

# Behavioral Science Meets SilverSneakers Fitness Program: Using Technology to Improve the Health of Older Adults

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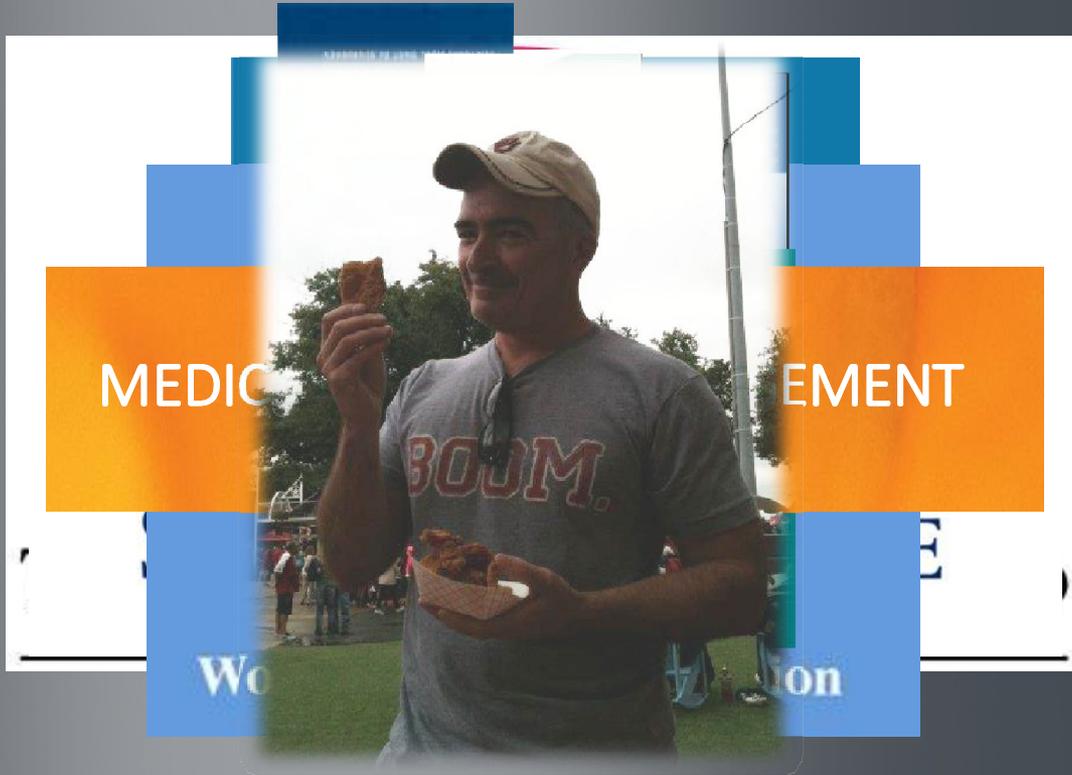
VP, Chief Behavioral Scientist  
Healthways/SilverSneakers

# SilverSneakers Fitness Program



# What to expect today

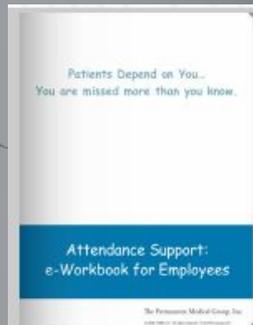
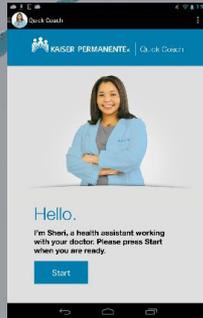
- Why we need behavioral science
- What we know about exercise
- How to integrate behavioral science into the SilverSneakers Fitness Program



# Leveraging technology for targeted population interventions

Behavioral Science

*Take Charge!*  
your life • your work • your future



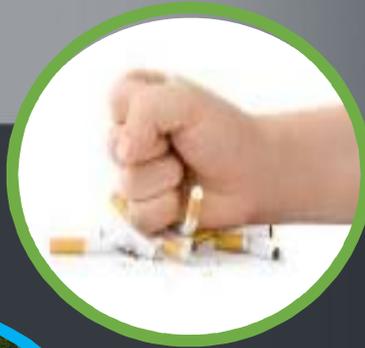
# Why we need Behavioral Science

# What is Behavioral Science?

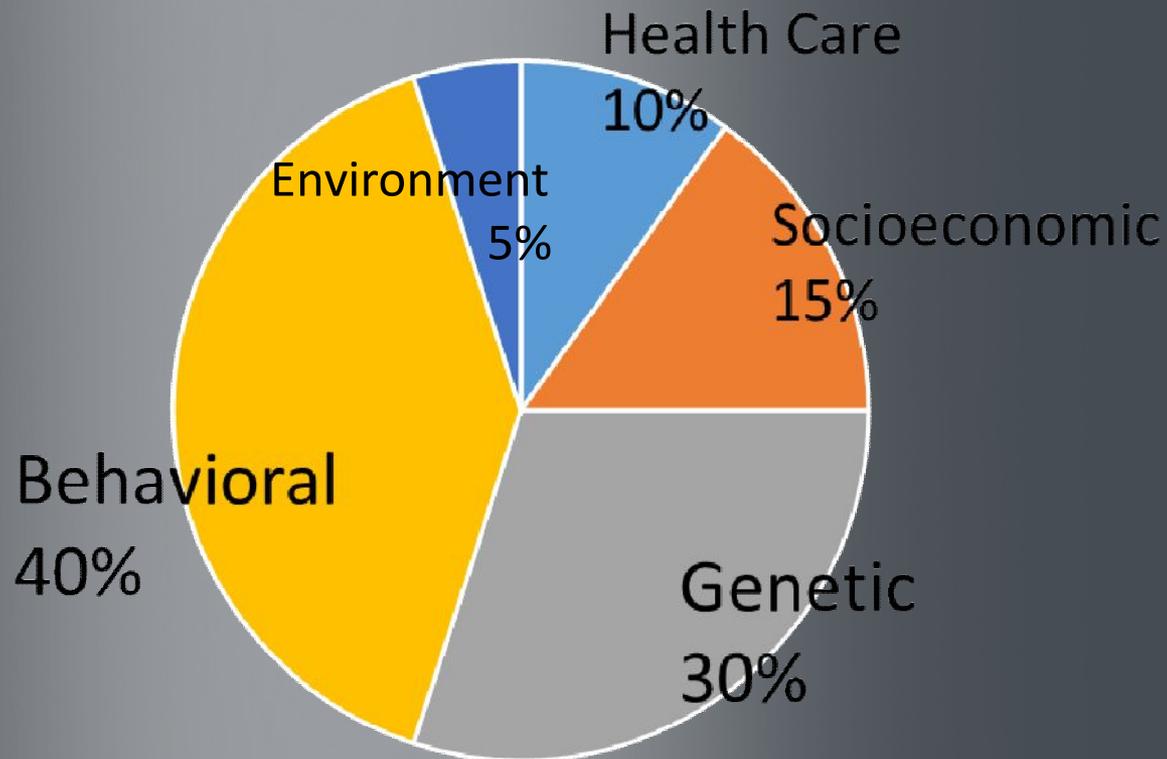
- An empirical approach to understanding, evaluating and changing human behavior.



Is behavior important  
to the business of  
health/health care?



# Leading Determinants of Overall Health are Behavioral



(McGinnis, JM, et al. JAMA 1993; Mokdad, AH, et al. JAMA 2004)

# Behavior is the *sine qua non* in health care

- What people do and don't do (behaviors) every day drives health outcomes
- Health outcomes determine our collective success
- Healthy behaviors are a win, win, win

The bottom line . . . .

Behavior is really, really, really  
important!

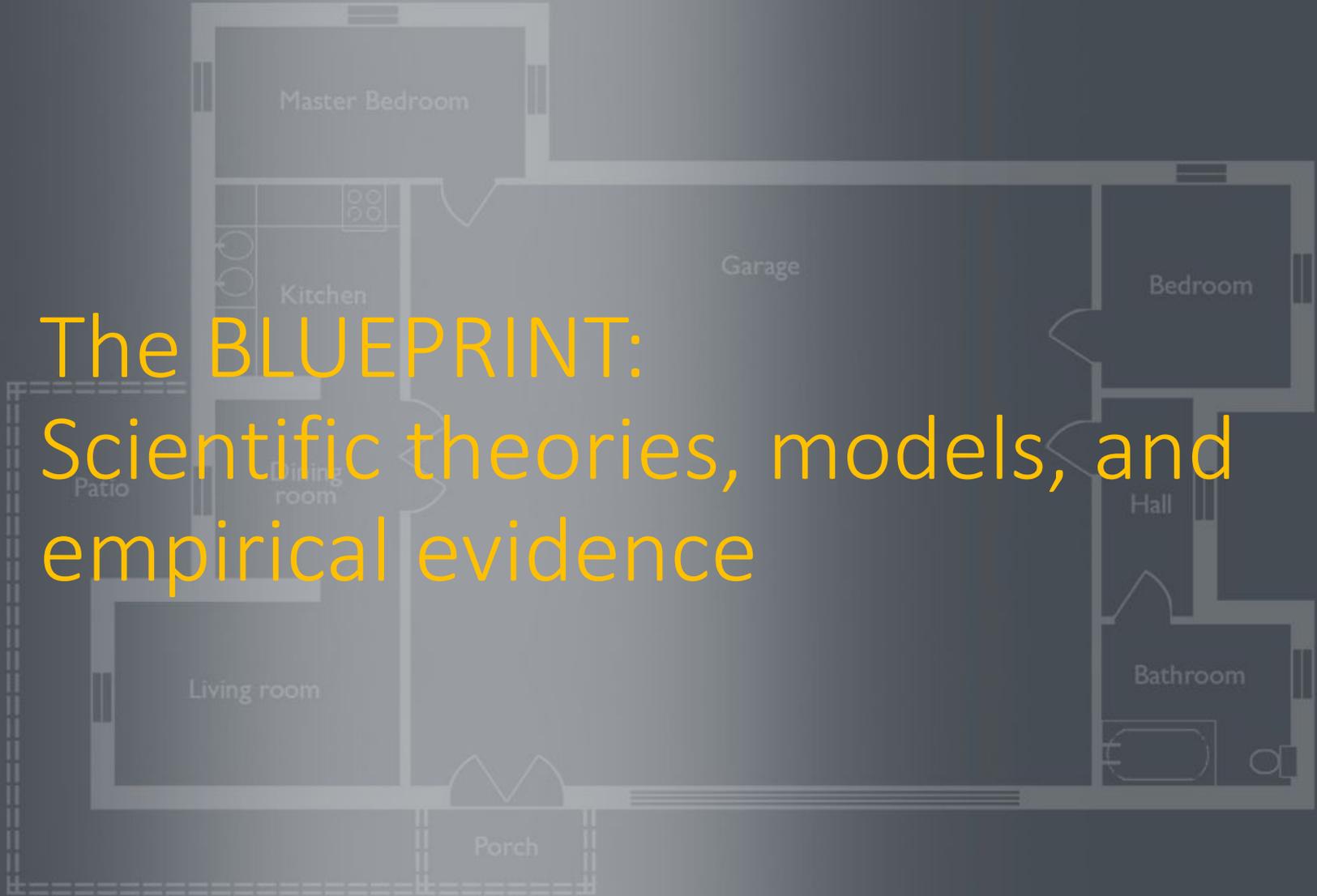
# Why should we use *SCIENCE*?

- **Because** there is an actual science of behavior
  - We don't have to guess about how to change behavior.
  - Behavior is not random; it is explainable and predictable.
  - Behaviors can be acquired, maintained, and changed using known scientific principles.

# Why should we use *SCIENCE*?

- **Because** there is still a huge opportunity in the health care arena
  - Behavioral science is not fully leveraged despite ample data.
  - Behavioral science is the missing link in getting people to do things to improve their health.

The BLUEPRINT:  
Scientific theories, models, and  
empirical evidence





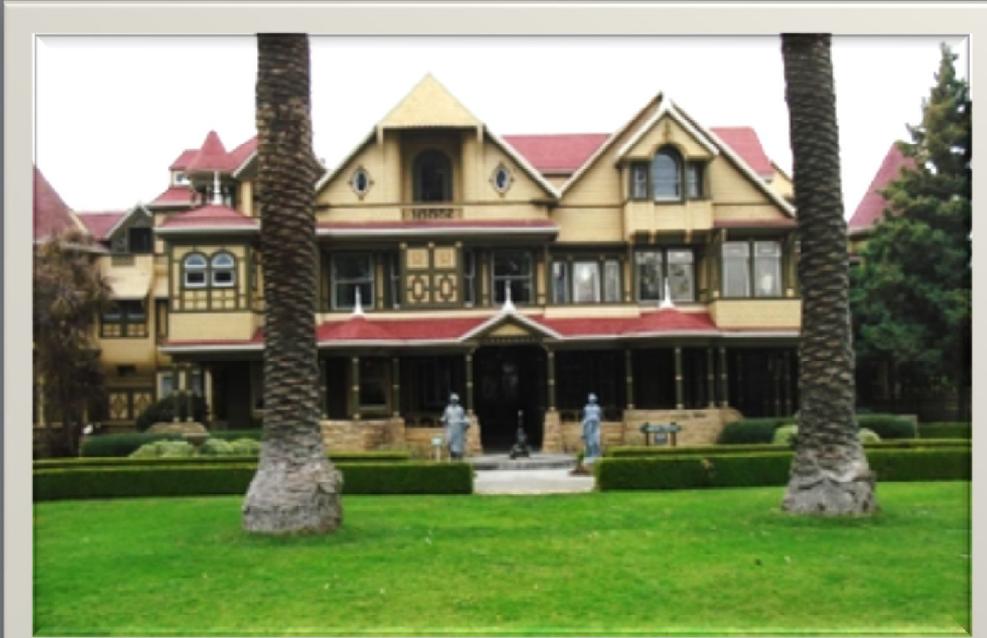
The HOUSE:

The programs, services,  
interventions, and  
communications that we build

# Why is a blueprint necessary?

- To guide our work
- To organize our thinking and our development of the member (or patient) experience
- To help determine why/why not what we are doing works or doesn't work
- To effectively manage our resources and reduce waste

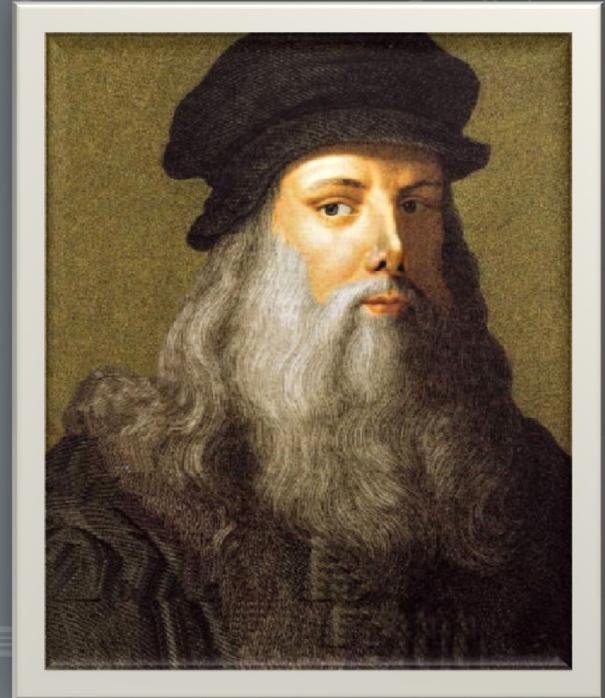
Without a blueprint . . .



Winchester Mystery House-San Jose, CA

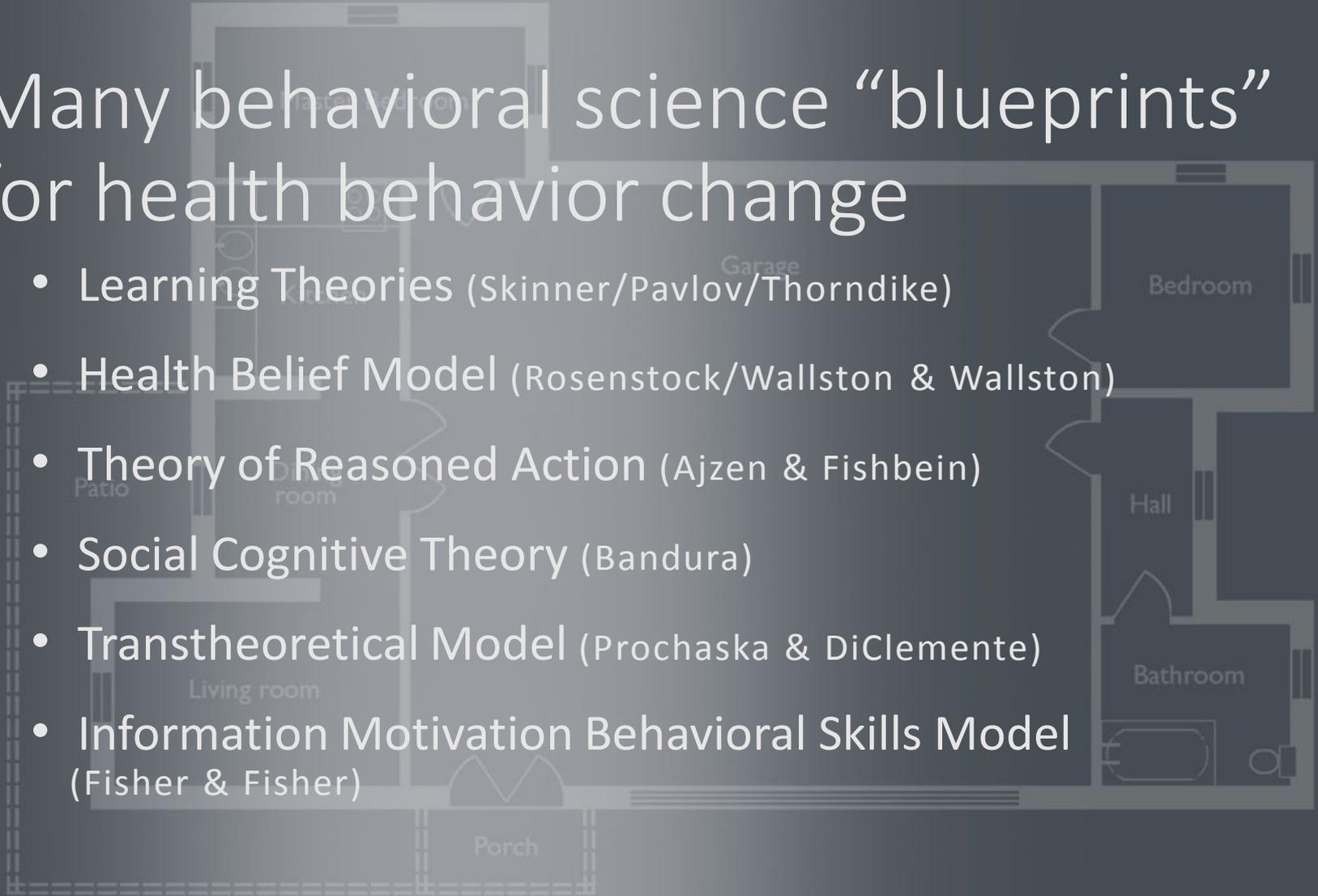
# Leonardo Da Vinci quote . . . .

“He who loves practice without theory is like the sailor who boards ship without a rudder and compass and never knows where he may cast.”



# Many behavioral science “blueprints” for health behavior change

- Learning Theories (Skinner/Pavlov/Thorndike)
- Health Belief Model (Rosenstock/Wallston & Wallston)
- Theory of Reasoned Action (Ajzen & Fishbein)
- Social Cognitive Theory (Bandura)
- Transtheoretical Model (Prochaska & DiClemente)
- Information Motivation Behavioral Skills Model (Fisher & Fisher)



# Which blueprint is best?

- It depends . . . .select a model based on needs
  - Comprehensiveness
  - Parsimony
  - Empirical Support
  - Ease of Translation
  - Ease of Outcome Measurement
  - Generalizability
  - Population/context



# One Blueprint

## Learning Theory, Operant Conditioning

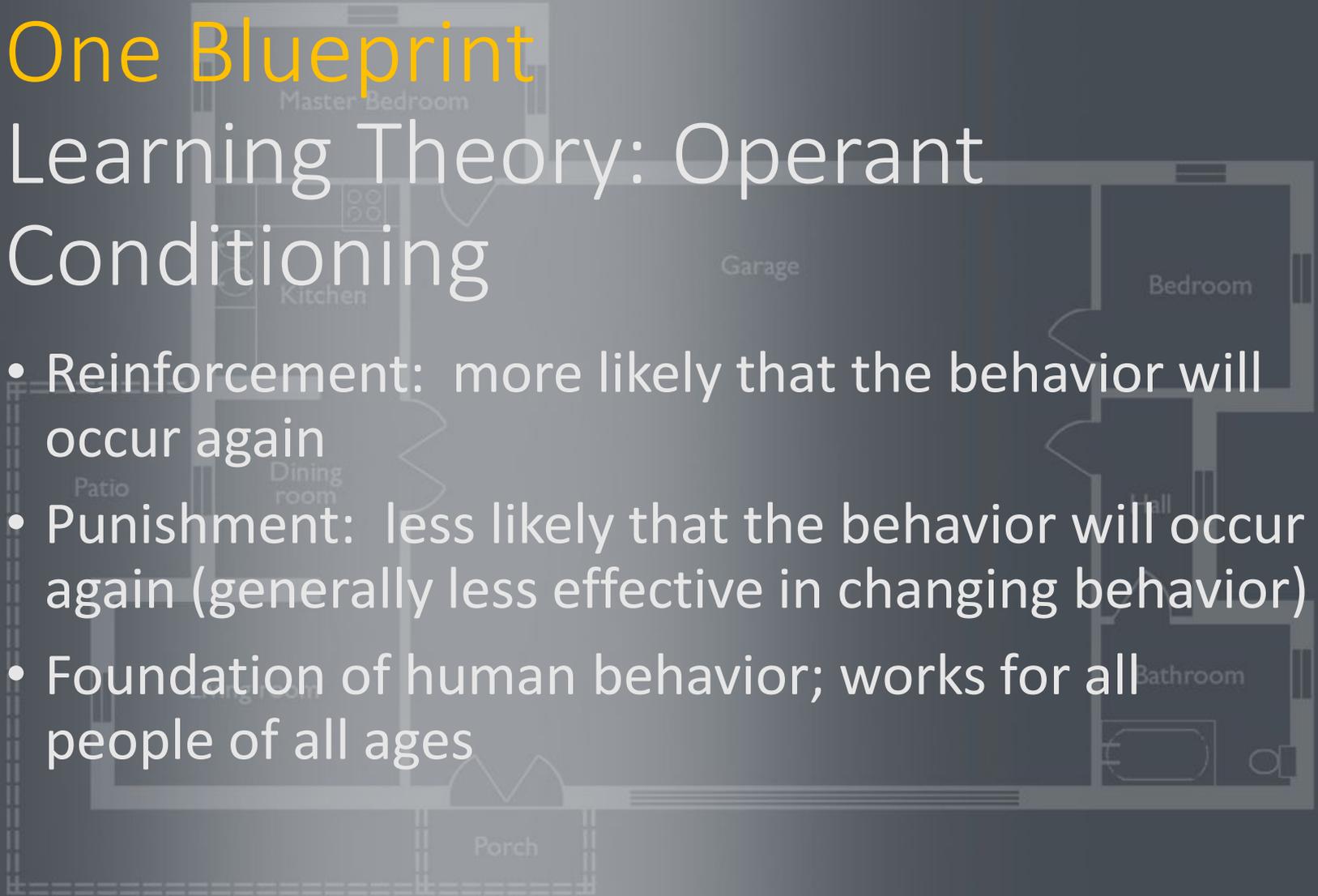
- Accounts for more behaviors in the simplest way
- Consequences lead to changes in voluntary behavior
- Environment is key
- Everywhere in our daily lives
- Most general and most powerful



# One Blueprint

## Learning Theory: Operant Conditioning

- Reinforcement: more likely that the behavior will occur again
- Punishment: less likely that the behavior will occur again (generally less effective in changing behavior)
- Foundation of human behavior; works for all people of all ages



Master Bedroom



Bedroom

Patio

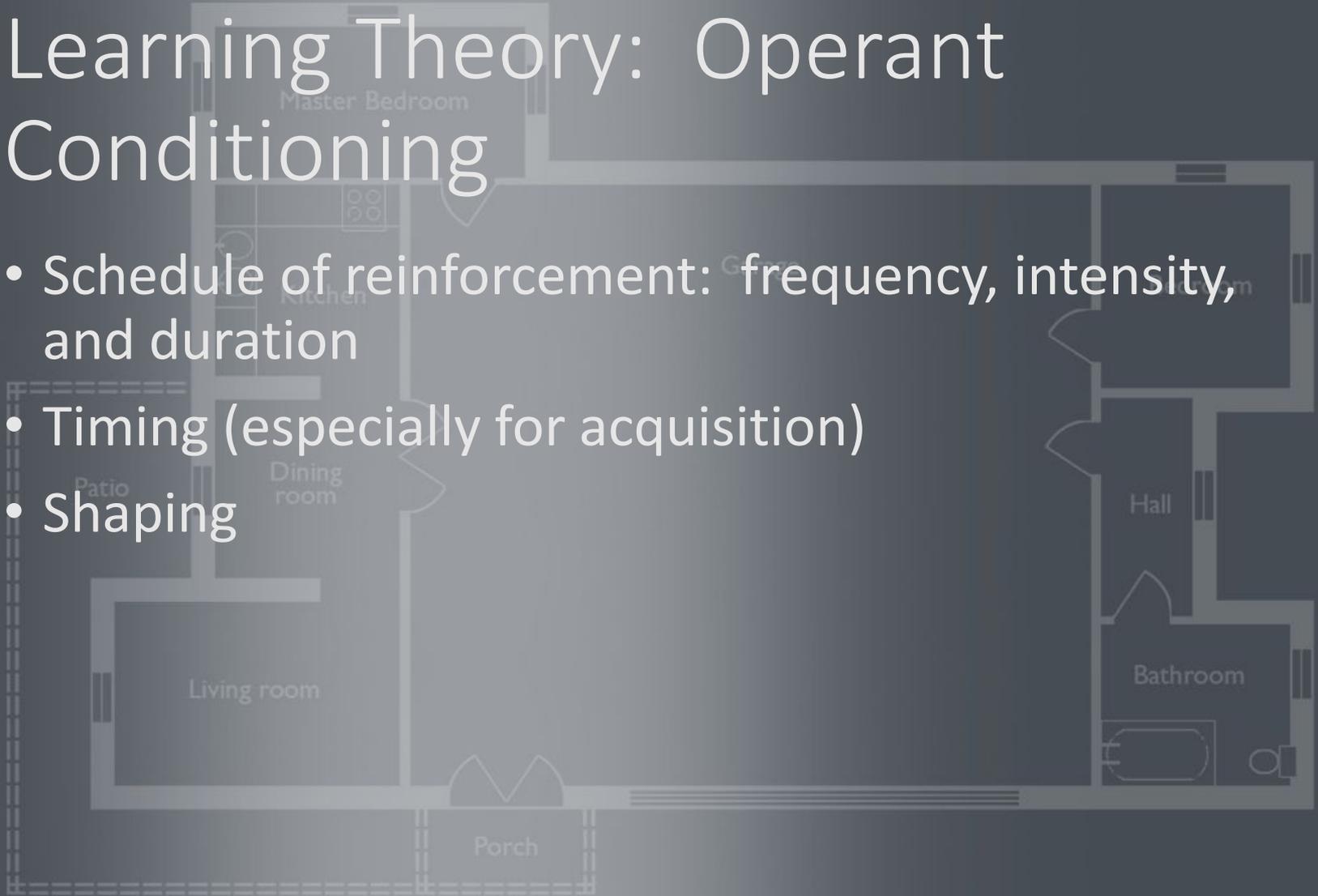
Hall

Bathroom

Porch

# Learning Theory: Operant Conditioning

- Schedule of reinforcement: frequency, intensity, and duration
- Timing (especially for acquisition)
- Shaping





You get what you reward!

# What we know about Exercise

# The facts about exercise . . .

- Regular exercise is health protective
- Benefits: controls weight, reduces risk of serious health conditions (including some cancers), improves biometrics, improves anxiety/depression, promotes sleep, reduces health care expenditures

# The facts about exercise . . .

- Recommendations for age 65 and up:
  - Do at least 30 or up to 60 min per day of moderate intensity aerobic activity
  - Do strength training 2-3 times per week
  - Do balance training, if at risk

Guidelines from Healthy People 2010 (HP2010), the American College of Sports Medicine (ACSM), the American Heart Association, (AHA), and the US Department of Health and Human Services (DHHS)

# The facts about exercise . . .

- About 48% of Americans get enough (most people over-estimate)
- The more adherent to the recommendations, the better the results
- About 50% stop exercising within a few months of starting a program

# Why don't people exercise?

- Audience survey (3 questions)
- “Present bias”
- Evolutionary instinct?
- It's HARD!: time, cost, location, uncomfortable



# The biggest myth

- That telling people to exercise is effective

PRESCRIPTION BLANK

PATIENT Zelda Jones DOB 7/2/62

ADDRESS 837 Coanier Street, Suite 315 DATE 7/18/14

**R<sub>x</sub>**

**Exercise**

SUBSTITUTION PERMISSIBLE DO NOT SUBSTITUTE

DONOT REFILL SIGNATURE OF PRESCRIBER

REFILL TIMES [Signature]

# The facts about exercise . . .

- Starting is difficult
- Maintaining is even more difficult

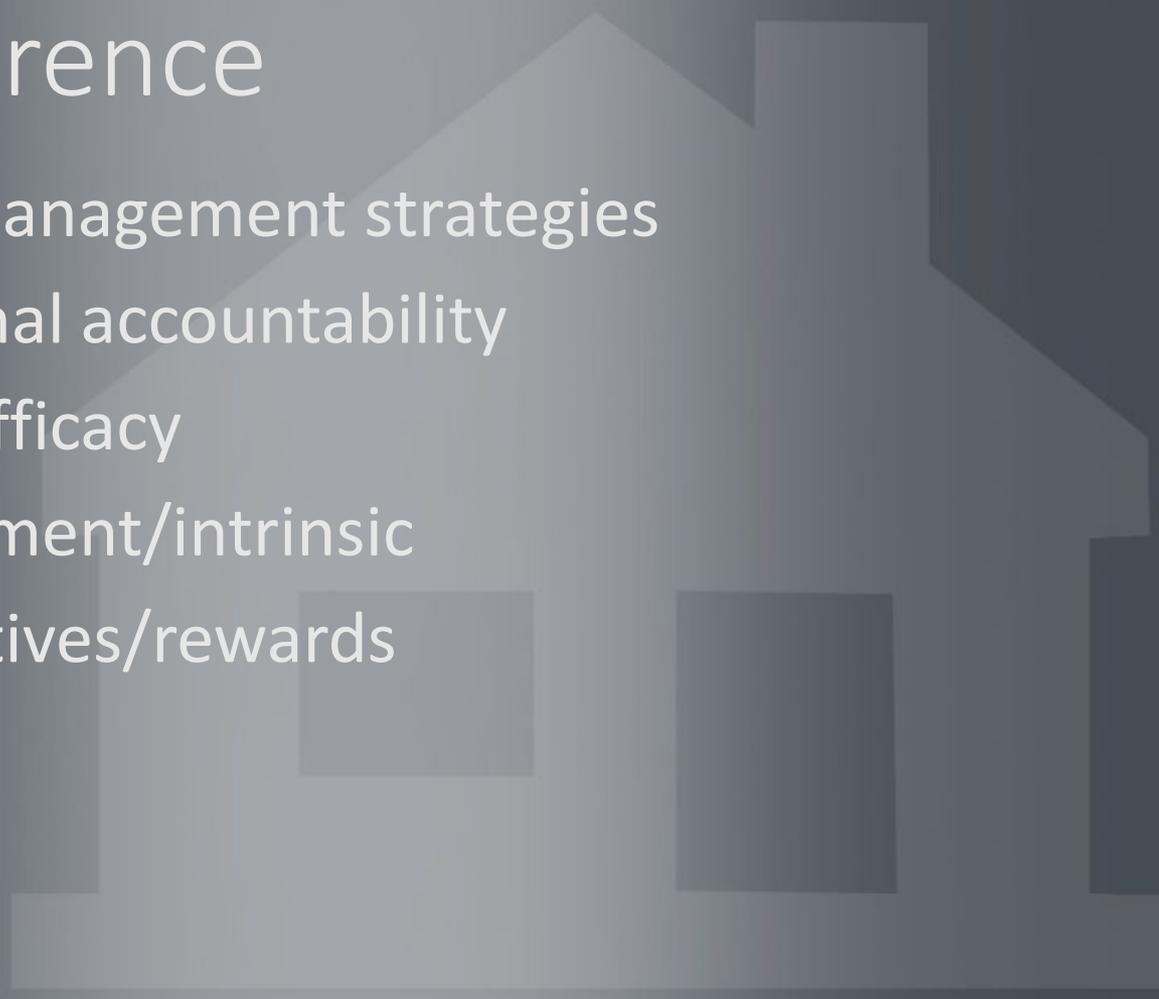
**Exercise is a health behavior**

# Behavioral Science meets SilverSneakers

# The House

- Translate the science into operations
- Develop services, interventions, programs, and communications across the entire member/patient experience
  - Telephone interactions
  - Website experience
  - Group exercise class
  - Fitness facilities
  - Marketing/Communications (mailers, texts, email)
  - Exercise adherence

# Effective interventions for exercise adherence

- Self management strategies
  - External accountability
  - Self-efficacy
  - Enjoyment/intrinsic
  - Incentives/rewards
- 

# Incentives for exercise adherence

- Financial incentives improve lifestyle behaviors both short-term and while incentives are still in place
- 11.5% increase in attendance at exercise sessions
- Works especially well with physically inactive adults (more likely to increase and more likely to sustain)
- Some evidence for maintenance (6 months after incentive removed )

(Mitchell, et al. 2013)

# SilverSneakers participation

- We want more participation
- We've removed top barriers: cost, location, (time)
- Lack of awareness of the benefit?
- Audience survey (3 more questions)

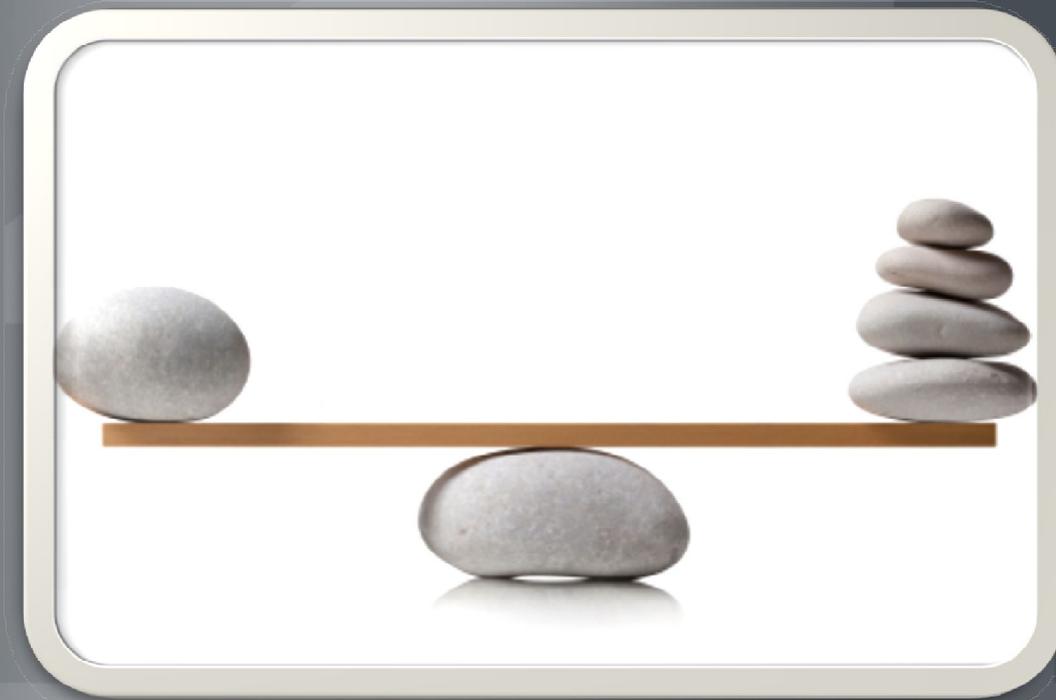


Exercise is hard!

What would it take for you to exercise at the recommended level?



How can we change the perceived value of exercising?





For millions of people!

# What can we do to increase participation in SilverSneakers?

- Leverage behavioral science
- Use technology
- Address challenges
  - CMS regulations
  - Multiple health plan partners

# Leverage behavioral science to increase participation

- What is the best positive reinforcer?
  - Non-monetary?
  - Donations to charity?
  - Coupons and discounts?
  - Financial? How much?
  - What would it take for you to go to the gym?
- What is the best reinforcement schedule?
  - To get behavior started?
  - To maintain it? (Slow extinction?)

# Summary

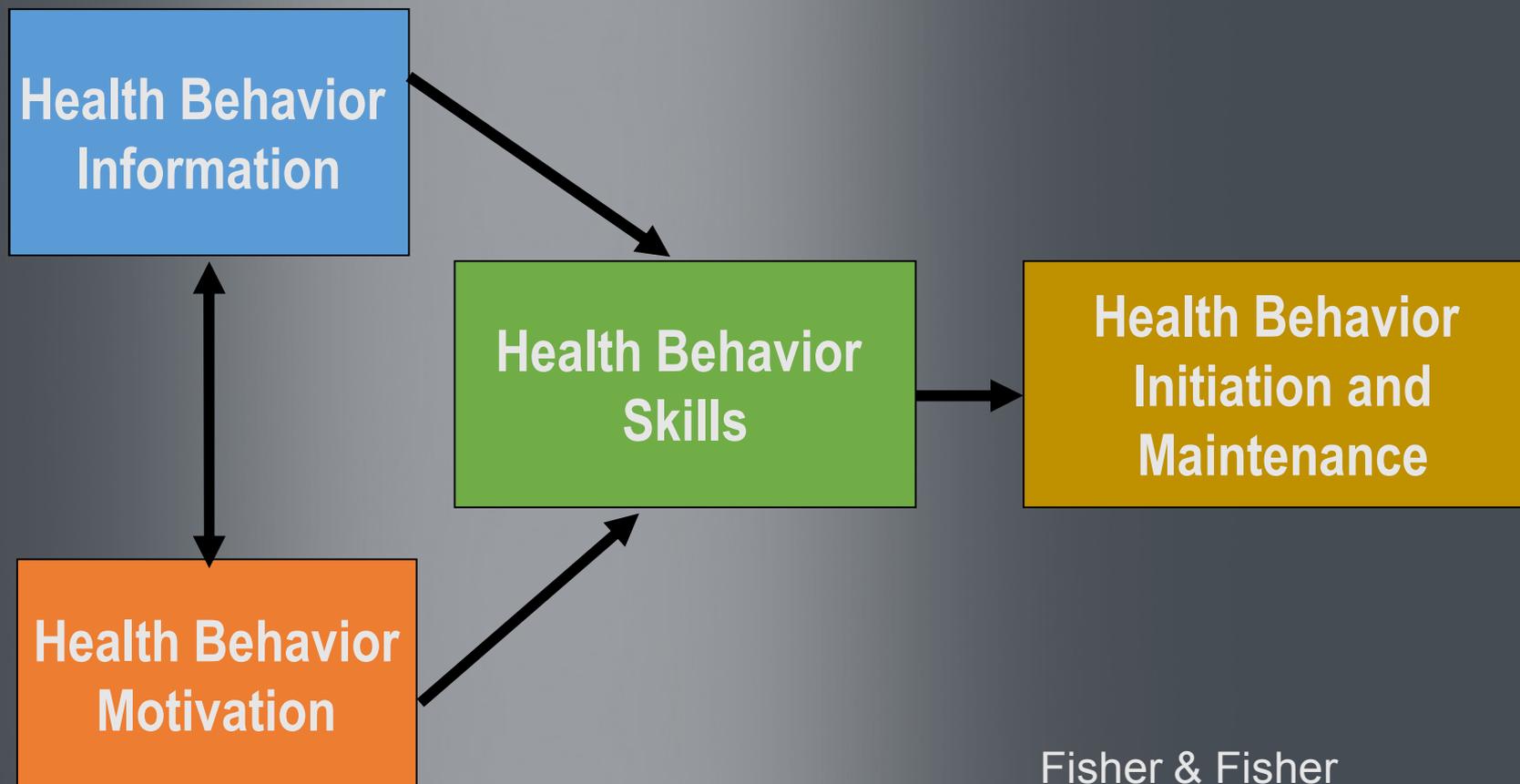
How to integrate behavioral science into the SilverSneakers Fitness program to improve the health of older adults:

- **Get a blueprint:** select a theoretically and empirically supported model to build scalable interventions
  - Learning theory (reinforcement)
- **Build a functional house:** translate the theory into operations: services, programs, interventions, and communications to increase participation
- **Share the rationale:** exercise is a health behavior, we know how to change behavior, technology helps us do this for millions

Thank you!

# Blueprint

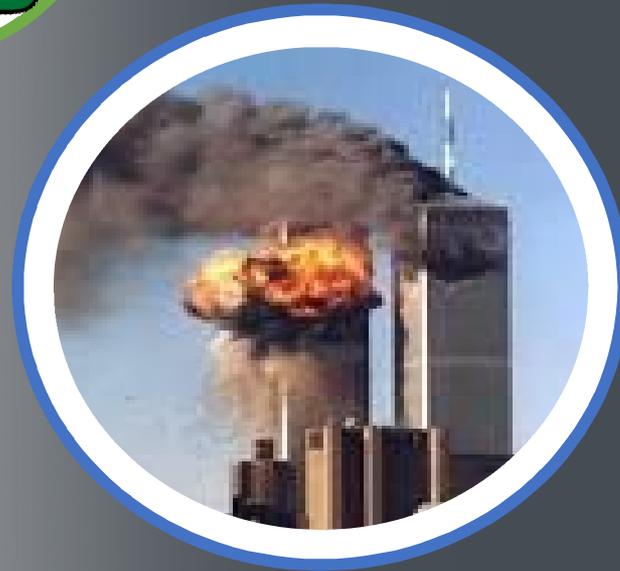
## Information Motivation Behavioral Skills (IMB) Model for Health Behavior



Fisher & Fisher  
(1992/2003)

# Empirical Support for IMB Model

- HIV prevention
- Injection drug use
- Adherence to medication regimens
- Adherence to rehabilitation regimen
- Adherence to trial medications in drug studies
- Adherence to exercise
- Initiation and engagement in medical care
- Training circumcision practitioners
- Obesity prevention
- Diabetes self-management



# Effective interventions for exercise

- Enhance self-efficacy/exercise with:
  - Specific action planning
  - Instruction
  - Reinforcement
  - Social comparison
- Lower self-efficacy/exercise with:
  - Relapse prevention/barrier identification
  - Graded tasks (in early stages)

(Williams & French, 2011)