increase stress and trauma throughout the year. It was explained that the culture relies on family and religious leaders during crises (Alessi, 2016). Heise (2013) believed that artmaking fosters resilience which could provide families with opportunities to express their unique stories. However, it is unclear how mental health professionals, including art therapists, should integrate spirituality in supporting the well-being of Caribbean families.

## Aims

This research sought to combine Caribbean people's reliance on family and spirituality to contribute to the practice of art therapy with Caribbean families. The main research question was: What is the relationship between the arts and spiritual practices on family resilience among Caribbean families?

## Methods

An art-based convergent mixed methods research design was used. Qualitative and quantitative data were collected during the same phase with separate analyses and integration during the discussion of the findings.



Data were collected from Caribbean families who resided in Grenada and identified with a spiritual group. Qualitative data were in-person family interviews, that included artmaking, and field notes. Visual and thematic analysis were completed in NVivo. Surveys were completed in-person or online. They contained scales on family resilience (Sixbey, 2005), spiritual experiences (Underwood, 2011), and religiosity (Koenig & Büssing, 2010). Multiple linear regression and one-way ANOVA were analyzed from those surveys through SPSS.

## Results

Interviews: 15 families: 5 Christian, 2 indigenous spirituality, 4 Muslim, and 4 Rastafarian  
 4 religious/spiritual leaders: 1 Christian, 1 indigenous spirituality, 1 Muslim, 1 Rastafarian  
 Surveys: 61 responses: 29 Christian, 11 indigenous spirituality, 10 Muslim, and 11 Rastafarian

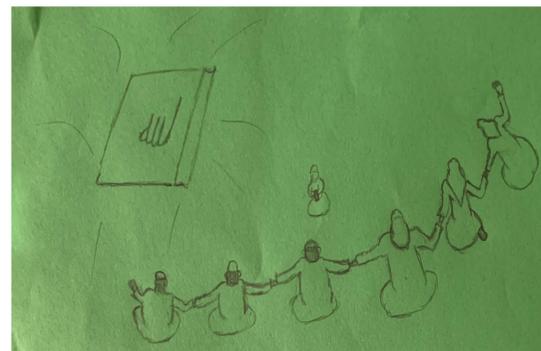


Figure 1. Muslim family. Art materials: construction paper, graphite pencil



Figure 3. Christian family. Art materials: construction paper, oil pastels, markers, colored pencils, graphite pencil



Figure 2. Rastafarian family. Picture taken of a place of workshop where drumming, dancing, and chanting occurred

Art & Themes	Survey
Prayer (Figure 1)	The overall model on the relationship between family resilience and religiosity and spirituality was significant, $F(2, 52) = 14.61$ , $R^2 = .37$ , $p < .001$ , and accounted for 3.7% of the variance. Of the variables, only spirituality was significant. Families had greater family resilience when they were more spiritual $\beta = .55$ , $p < .001$ .
Expressive Arts (Figure 2) Nature (Figure 3)	There was no significant difference in family resilience according to religion, $F(3, 57) = 1.21$ , $p = .28$ .

## Implications & Future Directions

There should be cultural awareness of spirituality and a variety of expressive arts in helping Caribbean families cope with severe stress. Art therapists should include families' spiritual beliefs in interventions. This can be done through the use natural materials, collage images that depict nature, and symbols of prayer. It is also important to not only use the visual arts, but also the expressive arts, such as music, dance, and drama that aligns with spirituality above and beyond religious beliefs. Art therapists and other mental health clinicians should integrate Caribbean values of spirituality, family, and the arts in supporting resilience.

Future work will expand on the existing results. Participation was lower than predicted; therefore, the next steps will be to extend recruitment to Caribbean families in other countries. Afterwards, the focus will be on research related to the types of expressive arts interventions for art therapists and other mental health professionals to sustain or foster family resilience among Caribbean families.



# Theoretical Description of Neutron-Rich Atomic Nuclei

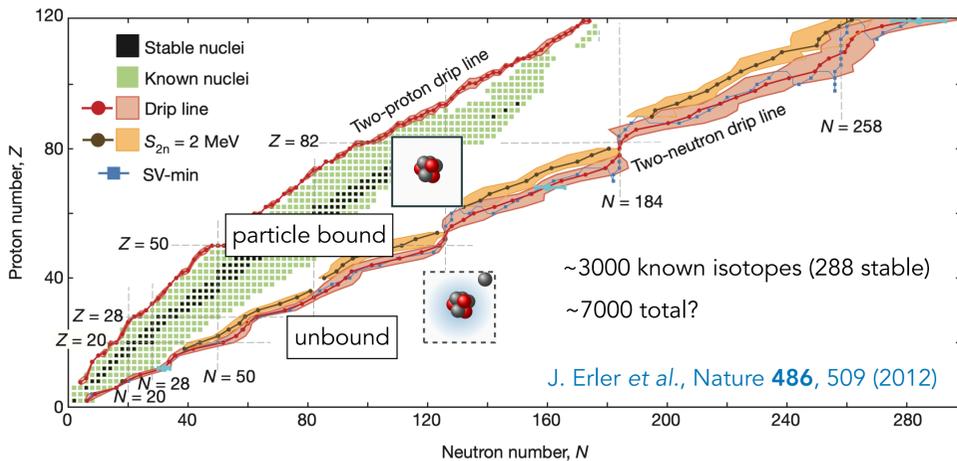


Kévin Fosse, FSU, FRIB Bridge

FYAP Award 2022

**Atomic nucleus:**  $Z$  protons,  $N$  neutrons.

What are the limits of nuclear stability, i.e. how many protons and neutrons can stay together?



## Physics of exotic nuclei.

C. Johnson et al., J. Phys. G 47 123001 (2020)

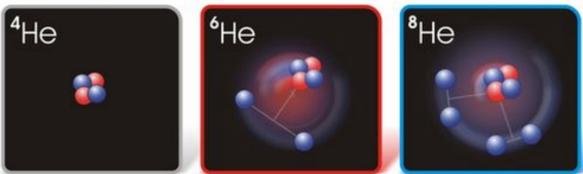
1. **Strong test for models:** either a nucleus exists, or it does not.
2. Exotic nuclei have **extreme N/Z ratios.**
3. Models can be tested using the **sensitivity of emergent properties.**

**New:** Facility for rare isotope beams (FRIB) at Michigan State University (\$1.5B DOE investment). Will double the number of isotopes we can produce. **Theory is behind experiment.**

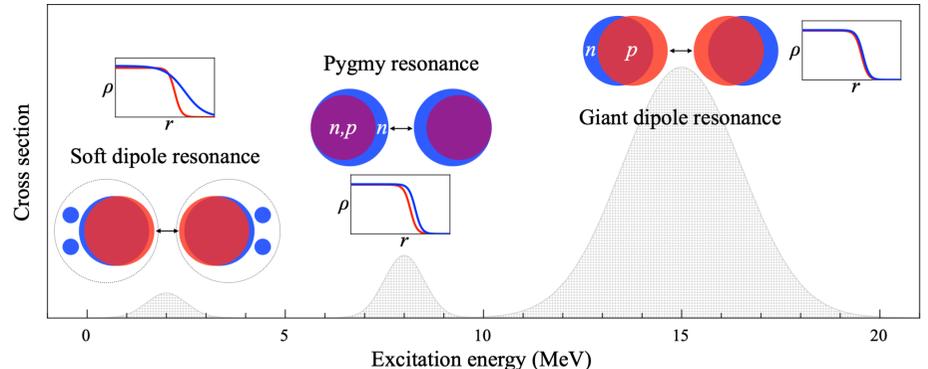
**Test of nuclear forces:** Investigate the presence of a soft dipole mode (SDM) in  ${}^6\text{He}$ .

The  ${}^6\text{He}$  (exotic) nucleus: 2-neutron halo above  ${}^4\text{He}$ .

SDM: core-halo vibration.



If a SDM exists, it would be a resonant state with spin and parity  $J^\pi = 1^-$ . Nuclear models disagree on its existence.

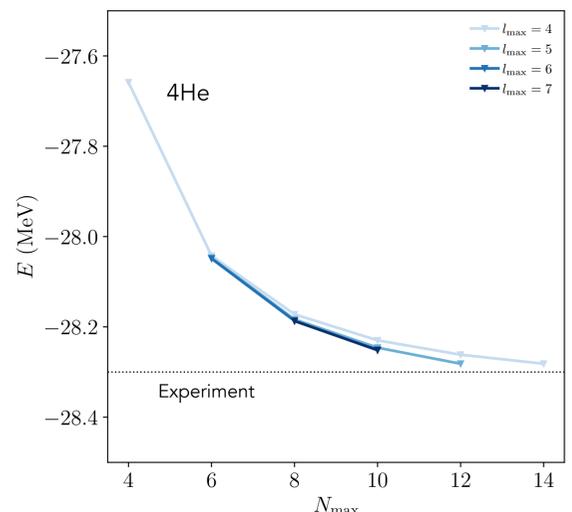
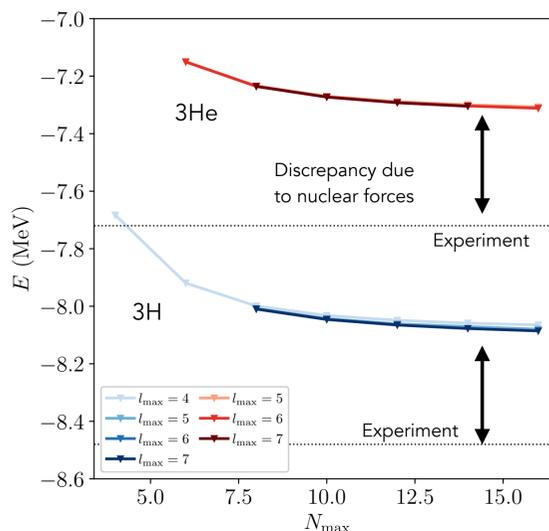


→ Resonance with both single particle and collective features. Difficult to describe.

**Preliminary results:** Convergence studies in  ${}^3\text{H}$ ,  ${}^3\text{He}$ , and  ${}^4\text{He}$ . Demonstrate feasibility.

Solve the fermionic quantum many-body problem for protons and neutrons using the no-core shell model on the high-performance computing center at FSU.

The extension to  ${}^6\text{He}$  will require using the density matrix renormalization group method in the Berggren basis. Tests are underway.

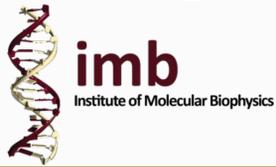


U.S. DEPARTMENT OF ENERGY

Office of Science

DOE: DE-SC0013617 (Office of Nuclear Physics, FRIB Theory Alliance)

# Development of an imaging platform to visualize the integrated HIV-1 DNA

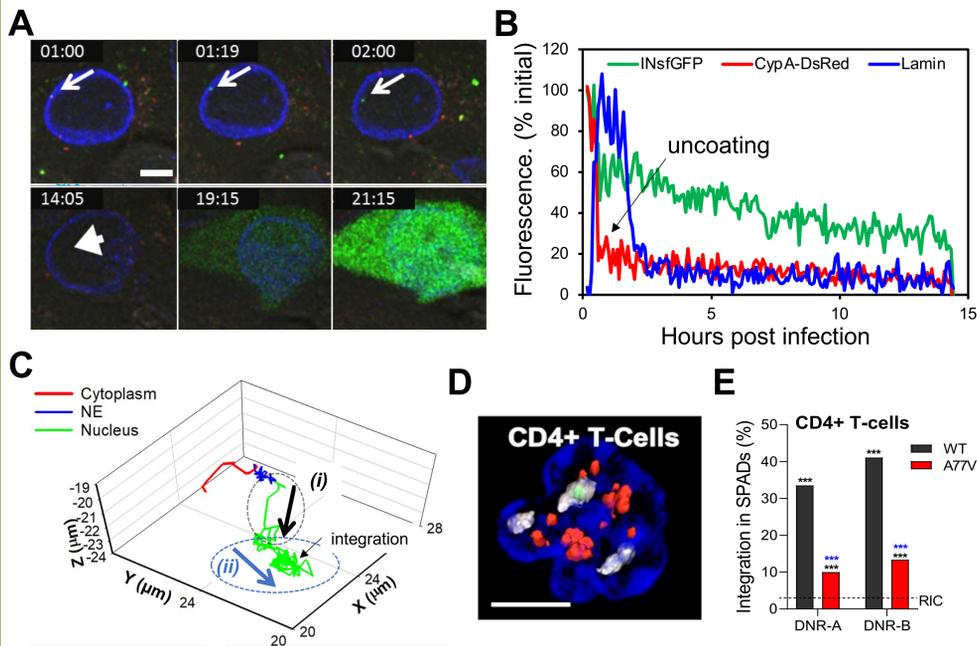


Ashwanth C. Francis, Ph.D.

Assistant Professor of Biological Sciences  
Institute of Molecular Biophysics, Florida State University

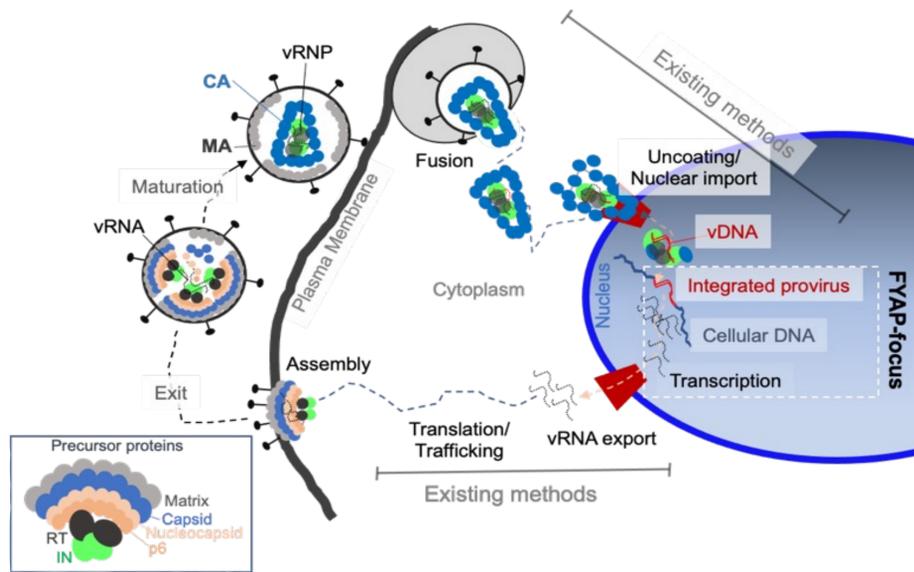


## 1. Background: Live-cell single virus imaging resolves the spatial and temporal aspects of HIV-1 cell-biology



**Fig. 1. Live cell imaging offers the unique opportunity to directly visualize virus infection inside living cells.** Fluorescent labeling of virus and cells not only allow us to see the dynamic events, but also allows us to quantify virus and cell biology. Shown here in (A) is the temporal imaging of a HIV-1 infection through a labeling approach developed in our lab to visualize virus capsids (red) and the genome containing viral replication complex (VRCs, green). Application of live-cell imaging and tracking single viruses allow us to measure loss of capsid (marked by reduction of red signal) at the nuclear membrane (blue), which is followed by HIV-1 VRCs (green) entry into the nucleus. One could use the fluorescence traces in (B) to determine the kinetics of HIV-1 interactions at the nuclear membrane before and after capsid loss, and (C) also determine the transport mechanisms (active-directed motions (i); and constrained tethered motions (ii) in the nucleus and identify the location of HIV-1 integration (marked by VRC disappearance in (A), and GFP-virus expression). These information allow us to make rationale interpretations of virus biology such as (1) capsid uncoating, (2) nuclear transport, (3) Interaction with host-factors during these process, and (4) to discover spatially and temporally resolved interesting virus-cell biology. For example: (D) We discovered that the constrained motions in the nucleus (shown in C ii), is because the virus associates with chromatin or specific compartments in the nucleus, which we identified to be nuclear speckles. (E) We also showed that following the compartmentalization of HIV-1 in speckles, the viral DNA is integrated into neighboring Speckle Associated Genomic Domains (SPADs). Ref: Francis and Melikyan, *Cell Host & Microbe* 2018; Francis et al., *Nat. Comms* 2020; Francis et al., *Viruses* 2020.

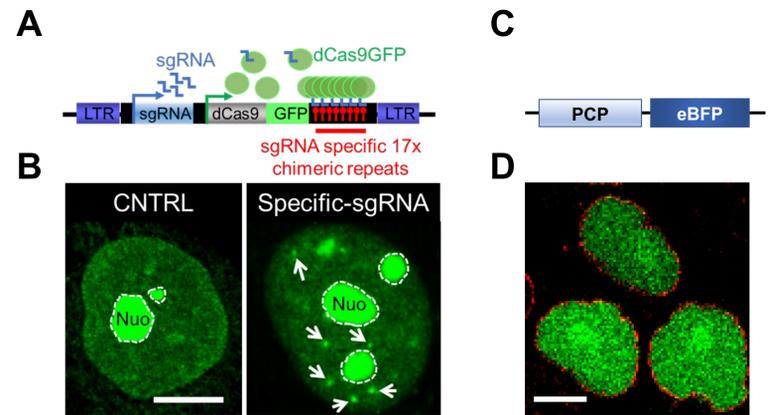
## 2. Current limitations in HIV-1 imaging and focus of FYAP



**Fig. 2. Current state of the art in HIV-1 imaging.** Over the years several groups have labeled multiple virus components and imaged HIV-1 infection. For example: Late steps, such as assembly of virus proteins on the plasma membrane and exit of HIV-1 virions showed the kinetic patterns of virus protease activation and formation of infectious virions. Early steps of HIV-1 entry is visualized by labeling viral membranes with lipophilic dyes and/or packaging of fluid-phase reporter proteins into virions, the spatial and temporal loss of these markers allow to study virus-cell fusion step, which delivers HIV-1 capsid into the cytoplasm. Cytoplasmic HIV-1 transport has been visualized by labeling the virus core (inside capsids), or capsid proteins itself. These observations discovered that HIV-1 movements occur through microtubule dependent cytoplasmic transport. Labeling of VRCs (as in Fig. 1) allowed to visualize HIV-1 replication complexes in the nucleus and identify sites of viral DNA integration (VRC-disappearance sites). However, tools to reliably label the integrated form of vDNA, which becomes a part of the human chromosome and study its positional effects on virus transcription remains severely underdeveloped.

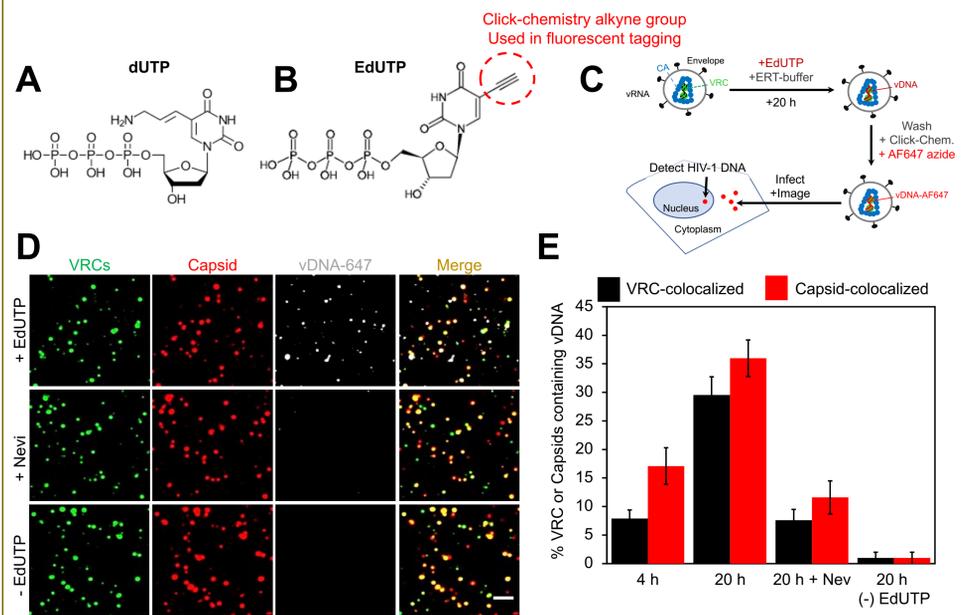
**Rationale.** Following cellular entry, the viral RNA genome is converted into a complementary cDNA by the enzyme reverse transcriptase (RT). The newly synthesized viral cDNA is then transported into the nucleus for its integration into host genome, which is catalyzed by viral enzyme integrase (IN). The integration of viral cDNA is a central and key step in HIV-1 replication. Once integrated the proviral HIV-1 DNA makes use of host-cell machinery to make copies of viral mRNA and proteins that latter co-assemble and exit from the plasma-membrane to infect new target cells. Importantly, the genomic locations selected for integration is critical<sup>1</sup>, as it can decide the outcome of transcriptionally competent (productive) vs. incompetent or transiently silenced (latent) states of the viral genome. Currently there is no technology that can visualize vDNA and its transcription simultaneously in live-cell, resulting in a critical gap-in-knowledge to our understanding of the positional control of HIV-1 transcription. In this FYAP-grant, we propose to develop a novel strategy to fluorescently label the integrated proviral DNA in the nucleus of target cells (Fig.2). By spatially locating the vDNA, this new labeling tool will also allow us to investigate the contribution of the local genomic environment on the outcome of viral mRNA transcription. The experiments proposed here will be used to generate key preliminary data in support of future grant applications to NIH.

## 3. Results: Detection of HIV-1 integrated DNA by adapting CRISPR/Cas9 technology



**Fig. 3. Schematics and preliminary data for the construction of a self-binding dCas9-eGFP system to detect integrated vDNA.** We designed a new labeling strategy (A), which uses the inactive form of CRISPR associated protein-9 (dCas9)<sup>7,8</sup> to self-target chimeric single guide RNA (sgRNA) sites within the proviral DNA. The lentiviral transfer vector pLenti-Self-dCas9eGFP that produces the HIV-1 vRNA genome is designed as follows: (1) the 5' and 3' long-terminal repeats at either end of the genome, (2) a packaging signal to incorporate the vRNA genome into virions, (3) CRISPR sgRNA targeting the bacteriophage PP7 RNA stem loops<sup>9</sup> under the control of a U6 promoter, (4) dCas9-eGFP fusion protein under the control of a SFFV-promoter, and (5) followed by 17x 24 bp repetitive segments of PP7 RNA stem loops. Following the integration of this chimeric vDNA into host-chromatin, the expression of the dCas9-eGFP fusion proteins and sgRNA will result in their co-binding to the 17x PP7 RNA stem loops. Sensitivity of vDNA detection is provided by the 17x repetitive nature of the PP7 stem-loops ensures signal amplification above background, and high specificity is dictated by the nature of dCas9/sgRNA binding to target. Preliminary analysis (B) suggested feasibility of this approach in HeLa based cell-lines, transfected with the vDNA and imaged by confocal microscopy after 48 h. As controls pLenti-Self-dCas9eGFP-PP7 vector that does not contain PP7 stem-loops was used. The, dCas9eGFP signals showed distinct nuclear puncta in the presence of the PP7 stem-loops and not control cells. This observation is indicative of dCas9-eGFP/sgRNA co-assembly on vDNA. Images show a central z-section of a representative infected nuclei. Scale bar – 5  $\mu$ m. Plasmid (C) encoding the PP7-bacteriophage coat protein (PCP)-fused to eBFP was constructed and a stable cell-line was prepared (D) to express this protein. The PCP-eBFP protein specifically binds the RNA-form of the PP7-stem-loops in pLenti-Self-dCas9eGFP shown in (A). This dual detection of vDNA and transcribing vRNA genome should allow us to probe the HIV-1 transcription levels at the different locations of vDNA integration.

## 4. Results: Labeling endogenous HIV-1 DNA during reverse transcription by Click-Chemistry



**Fig. 4. Labeling HIV-1 vDNA by click-chemistry probes.** HIV-1 virions have the intrinsic property of initiating their reverse transcription (synthesis of vDNA) inside the virions, and outside the cellular context. However, the efficiency of labeling the vDNA in this manner remains less exploited, primarily due to the inefficiency of vDNA synthesis in virions. Here we explored the possibility to deliver a clickable Ethynyl-Deoxy-UTP (EdUTP) into HIV-1 virions and initiate reverse transcriptions. The EdUTP incorporated into the nascent vDNA can then be labeled with a fluorescent Azide-containing dye (AF-647 azide). Click chemistry is performed in solution and the fluorescent vDNA is quantified by imaging virus on poly-lysine treated glass. As shown in (A) the dUTP and (B) EdUTP are similar in sizes, and dashed red lines highlights the alkyne group on EdUTP. (C) A strategy to label virions ex-vivo and use this labeled virus to visualize HIV-1 vDNA inside cells. We have performed some preliminary experiments during the FYAP program to visualize vDNA in HIV-1 capsids (labeled red) and VRCs (labeled green) tagged cores, as shown in (D). Our data and analysis (E) shows that vDNA can be specifically labeled using click-chemistry (although inefficiently) in a reaction for 20 h. The EdUTP incorporation (vDNA-647) is specifically detected when EdUTP and reverse transcription is present, and can be inhibited by the reverse transcription inhibitor Nevirapine (Nev).

## 5. Conclusions/ Future Directions

- In this FYAP proposal we are developing new approaches to label the HIV-1 vDNA and address the critical gap-in-knowledge about how the local environment surrounding an integrated provirus affects virus replication.
- Ongoing experiments will systematically test whether pLenti-Self-dCas9eGFP system (Fig. 3) or the Click-Chemistry based vDNA labeling (Fig. 4) detect vDNA more robustly.
- We will then analyze the extent and frequency of vRNA transcription from the vDNA sites, using FRAP.
- We plan additional investigations into the effect of these labeling approaches on virus infection steps and publish a manuscript.
- We thank the FSU and the FYAP program for supporting our research

# MAINTAINING THE FEELING

## ANALYZING THE INSTITUTIONALIZATION OF QUEBRADITA DANCING & ITS EFFECTS ON SOCIAL CREATIVITY AND TRANSNATIONAL CONNECTIONS

**ARGUMENT:** This investigation asks how these measures of standardization, promoted as a modernized progression and growth for quebradita, a Mexican/Mexican American social dance genre, have both positive and negative effects on the transnational community of dancers. I argue that standardization practices fulfill the opportunity for working-class Mexicans and Mexican Americans to acquire travel visas and forms of certification that would allow them to obtain funds and documents to cross the U.S.-Mexico border. However, these practices also invisibilize dancers who have long contributed to the form but whose economic situation, citizenship status, or same sex dance choice impedes their ability to join unification efforts. Similarly, undocumented U.S. dancers who have maintained transnational connections to the dance form risk marginalization since they will not have the ability to travel to Mexico for certification. In analyzing these dynamics, we can begin to identify ways of protecting and upholding social dance participants as they reckon with dominant ideas of dance and professionalization that alter, marginalize, and change the makeup of their communal ties and values, as well as the dance form's unique essence. As previous research had revealed for me, *rasquachismo*, what Chicano Studies scholar Tomás Ybarra-Frausto contextualizes as a DIY, underdog artistic sensibility amongst Mexican and Mexican American populations, was and is an integral part to creativity in quebradita dancing. This approach has allowed brown, working-class bodies to thrive by allowing them to use their bodies as tools to connect with others beyond borders. AMEDABA institutionalization will shift this DIY approach, constituting a new form of connection that only privileged participants will be able to access.

### INSTITUTIONALIZATION BENEFITS:

- WORK VISAS
- DANCE CERTIFICATION
- OFFICIAL RECOGNITION
- TRAINING

### NEGATIVE IMPACTS OF INSTITUTIONALIZATION:

- UNIFORMITY IN AESTHETICS THAT WERE ONCE UNIQUE CREATIVITY
- COSTLY TRAINING
- MARGINALIZATION OF SAME SEX COUPLES
- SOCIAL DANCE HIERARCHIES



Top Left: Quebradita dancers at the Sun Valley Swap Meet in 1993.

Bottom Left: Quebradita dancers in 1994 Los Angeles.

Right: Quebradita dancers in 2018 competing on stage with new aesthetics.

**ADDITIONAL OUTCOMES:** course of investigation revealed a sense of pedagogy, what I am terming *rasquache pedagogy*, amongst the quebradita community. Engaging Chicano Studies scholar Tomás Ybarra-Frausto's definition of *rasquachismo* as a DIY, underdog sensibility employed by Chicano communities to repurpose the intended use value of materials, I examine how quebradita dancing teaches participants to strategically hybridize aesthetics in order to reshape the world around them. I contend that *rasquache pedagogy* is an affectively embodied lesson of/for belonging that Brown, working-class peoples engage to cope with the instability of the US-Mexico border and times of crisis. Moreover, I examine how these creative strategies are utilized by bodies to reclaim subjectivity during moments that national il/legalities dehumanize their existence and connections.

**FUTURE DIRECTIONS:** This research has helped to develop two articles that are in the process for publication. One article, focusing on *rasquache pedagogy* within the quebradita dance community, will be featured in *El Camino Real Journal*. A second article that examines quebradita social dance techniques as methods for belonging amongst Mexican and Mexican American working-class dancers will be featured as a chapter in a popular dance anthology edited by Dr. Jen Atkins.

This research will constitute a new chapter for my book manuscript to be completed by year 5 of my track at FSU. The manuscript highlights the creative dance constructions and ways of connecting across the U.S.-Mexico border that quebradita participants have formed since the 1990s. My book project, *Quebrando Transnationalism*, will emphasize how queer, undocumented, and working-class dancers in Mexico and the U.S. survive in the face of assimilative, xenophobic, and volatile environments by developing their dance as a form of resistance.

# WHAT ARE THEY MISSING

## A Performance Outcomes Approach to Design Portfolio Success

Assistant Professor Terry Londy - Interior Design - Tlondy@FSU.edu



INTERIOR DESIGN



ARCHITECTURE



GRAPHIC DESIGN



INDUSTRIAL DESIGN



DESIGN STRATEGY



EXPERIENTIAL DESIGN

## PROJECT OBJECTIVES

- The purpose of the survey & interview is to gain insight & understanding into the key skills and fundamentals that make a design portfolio successful as measured by the securing of interviews and/or positions awarded to job candidates.
- What are recent college graduates of design programs missing in their portfolio design? We will uncover highly sought-after skills and fundamentals that professionals look for exhibited in the job candidates work. These defined measurable skills & fundamentals can be taught and will inform are teaching practices, strengthening the adaptability of the future job candidates in the workplace design culture. We will gain insight into the hiring process and non-design related elements allow the successful candidates to stick out.

### Important definitions that guided the research

**Skills** – including but not limited to creative writing/ storytelling, page layout, color application, software proficiency, design problem solving & strategy. These would be both implied and apparent from the overall effect of the portfolio on the reviewer.

**Fundamentals** – including but not limited to identifiable graphics and other visual elements: plans, sections, renderings, details, sketches, cohesive Brand & style

### The research was guided by the following questions

- What are the most impactful skills conveyed by portfolios of hired candidates, according to employers?
- What are the most impactful fundamentals present in portfolios of hired candidates according to employers?
- Do these preferred impactful skills & fundamentals differ by design discipline?
- What portfolio inclusions do employers most want to see, but rarely do?
- What are the intangible, gut level, non-design related celebrated behaviors that made candidates rise above the rest?

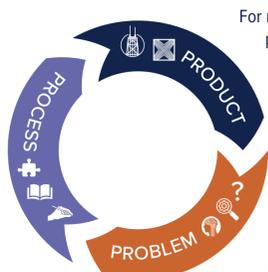
## METHODOLOGY

After approval and consent from the IRB, the study began with an email/ linkedin solicitation of 80 design practitioners from the disciplines of Graphic Design, Interior Design & Architecture, Industrial Design, Experiential Design, & Design Strategy. The practitioners were selected from previous work experience with the PI and connections made in the design industry. From a pool of 80 participants, 40 surveys were completed and 25 of those resulted in interviews. The response rates were 50% for the surveys, and 31% for the interviews. 19 of the interviews were conducted in person, while 6 were over Zoom, using a shared screen for the photo elicitation phase. All in-person interviews were audio recorded by an electronic recording device, with a secondary microphone to ensure accurate capture of data.

- The first step of the research process was a short **Qualtrics Survey** rooted in the topics of hiring practices & portfolio design.
  - Following the consent form, the survey began by collecting professional demographic data: 1. Employment location, 2. Professional role, 3. Years in practice, 4. Size of the design firm
  - The survey then gathered qualitative data with questions such as ranking a series of celebrated behaviors observed in job interviews, what skills and fundamentals were the most valued in portfolios, and what do they feel recent hires are lacking in their education.
- Following the survey was an **Interview** with the PI to further discuss hiring practices and portfolio design in depth.
  - The interviews were conducted in Chicago & Detroit primarily in person at local & familiar coffee shops. When participants could not coordinate an in-person interview, a Zoom interview was completed. All zoom sessions were video recorded for accurate transcription.
  - The interview portion lasted about an hour and included a photo elicitation exercise from (3) portfolio examples. The portfolios were sourced from recent graduates in the disciplines of Interior Design, Graphic Design, & Industrial Design..
  - The audio and video was uploaded to a transcription software **Trint** that transcribes the qualitative data to a searchable Word document for accurate dissemination. The data is analyzed using an open coding technique looking for similarities and differences allowing the categorization of themes seen in the data gathered from the participants.



## TAKING A STRATEGIC APPROACH TO PORTFOLIO DESIGN

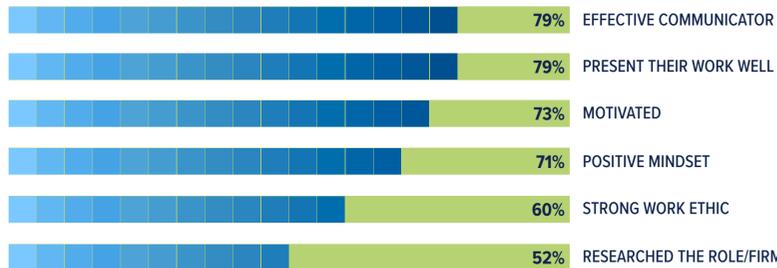


For recent or future college graduates from design programs it is important to understand the portfolio is the vehicle in which they showcase the evidence of their skills & fundamentals through thoughtfully curated project work. The project vetting process for students can seem complicated and daunting selecting the "right projects" to exhibit their skills & fundamentals. As many professionals stated it is more about the quality of content and not the quantity that makes the difference. Job seekers should focus on simplicity, & taking a strategic approach to portfolio design can optimize their position when trying to secure an interview. The diagram shows a three part process that may act as a checklist for the projects in your portfolio. The three elements do not need to be equal in content, but rather present in some form, & curated for each position you are applying for. A highly sought after content strategy is to show a diversity of skill-sets and scale of projects. As an example some projects may show more problem solving and process but less of a final solution. Talking through this strategy will be an important step in the interview.

DESIGN PROBLEM	DESIGN PROCESS	FINAL PRODUCT
RESEARCH - Location, Client, Project	IDEATION - Sketching, Conceptual Thought	SOLUTION - Compelling Images
STRATEGY - Purposeful Direction	STORYTELLING - Developing a Narrative	CHANGE - How is this better?
THE NEED - Why Do We Need This?	PROBLEM SOLVING - Creative Solutions	ADDED VALUE - Who benefits?

## WHAT BEHAVIORS ARE CELEBRATED IN THE INTERVIEW PROCESS?

AND ULTIMATELY AS YOU GAIN THE POSITION



The interview discussion was guided by a series of open-ended questions, seeking qualitative insight into the hiring process and specifically recent new hires. Design practitioners explained in depth the behaviors they look for in future teammates.

**Clear effective communication** is the most sought after skill-set, meaning communication with those around you internally with the team, externally with clients, and the communication of their design concepts & solutions.

Below are highly valued behaviors that were commonly discussed among the 6 disciplines.

- BEING PREPARED
- BEING EAGER TO LEARN
- BEING AN ACTIVE LISTENER
- BEING HUMBLE
- BEING ENGAGING
- BEING KIND

After careful deliberating and the assessing of countless portfolios & many job candidates, often times it comes down to one question.

**"Can I see myself working with this person?"**

*Design Strategist Tom Mulhern Project Consultant & Former Principal at Gensler*

## WHERE DO WE GO FROM HERE?

Seeking to understand more of the multidisciplinary nature of design was one of the guiding directions for the research, specifically how they may differ in what is required in a design portfolio. Future research will engage the differences of the design disciplines while seeking to uncover themes that can be consistent in their content. Design strategy proved to be the most insightful but are underrepresented in the study. Future research will engage them more heavily. The data gathered will begin to influence pedagogy in how we foster behaviors in the classroom (specifically **communication, problem solving, & storytelling**) these are highly sought after by professionals in future team members. Our students futures are our primary goal and this will better prepare them for practice and the professional culture.

### Further Research & Conferences

The framework for this research will be tested in other design centric communities, examples are and not limited to New York, Miami, and Los Angeles. The data will be disseminated in academic journals as well as future academic conferences including IDEC, AIGA, and SEG.D.

## KEY POINTS FROM THE LITERATURE REVIEW

The PI studied 14 publications that focused specifically on portfolio design and it's development. Of the 14 publications, 6 resources were focused solely on Graphic Design, 2 were focused on Interior Design, and 1 was focused on Architecture. The remainder of the publications were not discipline specific but rather a mix of color/ research/ and layout theory. The weighted quantity is reflective of the publications available in those specific disciplines. Graphic Design portfolio guides and publications far outnumber guides for Interior Design, Architecture, and Industrial Design. Below are a few takeaways from the literature review that helped to frame the research.

- After reviewing the many design publications, it was evident that little information is different among them concerning what content to include. With technology constantly changing, the design industry evolving, the approach seems outdated in many cases.
- Of the 14 publications studied only 2 contained a section for professional development and best practices when applying for a job. A common thread among the professionals was how important the interview process is, and the high value placed on presenting the work in the portfolio.
- Taken from an Interior design portfolio guide "The portfolio needs to show evidence of problem solving, there is a need to understand how the designer thinks and how they construct their own design process." (Bender, 2017) Can this line of thinking be used for other design disciplines?
- The portfolio guides focus primarily on well crafted student portfolios and their assembly, but rarely have insight from professionals that will be hiring these students. Going further the use of thick descriptors can give weight to quotes and insight into the process.

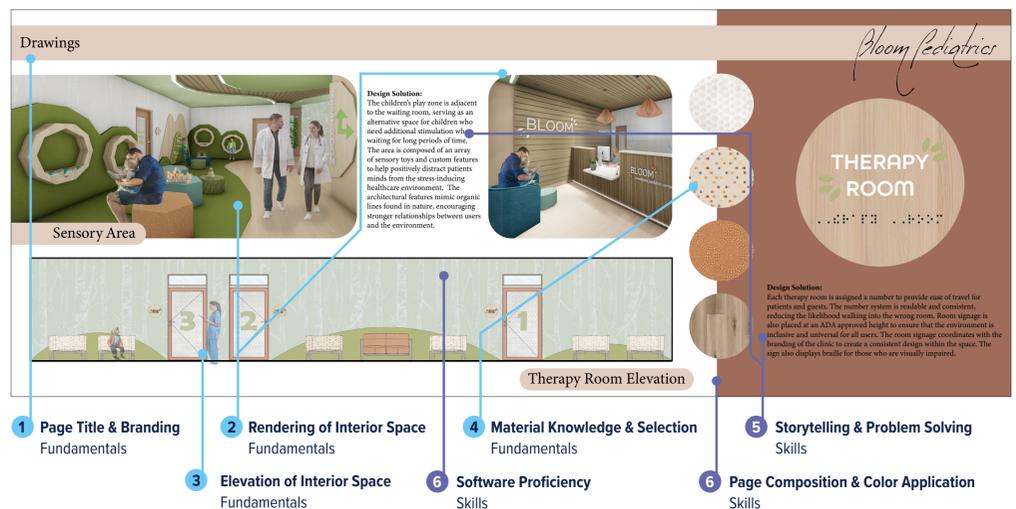
## LIMITATIONS OF THE RESEARCH

The professional design communities in and around Detroit and Chicago were chosen as the focus for this study. Professional connections allowed the PI access to knowledgeable former colleagues that would share their insight in the design portfolio and hiring process of their major design firms. Both cities are known for their rich design culture, and actively recruit recent college graduates to design professions. The research is limited by only including professionals in the areas of Detroit & Chicago. Broadening the research locations would allow for more data in other design rich cultures, giving better insight in the process and what the professionals look for in portfolio design.

## PORTFOLIO DESIGN ELEMENTS

Design Portfolio is a collection of completed original works, detailing one's ability to execute a design process from sketch to final product. The final product shows evidence of design proficiency through critical thought and familiarity with mastery of design-related software.

Below is an example portfolio page from an interior design healthcare project.



## FINDINGS

When hiring, design professionals are looking for several key elements as they search for the "best fit" for the role. One interviewee said they receive over 1000 portfolios each summer, and ultimately only hire 10 of the 1000. The design professionals frequently referenced the portfolio as a teaser, the agent that ultimately gets you into the door. It is more about the conversation you have when interviewing. The conversation that allows them to meet you build that connection.

- There is a benefit to having 2 portfolios. One is used to get the interview, the other has greater explanation, depth, and strategy and allows something fresh for the interview itself.
- Portfolios benefit by **diversity of projects and scale**, show a vast variety. It is important for job seekers to discuss the different skill-sets used in each project.
- Professionals seek to hear more about **lessons learned** and even failures along the way. Talk about what you learned, challenges, and concepts that might have changed along the way.
- Professionals from the (6) disciplines all mentioned wanting to see some form of process work in the portfolio. **Industrial Design was the highest focus for including rigorous process work.** The remaining disciplines agreed they wanted to see the process & problem solving in (1) project but prefer to see finished solutions only through the remainder of the projects in the portfolio.
- Storytelling is a highly sought after skill in all of the design disciplines. It needs to be thought of more as a **headline supporting the compelling imagery** that reinforces the design idea. An excess of copy is time consuming to read and can be clutter-some on the page. The key is keeping the creative storytelling descriptive yet concise. The headlines deliver a cohesive message throughout the project pages, keeping the audience engaged.

## WHAT SKILLS & FUNDAMENTALS ARE IMPORTANT IN A PORTFOLIO?

DESIGN EXPERTS WEIGHED IN, THESE ARE THE ELEMENTS THEY LOOK FOR MOST

The Qualtrics survey asked the participants to rank several design skills & fundamentals in their order of importance exhibited in a design portfolio. A consensus among the design disciplines surveyed, that there was a greater focus of importance primarily on the skills rather than fundamentals. Several professionals felt fundamentals are more common place and can be developed further in the position. Fundamentals can be highly valued when they are differentiated by a unique developed style or diverse design background.



## MODE OF DELIVERY

- PRINTED BOOKLET**  
The printed portfolio was the common practice before the convenience of a digital portfolio.
  - Advantages:** Shows care and craft, allowing the designer to pick paper choices and careful design in spreads.
  - Disadvantages:** This method can be costly & outdated.
- DIGITAL PDF**  
A digital "book" that is easily updatable and allows quick viewing of the work.
  - Advantages:** Can be updated easily. Can be sent digitally. Can have hyperlinks.
  - Disadvantages:** Files can be large and sometimes more difficult to send digitally. Needs to be stored somewhere.
- WEBSITE**  
An internet based portfolio site that showcases your work and can link the viewer to other visual media.
  - Advantages:** Allows for interactivity. Ease of sharing your work without large files. Increases your visibility.
  - Disadvantages:** Can have issues with different browsers.
- VIDEO**  
A personal video that allows the viewer a visual opportunity to experience the personality of the applicant.
  - Advantages:** Adds a personal touch. Evidence of greater software knowledge. In depth explanation of design thinking.
  - Disadvantages:** Time commitment for production. Files can be large & difficult to send.



# Interaction of dietary prebiotics and resistant starches with aging gut microbiome

## BACKGROUND

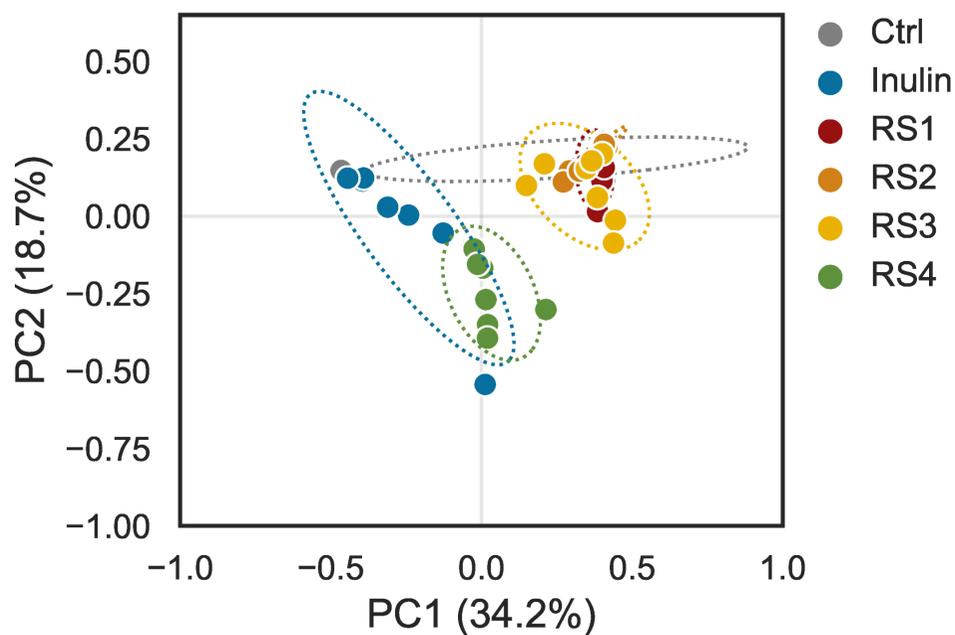
- Our gut microbiome, i.e., the diverse and complex community of thousands of bacterial species inhabiting our gastrointestinal tract, plays a fundamental role in our intestinal and metabolic health and aging.
- Diet is one of the most prominent factors that shape and regulate our gut microbiome.
- Diets rich in prebiotics (fiber) foster a healthier microbiome thereby improving our metabolic health and promoting healthier aging, but how different types of resistant starches from dietary beans and pulses versus plant-based fiber (e.g., inulin from chicory) modulate the microbiome especially during old age remains unclear.

## OBJECTIVE:

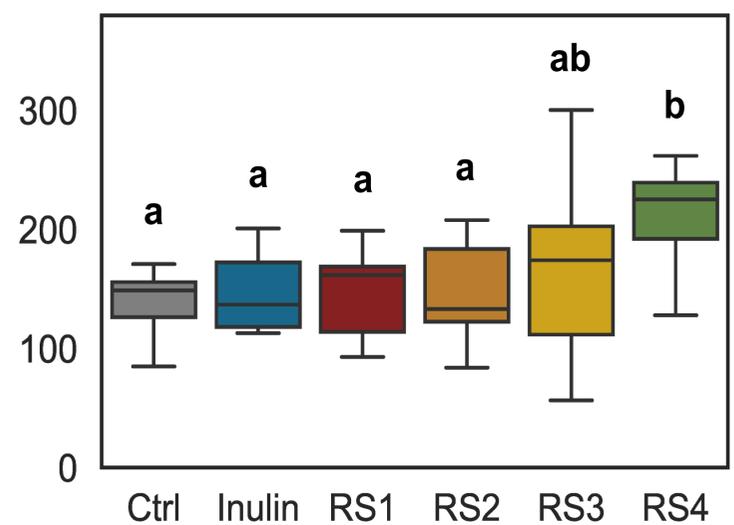
Using an aging mouse model (approx. corresponding to ~60-65 years old human), we sought to examine how feeding of resistant starches from different beans and pulses (i.e., pinto beans, black-eyed peas, lentils, and chickpeas) compared to inulin (from chicory roots) for 12-weeks affect and regulate the gut microbiome diversity and composition.

## SALIENT FINDINGS:

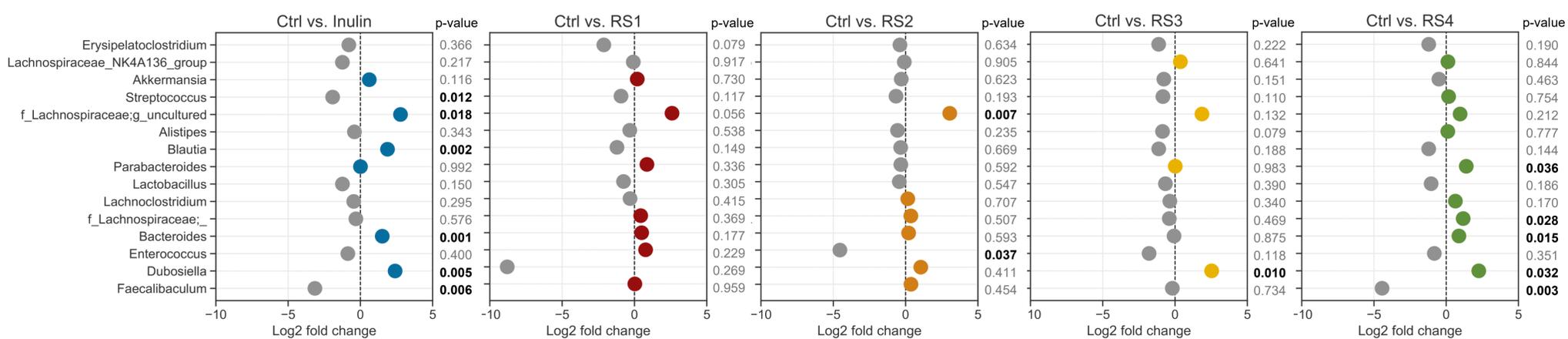
**Fig. 1.** Distinct patterns of microbiome beta-diversity in mice fed with resistant starches from pinto beans (RS1), black-eyed peas (RS2), lentils (RS3) and chickpeas (RS4) versus Inulin (from chicory roots).



**Fig. 2.** Distinct arrays of gut microbiome alpha-diversity (species richness) in mice fed with resistant starches from pinto beans (RS1), black-eyed peas (RS2), lentils (RS3) and chickpeas (RS4) versus Inulin (from chicory roots).



**Fig. 3.** Unique gut microbiome signatures in mice fed with resistant starches from pinto beans (RS1), black-eyed peas (RS2), lentils (RS3) and chickpeas (RS4) and inulin (from chicory roots) compared to control counterparts.



## CONCLUSION AND PROSPECTS:

These data provide insights into how resistant starches from dietary beans and pulses modulate the gut microbiome and demonstrate that this interaction varies based on the type/source of starches. Our immediate next step is to examine how these distinct microbiome signatures may differently influence host metabolic and cardiovascular health. We ultimately plan to use these data as prelim findings for our prospective grant applications for the USDA pulse crop health initiative program.

## ACKNOWLEDGEMENT

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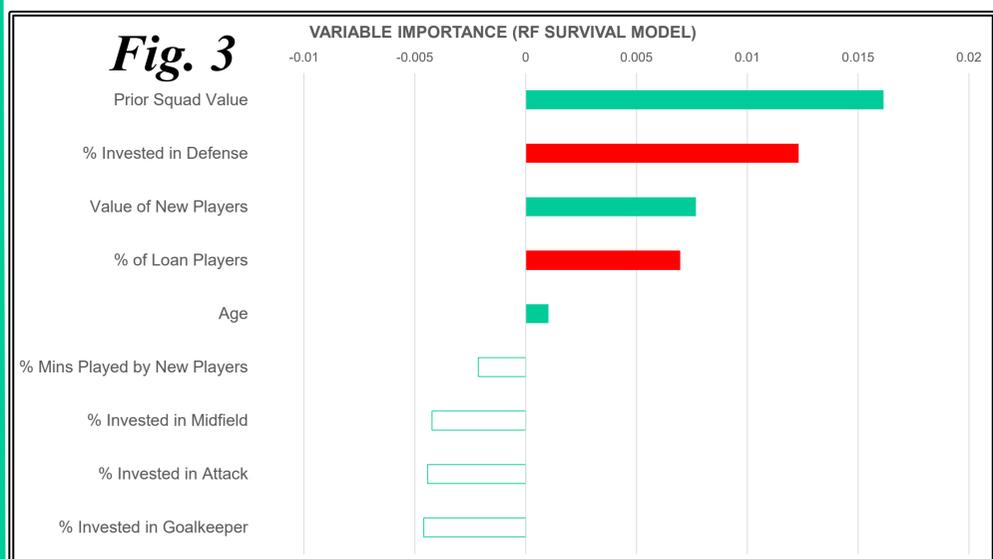
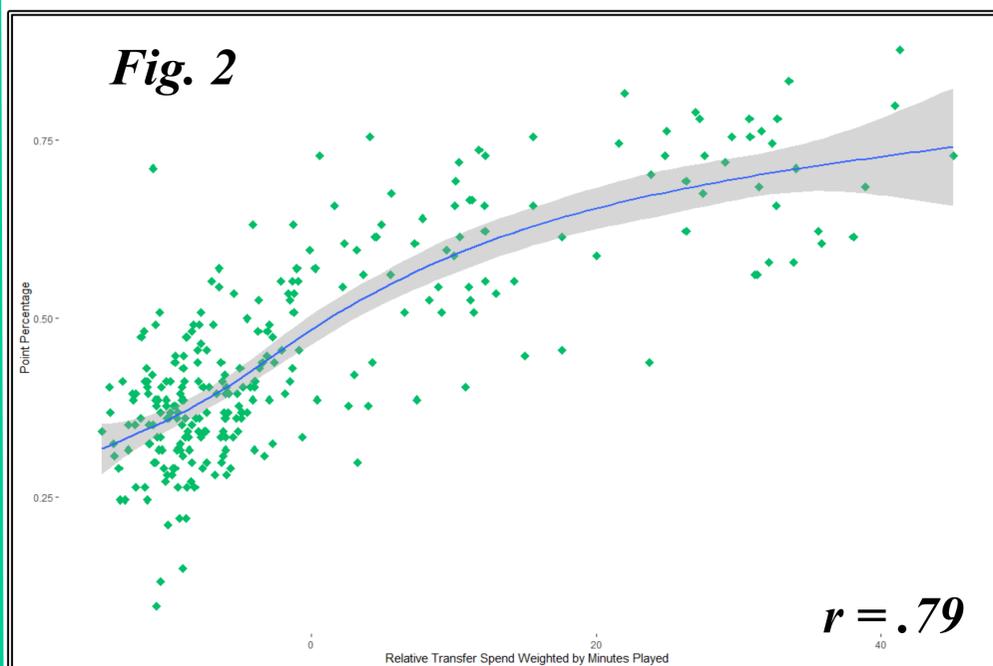
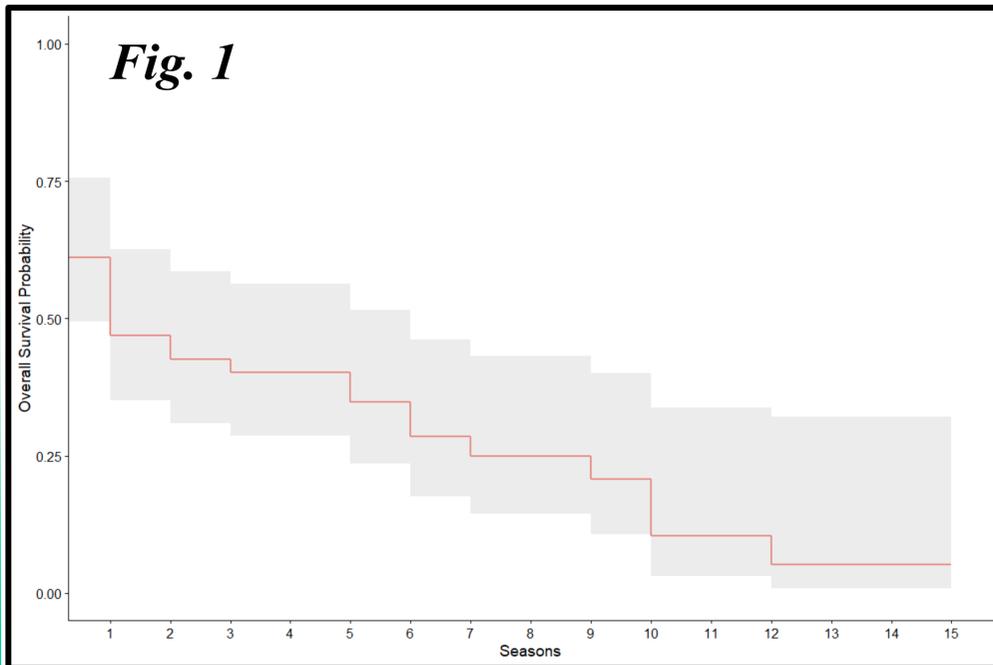
# Firm Strategies in Competitive Environments: The Case of European Soccer

**How do firms facing resource (financial) disadvantages develop strategies to compete in efficient markets?** This was the question driving my research as I explored two primary questions through the lens of professional club soccer in Europe:

- How do the labor market strategies of firms entering new, competitive markets impact their survival in the industry?*
- Do firms possess certain capabilities or inherent philosophies that drive performance, or are their resource-picking actions in the labor market the key determinants of productivity?*

Analyzing **18 seasons** of financial and performance data from the **English Premier League (EPL)**, I found:

- Just 61% of newly promoted clubs survive their first season in the EPL; the majority (53%) are relegated at the end of year two (see Fig. 1).*
- There is a strong correlation between individual player value and team success ( $r = .79$ ) in the EPL, but Fig. 2 also shows that clubs can vary in efficiency.*
- The prior amount invested in the squad is highly important (Fig. 3) in determining initial survival; the additional value of new players is also important, though funds should not be invested in the defense. Loan (temporary) players also have a negative effect on survival.*



The initial implications are that firms will likely have to invest in a **blend of old and new human capital** to be successful. They should further avoid being overly **defensive** with their acquisition & deployment strategies and **forego temporary solutions**.

# Social Media's Impact on Instruction: Beginning Teachers' Self-Directed Professional Learning



- Social media offer **new opportunities** but also introduce **new challenges**
- Beginning teachers must juggle more outlets and potentially competing voices for professional learning
- Unclear how professional learning through social media **impacts instructional practice**
- This qualitative study collected weekly diary entries from and interviews with 5 teachers

“It's a lot of different pieces that I'm trying to hold at once.

It feels like I'm trying to  
fold a fitted sheet.

You know how annoying that is... just as soon as you get one corner that you think is maybe done right, you look at the other half of the sheet and it's a disaster.”

**Key Finding:** Beginning teachers are trying to build professional learning systems and improve instruction

- **Pedagogical knowledge: *How to teach***
  - deepening understanding; practicing skills; reviewing concepts
- **Content knowledge: *What to teach***
  - getting ideas and inspiration; staying up-to-date on news and topics; giving students different perspectives,

**Next Steps:** Recruit larger sample and further refine longitudinal design to study social media use and instructional practice across a full school year.

Read the full paper:



SCAN ME

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