

# IPUMS Time Use Data for Studying Health & Well-being Workshop PAA 2019

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Center (MPRC) & Maryland Time Use Lab



### Acknowledgements

 This project was made possible through funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, Grant No. R01-HD053654-12



### Objectives

- Develop familiarity with breadth and depth of IPUMS
   Time Use data
- Enhance awareness of appropriateness of American Time Use Survey (ATUS), American Heritage Time Use Study (AHTUS), and Multinational Time Use Study (MTUS) for specific research topics
- Learn about using IPUMS Time Use archives to analyze health & well-being
- Learn how to navigate the IPUMS Time Use web-based extract system
- Obtain hands-on experience using IPUMS Time Use





### Agenda

- 8-9:15
  - Overview of IPUMS Time Use
  - Selecting the appropriate IPUMS archive for your research topic
- 9:15-9:30
  - Break
- 9:30-10:30
  - Demonstration of creating custom extract
- 10:30-12:00
  - Self-guided workshop exercises
  - 1-on-1 consultation







### Introduction



### What is IPUMS anyway?

IPUMS provides census and survey data from around the world integrated across time and space. IPUMS integration and documentation makes it easy to study change, conduct comparative research, merge information across data types, and analyze individuals within family and community context. Data and services available free of charge.





### The IPUMS Model

- Access data and documentation via webbased data dissemination systems
- Choose years of data and variables you want and build a customized data extract
- Receive an email when your data are ready
- Download and analyze <u>microdata</u> in a statistics package!





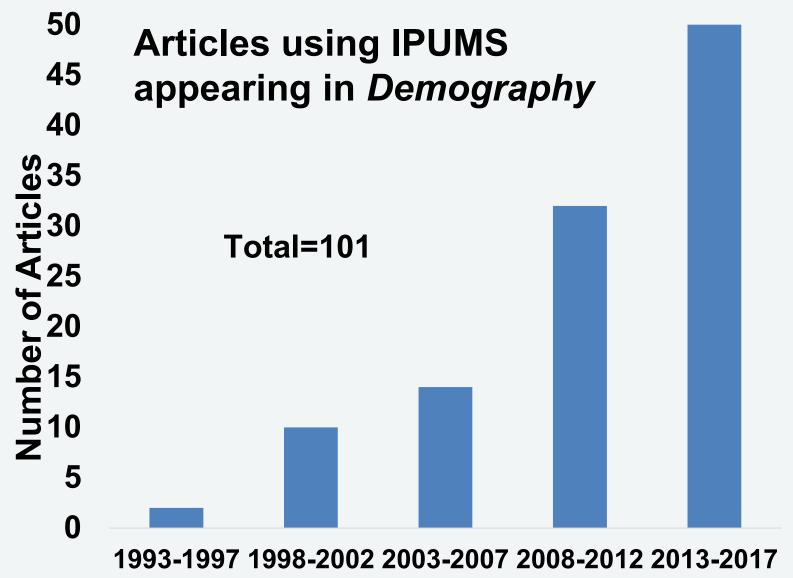
### 25 Years of IPUMS

• First IPUMS data released November 19, 1993

 US Census data from 1880, 1900, 1910, 1940, 1950, 1960, 1970, 1980, 1990







IPUMS.ORG



### **IPUMS Time Use**

- A middle-aged project
- The first really complex data available via IPUMS
- Year 12 of project supported by NICHD





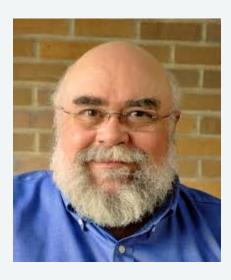
### **IPUMS Time Use Origins**



Katharine Abraham, UMD



Jonathan Gershuny, CTUR



Steve Ruggles, IPUMS





### **IPUMS Time Use Team**

University of Maryland & Maryland Population Research Center



Sandra Hofferth



Liana Sayer

University of Oxford & Centre for Time Use Research



Ewa Jarosz



Margarita Vega Rapun

University of Minnesota & Minnesota Population Center



Sarah Flood



Dan Backman





### What are time diary surveys?

- Structured narrative accounts of recent daily events
  - Usually 24 hour intervals
  - Episode level data on what people are doing, where, with whom
  - Recent expansion to how people feel about what they do (momentary affect), use of smart devices
- Suited to large sample surveys but retain properties of qualitative narratives
- Flexibly capture largely accurate activity reports



### Structure of Time Diary Data

START	STOP	ACTIVITY	LOCATION	WITH WHOM
4:00	6:00	Sleep	n/a	n/a
6:00	6:10	Personal Care	n/a	n/a
6:10	6:15	Dressing	Home	Alone
6:15	6:30	Eating Breakfast	Home	Spouse
6:30	6:45	Travel to Train Station	Car	Alone
6:45	6:55	Waiting for the Train	Train Station	Alone
6:55	7:30	Travel to Work	Train	Alone
7:30	10:00	Working	Work	Alone
10:00	11:00	Working	Work	Co-Workers
11:00	11:05	Personal Care	Work	n/a
11:05	12:00	Working	Work	Alone
12:00	12:10	Traveling to Restaurant	Walking	Co-Workers



## Part 1: Learn about the IPUMS Time Use Archives

ATUS, AHTUS, MTUS

IPUMS provides census and survey data from around the world integrated across time and space. IPUMS integration and documentation makes it easy to study change, conduct comparative research, merge information across data types, and analyse individuals within family and community context. Data and services evailable free of charge.



U.S. Census and American Community Survey microdata from 1850 to the present.

VISIT SITE



Current Population Survey microdate including basic monthly surveys and supplements from 1902 to the present.

VISIT SITE



Census microdata covering 82 countries from 1980 to the present. <u>IPUMS NAPP</u> offers microdata from the 19th and early 20th centuries.

VISIT SITE

#### RESEARCH AWARDS

Submissions for IPUMS Research Award are now closed.

ROWSE PREVIOUS AWARD
WINNERS

SUPPORT IPUMS ——
Your financial support helps us bring research data to you.

DONATE TODAY



Demographic and Health Surveys integrated for analysis across time and space from IPSO to the present.

VISIT SITE



Tabular U.S. Census data and GIS boundary files from 1790 to the present.

VISIT SITE



Integrated data on population and the environment from 1980 to the present.

VISIT SITE

#### — CALENDAR

APRIL 27, 2017

Population Association of America

Hilton Chicago

JUNE 25-27, 2017

Academy Health

Hyatt Regency, New Orleans, LA

JULY 16-21, 2017

61st ISI World Statistics Congress (WSC)

Marraketh, Morocco

VIEW MORE EVENTS

MPC

#### IPUMS TIME USE

Historical and contemporary time use data from 1985 to the present.

VISIT SITE



Health survey data from the National Health Interview Survey from the 1980s to the gresent.

VISIT SITE



Survey data on the science and engineering workforce in the U.S. from 1992 to the present.

VISIT SITE

http://www.ipums.org/



#### IPUMS.ORG | ATUS | AHTUS | MTUS













#### THREE RESOURCES TO STUDY TIME USE.

These projects provide free individual-level time use data for research purposes. The data extract systems make it easy to create data sets containing time use and other variables a user needs.

#### ATUS

AMERICAN TIME USE SURVEY
EXTRACT BUILDER

Annual American Time Use Survey (ATUS) data from 2003 forward.

**GET DATA** 

#### AHTUS

AMERICAN HERITAGE TIME USE STUDY EXTRACT BUILDER

Historical American time use data since 1965 harmonized for comparison over time, including the ATUS samples.

**GET DATA** 

#### MTUS

MULTINATIONAL TIME USE STUDY EXTRACT BUILDER

MTUS is a project dedicated to making it easy for researchers to use data from around the world

**GET DATA** 

SUPPORTED BY















### **Key Differences**

- Contents (countries, years of data)
- Variable coding
- Activity detail

- All data are publicly available for FREE
- We don't collect the data, but we make it easier to use and access, saving researchers time





### Why You Should Use IPUMS Time Use

- Lowers barriers to accessing time use data
- Simplifies use of complex time diary data
- Web-based documentation access
  - Dataset and variable-level documentation
  - Variable-level frequencies
- Consistently-coded data
- Customized data extracts
- Email helpline: <a href="mailto:ipums@umn.edu">ipums@umn.edu</a>





### Consistently-Coded Data

Definition of Harmonization from Businessdictionary.com:

Adjustment of differences and inconsistencies among different measurements, methods, procedures, schedules, specifications, or systems to make them uniform or mutually compatible.





### **Customized Data Extracts**

- Easily combine consistently-coded variables from multiple countries and years
- Include only the variables you need for your analysis
  - Sociodemographic characteristics of individuals and households
  - User-defined measures of time in specific activity aggregations (e.g. time use variables)
- Choice of multiple formats (SAS, STATA, SPSS)
- IPUMS saves extract definitions for easy revision





### Registration

- Required, but free and easy
- Can use same login for all IPUMS projects
- Allows you to create data extracts and access previously created extract definitions
- Allows us to demonstrate use of the data and get continued funding for this resource
- Data are free to use, but not to provide, help us out – CITE the data





### How to Cite the Data

 Sandra L. Hofferth, Sarah M. Flood, and Matthew Sobek. American Time Use Survey Data Extract Builder: Version 2.7 [dataset]. College Park, MD: University of Maryland and Minneapolis, MN: IPUMS, 2018.

https://doi.org/10.18128/D060.V2.7

- If possible, citations should also include the URL for the ATUS-X site: <a href="https://www.atusdata.org">https://www.atusdata.org</a>
- For link to citation, click <u>here</u>



#### HOME | SELECT DATA | MY DATA | FAQ | HELP











#### **PROJECT**

ABOUT ATUS-X

ABOUT ATUS

PARTNERS

REGISTRATION

#### DATA

BUILD AN EXTRACT

DOWNLOAD/REVISE EXTRACTS

TIME USE VARIABLES

#### DOCUMENTATION

SAMPLES

VARIABLES

LINK CPS

FAQ

REVISIONS

#### RESEARCH

CITATION AND USE

BIBLIOGRAPHY CT

PUBLICATIONS

TRAINING MATERIALS

#### **CONTACT US**

HELP

USER FORUM ☐

PROJECT STAFF

SUPPORT ATUS-X ☐

#### AMERICAN TIME USE SURVEY EXTRACT BUILDER

The ATUS is a nationally representative U.S. time diary survey for period since 2003. IPUMS Time Use harmonizes these data and provides a data extract builder that allows users to create custom time use variables and data extracts for analysis. ATUS-X is a collaboration of the Minnesota Population Center and the Maryland Population Research Center.

#### TIME IS OUR SCARCEST RESOURCE... USE IT WISELY!

CREATE AN EXTRACT

Get Data

OTHER TIME USE EXTRACT BUILDERS

AHTHS

MTUS

#### WHAT IS IPUMS?

IPUMS provides census and survey data from around the world integrated across time and space. IPUMS integration and documentation makes it easy to study change, conduct comparative research, merge information across data types, and analyze individuals within family and community context. Data and services available free of charge.

#### **NEW USERS**

CREATE AN ATUS-X ACCOUNT | NAVIGATING THE SITE

TIME USE NEWS



### ATUS - X

- www.atusdata.org
- Cross-sectional data from the American Time Use Survey from 2003 to the present
- Survey one person age 15+ per household
- Computer-assisted interview conducted by U.S.
   Census Bureau for the Bureau of Labor Statistics
- Annual data released in summer each year
- Occasional supplements with focused items:
  - Eating and Health, Well-Being, Leave





### **ATUS Time Diary Details**

- 24 hour time diary (4am-4am)
- 6 digit activity coding scheme (400+ activities identified)
- Co-presence of others
  - Who else was in the room with you?
- Location and mode of transportation
- Limited information on multitasking



### **ATUS Sampling Frame**

 People are selected from households that recently completed the monthly labor force survey—the Current Population Survey (CPS)

CPS Survey

ATUS Sample

2 to 5 months after the end of the CPS survey, selected individuals are interviewed for the ATUS survey

ATUS Survey

ATUS Survey

### **ATUS Sample Allocation**

- The ATUS sample is split evenly between weekdays and weekend days
  - ▶ 10 percent of designated persons are asked about a weekday
  - ▶ 25 percent of designated persons in the sample are asked about a Saturday, and 25 percent are asked about a Sunday

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25%	10%	10%	10%	10%	10%	25%

### **Example: Diary**

#### So let's begin. Yesterday, Monday, at 4:00 AM, what were you doing?

- Use the slash key (/) for recording separate/simultaneous activities.
- Do not use precodes for secondary activities.
- Sleeping
- 2. Grooming (self)
- 3. Watching TV
- 4. Working at main job
- 5. Working at other job
- 6. Preparing meals or snacks
- 7. Eating and drinking

- 8. Cleaning kitchen
- 9. Laundry
- 10. Grocery shopping
- 11. Attending religious service
- 12. Paying household bills
- 13. Caring for animals and pets

- 30. Don't know/Can't remember
- 31. Refusal/ None of your business





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#### **PROJECT**

ABOUT AHTUS-X

ABOUT AHTUS

PARTNERS

REGISTRATION

#### DATA

BUILD AN EXTRACT

DOWNLOAD/REVISE EXTRACTS

TIME USE VARIABLES

#### DOCUMENTATION

SAMPLES

VARIABLES

FAQ

REVISIONS

#### RESEARCH

CITATION AND USE BIBLIOGRAPHY

#### **CONTACT US**

HELP

USER FORUM **☐** 

PROJECT STAFF

SUPPORT AHTUS-X [2]

#### AMERICAN HERITAGE TIME USE STUDY EXTRACT BUILDER

The AHTUS is a harmonized collection of time diary data from the U.S. for the period 1965 to 2012. AHTUS-X is a data extract builder that allows users to create custom time use variables and data extracts for analysis. This project is a collaboration of the Minnesota Population Center, the Maryland Population Research Center and the Centre for Time Use Research.

#### TIME IS OUR SCARCEST RESOURCE... USE IT WISELY!

#### CREATE AN EXTRACT

Get Data

#### OTHER TIME USE EXTRACT BUILDERS -

ATUS

MTUS

#### WHAT IS IPUMS?

IPUMS provides census and survey data from around the world integrated across time and space. IPUMS integration and documentation makes it easy to study change, conduct comparative research, merge information across data types, and analyze individuals within family and community context. Data and services available free of charge.

#### **NEW USERS**

CREATE AN AHTUS-X ACCOUNT | NAVIGATING THE SITE

TIME USE NEWS



### **AHTUS-X**

- www.ahtusdata.org
- U.S. time diary data harmonized over time
- 1965-2012
- Partnership with the Centre for Time Use Research, UCL (<a href="https://www.timeuse.org/">https://www.timeuse.org/</a>)





### **AHTUS-X**

- 1965-1966 Multinational Comparative Time-Budget Research Project
- 1975 American's Use of Time: Time Use in Economic and Social Accounts
- 1985 American's Use of Time Project
- 1992-1994 National Human Activity Pattern Survey
- 1998-2001 Family Interaction, Social Capital, and Trends in Time Use Study and National Survey of Parents
- American Time Use Survey 2003-2012





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#### PROJECT

ABOUT MTUS-X

ABOUT MTUS

- PARTNERS -REGISTRATION

#### DATA

BUILD AN EXTRACT

DOWNLOAD/REVISE EXTRACTS

TIME USE VARIABLES

#### DOCUMENTATION

SAMPLES

SOURCE DOCUMENTS

VARIABLES

FAQ

REVISIONS

#### RESEARCH

CITATION AND USE

BIBLIOGRAPHY

TRAINING MATERIALS

#### MULTINATIONAL TIME USE STUDY EXTRACT BUILDER

MTUS is a collection of time diary data from a growing number of countries that are harmonized for compatibility across time and space. MTUS-X is a data extract builder that allows users to create custom time use variables and data extracts for analysis. This project is a collaboration of the Minnesota Population Center, the Maryland Population Research Center and the Centre for Time Use Research.

TIME IS OUR SCARCEST RESOURCE...USE IT WISELY!

#### CREATE AN EXTRACT

Get Data

OTHER TIME USE EXTRACT BUILDERS

ATUS

AHTUS

#### WHAT IS IPUMS?

IPUMS provides census and survey data from around the world integrated across time and space. IPUMS integration and documentation makes it easy to study change, conduct comparative research, merge information across data types, and analyze individuals within family and community context. Data and services available free of charge.



### MTUS-X

- www.mtusdata.org
- International data on time use harmonized over time and space
- Partnership with the Centre for Time Use Research, UCL (https://www.timeuse.org/)





### Centre for Time Use Research, UCL

- Identifies time use data sets
- Acquires data
- Harmonizes data
- Disseminates data in MTUS on the CTUR web site and via MTUS-X



### Currently Available via MTUS - X

- Austria
- Bulgaria
- Canada
- Finland
- France
- Hungary
- Israel

- Italy
- Netherlands
- Spain
- United Kingdom
- United States



#### Planned Additions to MTUS - X

- Brazil
- Germany
- India

- Mexico
- South Africa (2)- 2019
- South Korea (3)- 2019
- Turkey



#### MTUS-X Variety

- Some countries have multiple diary days per person (can investigate whether day is representative)
- Some countries have multiple respondents per household (can compare time use reports between household members)





#### What's not in the data?

- Attitudes
- Quality of relationships (e.g. parent-child, partners)
- Detail about activity beyond who, what, when, where







# QUESTIONS?



# Part 2: Select a Topic and Archive for Your Research

ATUS-X, AHTUS-X, MTUS-X



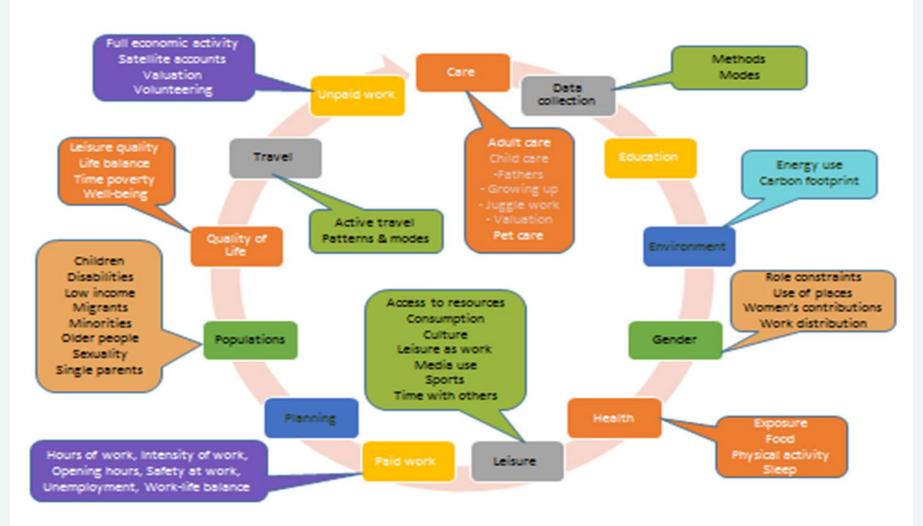
#### Assumptions of Time Diary Research

- Daily behavior the "sociological atom" of social research (Jonathan Gershuny, CTUR)
- All activities by all groups of people are worthy topics of research
- Comprehensive behavioral data essential to understand complex social issues
- Comprehensive behavioral data essential to understand policy influences on social change





#### Policy Applications of Time Use Research







# Selected Research Topics

- Leisure (trends, physical activity, quality)
- Sleep (hours per week, deprivation, trends)
- Health (associations with activities)
- Subjective well-being
- Eating
- Work-life Balance
- Paid work (hours of work, scheduling)
- Unpaid work (women's total economic contribution, hours, trends, sharing in households)
- Adult care (valuation, time cost, who performs care but does not identify as a carer)
- Child care (valuation, trends, participation of fathers, balance of physical/interactive care)
- Volunteering / civic engagement (valuation, trends)
- Education (homework, parental involvement)
- Environment (transport modes, time at home/inside)





# Most Common Use of Diary Data

Minutes per day spent in activities of interest

- Requires manipulation of diary data, which is complicated
- Our system lowers barriers by building variables that researchers define

We call them Time Use Variables





#### What is a time use variable?

- Number of minutes per day (0-1440) in specific activities
- Summarize time across the day based on
  - Primary and secondary activities
  - Location
  - Time of day
  - With others
- More restrictions = fewer people who will have done the activity given the constraints





#### Work Time Use Measures

- Paid work
  - Employment
  - Job commute?
  - Education related to work?
- Unpaid Work
  - Housework
  - Care Work
  - Volunteering?
- Can differentiate by when and where people work





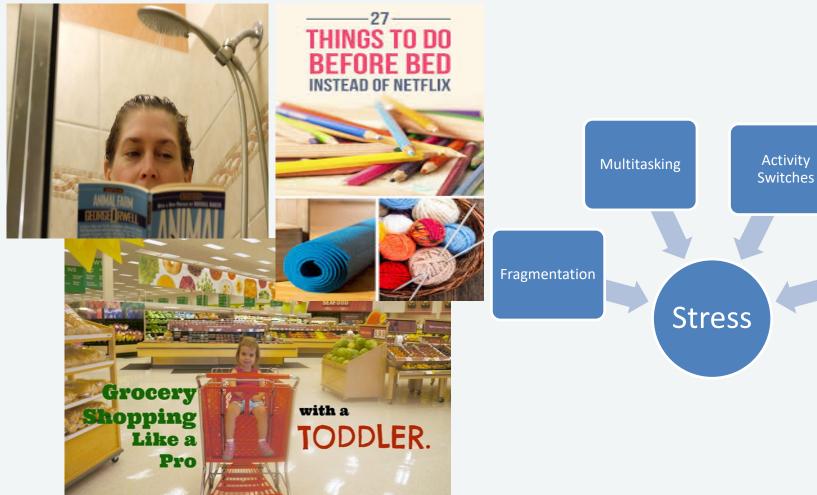
#### Leisure Measures

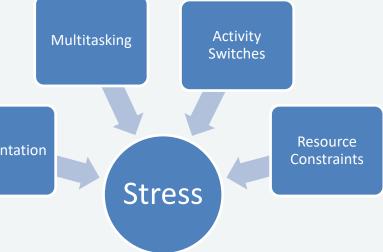
- Sports, exercise, recreation
  - Bicycling
  - Working out
  - Camping
- Socializing, relaxing, leisure
  - Parties
  - Games
  - Reading
  - Listening to music
  - Watching TV
- Leisure?
  - Leisure activity with children?
  - Eating with friends?
  - Working out?
- Can differentiate by when, where, and with whom





#### Leisure & Health





IPUMS.ORG



Leisure & Health Disparities

- Less total but more quality leisure for highly educated (Gershuny 2000; Sevilla, Gimenez-Nadal, & Gershuny, 2012; Sayer 2018)
- Cross-national variation determinants of leisure activity & context
  - Educational gradient in parenting practices (Altintas 2016; Pepin, Sayer, & Casper 2018; Craig & Mullan 2013; 2012);







#### Health Measures

- Physical activity
  - Exercise
  - Walking/Biking for transportation
- Sedentary activities
  - Watching television
- Social engagement
  - Time with others
  - Time alone





#### **IPUMS Time Use Archives Variation**

- Individual and Household Variables
- Time Diary Episodes



# Sampling Frames

#### ATUS

 One diary day from one individual age 15 or older selected from CPS household in ATUS

#### AHTUS

- One diary day from one individual aged 18 and older in AHTUS
- Subsample of 1975 data have diaries from spouses

#### MTUS

- Weekend and weekday diaries in some countries
- Diaries from all household members in some countries
- See <u>MTUS-X Sample Selection Page</u>





#### Health Related Variables

- ATUS
  - Self-Reported Health
  - Physical Activity in last 7 days
  - <u>Life Satisfaction & Momentary Affect</u>
  - MET Value
  - Disability
  - Time Diary Activities
- AHTUS
  - Disability
  - Time Diary Activities
- MTUS
  - General Health
  - Rushed
  - <u>Disability</u>
  - Time Diary Activities





# **Activity Classification System**

- 400+ codes in ATUS
- 98 codes in AHTUS
- 69 codes in MTUS



# Secondary Activity Data

- ATUS
  - Secondary Child Care
  - Secondary Eldercare
  - Secondary Eating & Drinking
- AHTUS
  - SEC
- MTUS
  - <u>SEC</u>



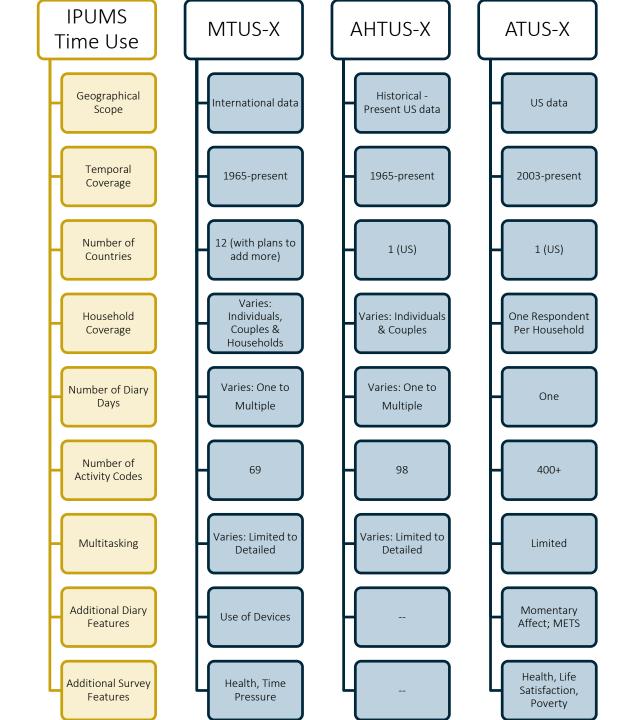


#### With Whom Data

- ATUS
  - WHO ASK
  - <u>Technical Who Variables</u> (hierarchical)
  - Create Own Time Use Variable (rectangular)
- AHTUS
  - Who else is present during activity
- MTUS
  - https://www.mtusdata.org/mtus-action/samples
  - Who else is present during activity



# Archive Decision Tree





#### More Health and Well-Being Opportunities

- Metabolic Equivalent Values assigned to activities (ATUS, eventually MTUS)
- ATUS Modules



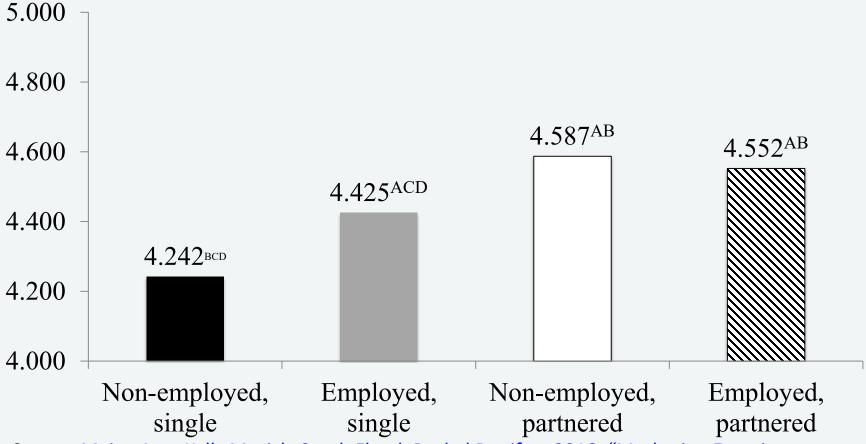
## Well-Being Module

- Fielded: 2010, 2012, 2013
- Funder: National Institute on Aging
- Topics: Momentary affect (3 activities), life satisfaction, health, pain medication, high blood pressure, well-rested
- Person and activity variables





#### Partnered Mothers Happier with Children



Source: Meier, Ann, Kelly Musick, Sarah Flood, Rachel Dunifon. 2016. "Mothering Experiences: How Single Parenthood and Employment Structure the Emotional Valence of Parenting."

Demography 53(3): 649-674.





#### Research Using Well-Being Module at PAA

#### **Thursday**

- 8:30 10:00 a.m., Lone Star B (Level 3), Paper Session 19
  - Gender Differences in Parents' Time With Children and Daily Emotional Well-being: Does Child's Gender Matter? by Negraia and Yavorsky

#### Friday

- 8:15 9:45 a.m., Brazos/206 (Level 2), Paper Session 122
  - Lonely Only Children? Companionship Patterns and Well-being Among Adolescents With and Without Siblings by Wikle, Ackert, and Jense
- 2:30 4:00 p.m., Griffin Hall (Level 2), Poster Session 9
  - Couple-Level Work Arrangements, Gender, and Subjective Wellbeing During Shared Time by Flood, Pepin, and Genadek





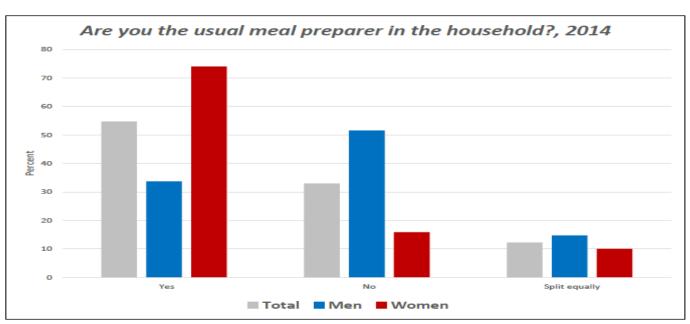
## Eating and Health Module

- Fielded: 2006-2008, 2014-2016
- Funder: US Department of Agriculture and Food and Nutrition Service
- Topics: Eating, food and nutrition assistance program participation, food safety, grocery shopping, meal preparation, health, exercise
- Person variables





#### Research Using Eating & Health Module



Note: Data are for individuals, age 18 and older.



Source: Hamrick, Karen, USDA, Presentation for UMD 2016 Time Use Conference, College Park, MD





#### Health Measures in EH Module

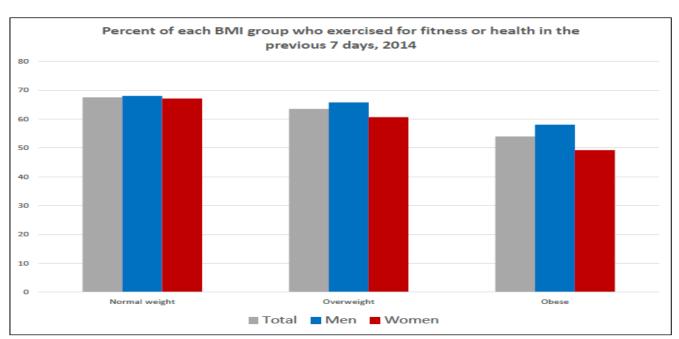
- General health: excellent, very good, good, fair, poor
- Height & weight
- Exercise:



During the past seven days, did you participate in any physical activities or exercises for fitness and health such as running, bicycling, working out in a gym, walking for exercise, or playing sports? How many times?



#### Research Using Eating & Health Module



Note: Data are for individuals, age 20 and older.



Source: Hamrick, Karen, USDA, Presentation for UMD 2016 Time Use Conference, College Park, MD





#### Research Using Eating and Health Module at PAA

- Thursday
  - 1:00 2:30 p.m., Meeting Room 305 (Level 3),
     Session 70
    - Unequal Parenthoods: How Poverty Shapes the Experience of Parenthood by Meier, Musick, and Flood



#### Leave Module

- Fielded: 2011, 2017, 2018
- Funder: US Department of Labor Women's Bureau
- Access to and use of paid and unpaid leave, job flexibility, work schedules
- Person variables





# More Research Using IPUMS

- IPUMS Bibliography
  - https://bibliography.ipums.org/
- IPUMS Research Award Winners
  - https://www.ipums.org/awardwinners.shtml







# QUESTIONS?



#### Part 3: Create a Custom Extract



#### Who to Include in Your Extract

- Respondents only (DEFAULT)
- Respondents and household members
- Respondents and non-respondents
- Respondents, non-respondents, and their household members





# Types of Data

#### Rectangular: Person (DEFAULT)

- Ready to analyze
- Person records ONLY
- Activity and Who record information is used to create time use variables you never actually see them

#### Rectangular: Activity

- Activity records ONLY
- Person and household information is attached to end of activity records
- Good for manipulating activity records, especially if who records aren't needed

#### Hierarchical

- Five record types
  - Household, Person, Activity, Who, Elder care recipient
- Select variables for each record type if you want them to be included
- More difficult to work with, but better for creating LOTS of time use variables that are only slightly different or are too complicated to do in the system
- Necessary for analyzing activity sequences



# Hierarchical Data: What they Look Like

```
H2006010106000102006
   P200601010600010200601001000338457485960707301060100000
   A2006010106000102006
   W2006010106000102006
   A2006010106000102006
   W2006010106000102006
   A2006010106000102006
   W2006010106000102006
  H2006010106001402006
   P200601010600140200601001000347906790572103302060100000
   A2006010106001402006
   W2006010106001402006
   A2006010106001402006
   W2006010106001402006
   A2006010106001402006
   W2006010106001402006
  P2006010106001402006030030000000000000000130199022
H2006010106003302006
   P200601010600330200601001000517444727416601902060100390
   A2006010106003302006
   W2006010106003302006
A2006010106003302006
→ W2006010106003302006
W2006010106003302006
   A2006010106003302006
   W2006010106003302006
```

# Rectangular Data: What they Look Like



#### Two Approaches to Working with Diary Data

#### 1. Hierarchical data

- Break the file into pieces by record type
- Manipulate pieces separately and merge together at the end

#### Rectangularized at activity level

- Manipulate a single file
- Keep only one activity record

RESULT: a person-level file with activity information summarized on person records





## **Engage Time Use Researchers**

- International Association of Time Use Research Annual Meeting
  - 2019 in Washington, DC, July 10-12
  - Abstracts
    - 250-350 words
    - Deadline: May 10
- Time Use Conference 2020
  - At the University of Maryland, College Park, MD
  - June 22 & 23, 2020

