Study Number	Title	Principal Investigators	Abstract
202106-62	Structural Racism and Biological Risk Factors for AD/ADRD among a National Cohort of Young Adults	Chantel Martin, Taylor Hargrove, Allison Aiello, Robert A. Hummer, Whitney Robinson, Carmen Gutierrez, Jessie Edwards,	The purpose of this ancillary application is to merge contextual data on structural racism to Add Health respondents; location of residence at Waves IV and V. We propose state-level, county-level, and Census-tract data linkages to describe Black-White inequities in (1) economic opportunity, (2) political context, and (3) the criminal justice system context. This contextual database will allow for innovative research that investigates how structural racism at various geographic levels influences health, behavior, social, and economic outcomes during young adulthood and the transition from young adulthood to the beginning of midlife. We will use these contextual measures to investigate the relationship between structural racism and risk for Alzheimer's Disease and Alzheimer's Related Dementias (AD/ADRD). Specifically, we aim to test whether various components of structural racism shape racial disparities in biological risk factors for AD/ADRD, including hypertension, type 2 diabetes, inflammation, and key biomarkers of AD/ADRD risk (e.g., tau, neurofilament light, DNA methylation markers implicated in AD/ADRD), when respondents are 33-43 years old. We also intend to use simulation models to compare the effects of hypothetical population-based policy changes and targeted interventions on racial inequalities in outcomes of AD/ADRD risk.
202406-14	How neighborhoods shape health from adolescence to adulthood: An examination of age-varying effects and change over time	Theresa Osypuk, Gresham Bria	A large body of predominantly cross-sectional research suggests adverse neighborhood conditions are linked to a variety of health difficulties across development (Richardson et al., 2015). Additionally, evidence has long demonstrated the critical importance of developmental timing for understanding the impact of environmental exposures. However, we have limited longitudinal research on neighborhood characteristics and later health outcomes. In the proposed Add Health activity, we will overcome limitations of the existing contextual data by merging five indicators and a composite variable of neighborhood concentrated disadvantage that are appropriate for longitudinal analysis (i.e., the data and geographic boundaries are normalized) to each wave of Add Health data. We will then use this data to investigate the role of developmental timing and the longitudinal, dynamic associations between neighborhood disadvantage and later depression and alcohol use. These findings will provide (1) insights into when neighborhood concentrated disadvantage is most strongly associated with depressive symptoms and binge drinking, (2) help identify youth most at risk, and (3) help explicate when early intervention and prevention efforts might be most impactful.
202401-02	Gentrification, Retail Environments, and Chronic Disease Risk	Sarah Halvorson-Fried, Jensen Todd, Ribisl Kurt	Evidence is emerging about associations between gentrification and health, but this research is limited by lack of longitudinal data. Studies to date mainly use cross-sectional or repeated cross-sectional designs, creating selection bias because 1) new residents are included in analyses and 2) original residents who stay in gentrifying neighborhoods may have more resources than those who move. Longitudinal research following original residents is needed to understand impacts on health and health equity. To address this important gap, we propose leveraging the nationally representative, longitudinal design of Add Health to examine differences in individuals' neighborhood environments, behaviors, and health outcomes among participants who experienced gentrification vs. those who did not. This study will link measures of gentrification that have been proposed for use in national public health studies for Waves 1, 3, 4, and 5 and food and tobacco retail environment measures derived from expert-informed protocols for Waves 3 and 4. We will then analyze associations between gentrification and changes in retail environments, health behaviors, social determinants of health, and chronic disease risk biomarkers. Future research can use linked data to examine associations between gentrification and additional social, behavioral, and health outcomes, as well as between retail access and these outcomes.
202304-26	Linking Incidents of Fatal and Non-Fatal Firearm Violence to the Add Health Study	Alexander Testa, Dylan Jackson, Cass Crifasi	Exposure to firearm violence has emerged as a critical public health issue in the United States. Increasingly, research suggests that direct or vicarious exposure to firearm violence affects individuals' mental and physical well-being. Across the United States, individuals are exposed to firearm violence in multiple ways, including fatal and non-fatal community-based shootings (i.e., citizen-on-citizen firearm violence) and fatal and non-fatal police-on-citizen shootings (i.e., police-on-citizen firearm violence). However, limited research has linked objective geospatial measures of firearm shootings to rich individual-level longitudinal data, precluding a fuller understanding of how these events impact Americans' mental and physical well-being. We propose the linkage of data on (1) community-based fatal and non-fatal firearm shootings at the census tract level from The American Violence Project and (2) longitude and latitude measures of police on citizen fatal and non-fatal injurious firearm shooting data from the Gun Violence Achieve to Wave V of the National Longitudinal Study of Adolescent to Adult Health (Add Health). By merging these datasets, we will gain a unique opportunity to comprehensively investigate the health implications of multiple forms of exposure to firearm violence on a diverse cohort of individuals.

202302-17	Add Health Birth Records Database (Release 2)	Robert Hummer, Harris Kathie, Aiello Allison, Eric Whitsel	In this project, we will add critical prenatal and perinatal data needed to accomplish the scientific goal of the Wave V Program Project—to understand the early life precursors of chronic disease—thus creating a major new resource for studying the life course consequences of maternal and infant health in a large, nationally representative cohort. Specifically, for each original Add Health respondent born in one of the six sampled states, we will obtain and link their birth records to the existing longitudinal data. The addition of birth records at Wave V will significantly enhance the value of the Add Health database, which currently spans four decades and three generations, by providing researchers with an unprecedented opportunity to examine the life course consequences of health status at birth. The specific aims of this project are: 1) Access restricted use birth record micro files in six states by meeting all state-specific requirements including, if necessary, obtaining the informed consent of respondents. 2) Locate and link the birth records of approximately 6,500 original Add Health respondents to the longitudinal database by applying probabilistic matching algorithms. 3) Analyze the quality of birth records, conduct reliability studies with the self-reported birth outcome measures, and summarize lessons learned from the linkage project to inform the larger scientific community.
202210-13	The Mental Health Consequences of Life Course-Varying Exposure to Structural Sexual Minority Stigma	Arjan Van Der Star	An expanding body of theory-driven research has consistently shown how factors related to sexual minority stigma, including structural, interpersonal, and intrapersonal factors, may drive sexual orientation-based mental health disparities. However, public health research has so far been unable to produce strong causal, longitudinal evidence on how structural forms of sexual minority stigma may jeopardize mental health outcomes among sexual minorities, including suicidal ideation, suicide attempts, or depressive symptoms, where 1) temporality, 2) a dose-response gradient, and 3) specificity of results have been lacking. Using Add Health data, this proposed study will 1) quantify the level of structural sexual minority stigma for each US state between 2001 and 2018 and calculate individuals' exposure over time, 2) examine the associations between structural sexual minority stigma and suicidal ideation, suicide attempts, and depressive symptoms in longitudinal models, and 3) examine if the associations between structural sexual minority stigma and mental health outcomes in longitudinal models vary by sexual orientation. The analysis will include advanced three-level multi-membership longitudinal models to examine three key aspects yet missing to facilitate causal inferencing regarding the mental health sequelae of structural sexual minority stigma exposure.
202201-12	Mapping Inequality: Historical Neighborhood Redlining in the United States	Bob Hummer DeAngelis Reed	The purpose of this ancillary study is to develop a contextual database that summarizes whether respondents live inside of or within close proximity to historically redlined neighborhoods at the time of their Wave I, III, IV, and V interviews. We propose linking historical redlining geodata with respondents' latitude and longitude coordinates at each wave. This contextual database will allow for innovative research into the long-term consequences of redlining for population health and socioeconomic outcomes. Researchers will be able to determine, first, whether marginalized racial-ethnic and socioeconomic groups are more likely than their advantaged peers to reside within historically redlined neighborhoods across the life course. By merging the redlining contextual database with other contextual, survey, and biomarker data in the Add Health study, researchers will also be able to test mechanisms linking historical redlining to individual health and socioeconomic outcomes over the life course.
202112-14	Contextual Despair and Risk Behaviors in Midlife: Extending Innovative Measures to Add Health	Lauren Gaydosh	Using the longitudinal and nationally representative National Longitudinal Study of Adolescent to Adult Health (Add Health), this project will conduct analyses to obtain a more comprehensive understanding of deaths of despair from a life-course perspective by achieving the following three aims: Aim 1: Construct social and built environment measures of despair (i.e., contextual despair) at census tract and county level. While Add Health already has many social environment covariates, they are not designed for research on deaths of despair. This project will create contextual despair measures that are substantively relevant to deaths of drug overdose, alcoholism, and suicide, such as density of firearm shops. Aim 2: Investigate whether the contextual despair measures are associated with individual risk behaviors that are precursors to deaths of despair. We hypothesize that individuals exposed to high levels of contextual despair measures tend to engage in risk behaviors that may lead to deaths of despair, such as illicit drug use and excessive alcohol consumption, prior to their middle adulthood. Aim 3: Investigate whether the contextual despair measures moderate the relationships between an individual's educational attainment and risk behaviors. We hypothesize that net of other individual differences, the relationships between individual educational attainment and risk behaviors are more profound among people exposed to high levels of contextual despair than their counterparts living in areas with low levels of contextual despair.
202012-59	Developing long-term air pollution exposure estimates for Add Health	Mercedes Bravo, Harris Mullan Kathie, Fang Fang, Dana Hancock, Eric Johnson	Exposure to ambient air pollution has well-documented adverse effects on human health, including cardiovascular and respiratory disease. Increasingly, evidence indicates that long-term, cumulative air pollution exposure is causally associated with elevated risk of mortality. Despite strong evidence of the negative effects of air pollution exposure on health outcomes, the underlying mechanisms are not well understood. The objective of the proposed ancillary study is to develop estimates of annual average air pollution exposure from the Fused Air Quality Surface using Downscaling (FAQSD) datasets, available 2002-2017, and attach these estimates to the Add Health cohort. Attaching multiple years of air pollution exposure data to the Add Health cohort will allow researchers using the Add Health dataset to investigate a new set of questions regarding the effects of cumulative and life stage exposures to ambient air pollution.

201907-57	Contextual Determinants of Sexual Minority Health in the United States	Kara Joyner, Wendy Manning, Krista Westrick-Payne	The purpose of this study is to produce and disseminate a contextual database that includes measures of structural support (or stigma) relevant to sexual minorities (a population typically defined on the basis of self-identification as gay, lesbian, or bisexual) for Waves 3, 4, and 5 of the National Longitudinal Study of Adolescent to Adult Health (Add Health). The database will enable researchers to identify factors driving disparities between sexual minorities and majorities in health and well-being with its addition of measures of social and legal support corresponding to the tract, county, and state levels before or around the time of Wave 3, 4, and 5. Most of these measures have been used in prior studies on sexual minority health and well-being based on other population-based surveys. The database will additionally include measures used in studies of racial/ethnic disparities to capture structural racism and it will update several existing contextual measures in Add Health (e.g., tract-level poverty).
201809-55	The Effect of Legal Challenges to School Desegregation on Health Disparities among Children and Young Adults	Rita Hamad, Daniel Collin, Akansha Batra	Educational disparities are thought to drive racial disparities in health. One possible explanation is that racial minorities often attend highly segregated low-quality schools. Yet racial segregation is a key school characteristic that is conspicuously absent from the education-health literature. The goal of this study is to contribute new knowledge to inform educational policies and interventions during childhood to reduce health disparities among racial minorities. Our hypothesis is that increased racial segregation leads to worsened health among children and young adults. We will employ correlational models and quasi-experimental techniques such as difference-in-differences analysis to examine the association between school segregation and health. We will take advantage of the geographic and/or temporal variation in the court decisions since 1990 that created a natural experiment resulting in "resegregation" of some school districts in the South. To do so, we will carry out both difference-in-differences as well as generalized synthetic control models. Geographic census block data in Add Health will allow us to link individuals with their assigned school district in order to examine the long-term effects of school segregation on health among children. They will also allow us to link in other Add Health contextual data (e.g., residential segregation measures at the census tract level) which will serve as covariates in our models.
201808-54	Community Violence as a Social Risk Factor for Cardiometabolic Diseases: Neighborhood Dynamics from Structures to Self	Elizabeth Tung, Monica Peek, Stacy Lindau	Community violence is an important social risk factor for cardiometabolic diseases. Community violence can increase risk for cardiometabolic diseases through pathophysiologic processes, such as stress or neuroendocrine responses, or by influencing health behaviors. However, the role of community violence across the life course, and specifically, how built and social environments can mediate or moderate its impact, remains poorly understood. In prior studies, I have shown that frequent and persistent exposure to violence may be a stronger predictor of cardiometabolic disease than isolated, life-threatening events. My central hypothesis is that community violence, when frequent and concentrated over time, can trigger stress-response pathways on both individual and neighborhood levels to augment risk for poor cardiometabolic outcomes. The overall objective of the proposed research is to determine the built and social environment characteristics that influence the relationship between community violence and cardiometabolic diseases across the life course.
201711-52	The geography of health inequalities	Lauren Gaydosh, Ken Krauter, Brian Finch, Kathleen Mullan Harris	The purpose of this ancillary application is to develop a contextual database that summarizes the socioeconomic, health, and mobility characteristics of the environments in which Add Health participants were living at the time of their Wave I and Wave IV interviews (Wave V pending). We propose county-level data linkages to describe (1) levels of and trends in chronic disease (hypertension, type-2 diabetes) and health risk behaviors (obesity, smoking, alcohol use); and (2) economic opportunity and inequality. This contextual database will allow for innovative research that investigates how place influences health, behavior, and social outcomes during the transition from adolescence to adulthood. It will also enhance studies of the determinants and sequelae of socio-geographic mobility. Specifically, we aim to characterize the socio-geographic and health-geographic mobility of Add Health participants from Wave I to Waves IV and V. We then aim to test if socio-geographic and health-geographic mobility predict socioeconomic and health outcomes across the transition to adulthood.
201709-51	Understanding the role of subsideized housing on adverse childhood experiences (ACEs) and chronic disease incidence	William Rohe	This project investigates the relationships among living in HUD-assisted housing as a child, exposure to adverse childhood experiences (ACEs), and chronic disease incidence later in life. Both ACEs and chronic diseases are significant public health concerns, and living in subsidized housing has the potential to reduce household expenditures and foster residential stability, resulting in lower household stress and improved physical health. However, the vast majority of subsidized housing residents live in stressful, chaotic neighborhoods – which could have a deleterious impact on their health. By matching HUD administrative data to the biometric data from Add Health, the project will be able to provide a unique and needed perspective on crucial public health and housing policy questions.
201707-49	Adolescent and adult lives of children of parents returning from prison - Additional variable to datafile stchr95	John Hagan, Holly Foster	Research in the era of mass incarceration is by necessity multi-dimensional: focusing on cross-national, national, state, and individual levels of analysis, while addressing macro- and micro-level issues, attending to both causes and consequences of incarceration, within and across generations. Although different scholars are associated with each of these dimensions of research on mass incarceration, the areas of work are logically interrelated. We build on research on the multi-level influences affecting children of incarcerated parents and the integrated framework we have developed regarding the influences of state punishment regimes along with parental imprisonment on Add Health respondents' life course outcomes. As per our earlier research, we are concerned with explaining the adult outcomes of inequality and exclusion among children of incarcerated parents, including earnings, employment, and financial strain. We will analyze the National Longitudinal Study of Adolescent and Adult Health (Waves 1-5). We propose to build on our work on 1995 state regimes with additional state indicators for 2013 (18 new state indices for 2013) to be used along with the Wave 5 data. Our main study objective is then to develop further the role of state policies and characteristics using a more recent data set for analysis with the Add Health data using hierarchical linear modeling techniques. We will now be addressing the influences of recent regimes for adult outcomes in Wave 5.

201706-48	Investigating the health profiles of socially mobile young adults	Lauren Gaydosh, Taylor Hargrove	The proposed project investigates biological mechanisms underlying the unequal benefits of social mobility. While a plethora of research has documented a robust socioeconomic gradient in health, growing evidence suggests that African Americans do not experience the same health benefits from upward mobility compared to their white peers. The mechanisms underlying this relationship, however, remain unclear, as well as the extent to which these patterns are evident among other groups in the US. Eliminating racial disparities in health requires that researchers and policymakers better understand why racial minorities do not enjoy the same health benefits of upward mobility as their white counterparts. This project proposes to address this need by conducting new assays (IL-6, IL-8, IL-10, TNF, and CMV) on the Add Health Wave IV archived dried blood spots to examine the role of inflammatory response and immune function among non-Hispanic white, non-Hispanic black, and Hispanic young adults. Examining how social factors impact biological functioning is imperative for understanding how the social environment differentially shapes biological risk factors for chronic and debilitating illnesses, as well as premature mortality, among population subgroups.
201702-47	The role of persistent infections and inflammation in cognition	Allison Aiello, Claire Yang, Daniel Belsky, Kathleen Mullan Harris	Advances in the biological sciences have identified key processes involved in the immune system that may play a role in cognitive decline and Alzheimer's Disease (AD). These studies have suggested that infectious and inflammatory processes may be a trigger for cognitive decline and AD. However, these bench science infectious markers have yet to be explored in relation to cognition in studies of young adult to mid life age individuals. We propose to address this research gap by leveraging stored biological samples on individuals who participated in Add Health and test them for infections and inflammation implicated in cognitive decline. We will also assess whether measures of socioeconomic position (SEP) are associated with infection and inflammation and whether these biomarkers mediate observed associations between SEP and cognition. The resulting infectious phenotype data—when linked with rich, longitudinal data on the social environment, stressors, and physical and cognitive health—will provide an unprecedented resource to the scientific community for testing hypotheses about bio-psychosocial pathways to cognition in the US population.
201701-46	Examining the role of incarceration on food insecurity and access to healthful foods - MRFEI	Andres Villarreal	The current study examines the impact of prior incarceration on food insecurity and access to healthful foods among former inmates and their households. This research uses data from two sources. First, information on prior incarceration and survey responses indicating food insecurity are obtained from Add Health to estimate the influence of incarceration on food insecurity. Second, geocoded data on census tract of residence from wave IV of Add Health is merged with the Center for Disease Control's Modified Food Retail Environment Index (mRFEI). The mRFEI provides census tract level data on both food deserts and the ratio of healthy to unhealthy food retailers in the 0.5 mile radius from the census tract boundary. This merged data is used to examine whether prior incarceration impacts access to healthful foods for former inmates and their households. Analysis is performed using multivariate regression and propensity score matching, both of which strategically compare former inmates to respondents who have been convicted of a crime but not incarcerated. This study will add to burgeoning literature investigating the consequences of incarceration for the health and well-being of former inmates.
201609-44	Dynamic complementarities in human capital investments and their long-run impacts	Rucker Johnson	This study analyzes the impacts of public school spending on outcomes during adolescence and adulthood, and examines interactive effects of school spending with childhood health insurance and racial segregation. The analysis will explore the effects of school finance reforms that caused dramatic changes to the structure of K-12 education spending. We will use the timing of the passage of court-mandated reforms and their associated type of funding formula change as exogenous shifters of school spending, and compare the outcomes of cohorts that were differentially exposed to school finance reforms. Previous work has identified large effects of these reforms on education and adult economic outcomes, but little is known about impacts on intermediate outcomes during adolescence and health outcomes, or the potential synergistic effects of public education and childhood health investments. We will analyze interactions between school spending and two public policies that affected Add-Health respondents during childhood: the expansion of Medicaid and the end of court-ordered desegregation. The project will therefore shed new light on how child poverty and concentrated neighborhood disadvantage interact and lead to inequality in economic and health outcomes in adulthood. The analysis builds on earlier work by Johnson using PSID data and by Wren-Lewis using Add-Health.
201603-42	Understanding the short and long-term effects of sleep on BMI in adolescents and young adults using an instrumental variables approach	Leslie Lytle	Background: Nearly one in three children in the U.S. aged 2-19 are overweight or obese. Observational studies suggest that insufficient sleep may increase risk of obesity. However, the causal effect of sleep on weight is difficult to determine because confounding variables can bias results even in longitudinal studies, and ethical concerns preclude randomizing individuals to prolonged sleep curtailment. Objective: To address these methodological limitations, this study will use an instrumental variables approach to estimate the causal impact of sleep on weight. Research Design: Individuals who live further west within a time zone experience a later sunset time. Because human circadian rhythms are influenced heavily by solar cues, these individuals also tend to go to sleep later, but may not be able to compensate by sleeping later the next morning due to school or work schedules, reducing total sleep duration. We will merge geocoded Add Health data with sunset time by location. Using two-stage instrumental variables estimators, we will exploit the exogenous variation in sleep duration to estimate the causal impact of sleep on BMI. Significance: If sleep is indeed causally related to obesity, existing obesity prevention strategies may benefit from expanding their focus to also target sleep.

201507-38	Sexual Orientation/Gender Identity, Socioeconomic Status, and Health across the Life Course	Carolyn Halpern	Socioeconomic status (SES) is a fundamental contributor to health and disease across the life course. Inequalities in health that disfavor sexual and gender minorities have been widely documented in both adolescence and adulthood. Despite the importance of SES to health, knowledge about factors that pattern these resources and strains across sexual and gender minority groups is incomplete, largely because of the absence of appropriate and high quality data, as well as study design limitations for data that do exist. In synchrony with the National Longitudinal Study of Adolescent to Adult Health (Add Health) Wave V program project design and activity, this proposed ancillary project will collect, clean, disseminate, and analyze new data from a subset of the Add Health cohort (sexual minorities, transgendered individuals, and a comparison sample of heterosexuals) via a theory-guided ancillary survey that will add information about formative experiences more specific to sexual orientation and gender development, and enhance existing prospective information about SES and determinants of SES. Based on Wave IV data we plan to recruit approximately2,200 self-identified sexual/gender minorities and a random comparison sample of 1,500 heterosexuals. The unique data collected via this project will provide an unprecedented opportunity for new and current Add Health users to prospectively study the intersections of sexual orientation, gender identity, socioeconomic factors, and health in a population-based sample across the life course at only marginal cost. Positioned within a life course framework and guided by Minority Stress Theory, we will also address three substantive analytical aims using the released ancillary data: 1) to describe the timing and sequence of theoretical milestones in the development of sexual orientation and gender identity; 2) to examine potential mediators (i.e., parent-child relationship quality and subsequent adolescent educational attainment and housing status) of the association between sexual orientation, gender identity, and young adult SES; and 3) to test a hypothesized pathway that economic strain heightens stress, which in turn elevates depressive symptoms. Findings made possible through these new data, in combination with existing longitudinal information about Add Health sample members, have the potential for critical impact on public health policy and intervention strategies to reduce the prevalence of and disparities in disease burden for the sexual and gender minority population.
201502-36	Creating a Sexual Minority Policy Contextual Database	Kara Joyner, Wendy Manning	The purpose of this study is to produce and disseminate a contextual data set that includes indicators of the policy context for sexual minorities (a population typically defined on the basis of co-residence with a same-sex partner or self-identification as gay, lesbian, or bisexual) in Wave III & IV of the National Longitudinal Study of Adolescent to Adult Health (Add Health). These data will enable us to demonstrate how state- and county-level policies in young adulthood are associated with a wide range of indicators of well-being among sexual minorities. The long-term plan is to prepare an application to append a suite of indicators to the upcoming (fifth) wave of the Add Health data.
201312-30	Racial Inequalities in Marriage Outcomes	Michael Rosenfeld, Maja Falcon	This study will adjudicate between the Sex Ratio Hypothesis and Standard of Marriage Hypothesis, by evaluating interest in marriage and transition to marriage for never married men and women in a longitudinal cohort study. Preliminary results that motivate this study show that black men and women's interest in marriage is comparable to their white peers, yet outcomes in marriage diverge. While equal numbers of blacks and whites wanted to be married at Wave 3, 57% of white men and 60% of white women who wanted to be married at Wave 3 married by Wave 4 whereas, only 30% of black men and 26% of black women who wanted to be married, did. The proposed study will test contextual sex ratios and personal and contextual disadvantages as explanations for lower transition to marriage among blacks. Using the proposed ancillary measures, as well as those already available in the Add Health data, this study will evaluate whether the Sex Ratio Hypothesis or Standard of Marriage Hypothesis are sufficient to explain racial inequalities in marriage and will consider other possible explanations.
201309-29	Study of Social Studies Coursetaking and Civic Engagement, Using the National Longitudinal Study of Adolescent Health	Krista Perreira, Kristina M. Patterson	The study uses the Classification of Secondary School Courses (CSSC) course codes, which are included in the Add Health transcript data collected at Wave III, to classify social science and humanities courses based on course content and instructional strategies that are expected to facilitate civic engagement. This study creates several variables for the Add Health database that will allow the empirical study of the relationship between social studies courses taken in high school and adult civic engagement, as well as the study of the individual and school characteristics that are related to high school social studies coursetaking patterns. Course categories will include: experiential learning; service learning; political skills development; social and political issues/problems of society; historically marginalized groups; American History; international studies; and government/political science/public policy. Course categories are broad enough to be meaningful to policy makers and curriculum specialists, as well as to protect the identity of Add Health respondents.
201201-23	Punishment Regimes and the Multi-Level Effects of Parental Imprisonment: Inter-institutional, Inter-generaltional, and Inter-sectional Models of Inequality and Exlusion	John Hagan, Holly Foster	Research in the era of mass incarceration is by necessity multi-dimensional: focusing on cross-national, national, state, and individual levels of analysis, while addressing macro- and micro-level issues, attending to both causes and consequences of incarceration, within and across generations. Although different scholars are associated with each of these dimensions of research on mass incarceration, the areas of work are logically interrelated. Indeed, the innovative premise of this proposal is that these areas of attention must be integrated into a more comprehensively unified research design. We begin by providing a theoretical overview that emphasizes punishment regimes and parental imprisonment as focal points for our life course based research design. Our research is concerned with explaining the early adult outcomes of inequality and exclusion among children of incarcerated parents, including earnings, employment, and financial strain. We will analyze the National Longitudinal Study of Adolescent Health. The Add Health sample is a historically unique cohort of parents and their children who were born during the peak growth years (the 1980s) of mass incarceration and surveyed four times during the continued expansion of American imprisonment. We propose to meet our study objectives by developing an expanded state data base for analysis with the Add Health data using hierarchical linear modeling techniques.

201112-22	Creating and Utilizing a Wave IV Contextual Database	Raymond Swisher, Karen Guzzo, Kelly Balistreri	The purpose of this study is to produce, disseminate, and utilize a contextual data set that includes a wide range of indicators of respondents' broader social contexts at Wave IV of the National Longitudinal Study of Adolescent Health (Add Health). When used in conjunction with the existing Add Health contextual data sets, a wave four contextual data set will enable Add Health researchers to examine, more dynamically, how a variety of contexts during adolescence, the transition to adulthood, and young adulthood are associated with health, well-being and socioeconomic attainments. We are also seeking funding to support our own research into how changing social contexts in the early life course (from adolescence to early adulthood) are associated with the successful achievement of adulthood (i.e., as indicated by markers such as stable family formation, stable employment, desistance from risk behaviors).
201108-20	Ambient Air Pollutant Exposures and Cardiovascular Health Effects among the National Longitudinal Study for Adolescent Health Cohort	Qingyu Meng, Jennifer Bryant Richmond, Eric Whitsel, Adel Hanna, Karin Yeatts, Amy Herring, William Welsh	The long-term goal of this research is to develop a method for explaining population-level health effects with the physico-chemical properties of ambient air pollutants, including particulate matter species and gases. The novel aspect of this work is that toxicological evidence of the mechanisms underlying adverse health effects of air pollutants will be accounted for in the epidemiological model. The specific aims of this project are (1) develop a database linking air pollution data from the National Longitudinal Study of Adolescent Health (Add Health) with the U.S. Environmental Protection Agency's Air Quality System, (2) construct toxicologically-based air pollutant groups, and (3) associate cardiovascular health effects with oxidative properties of air pollutants using epidemiological modeling. The Add Health cohort has been chosen for the analyses because it contains biometric parameters of cardiovascular health; it comprises young adults, an age group that has not been studied extensively and exhibits high rates of obesity (36%), hypertension (19%), and diabetes (5-15%); and, it has a progressive data-sharing policy. This project is highly policy-relevant; a recent review of 36 studies showed that exposure to air pollution has a population attributable risk fraction of 5-7% for myocardial infarction, on par with regular alcohol use and physical exertion.
201105-19	Healthy People and Healthy Neighborhoods: An Empirical Model of Weight Status for Young Asults in the U.S.	Penny Gordon-Larsen, Leonardo F. Morales	In our study we aim to measure the impact that built environment and other neighborhood characteristics have on the probability to become obese. In order to estimate an unbiased effect of neighborhood characteristics on weight, a behavioral model of weight status determination is enhanced by including a residential location decision model. The individual's residential decision is modeled as a discrete dynamic choice that individuals make subject to a set of restrictions. By include the residential location decision as part of a dynamic model of weight determination we will be able to correct the endogeneity bias that is a result of the fact that individuals can chose the neighborhood in which they want to live based on unobserved preferences about their health. In order to do this we need to collect contextual data describing neighborhood characteristics, and merge this new information with each one of the waves in the Add Health. Wave 1 and Wave 3 have unique contextual data already available; it is in Wave 4, where this contextual data is really needed. Nevertheless, given that the most reliable information that this study can use is census track level data, we would need to merge this information with all waves in order to make it consistent throughout all the collections of the Add Health.
200809-11	Gene-Environment Interactions with the Political Context	James Fowler	Our previous research with the Add Health data indicates that genes do help explain political behaviors such as voting, political participation, and strength of political ideology. This finding challenges the conventional wisdom in political science that the environment can entirely explain a person's political behavior. There are strong indications, however, that it is the interaction of genes and the environment that have the greatest impact on attitudes and behavior. The next critical step in evaluating the role of genes in political behavior is synthesizing the knowledge that genes matter with the rich literature on which components of the environment matter. In our proposed Ancillary Study, we seek to analyze the ways in which genes and the environment interact to contribute to political behavior. In order to complement the existing information in the Add Health study, we will collect data from publicly-available sources on the political and social environment to the census tract, county, or congressional district level in order to test for interactions between a respondent's genetic profile and the political context in which he or she lives.
200805-09	Social Demographic Moderation of Genome-wide Associations for Body Mass Among Adolescents and Young Adults	Matthew McQueen, Jason Boardman, Andrew Smolen, Sam H. Field, Kathleen Mullan Harris	Evidence from biometric and molecular studies indicates that genetic factors significantly influence body mass among humans. This has led to recent efforts to identify single nucleotide polymorphisms (SNPs) across to the entire human genome that are associated with adult and adolescent weight. However, all existing genome wide association (GWA) studies of body mass and obesity have focused on main genetic effects rather than interaction effects between genetic and environmental factors. This leads to gene-environment interaction (GxE) studies that focus on environmental factors that moderate genetic main effects. In the event that there are only genetic effects within particular environments (e.g., no main genetic effects), then current GWA models will overlook important genetic influences. Because body mass is strongly influenced by social environmental factors and because genetic associations for body mass are contingent upon social environmental influences, environmental risk (and protective) factors must be included in the conceptual understandings and methodological approaches to GWA. While GxE studies involving a single genetic variant are increasingly common, no existing work has specifically focused on genome-wide approaches to GxE. Our approach is a fundamentally new way of examining genetic influences on body mass that extends established GWA methods and draws upon established GxE theory.
200704-05	Exploration of SNPs associated with BMI - Wave IV GRS BMI	Matthew McQueen, Andrew Smolen, Merissa Ehringer	Reports of variants underlying body-mass index (BMI) have started to emerge. The goal of the proposed study is to genotype SNPs previously found to be associated with BMI to further characterize the age-dependent role of the variants.

200704-04	Whole Genome Association of Alcohol, Tobacco, and BMI	Matthew McQueen, Andrew Smolen, Brett Haberstick, Merissa Ehringer, John K. Hewett, Jason Boardman	There is mounting evidence from family, twin and adoption studies that a shared genetic component underlies the complex correlated alcohol-tobacco relationship. Highly ascertained studies, while in principle more powerful to detect genetic effects, may not be adequately positioned to (1) map genes underlying the aggregate alcohol-tobacco phenotype or (2) evaluate the role of environmental constructs in its genetic etiology. We proposed a family-based, whole-genome association study of the Add Health pairs sample, using measures of alcohol, tobacco and body-mass index as evaluated longitudinally. The well-characterized Add Health pairs sample is ideally positioned to address important substantive and methodological issues facing large-scale behavioral genetic studies in the post-genome era.
200610-03	Genetic and environmental influences on weight gain: Adolescence to adulthood	Penney Gordon-Larsen, Kari North, Linda Adair, Guo Guang, Karen Mohlke, Leslie Lange, Barry Popkin, Patrick Sullivan, Cindy Bulik	We will investigate how genes, environment, and gene-environment interactions influence temporal changes in BMI. We will leverage Framingham GWAS data to investigate interactions between genetic and environmental factors related to body mass. An initial panel of 50 SNPs will be genotyped across respondents with measured height and weight at two time periods or more. A second set of genotyping will be determined after the first wave of genotyping is complete. The following was proposed: SNP selection based on: 1) GWAS data from the Framingham, SNPs with greatest evidence for association with BMI level and change; and 2) literature-based candidates. In the first stage of genotyping, we proposed selecting approximately 7,300 SNPs for association testing in a subsample of the Add Health European-Americans. In a second stage, we proposed genotyping approximately 1,200 of the most strongly associated SNPs from stage 1 in the rest of the European, African, Hispanic, and Asian Americans. Given changes in timing and data release, the numbers of SNPs to be genotyped may differ from what was proposed. Environmental factors, behaviors and genes that predict BMI level and change will be identified, and gene by environment interactions will be assessed in statistical models predicting BMI over time.
200610-02	Obesity and Built Environment Dynamics: Adolescence to Adulthood	Penney Gordon-Larsen, Barry Popkin, David Guilkey	There is an increasing call for population-wide environmental/policy interventions to reduce and prevent obesity. This proposed longitudinal study will link contemporaneous geographic locations of respondents with diet-related (e.g., food shopping and eating options) and activity-related (e.g., recreation, community design) built environment variables to Add Health wave IV. We will capitalize upon our work developing the comparable, time-varying environment database for waves I, II, and III, providing an unprecedented opportunity to investigate across a major lifecycle period of risk, across four diverse racial/ethnic groups, and across a wide variety of environmental contexts to understand the impact of the built and social environment in shaping obesity. We will use complex longitudinal and spatial analytical models to explore relationships between the built and social environment and physical activity, diet, and obesity patterns. We will address residential self-selection (the conscious movement of individuals into diet- and activity-promoting neighborhoods), an issue of increasing concern as scholars attempt to understand how the environment affects health behaviors. We will examine race/ethnic differentials in these effects and the impact of the built environment shifts over time and through the lifecycle. Further, we will examine direct relationships between the built environment and the etiology of weight gain and incident obesity.
200600-09	Molecular Genetics and Behavior: Alcohol and Tobacco Use	Marissa Ehringer	Twin, adoption, and family studies have provided evidence that genes play an important role in alcohol and tobacco abuse. Moreover, epidemiological and biometrical genetics studies have shown that there is high comorbidity between alcohol and tobacco use, which may be due to overlapping genetic factors. Converging evidence from pharmacological research and the study of mouse models of alcohol- and tobacco-related phenotypes also supports the hypothesis that the same neurological pathways are activated by both substances. Recent evidence has implicated the neuronal nicotinic receptors (nAChRs) as critical targets of these drugs. Several nicotinic receptors are known to be involved in mediating the release of dopamine in response to alcohol and nicotine. These receptors (the alpha4-6 and beta2-3 subunits) may play an important role in regulating the dopaminergic reward pathway, which has been strongly implicated in contributing to the pleasurable feelings associated with substance use. This project seeks to examine the genes for the alpha4-6, beta2-3 nAChR subunits for their possible role in contributing to the development of alcohol and tobacco problem use. The candidate will examine these genes in a sample of sibling pairs for which DMA and phenotypic data have already been collected as a part of the National Longitudinal Study of Adolescent Health (Add Health). The candidate will utilize computational bioinformatics methods to identify potential functional single nucleotide polymorphisms (SNPs) within these genes in order to optimally select the SNPs and determine the genotypes of these in the subjects. Several statistical methods will be used to test for association and/or linkage with individual SNPs or haplotypes and alcohol or tobacco problem use. The skills to perform bioinformatics and statistical genetics will be developed through coursework, symposia, workshops, conferences, and consultations with mentors. Training will take place at the Institute for Behavioral Genetics, a unique environment where the candidate will have regular interactions with experts in behavior genetics and substance use disorders. This project will allow the candidate to achieve her short-term goals of learning computational bioinformatics methods, as well as advanced statistical genetics methods to analyze the data, while accumulating evidence that these genes may contribute to alcohol and tobacco problem use. It will also promote her long-term career goals of establishing an independent research career in behavior genetics of alcohol and tobacco use and provide a foundation for future studies.

200600-06	Wave III Education Data - Design and Implementation of the Adolescent Health and Academic Achievement Study	Chandra Muller	The Adolescent Health and Academic Achievement (AHAA) study provides an opportunity to examine the health behaviors and human relationships of adolescents in the 1990s with necessary attention to their education, one of the most defining aspects of adolescents' lives. It expands the National Longitudinal Study of Adolescent Health (Add Health) to include detailed measures of academic achievement and experiences by collecting transcripts for the Wave III Add Health sample members. The AHAA data provide indicators of (1) educational achievement, (2) course taking patterns on multiple levels, (3) curricular exposure, and (4) educational contexts within and between schools, all linked to the Add Health survey data. The 1990s was a period of widespread, decentralized school reform policy, including changes in curriculum, implementation of prevention and school safety programs, and attention to the needs of special populations. AHAA provides an opportunity to examine these policy initiatives and compare this period with the preceding and subsequent decades.
200600-05	Waves I and III Contextual and Build Environment Data	Penney Gordon-Larsen, Jay Steward	The Obesity and Environment database is a unique large scale Geographic Information System (GIS) that links community-level data to individual Add Health respondent residential locations in both space and time. Community-level data include density and proximity to recreational facilities, land use pattern, population, economic, climate, and crime statistics, which are linked spatially and temporally to individual-level Add Health behavior and health outcome data. The database provides physical, social, and economic environment measures corresponding with Add Health respondent locations in Wave I and Wave III for each Add Health respondent. These environment variables can be compared to individual-level characteristics and behaviors collected in Add Health interviews and surveys. The Obesity and Environment database was created in response to greater focus on environmental factors which may influence obesity and related behaviors such as physical activity and diet. While the data can be used for research questions involving economic, social, psychological, or other topics, the primary objective of the Obesity and Environment database was to provide environment measures well suited for obesity-related research, thus data relate primarily to obesity and obesity-related outcomes.
200600-04	Additional Genotypes - Wave III full sibs and twins	Brett Haberstick, Andrew Smolen, Jeff Lessem	
200600-03	Alcohol Outlet Density, Alcohol Use, and Intimate Partner Violence	Martha Waller, Freisthler, Bridget, M.J.Paschall	This Add Health data file measures the prevalence of alcohol outlets in respondent communities by reporting the tract-level density of establishments possessing on- and/or off-premise alcohol licenses. Alcohol outlet licensing data was gathered from individual states from September 2006 through June 2007. The physical address and the alcohol license category for each outlet were obtained when available. Data were successfully acquired from 43 states and the District of Columbia; 34 of these provided both on- and off-premise licensing data; eight provided aggregate outlet data; two states provided only aggregate data for select counties, while no data was obtained from seven states.