

NewCourtland Center  
for Transitions and Health

UNIVERSITY of PENNSYLVANIA  
SCHOOL of NURSING



## ***Tiempo Juntos por Nuestra Salud (Time Together for Our Health)***

**A Physical Activity Intervention to Promote Cognitive Health,  
Cardiovascular Health and Sleep in Older Latinos with MCI**

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1

# Disclosure Statement

*I have no relevant financial relationships to disclose.  
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2

## RESEARCH TEAM



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**Grant Source: National Institutes of Health, National Institute on Aging  
R01AG070351 (2021-2024)**

## RESEARCH TEAM



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**Grant Source: National Institutes of Health, National Institute on Aging  
R01AG070351 (2021-2024)**

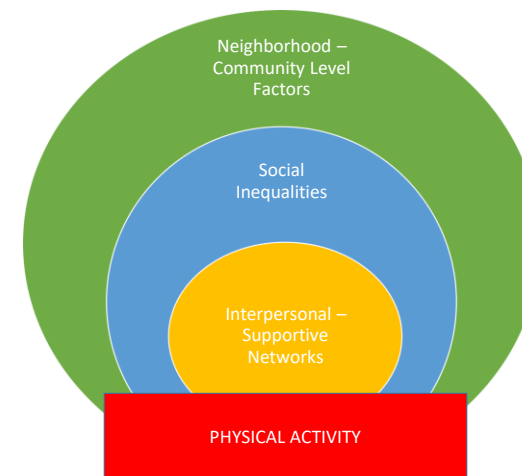
## BACKGROUND & SIGNIFICANCE



- **Physical inactivity:** public health priority for Hispanic/Latinx older adults with mild cognitive impairment (MCI)
  - Risk of developing AD and related dementias (ADRD)
  - Physical activity (PA): enhances cognition
    - Improves sleep
    - Reduces cardiovascular disease (CVD); affects neurocognitive function
- **Hispanic/Latinx community:** one of the most sedentary of older racial/ethnic groups; experience significant multi-level barriers to PA
  - Cost, environmental/neighborhood, safety concerns, lack of social networks
  - Few PA interventions are designed for older Latinos with MCI

5

## SOCIAL DETERMINANTS OF PHYSICAL ACTIVITY



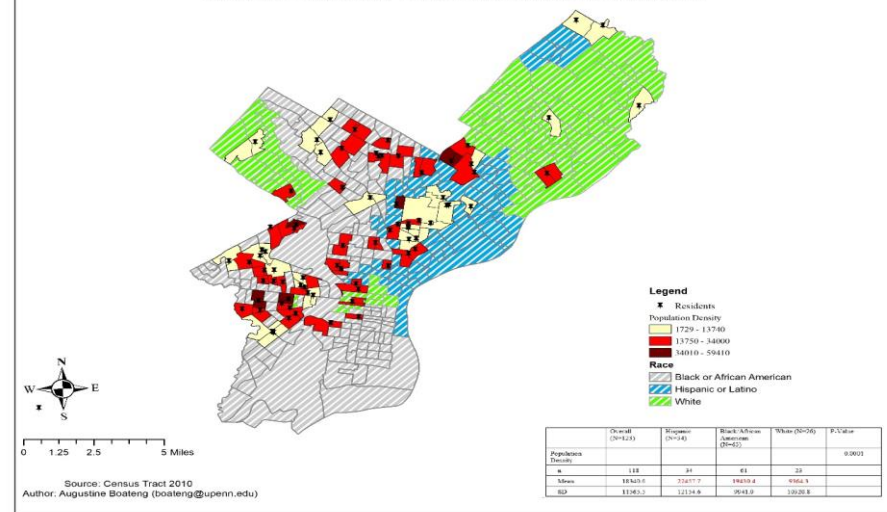
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## DATA DRIVEN COMMUNITY-BASED APPROACH

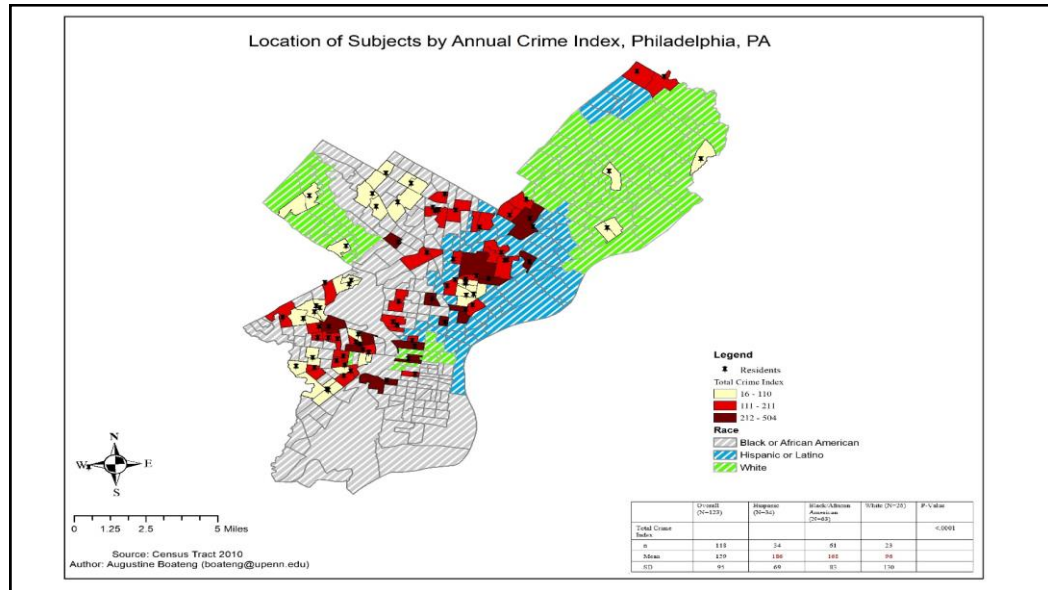
- Preliminary research in partnership with community organizations serving Latinx elders
  - Community-based focus groups
    - Memory & sleep health rated as important for Latinx elders and their families
    - High interest in research participation opportunities
    - Limited physical activity programs available in Spanish
    - Neighborhood safety concerns for walking
  - Geographic Information Systems (GIS) Mapping – community level factors
    - Low-income, low-resourced neighborhoods
    - Higher neighborhood-level crime rates compared to White, non-Latinx elders
    - However, distance to green space highlight opportunities to promote group walking

7

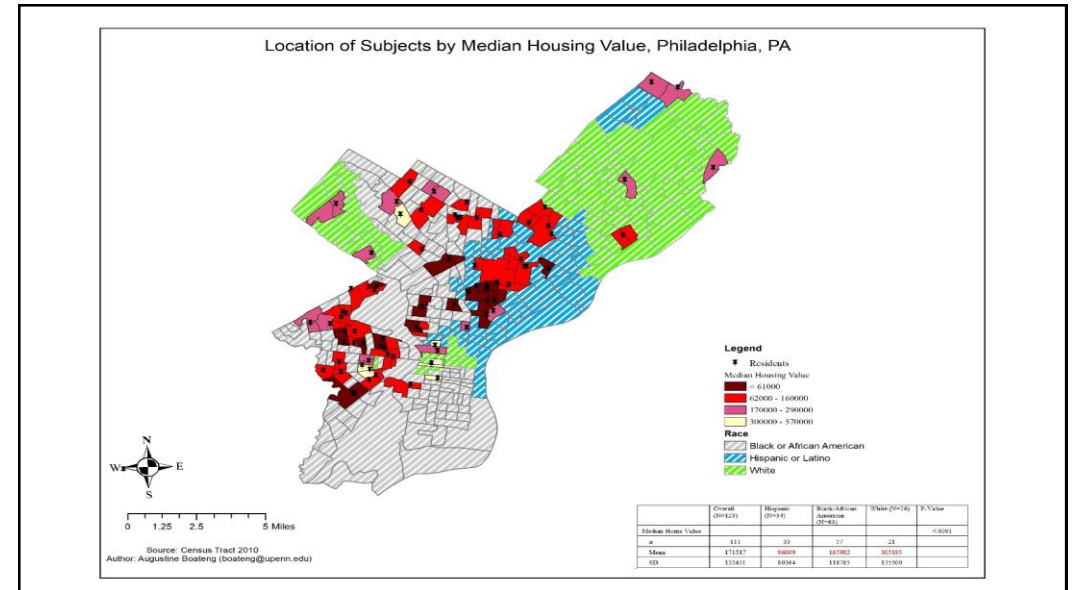
Location of Subjects by Population Density, Philadelphia, PA



8



9



10

# COMMUNITY-BASED PARTNERSHIPS

- **Tiempo Juntos Community Advisory Board**

- Co-Chair, Member Paid Honorarium

- **Esperanza Health Center**

- **Recruitment sites**

- Congreso de Latinos Unidos
- Catholic Housing & Community Services (Archdiocese of Philadelphia)
- HACE
- Mercy LIFE North Hancock
- Esperanza Health Center
- Senior Centers: (Aramingo Adult Day Center, Mann Older Adult Center, Norris Square Senior Community Center, Taller Puertorriqueño)
- Maria de Los Santos Health Center



## Tiempo Juntos Study Aims

Calculate intervention costs; compare to health care utilization (HRS)

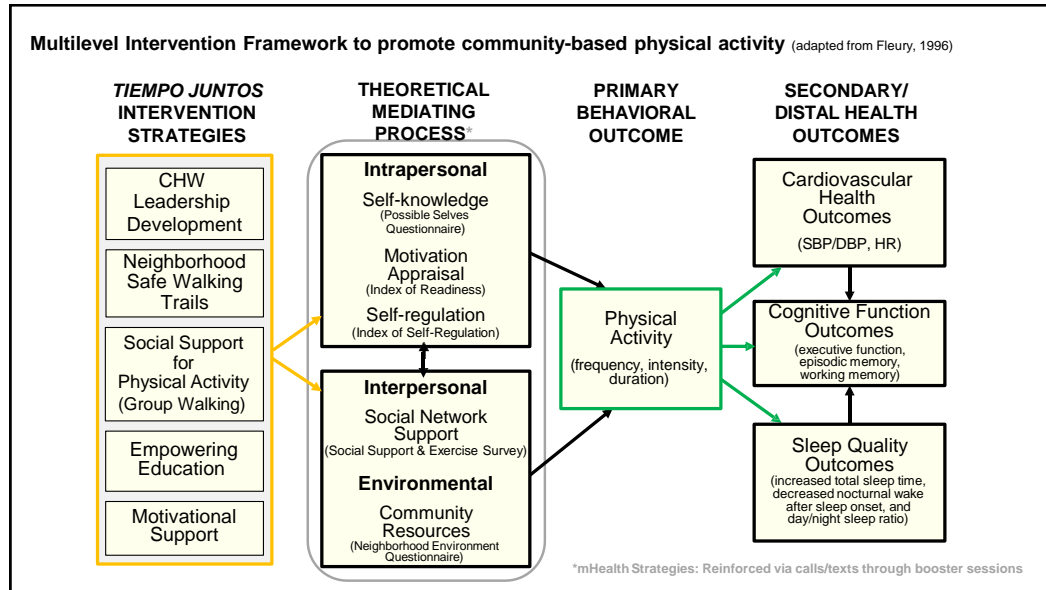
Effects on primary outcome (physical activity)



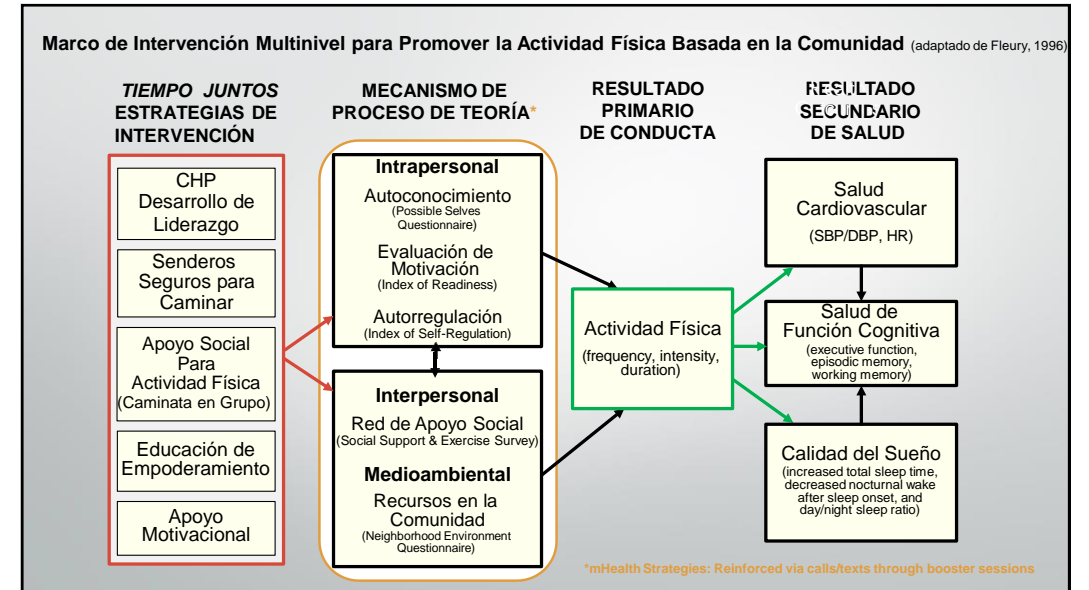
CV health and sleep quality effect on cognitive function

Effects on secondary outcomes (CV health, sleep and cognitive function)

Theoretical mediators effect on physical activity (self, others, environment)



13



14

## RESEARCH DESIGN OVERVIEW

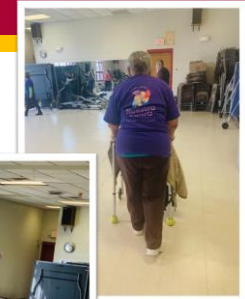
- Community-based, RCT
- (1:1) Group walking delivered 2X week for 3 months, followed by bi-weekly mHealth booster sessions for 3 months; or AC, health education group sessions topics adapted from NIA/preliminary research
- RMANOVA 12 months
- Between-participant treatment factor [intervention vs AC group]; within-participant time factors (individual differences at each time point)
- Primary & Secondary/Distal Health Outcomes assessed:
  - T1- baseline
  - T2- 3 months, post-intervention
  - T3- 6 months, post mHealth booster sessions
  - T4- 12 months post baseline



15

## 216 Participants (108 Per Group)

- **Inclusion criteria:**
  - $\geq 55$  years
  - Hispanic/Latino
  - Spanish as the primary language
  - Access to a phone (landline) or mobile device
  - **Vaccinated for COVID-19**
  - Do not have a problem that will prevent the participant from walking
  - Physical Activity Stage is less than 5
  - the MoCA score is  $\geq 16$  and  $< 25$  and/or CDR is 0.5 or 1
- **Exclusion criteria:**
  - Participants who do not meet any one of the inclusion criteria above



16



**Procedures**

- Recruitment/ Screening & Enrollment
- Exercise Assessment and Screening for You (EASY)
- Informed Consent
- Objective & Self-Report Measures (Family/Caregiver)
- \$50 Gift Card (T1-T4)

## Treatment Design

- Led by Community Health Promoters (*Promotores de Salud*)
- Tailored to the needs/capacity of each participant's goals/abilities
- Focus on "Individual Motivation"
- Social Support Network
- Embedding Technology (mHealth) for booster sessions
- Safe walking trails for older adults
- Building community resources to sustain physical activity

**Legend Latino Population Density by Census Tract**

|              |
|--------------|
| 0.1% - 20%   |
| 20.1% - 40%  |
| 40.1% - 60%  |
| 60.1% - 80%  |
| 80.1% - 100% |

Map by Caleb Dafilou

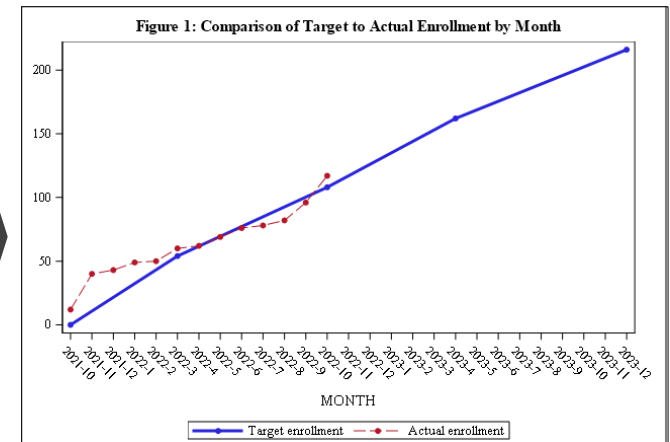
## Treatment Delivery

- Manualized procedures
  - Stretching Protocol
  - Wellness Motivation Framework Critical Inputs
- Delivery Methods (COVID-19)
  - 2X weekly group sessions
  - Use of motivational strategies
- Process evaluation forms
- Index of procedural consistency
- NIH Behavior Change Consortium recommendations for enhancing treatment fidelity

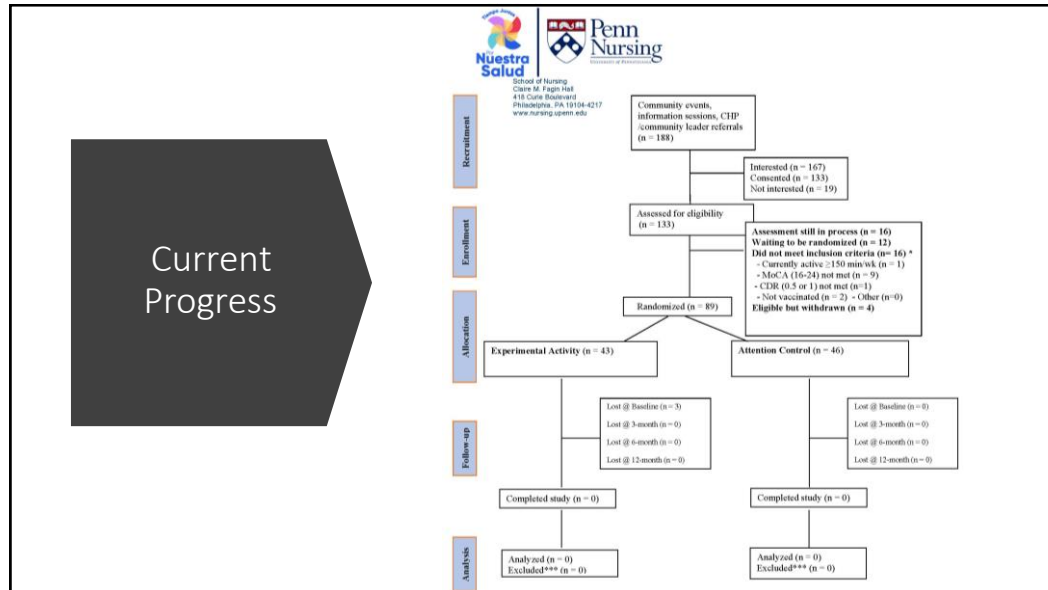


19

Current  
Progress



20



21

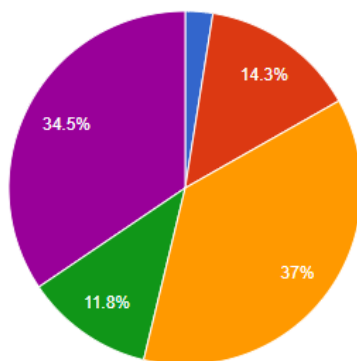
**Current Sample**

|  | Overall (N=89) | Education (N=46) | Activity (N=43) |
|--|----------------|------------------|-----------------|
| <b>Age</b>   |                |                  |                 |
| Mean (SD)  | 72.1 (7.67)    | 71.9 (8.19)      | 72.3 (7.18)     |
| Median   | 73.00          | 71.50            | 73.00           |
| Min, Max   | 56.00, 86.00   | 56.00, 86.00     | 57.00, 83.00    |
| <b>Marital Status</b>                                |                |                  |                 |
| Casada/o --- Married                                 | 17 ( 19.3%)    | 6 ( 13.0%)       | 11 ( 26.2%)     |
| Separada/o --- Separated                             | 9 ( 10.2%)     | 6 ( 13.0%)       | 3 ( 7.1%)       |
| Divorciada/o --- Divorced                            | 20 ( 22.7%)    | 11 ( 23.9%)      | 9 ( 21.4%)      |
| Viuda/o --- Widowed                                  | 32 ( 36.4%)    | 18 ( 39.1%)      | 14 ( 33.3%)     |
| Nunca Casada/o --- Never Married                     | 10 ( 11.4%)    | 5 ( 10.9%)       | 5 ( 11.9%)      |
| <b>Highest level of education completed</b>          |                |                  |                 |
| Did not finish high school                           | 54 (62.1%)     | 31 (68.9%)       | 23 (54.8%)      |
| High school graduate / GED                           | 15 (17.2%)     | 6 (13.3%)        | 9 (21.4%)       |
| Some college   | 10 (11.5%)     | 4 (8.9%)         | 6 (14.3%)       |
| College/University Degree (i.e., Bachelor's)         | 7 (8.0%)       | 4 (8.9%)         | 3 (7.1%)        |
| <b>Employment status</b>                             |                |                  |                 |
| Retirado --- Retired                                 | 57 (66.3%)     | 30 (66.7%)       | 27 (65.9%)      |
| Empleado a tiempo parcial --- Part-time employee     | 5 (5.8%)       | 5 (11.1%)        | 0               |
| Empleado a tiempo completo --- Employed full time    | 2 (2.3%)       | 0                | 2 (4.9%)        |
| Desempleado --- Unemployed                           | 9 (10.5%)      | 3 (6.7%)         | 6 (14.6%)       |
| No empleado --- Not employed                         | 13 (15.1%)     | 7 (15.6%)        | 6 (14.6%)       |
| <b>Household Monthly Income (Including SSI)</b>      |                |                  |                 |
| \$100 to \$499                                       | 4 (4.8%)       | 1 (2.2%)         | 3 (7.7%)        |
| \$500 to \$999                                       | 47 (56.0%)     | 23 (51.1%)       | 24 (61.5%)      |
| \$1,000 to \$1,499                                   | 20 (23.8%)     | 13 (28.9%)       | 7 (17.9%)       |
| \$1,500 to \$1,999                                   | 7 (8.3%)       | 7 (15.6%)        | 0               |
| \$2,000 o más --- or more                            | 6 (7.1%)       | 1 (2.2%)         | 5 (12.8%)       |
| <b>Ethnicity/Nationality</b>                         |                |                  |                 |
| Puertorriqueña/o --- Puerto Rican                    | 66 (76.7%)     | 35 (77.8%)       | 31 (75.6%)      |
| Dominicana/o --- Dominican Republic                  | 11 (12.8%)     | 6 (13.3%)        | 5 (12.2%)       |
| Colombiana/o --- Colombian                           | 3 (3.5%)       | 1 (2.2%)         | 2 (4.9%)        |
| Additional- (Argentina, Cuba, Ecuador, Panama, Peru) | 6 (7.0%)       | 3 (6.7%)         | 3 (7.3%)        |

22

## Participant Health Insurance Coverage

**Counts/frequency:** Basado en el empleo --- Employer-based (3, 2.5%), Privado --- Private (17, 14.3%), Medicare --- Medicare (44, 37.0%), Medicaid --- Medicaid (14, 11.8%), Doble elegibilidad --- Dual-eligible (41, 34.5%), Sin seguro --- Uninsured (0, 0.0%)



23

## Attention to Sociocultural Implications

Community Advisory Board ongoing review and recommendations

Community Health Promoter testing of procedures and ongoing input

Small pilot/group of participants tested procedures and provided critical feedback

- Sub-cultural and linguistic differences that impact assessments, including differences in education attainment and education systems in native countries
- Refine recruitment and retention procedures by considering diversity of religious preferences
  - Preparation and support for students, interns, scholars going out in the field
- Consider outreach to those isolated (not served/not aware of community partners/resources)
- Work with community partners to address potential barriers to participation (i.e. transportation)
- Embedding participant preferences for celebrating milestones

24

### Regional variations

Taking into account language and sub-cultural differences

| Country of origin  | Vegetable      | Fruit   |
|--------------------|----------------|---------|
| Dominican Republic | Plátano        | Guineo  |
| Mexico             | Plátano macho  | Plátano |
| Colombia           | Plátano        | Banano  |
| Puerto Rico        | Banana Plátano | Guineo  |

25

Counts/frequency: Protestant (4, 7.3%), Christian (8, 14.5%), Catholic (26, 47.3%), Jehovah's Witness (6, 10.9%), Muslim (0, 0.0%), Jewish (0, 0.0%), Agnostic (0, 0.0%), Mormon (0, 0.0%), Buddhist (0, 0.0%), Indigenous (0, 0.0%), None (2, 3.6%), Other (9, 16.4%)

Religious Preferences

26

Diversity of  
Cultural  
Traditions

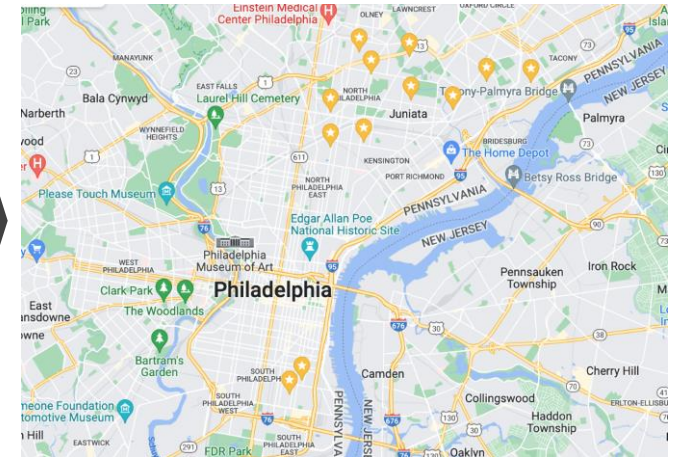


*¡Feliz Día de las Madres!*

Mayo 10 — Mexico, Guatemala, and El Salvador  
El segundo domingo de mayo — EE.UU, Brazil, Chile, Colombia, Cuba,  
Ecuador, Honduras, Peru, Puerto Rico, Uruguay, Venezuela  
Mayo 15 — Paraguay  
Mayo 27 — Bolivia  
El último domingo de mayo — La República Dominicana  
Mayo 30 — Nicaragua  
Agosto 15 — Costa Rica  
Octubre 17 — Argentina  
Diciembre 8 — Panamá

27

Social Media  
Pilot



28



## Opportunity for Mentoring an Inclusive Scientific Workforce

- Next generation of nurses, scientists who reflect the community
- Providing “real world” hands-on research experiences, acknowledging both challenges and strengths
- Opportunity to learn/conduct research focused on the needs, values & priorities of minoritized elders
  - Learning with faculty from community partners, leaders and participants themselves



29



30