Neighborhood Effects and Depression:
Associations with Adolescents' Sexual Behavior

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Preface

- This is a presentation of my work-in-progress.
- Everything being presented is preliminary.

Background and problem

The risk: Adolescent sexual activity (ASA)

- Studies involving adolescent youth populations have found associations between sexual risk behaviors and mental health problems, sexual risk behaviors and social environment, and sexual risk behaviors and a combination of both mental health and social environment. (Sampson, et al 2002; Berkman and Kawachi, 2003; Diez-Roux, 2000)

- Neighborhood processes appear to have relationships with mental health outcomes. Adolescents in high-risk neighborhoods present a higher symptom count for internalizing behavior such as depression and anxiety disorders and lower self-esteem. (Chen, 1997)

- How social context and the neighborhoods causally shape behaviors have methodological challenges in understanding the effects. (Oakes, 2004)

Research Questions and Purpose

1) Do perceptions of neighborhood factors play a role in determining adolescent sexual outcomes?

2) Is depression a predictor of sexual activity?

Study Design and Analysis

- Descriptive, Cross-sectional design

- The study sample includes 1,615 adolescents ages 14 – 18 interviewed in the 2004 wave of the National Longitudinal Study on Youth (NLSY) – Child Young Adult cohort.

Conceptual Model

Predictors (Independent variables)

Dependent (Outcome) variables

Perception of Neighborhood Attributes
Neighborhood quality index and peer, individual drinking

Depression
(CES-D/ 7 questions)

Control Variables

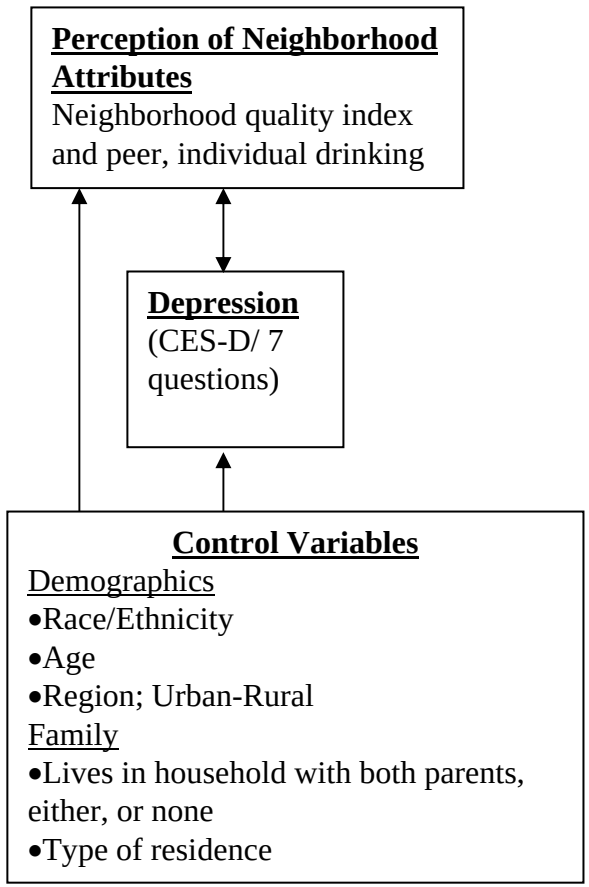
Demographics
- Race/Ethnicity
- Age
- Region; Urban-Rural

Family
- Lives in household with both parents, either, or none
- Type of residence

Conceptual Model

Predictors (Independent variables)

Dependent (Outcome) variables



Conceptual Model

Predictors (Independent variables)

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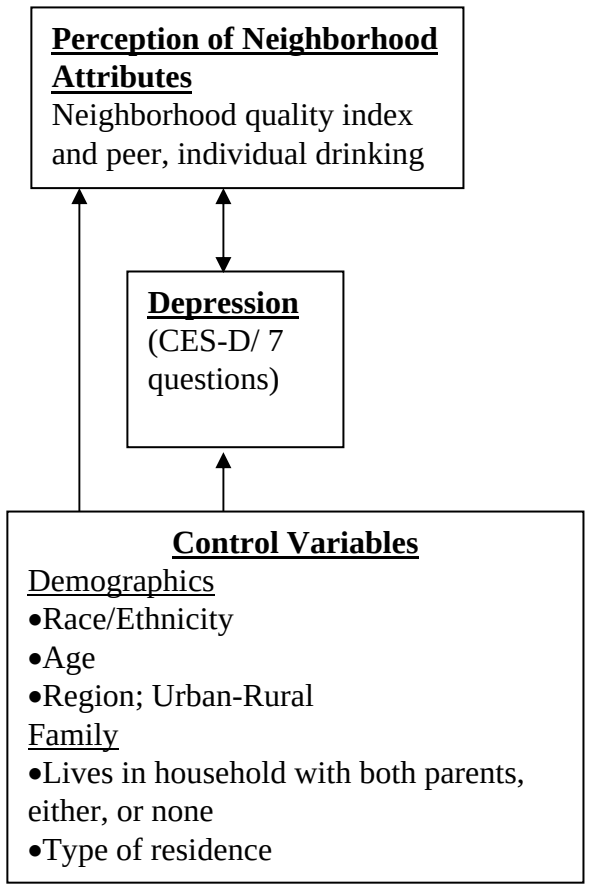


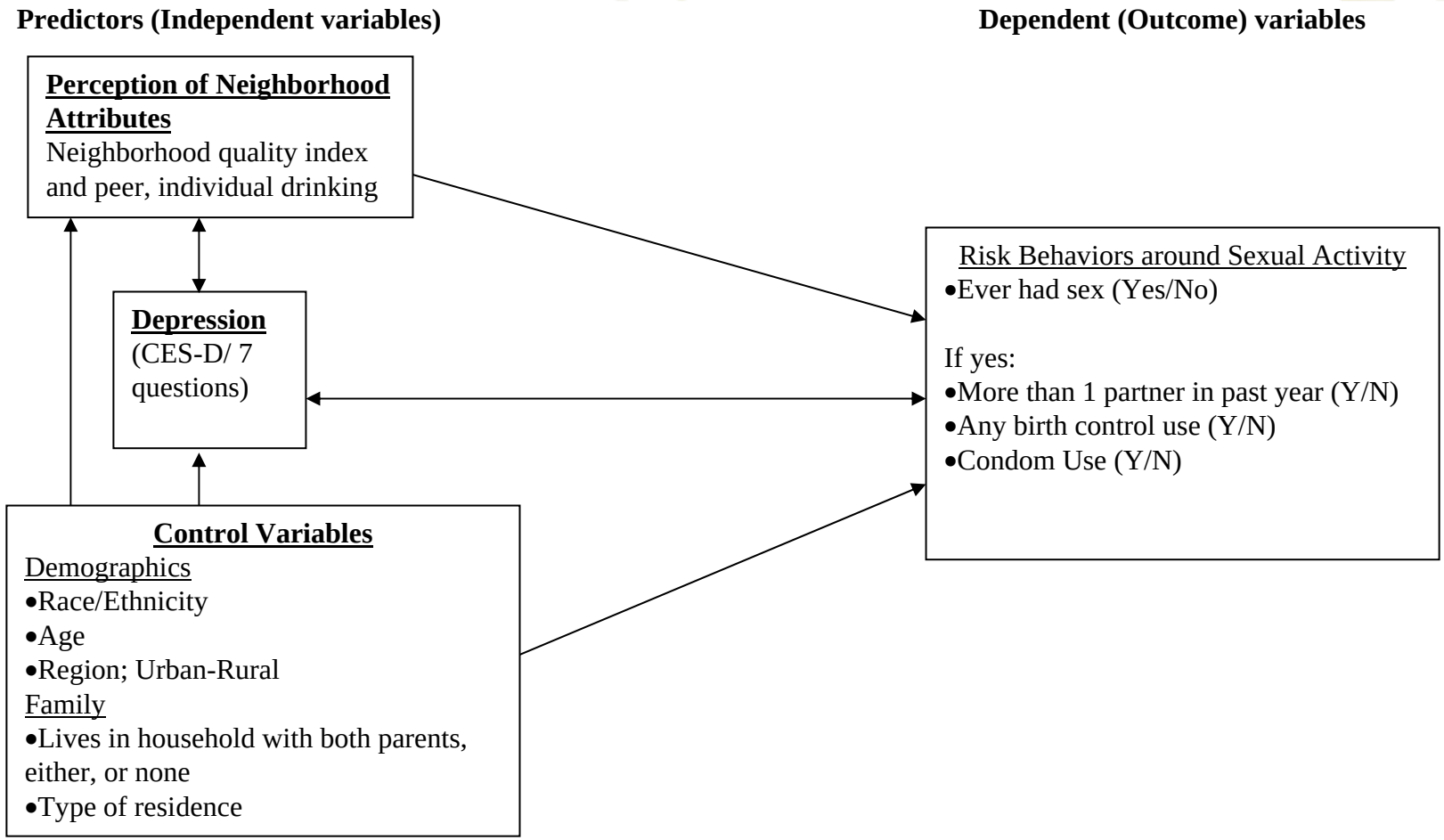
Risk Behaviors around Sexual Activity

- Ever had sex (Yes/No)

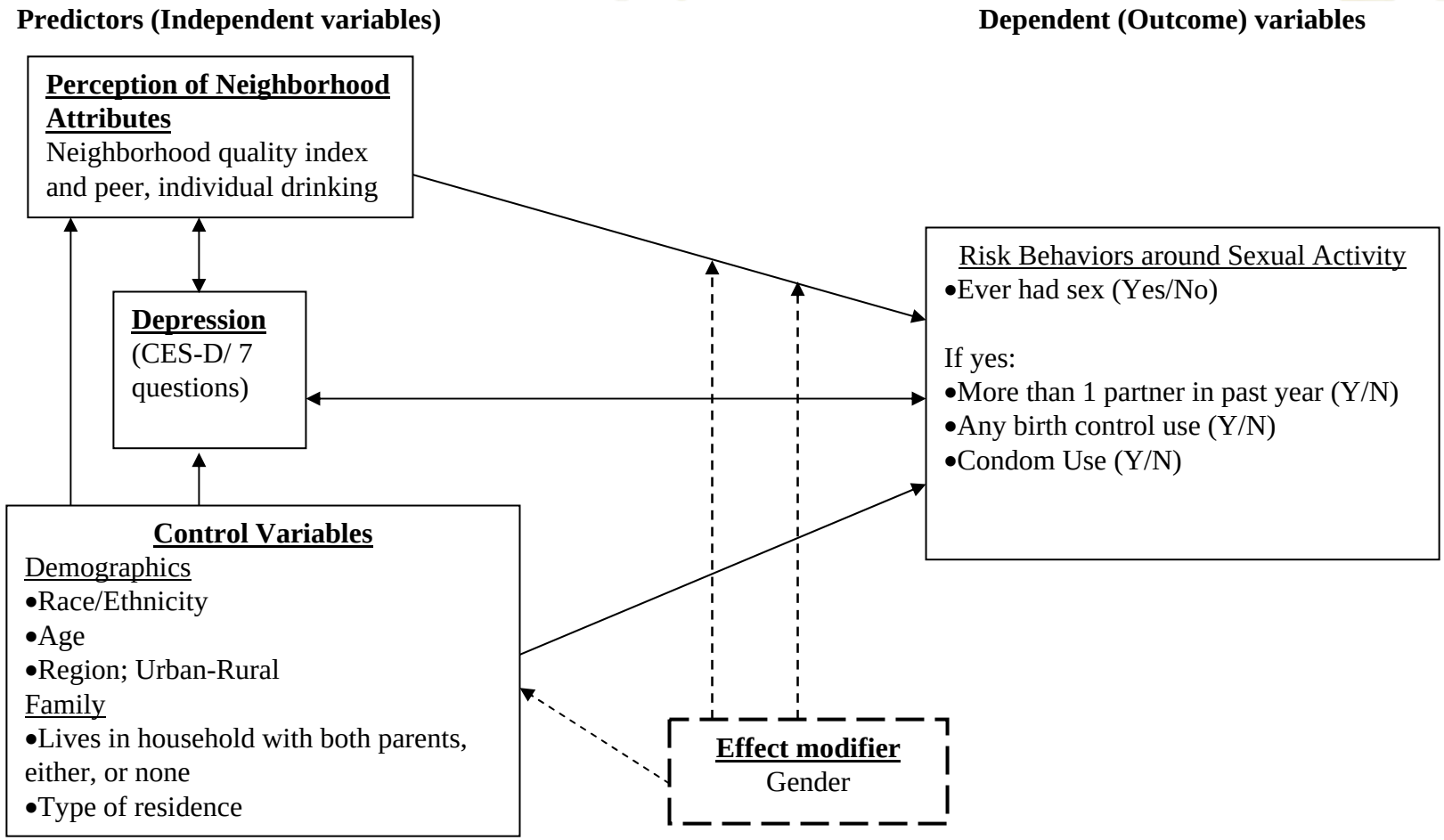
If yes:

- More than 1 partner in past year (Y/N)
- Any birth control use (Y/N)
- Condom Use (Y/N)

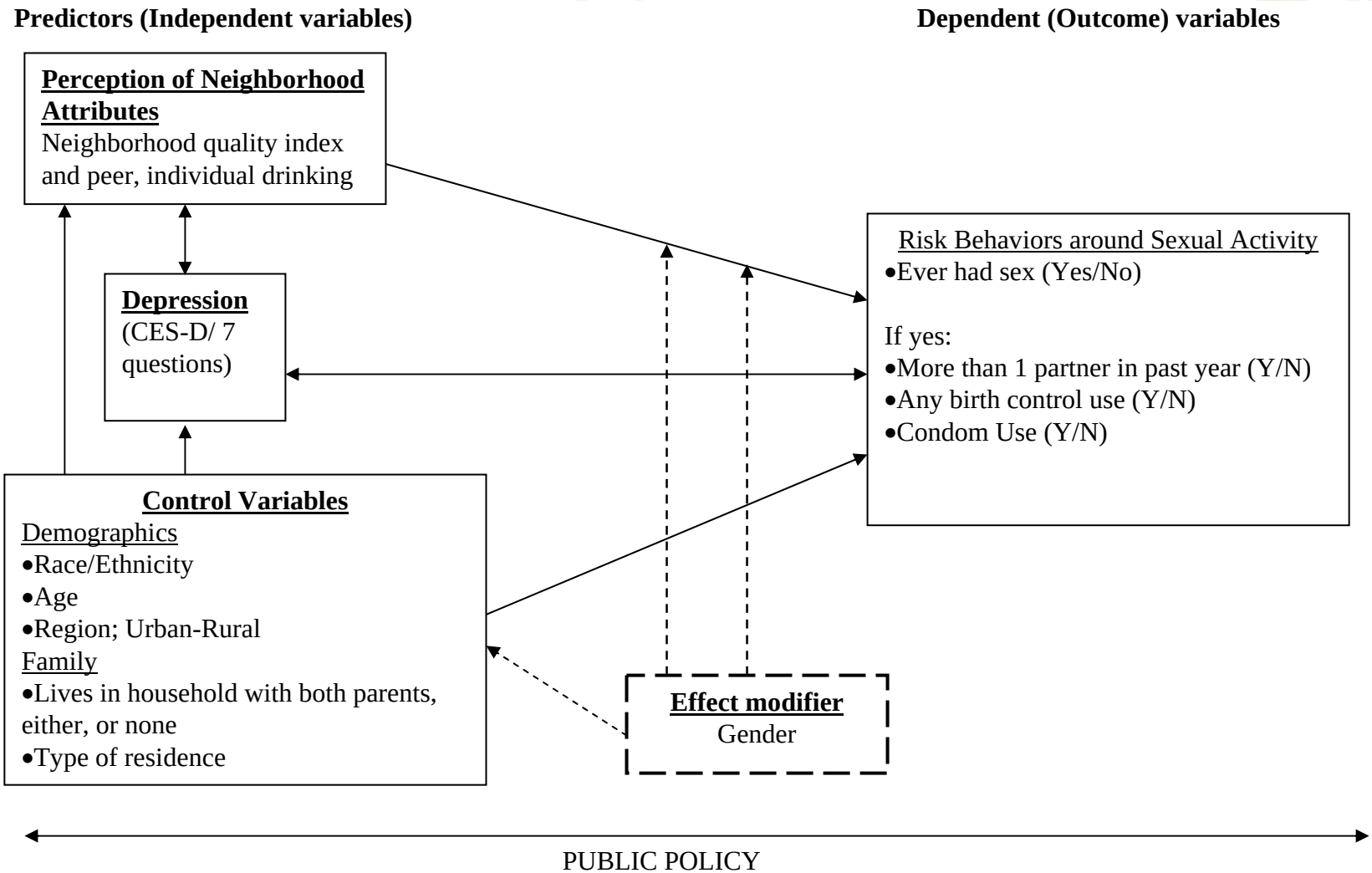
Conceptual Model



Conceptual Model



Conceptual Model



Methods

- *Logistic regression* modeled specific aspects of adolescent sexual activities as functions of neighborhood factors and symptoms consistent with CESD controlling for important family and individual characteristics.

- *Effect modification* by gender will be assessed using formal Chow tests. Sample weights will be applied in all models to account for the complex survey design. (underway)

Preliminary Results – Table 1

Table 1: Pooled (boys and girls) behavior of Adolescents Age 14 - 18 years, NLSY 2004. (n=1,615)				
Predictors	**Asked if Ever had sex? (Y/N)**			
	Y	**%**	**N**	**%**
Overall	443	27.4	1,172	72.6
Depressed (CESD)*	25	5.6	67	5.7
Perception of Neighborhood Attributes				
Peer drinking				
Big problem	124	28.0	120	10.2
Individual drinking	156	35.2	287	24.5
Neigborhood Quality Index**	mean= 18.5	s.d.= 2.9	mean= 19.0	s.d.= 2.5
Used a condom?	274	61.9	169	14.4
Many partners?	170	38.4	273	23.3

*Weighted sum using the Center for Epidemiologic Studies Depression Scale

**Using a neighborhood quality index: groups, no job, don't care, supervision, police, rundown, violence, rules

s.d=standard deviation

Preliminary Results – Table 2

Table 2: Logistic Regression Model of Adolescents asked about having sex (n=1,615) [a]

Predictors	OR	p
Neigborhood Quality Index	0.96	0.235
Neigborhood perception of others drinking	1.98	0.000
Depressed	1.35	0.394
Individual drinking	4.84	0.000

a Model controlled for age, sex, race (white=ref, black, Hispanic, other), depression, drinking, region, trucated income (log-transformed)

OR=Odds ratio; CI=confidence interval

Preliminary Results – Table 3

Table 3: Logistic Regression Model of Adolescents Ever having sex. Used a condom? (n=433) [a]

Predictors	OR	p
Neigborhood Quality Index	1.07	0.148
Neigborhood perception of others drinking	0.84	0.498
Depressed	1.06	0.909
Individual drinking	0.74	0.246

a Model controlled for age, sex, race (white=ref, black, Hispanic, other), depression, drinking, region, trucated income (log-transformed)

OR=Odds ratio; CI=confidence interval

Preliminary Results – Table 4

Table 4: Logistic Regression Model of Adolescents Ever having sex with more than one partner in a year? (n=433) [a]		
Predictors	**OR**	**p**
Neigborhood Quality Index	0.98	0.688
Neigborhood perception of others drinking	0.82	0.462
Depressed	2.65	0.107
Individual drinking	2.97	0.000

a Model controlled for age, sex, race (white=ref, black, Hispanic, other), depression, drinking, region, trucated income (log-transformed)
OR=Odds ratio; CI=confidence interval

Preliminary Conclusions

1) Do perceptions of neighborhood factors play a role in determining adolescent sexual outcomes?
   - Drinking is highly significant in ASA

2) Is depression a predictor of sexual activity?
   - Depression has is moderately significant effect in ASA
   - Depressed girls are more likely to be in involved ASA than boys.

- If effect modification, this would allow for targeted public health action
- Drinking is a strong predictor, allows for community level programming

Limitations

- Incomplete, i.e. on-going, analysis
- Sample size for depressed and sexually active adolescents is small
- Reporting bias
- Limited ability to address causality
- Explanatory power of different variables cannot be examined.

A Kind Thank you!

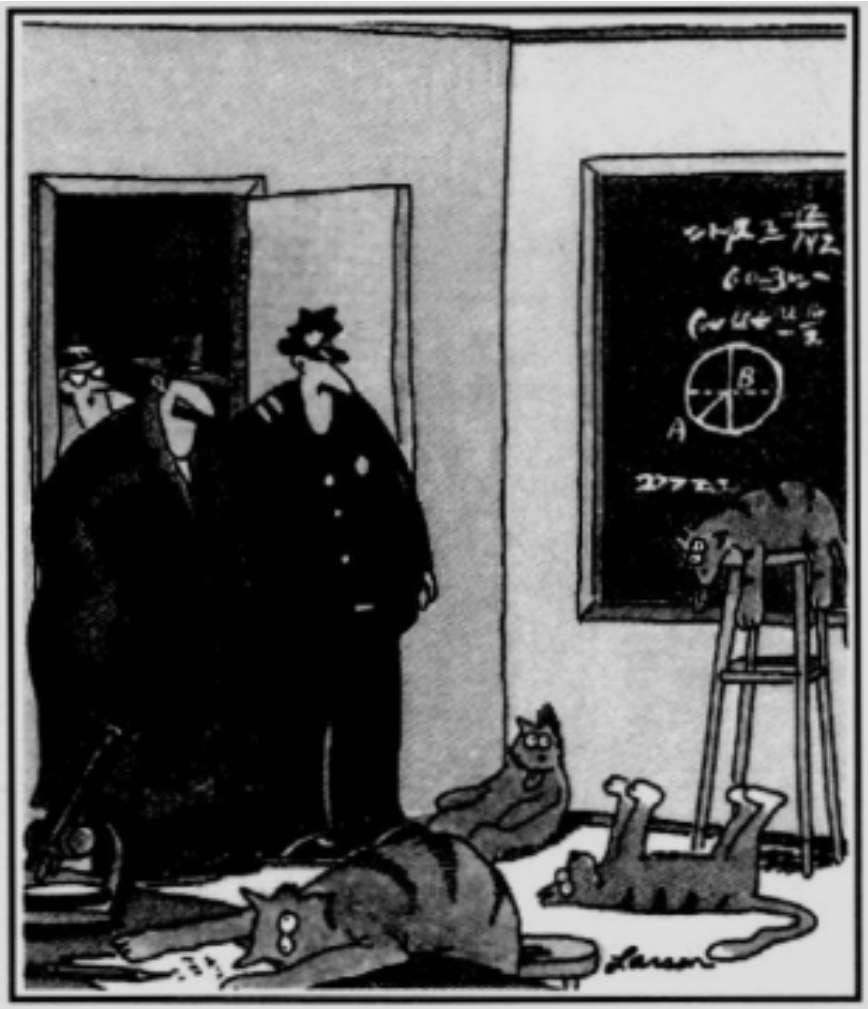
My committee:

- Fred Zimmerman (chair)
- Janice Bell
- Mary Kay Gugerty

A-long the way:

- MCH Department (Administration and Faculty)
- Friends
- Family

Questions???



"Notice all the computations, theoretical scribblings, and lab equipment, Norm. ... Yes, curiosity killed these cats."