

Goals and Opportunities, 2002-2006

Demographic and Behavioral Sciences Branch

Center for Population Research

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Section I. Executive Summary

The Demographic and Behavioral Sciences Branch (DBSB) is one of three branches in the Center for Population Research (CPR) of the National Institute of Child Health and Human Development (NICHD). The mission of the Branch is to foster research on the processes that determine population size, growth, composition, and distribution, and on the determinants and consequences of those processes. Research supported by the Branch addresses the demographic processes of fertility, mortality, and migration, and their broad interrelationships with larger social, economic, and cultural processes.

In June 2001, the DBSB convened a two-day workshop to develop a research agenda that would help to guide Branch activities and priorities for the years 2002-2006. The Branch invited 25 eminent population scientists to identify those scientific areas and issues that offer the most significant opportunities for the future development of population research. Discussion at the workshop centered around 20 *Areas of Opportunity* for population research that had been identified by a planning group prior to the workshop. Participants discussed research directions and challenges in each of these areas and engaged in a priority-setting exercise to identify those areas most important for development. On the basis of the workshop discussions, staff of the DBSB developed a strategic plan for the Branch. Elements included two cross-cutting themes and five new areas of emphasis.

Cross-cutting themes:

- Continue to emphasize the development and cross-fertilization of theoretical and methodological approaches that contribute to population research.
- Promote the translation of research findings to make them accessible and useful to diverse audiences and to better integrate the insights from basic research into programs and practice.

New areas of emphasis:

- Support demographic, behavioral, and social science research on race and ethnicity, on social and economic inequalities, and on their intersections with immigration and other demographic phenomena.
- Support research on resource flows across generations and age groups, the mechanisms through which assets, values, and behaviors are transmitted across generations, and the impact of intergenerational flows on children, families, and society.
- Develop a comprehensive population perspective on children and child health by supporting research on the status, well-being, and health of children in diverse populations, and on the influence of families, communities, and policies on child health and well-being.

- Encourage basic research on sexuality and sexual behavior in relation to healthy development, the stability of family relationships, fertility, and the transmission of disease.
- Support population research at the aggregate level and develop theories and methods that unify macro- and micro-level processes in population research.

The plan also identified numerous ways in which ongoing Branch programs in several areas could be advanced. These areas included training, fertility and family, population movement and distribution, population and environment, mortality and health, and AIDS.

The DBSB will use this plan during the years 2002-2006, to formulate program priorities and develop new initiatives such as conferences, program announcements (PAs), and requests for applications (RFAs). This report describes the process the Branch used to develop the plan, summarizes discussion at the June workshop, and presents the strategic plan. The report also provides links to relevant materials posted on the World Wide Web, including statements on each of the *20 Areas of Opportunity* prepared by the workshop participants, and a report on DBSB Program Activities and Progress prepared by the Branch for the years 1995-2000.

Section II. Background

The DBSB is one of three branches in the CPR of the NICHD. The mission of the Branch is to foster research on the processes that determine population size, growth, composition and distribution, and on the determinants and consequences of those processes. Research supported by the Branch addresses the demographic processes of fertility, mortality, and migration, and their broad interrelationships with larger social, economic and cultural processes. Specific areas of research include fertility and family planning, HIV and sexually transmitted disease, family and household demography, mortality and health, and population composition, change, and movement. The Branch supports investigators in a broad set of disciplines, including sociology, economics, psychology, medicine, public health, and anthropology. In fiscal year 2001, the Branch awarded \$80.4 million in research, training, and infrastructure support for population research.

In June 2001, the DBSB convened a two-day workshop to develop a research agenda that would help to guide Branch activities and priorities for the years 2002-2006. The *DBSB 2001 Long-Range Planning Workshop* was the sixth in a series of such workshops held since 1980. Traditionally, the Branch has drawn on the findings of these workshops in formulating program priorities and developing new initiatives such as conferences, PAs and RFAs. Participants included 25 respected scientists working in diverse disciplines and substantive areas relevant to the Branch's mission. Participants were invited to help the Branch identify those scientific areas and issues that offer the most significant opportunities for the future development of population research.

Appendix I details the many steps involved in preparing for the *DBSB 2001 Long-Range Planning Workshop*. Some of the key benchmarks during the 15-month period of preparation included:

- A special session, *Visions of the Future: A Town Meeting on Future Directions in Population Research*, at the March 2000 annual meetings of the Population Association of America, in which representatives of the newest generation of scientists shared their ideas about future directions for population research;
- Development of a nine-person Planning Group, chaired by Dr. Ren Farley of the University of Michigan, which identified 20 *Areas of Opportunity* for population research to be discussed at the workshop; and
- Development of brief statements by workshop participants on important scientific opportunities within each of the 20 areas.

The Workshop was held June 25-26, 2001, in Rockville, Maryland. Section III of this report provides a brief summary of the discussion and a list of the highest-rated recommendations for research directions developed by the group at the end of the meeting. Appendices II and III provide the agenda and participant roster for the Workshop.

The Strategic Plan in Section IV of this report was developed by staff of the DBSB. The Branch's plan reflects not only the contributions of the Workshop participants, but also the Branch's consideration of its mission within the NICHD and the National Institutes of Health (NIH), overlap with other programs, and Institute priorities. Although Workshop participants provided comments that greatly improved the quality and focus of this report, the DBSB takes full responsibility for its contents.

Section III. The DBSB 2001 Long-Range Planning Workshop

At the Workshop, participants devoted the first one and one-half days to discussing the *Areas of Opportunity*. These discussions were based on the statements prepared by participants detailing important new directions for research, and on the outlines of recommendations prepared by the DBSB staff based on these statements. The first three parts of this section summarize highlights of the discussion of each *Area of Opportunity*. The fourth part summarizes results of a priority-setting exercise conducted during the afternoon of the second day.

Progress and Promise in Ongoing Areas

Fertility and family planning

There is a long history of demographic research on fertility and family planning. John Casterline, Jim McCarthy, and Jim Walker, in leading the discussion, suggested that much of the work that has been conducted in this area should continue on its trajectory, and they urged the DBSB to maintain its focus on integrating parenting and partnering.

They also recommended continuing support for research on unintended pregnancy, paying special attention to understanding the meanings of the terms “wanted,” “intended,” and “planned.” Much remains to be explored about the consequences of unintended pregnancy for the pregnant woman and her family—parents, siblings, and children. Familial impacts will vary depending on a mother’s age and her educational attainment. Research on the effect of timing on childbearing and outcomes also deserves more attention for older and younger women alike. Data sets such as the National Longitudinal Study of Adolescent Health (Add Health) are an important resource for studying the effects of adolescent reproductive behavior.

Use of contraception by adolescents and others should also receive continued support. Discussion leaders recommended that contraception research focus on uncovering barriers to use, including cultural factors, women’s power, and service delivery. Research is also needed on the use and success of infertility treatments. The nature and cost of such procedures selectively enable people with greater financial resources to have children later in life. This situation is just one example of how wealth and poverty affect fertility. Fertility differentials may, in turn, affect the distribution of wealth and poverty. Other understudied topics in the fertility and family planning literature include the effects of gender construction and gender stratification, culture, political forces, and race and ethnicity.

Male reproductive behavior is also often overlooked by social science researchers and deserves more attention. For all fertility and family planning research, there is a need for improved methods of measuring subjective phenomena.

Families and households

Sara McLanahan and Aletha Huston took the lead in discussing the future of research on families and households. They stressed that findings about the nature and impact of decisions made by members of the “traditional” American family have been valuable, and that testing theories framed in this context will continue to contribute to our understanding of the determinants of child health and well-being. However, they emphasized a need to widen family researchers’ focus beyond studying two-parent households where children are under the age of 18. In developing funding priorities for research, DBSB staff should consider how household structure, parental influence, and family member roles have evolved. For their part, researchers should think of these changes as opportunities, instead of as “complications” that limit the wide applicability of results. Meeting participants echoed these sentiments and suggested there is an immediate need for understanding the prevalence of, and variation within, new family types. Since, over time, a family’s “type” can change, participants urged placing emphasis on the study of changing structure, roles, and responsibilities in families impacted by divorce or death. There was interest in continued exploration of fathers’ roles in all kinds of families.

Another priority that emerged during the discussion was to develop research that will help policy makers understand how public policies, formulated with a given set of assumptions about behavior, interact with changing racial and cultural norms to possibly produce unintended consequences. Participants also stressed the need for panel data on households. They argued that being able to incorporate a dynamic component into studies could bring the field closer to understanding how the timing of family events, policy interventions, and economic crises differentially impact fertility decisions and options, family stability, educational investments, and parental involvement by altering life path trajectories. Other dynamic issues deserving attention included the aging of children, the changing abilities and needs of older family members, internal migration, and the transmission of attitudes, behaviors, and preferences from parents to offspring.

Well-being of children

Aletha Huston, Sara McLanahan, and Janet Currie discussed research opportunities related to the well-being of children. Panel members supported suggestions for increased study of the effects of circumstance, policy, and non-family institutions on child well-being. Huston, who led this discussion section, recommended that funding be granted for work investigating the processes linking family structure, family resources and resource distribution, family time use, parental relationships, and parental employment to child outcomes. She pointed out that these factors might have differential impacts on child well-being according to racial, ethnic, and socioeconomic characteristics. Effects of public policies and interventions should be examined routinely as part of the social context. Participants expressed particular interest in encouraging researchers to analyze the effects of child-support enforcement and public assistance. Non-family institutions such as schools, programs, and juvenile detention facilities are likely to have an effect on child well-being that has not been adequately investigated. A basic description of how time is spent in school and an understanding of school organization, stability, and resources would serve as useful tools for researchers looking at the influence of this environment.

Including dynamic components in future NIH-sponsored data collection efforts would make it possible to study the effects of parent/child relationships on children of different ages, and as family structures and parental employment situations change. Because research is driven by what data are available, the DBSB should develop a longitudinal birth cohort study and ensure that data are available to investigators. There was also a plea to study the information parents have and use in making decisions that affect their children, the many factors that influence information access and resources, and the consequences for child well-being.

Finally, there was a call for additional tests of the validity and reliability of measures of child well-being, including measures of physical and mental health used as outcomes and as influences on child well-being. From obesity to low birth weight, child nutritional status is impacted by parental decisions and environmental factors and has implications

for health in later life. Children with mental retardation are also a growing concern because of the effects on family life and suspected unmet health care needs.

Immigration and population movement

Charles Hirschman and Mary Waters noted a renewed interest in immigration as they led the discussion about the future of research on immigration and population movement. Panelists suggested that migration often comes into focus only when migrants are seen as a social problem. The discussion leaders recommended developing broad theories of migration or, lacking that, broad empirical generalizations, as well as developing a consensus on data needs (including data on explanatory variables). Suggested avenues included developing a macro-level approach (in the human ecology tradition), integrating migration research and urban studies, and integration of micro- and macro-level modeling. Panel members also suggested studying sending, as well as receiving populations, and studying the effect of migration on both sending and receiving areas. Pointing to the role that migrant selectivity plays in comparisons between migrant and non-migrant populations, panelists stressed the need for models that deal with selectivity. They also recommended that researchers study how immigration policies affect the racial/ethnic composition of neighborhoods, the residential patterns of legal and illegal immigrants, and the effects of settlement patterns in rural and urban areas. Because immigrant settlement and adaptation occur over life courses and generations, panel members agreed on the importance of collecting longitudinal data. They recommended the development of innovative strategies to study illegal migration because, for obvious reasons, less is understood about illegal aliens than legal immigrants.

Population and environment

Myron Gutmann, Barbara Entwisle, and Andrew Foster presented recommendations about research directions in population and the environment. The recommendations were organized under four headings: “old” areas to receive continued attention; established issues to attack with a new focus; new work to encourage; and methodological development. They recommended that the NICHD continue to support the developing branches of research that analyze the determinants and effects of land use. Although studies about land use in rural areas have been funded and have included studies of agricultural water use, there is also a need for studies of water use that include ground and coastal waters, as well as studies of urban land use. Management of common resources can be studied by combining data on village institutions and governance with household data. Although management of environmental resources has always been a concern, it should be re-conceptualized as a public goods issue, and research on the topic should incorporate a historical perspective. Researchers should consider not only the effects of environmental changes on the population, but also the effects of population changes on the environment. Decisions made by individuals about where to live cause urban sprawl, spatial mismatch of housing, industry, residential segregation, and environmental toxins. Population movement affects the environment, which, in turn, impacts the population—possibly disproportionately affecting the poor.

Research is also needed on the economic, physical, and environmental aspects of the social and demographic sustainability of communities. This research should go beyond scale dependency and the idea of a one-to-one correspondence. Methodological techniques used in this field of study should allow flexible frameworks—for instance, allowing researchers to incorporate relevant information on markets in other countries into models. Panel members recommended that work in this field should include interdisciplinary teams. They also recommended that analysis take place on many levels, integrating micro- and macro-level factors; that analysis include consider effects at the individual, family, and regional levels; and that models incorporate time.

Mortality and health

Ron Lee and Alberto Palloni urged a multi-level approach to research on mortality and health. At the level of biodemography, interest was expressed in discovering genetic markers for health risks and understanding environmental effects and interactions. There may be a lot that can be explained about health disparities by analyzing environmental impacts on gene expression and on neuro-physiological and hormonal responses, such as stress and allostatic load. The effects of events during the prenatal and early childhood periods of development on health status later in life are also important to study. Untangling the mechanisms that contribute to the observed relationship between socioeconomic status and health should be a priority, with special attention given to wealth/productivity factors. If policy makers were able to target interventions to particular stages of child development, they would be better able to improve health. To discover which stages of development are particularly crucial, researchers need multi-state, longitudinal studies with good data on health outcomes and links to macro-variables. There is also a need for models for forecasting mortality, health, and disability in different populations. To complete this research correctly, the effects of migrant selectivity must be accounted for, and the causal effects of differential health on socioeconomic inequality distinguished from the causal effects of socioeconomic status on health. Several major shifts were recommended for this field of research: away from studying chronic diseases, toward the study of emerging infectious diseases; away from studying developing countries, to studying developed countries; and away from access to care in rural areas, toward access to care in urban areas.

HIV/AIDS

Peggy Dolcini, Francis Doodoo, and Martina Morris pointed out that, although the magnitude of this epidemic warrants its own section heading, the scope of its impact also necessitates consideration of AIDS within other areas of social science research. Partnerships, children, parents, and communities are all affected by HIV and AIDS. The epidemic affects people both directly and indirectly through interactions in social and sexual networks, fertility, gender dynamics, culture, spirituality, and ethics. These same factors, along with migration patterns, contraceptive use, media outreach, and social institutions such as schools also affect the incidence and prevalence of AIDS. The fact

that AIDS attacks populations on multiple fronts makes targeting intervention and prevention particularly challenging. At the same time, it means that there is potential for researchers from a range of fields to work separately and collaboratively to discover multiple ways to minimize the damage to human life. Considering intervention research, panelists recommended that work be done with an individual, as well as a network focus. Prevention can be structural or behavioral, although the panel debated whether the distinction is necessary or useful. Communication among researchers, government agencies, schools, and the media is needed if new discoveries are to be beneficial. Although there is an immediate and urgent need to concentrate study on sub-Saharan Africa and U.S. minority populations, focusing only on high-risk populations will limit the understanding of AIDS-related behaviors. Longitudinal data will allow researchers to compare surveillance populations to general populations over time, a comparison necessary for validation of behavioral markers. Collecting longitudinal data will also allow for dynamic analysis and for the study of disease progression, sexual network formation, and migration, and their effects on the spread and treatment of AIDS.

Tools: Theories, Methods, and Training

Innovative methodologies

The presentation and discussion of priorities for innovative methodologies, led by Martina Morris, Joshua Goldstein, and James Walker, focused on three main aspects of this research: modeling systems, biomarkers, and data collection. Currently, the field of population research lacks adequate methods for modeling dynamic processes. Although panelists disagreed about the extent to which simulation models might be useful to this end, they agreed on the need for additional funding of research that links statistical estimation and dynamic modeling. There was also consensus about the need for causal models, models that can incorporate network analysis and path-dependence, and models that can be expanded to make use of information collected as biomarkers. The integration of biomarkers with social and contextual data in demographic research holds great promise for measuring sources of heterogeneity among individuals. However, there are many issues about confidentiality, privacy, and reporting of negative findings that need to be resolved when these data are collected. Supporting research on methods to assure anonymity without compromising data utility when disseminating data is also a priority. Panel members recommended that research efforts be devoted to finding an alternative to enclaves to accomplish this goal. Web-based interviewing offers many potential advantages for future data collection efforts, especially given the sensitive nature of so much DBSB-supported research. The future of innovative technology depends on how well innovative technologies are disseminated to other researchers, whether through detailed documentation or rigorous training.

Formal demography

Joshua Goldstein, Alberto Palloni, and Ron Lee began the discussion of formal demography by arguing that the field is alive and well. The panelists defended the field not only as an important “way of thought,” but also as an evolving set of models, theories, and statistical methods. They urged continued attention to training in this area. Innovations made by formal demographers in stochastic forecasting, diffusion models, and formal dynamics will be useful to those studying social effects, race and gender differentials, and other patterns of population dynamics. Other panel members argued that new simulation models, statistical methods, and social theory would not replace formal demography; rather, formal demography would interact with these new areas of cutting-edge population research in the future. For example, panelists saw synergies between formal and simulation analysis. Panelists remarked on the difficulty of obtaining NICHD funding for formal demography. In part, they speculated that this was a function of the inability to predict exactly how new formal models will be useful to the field. For example, although the results of innovations in formal demography such as tempo and quantum effects enable research on the dynamics of population waves that result from fertility and mortality declines, the actual results of funding formal demography are just the tempo and quantum effects models themselves, not necessarily new empirical findings. Another problem noted by panelists was the lack of readily accessible aggregate data, an important resource for formal demographic work and macro-level analysis.

Culture

Discussion leaders Jennifer Hirsch and John Casterline addressed ways in which researchers could advance the application of cultural constructs and theories in demographic studies. The concept of culture has been less studied in demography because it is considered “soft” and “not easily measured.” The term “culture” is often used simply as a synonym for race or ethnicity. At other times, culture has been treated as a label for the residual, or the variation left unexplained after controlling for everything else in a statistical model. Discussion leaders expressed a need for researchers to study culture as local meanings given to demographic behaviors. Researchers can accomplish this by becoming better listeners when working with research subjects and working comparatively, even if they do not adopt cultural theories. When theories of culture are employed, they should incorporate dynamic, historically variable, and non-homogeneous aspects of culture. Research should explore the role of culture at levels other than the individual: by integrating culture and social stratification research, researchers will be able to recognize interrelationships between local meanings, social structure, and social location. Demographers should also be encouraged to articulate and critique their own culturally constructed world views. This field is ripe for cross-fertilization of methods. Qualitative researchers trained in a broader range of data collection methods and demographers trained in qualitative methods will be better equipped to get at the heart of culture. Interaction between psychologists and sociologists would be especially productive because it is important for researchers to understand the

cognitive dimensions of the meanings that constitute culture. Knowledge, attitudes, preferences, and values all contribute to the definition of culture. Specification and improvement in the measurement of these phenomena should be a major research priority.

Biodemography

There is a thin membrane separating biology and demography. Discussion leaders Jane Menken and John Haaga asserted that, for this reason, the field of biodemography requires interdisciplinary communication and the forging of collaborations between researchers in different fields. To promote progress in this field, it is important to stimulate social science researchers to study phenomena prevalent enough to have population significance. It is equally necessary to provide support for mid-career training and summer institutes to facilitate cross-training in relevant disciplines, as well as workshops and conferences that explore biological mechanisms for demographic outcomes. Research that draws from evolutionary, economic, and social theories may provide new clues to understanding rapid fertility declines and may contribute to research on childrearing and marital stability. When studying how physical attributes influence social behavior, the field should not neglect equally important studies of the effects of social behavior on physical attributes. Examples of interdisciplinary research approaches that may contribute to advancing our understanding of the interconnections between biology and demographic behaviors include twin studies, molecular studies of the effects of multiple genes, and studies of complementary animal and human models. As the biological sciences progress quickly toward uncovering the genetic underpinnings of behavior, social scientists should be prepared to respond to the findings of gene-behavior links with appropriate (new) data from representative populations. This will mean supporting the development of new methods to gather biomarkers to supplement social surveys, and/or adding social and economic information to health surveys. Panel members cautioned, however, that demographers should not adopt the theories, techniques, and results of other fields of research without considering their methodological and theoretical basis.

Translational research

Discussion leaders James McCarthy, John Haaga, and Robert Michael focused on different ways in which the concept of translational research can be applied in population research. McCarthy urged the DBSB to increase its support for applied research that seeks not only to understand demographic processes, but also to change demographic behavior. He asked panel members to consider whether the DBSB should do this directly or through collaboration with other government agencies that have traditionally focused on applied research and service delivery. Haaga and Michael encouraged the staff to fund interdisciplinary research to inform policy and to foster the effective communication of research. They suggested that support is needed and can be useful at all steps of this process. First, researchers should be trained to understand which results are useful to

policy makers. The DBSB could encourage training programs to stress the importance of causation when linking science to policy. Second, scientists should recognize that the audience for the translation of their research includes scientists, the next generation of researchers, policy makers, and private decision-makers. Panel members recommended using funds to make demographic research more accessible to policy-makers and other non-technical users through journalists, the Web, presentations, interviews, and outreach activities. Third, the DBSB should encourage study sections to weigh the potential of empirical studies to provide information regarding causal relationships, and give priority to research grounded in theory that has the capacity to establish causal connections. Researchers may be encouraged to make effective communication of results a priority by requiring evidence that their work has an impact.

Training

Alberto Palloni, Jane Menken, and Joshua Goldstein led the discussion on training. They asserted that while demographic training should preserve and reinforce its core elements, training must also anticipate and adapt to the evolution of the field. Most panel members agreed that students should continue to receive a strong foundation in techniques and theories such as simple and multi-state life tables, population projection, and the relationship between rates and population. DBSB support and encouragement could prevent many of these standard courses from being dropped from demography programs. In addition, the core training of demography students should also include new opportunities to learn about the nature and applications of micro-simulation, as well as associated computer intensive algorithms, the nature and application of spatial statistics, and the nature and utility of a variety of study designs able to identify demographic processes. Training for demographers should also adapt to the opening of new research areas, and to the change and growth in methods and techniques used in established fields. In discussing the future of demographic training, panel members echoed the concerns of discussion leaders, who stressed the need not only for enhanced social science training, but also for conscientious interdisciplinary training. For example, the quality and applicability of demographers' health and mortality studies may be greatly enhanced if these researchers acquired elementary training in epidemiology and public health. Familiarity with economic theory and techniques should be encouraged in quantitative fields where that background would be useful.

Although the primary goal of demographic training programs is to train demographers to do research, students should also be taught to translate and disseminate their findings. In the past, training demographers with non-traditional backgrounds has enhanced demographic research, but put the trainees at a disadvantage in terms of their hiring prospects. Emphasizing areas that will lead to non-academic employment could increase options for demography students and increase demand for these degrees. Finally, innovative approaches to delivering training should be developed, including: offering short courses in topics not offered outside of a few centers, experimentation with formalized visiting student programs, and distance-learning opportunities. The summer offers valuable opportunities to provide students with additional course work,

apprenticeships, and mentoring. One possible model for this type of training is the summer training program offered by the Inter-University Consortium for Political and Social Research (ICPSR). To accomplish these goals, universities and faculty should be given incentives to develop opportunities for interdisciplinary research. In situations where subject areas do not interest a critical mass of students, the DBSB can help by using mechanisms to “fill in around the edges” and facilitating institutional courses.

Topical Areas to Explore or Expand

Race and ethnicity

Mary Waters, Francis Doodoo, and Charles Hirschman led the discussion of research on race and ethnicity. Research that identifies and examines fundamental concepts of race and ethnicity would not only provide a foundation for further research in this field, but would also provide useful information for researchers working on other topics. The more scientists understand about the effects of race and ethnicity on social processes, immigrant adaptation, institutions, and poverty, the more equipped social science researchers will be to disentangle the effects of race and ethnicity from the effects of other factors, such as class and immigrant status. It is also important to understand how individuals develop and report racial and ethnic identity. The panelists recommended that researchers compare how these concepts have been collected in surveys, how this collection has changed over the years, and how measurement technique, non-response, and under-enumeration affect interpretation of the data. Panelists asserted that continuation of this type of research is necessary to ensure unbiased results in studies of the effects of quotas, immigration, and discrimination on community outcomes. Keeping the needs of other fields in mind when discovering facts about race and ethnicity would also ensure maximum use of results. In particular, demographers studying race and ethnicity should consider the potential contributions of their research to studying the racial and ethnic composition of major institutions, integration/socialization in schools, interactions between race and peer groups, investments in children, health care, and the sets of opportunities offered to individuals. Some panel members suggested that demographers become familiar with the well-established labor economics research done on this topic, and take up studying discrimination where this literature leaves off.

Health disparities

Janet Currie and Andrew Foster, who led the discussion about the future of health disparities research, emphasized the need for an overall shift from descriptive research to research examining causal mechanisms. As discussed in the biodemography section, the key to bridging the gap between medical, epidemiological, and social science research is collecting data that improves our ability to model causal mechanisms. For example, integration of biomarkers in demographic studies permits more sophisticated models of the impact of the social environment on health. Researchers should be encouraged to evaluate policies aimed at reducing health disparities, looking at the effects of reducing

such disparities not only over the short-term, but also over the long-term. It is also important to include a dynamic perspective in this work. Panel members expressed particular interest in discovering the impact of different family structures and labor force behavior on health care. Household structure, social groupings, labor force behavior, and *in utero* exposure may all cause health disparities within groups with similar levels of insurance coverage and economic resources. Researchers looking at these concepts should pay particular attention to selection effects. Examining health disparities among racial/ethnic groups, geographic areas, and among individuals of different socioeconomic status may allow for identification of mechanisms that influence health both within and outside the United States. Research that explores the implications of moving to alternative schemes for providing subsidized health care for the poor in developing countries is timely as these countries move away from clinic-based models.

Intergenerational research

Ron Lee, Sara McLanahan, and Robert Michael served as discussion leaders on the topic of intergenerational research. The discussants recommended focusing research dollars on study of the nature, types, and effects of transfers that link generations. The term “intergenerational transfer” no longer implies a flow from the older to younger generations. The DBSB should encourage the development of theories that better explain changes in the patterns of intergenerational transfers—especially the trend of transfers from children to the elderly. This research agenda could include studies of the effects of changes in demographic behaviors on the elderly. Additionally, prospective studies should examine how families transmit values, attitudes, tastes, preferences, and expectations across generations, and how these intergenerational transmission patterns vary among different ethnic and cultural groups. Research is also needed on the ways in which family and cultural social contracts govern intergenerational relations, and thereby influence demographic processes and behaviors. Research questions to be addressed concerning the interrelationships between intergenerational processes and demographic outcomes include: how is intergenerational mobility influenced by public and private transfers? How is socioeconomic and geographic mobility influenced by family size, race/ethnicity, and income? How is the structure of mobility opportunities being changed by current trends in demographic behaviors and processes? Micro-level data on intergenerational relations among minority groups currently focuses on African American families; expanding data on other minority populations would allow for a greatly enhanced research agenda. The DBSB should also fund data collection projects that obtain individual level data on behavioral and attitudinal measures such as life expectations, family preferences, and intergenerational beliefs.

Social and economic inequality

Yu Xie and Ted Mouw led the discussion on directions for future research about social and economic inequality. They stressed the need to support basic research that describes recent changes and trends in social and economic inequality, with respect to income and

wealth, over time and across sub-groups. This descriptive research should also link current trends in inequality to recent changes in demographic processes and behaviors (e.g., changes in family structure, marriage, immigration, and fertility). The discussants also recommended that the DBSB fund research on the current causes and consequences of social and economic inequality, especially the effects of technological change and education on inequality. The differential effects of macro-level changes on ethnic and racial minority groups and recent immigrants also should be examined. The effects of inequality on health disparities and child well-being and development should receive special emphasis. Discussants recommended that the DBSB support innovative research projects that offer causal explanations for the statistical correlation between socioeconomic status and health outcomes. NIH-funded longitudinal micro-data files, which have become widely accessible, provide researchers with opportunities to examine how family income and individual-level behaviors influence health behaviors and differences in critical health outcomes across time. Longitudinal analyses will also be useful for determining which differences in child developmental outcomes are attributable to income inequality, and which are the result of behavioral and cognitive differences of low- and high-income parents. Lastly, participants agreed that demographic research on the current causes and consequences of social and economic inequality has important policy implications, and that this line of research should be a key focus at the DBSB.

Spatial demography

Barbara Entwisle, Myron Gutmann, and Ted Mouw led the discussion on spatial demography and spatial techniques in demographic research. Entwisle began with an overview of how spatial demographic research has contributed to the areas of neighborhood effects, stratification and segregation, population and the environment, and migration. The main issues that spatial demographic research needs to address include: (a) developing theory; (b) improving data accessibility and compatibility with spatial techniques; (c) maintaining privacy of geocoded data; and (d) fostering interdisciplinary research with investigators from other disciplines with extensive experience in spatial theory and spatial research techniques. The lead discussants urged the DBSB to fund empirical research to further develop theoretical and conceptual frameworks that bridge demography and spatial/geographic research. The role of spatial analysis in demography is unclear because of a lack of coherent theory. The DBSB can promote innovative research on spatial demography by funding research programs that enhance and integrate spatial information and geocoded data in existing databases. Similarly, greater funding should be allocated to researchers and population centers to develop, maintain, and ensure data confidentiality and to protect privacy of geocoded data. Funding for future research initiatives should also encourage interdisciplinary research on spatial demography. Geographers, human ecologists, economists, and psychologists have conducted empirical research on the effects of space on human ecology, the environment, and the meaning of space. This body of research can be a valuable starting point for future research on the impact of space and land use on demographic processes.

Technological change

Yu Xie and Jim Walker led the discussion on the topic of technological change and demographic research. This section was guided by two goals: (a) to initiate discussion about the impact of technological changes on demographic outcomes, as well as the influence of demographic processes on changes in technology; and (b) to discuss whether research on technology change and demography should be treated as a specific area of funded research, or if they should be embedded within other areas of research. Several questions were presented to stimulate discussion: how has the information revolution affected demographic outcomes? Does information technology affect social and economic inequalities and how? What are the implications of biomedical advances for fertility, health, and mortality; and how do these differ by socioeconomic status and access to information technology? Should there be a demography of genetic diseases? Will assisted reproductive technologies be used widely and what social implications would this use have? Evidence of reverse flows between technological development and demographic behavior was also discussed using the example of how the rise of the women's movement increased the demand for birth control. Others discussed how technological advances in drugs and pharmaceuticals continue to affect demographic behaviors, especially in developing countries. It was also noted that the NICHD's impact on the creation of contraceptive technologies is a strong example of how research on demographic behaviors and processes has impacted technology change. Others commented that long-term longitudinal research is needed to assess and examine the impact of technological changes on the demographic behaviors of mothers and children. On the issue of whether the DBSB should treat technological change as a special area of emphasis, the discussants noted that the National Science Foundation has an initiative on technological change that the NIH can join. Participants argued against placing technological change and demography in a special area of emphasis, noting that technology is contained within research on fertility, mortality, and other demographic topics.

Sexuality

Robert Michael, Jennifer Hirsch, and Peggy Dolcini led the discussion of sexuality, the final *Area of Opportunity* discussed at the meeting. They argued that, despite some excellent past research, there remains a lack of formal understanding about "healthy" human sexuality, particularly as it develops within different social and cultural contexts. There was discussion of the definition of "healthy sexuality," although no consensus was reached. The discussants recommended funding research that examines sexual development across the life course, drawing on psychological and social science theory to re-examine assumptions about sexual motives and development. A dynamic framework of study would allow investigation of family influence on sexual development. Panel data would also allow researchers to study the effects of social influences and dating marketplaces (which change over the life course) on sexual behavior and attitudes. Heterosexual partnerships should not be ignored, and researchers should include both adolescents and adults in their post-reproductive years. Non-sexual aspects of

relationships, bargaining, quality, and intimacy should also be explored. There was wide consensus about the need for both quantification and examination of sexual violence and abuse. In general, data about sexuality and sexual behaviors can be difficult to collect and sensitive to analyze. The data necessary to further research on sexual partnerships within specific social contexts is even more problematic—especially in the light of potential new interpretations of the status of “third parties” in research. Panel members hoped that innovations in data archiving and accessibility would make it possible to collect and provide access to valuable local and national sexuality data.

Setting Priorities

Given the large volume of issues and suggestions raised by participants during the first day-and-a-half of the Workshop, it was important to focus on priorities for research. Ren Farley led the participants through a priority-setting exercise to accomplish this goal. Each participant was asked to give one or two recommendations reflecting his or her belief about the most valuable and important directions for the Branch. In all, 35 recommendations were generated and recorded on flipcharts. Participants were then asked to “vote” on the recommendations by distributing a fixed number of points among them. Together, participants distributed 463 points. Recommendations receiving the greatest endorsements (at least 15 votes each) from the group included the following:

- Develop a multi-school consortium offering formal demographic training.
- Study how health and socioeconomic status interact over the life cycle, including attention to the role of family structure.
- Study immigration and processes of assimilation.
- Encourage research on variation within and between household types and its implications for child well-being and child-rearing.
- Encourage research on sexuality and sexual behavior, considering links to stability of relationships, fertility, and disease transmission.
- Promote research on the theme of diversity and opportunity in American society.
- Study the determinants and consequences of union formation and dissolution.
- Encourage research on the demographic processes of inequality.
- Support research on the measurement, meaning, and conceptualization of race/ethnicity comparatively and in the United States.
- Study resource flows across generations and age groups and the institutions and values that support them.
- Study the causes and consequences of low fertility.
- Support research on fertility motivation and decision-making.
- Understand the impact of policies affecting family and community resources on child well-being using experimental and non-experimental methods.
- Develop better measures of child well-being and family structures (using multi-method measures).

Participants then discussed the results of this exercise. They noted that some very important topics were ranked low because they had been split among several different

recommendations. For example, issues relating to child well-being are important to pursue. In addition, certain cross-cutting themes, such as promoting the development of theory and new methodologies, should continue to be of central concern to the Branch.

Section IV. The DBSB Strategic Plan

DBSB staff used the wealth of information provided at the planning workshop to develop a Strategic Plan to guide Branch programming during the years 2002-2006. The Strategic Plan has three components. The first is *Cross-cutting Themes*, or areas of emphasis that are relevant to all topical areas within the Branch's mission. The second, *New Areas of Emphasis*, includes topical areas in which the Branch hopes to substantially expand its focus. The third component, *New Challenges for On-going Areas of Emphasis*, describes important areas of expansion in research topics in which the Branch has an ongoing interest.

The purpose of this Plan is to guide the DBSB's investment in new programmatic activities—such as conferences, PAs, and RFAs—toward promising and important areas. The Plan is meant to focus program-initiated efforts, but not to narrow the DBSB mission. The vast majority of research supported by the DBSB results from investigator-initiated applications that address one or more of the broad areas of science within the DBSB mission. This will continue to be the case, and DBSB staff will continue to welcome the opportunity to assist investigators seeking funding for studies within the Branch mission, but outside the purview of this Strategic Plan.

Cross-cutting Themes

Cross-cutting Theme: Theory and Methods

Continue to emphasize the development and cross-fertilization of theoretical and methodological approaches that contribute to population research.

Advancing the development of theories and methods that contribute to population research is a fundamental goal of the DBSB. As population scientists seek to answer increasingly complex questions, the theories that guide research must keep pace, whether through the development of new paradigms or the extension, elaboration, and integration of existing ones. Similarly, increasingly complex questions require a broader and more sophisticated toolkit of research methods. The Branch will continue to encourage diversity and innovation in the theoretical and methodological approaches to population research, as well as the cross-fertilization of different approaches.

In recent years advances in theory and methods have expanded the understanding of questions such as the effects of context, the role of social interaction in demographic change, and intergenerational processes. The Branch will continue to support developments in these areas. Other important challenges for theory development include:

- Strengthening theories that contribute to migration research by drawing from the human ecology tradition, developing macro-level theories, and considering migration in relation to the life course
- Improving theories related to the spatial distribution of populations, considering the relevance and dimensions of space in demographic research, and integrating space and time in causal frameworks
- Expanding work that integrates theories of gender in population research, focusing on gender as a structural aspect of social organization, as well as gendered meanings and norms
- Enriching population research with theories of culture that view cultures as dynamic, historically variable, and non-homogeneous, studying the local meanings people give to demographic behaviors and relevant explanatory variables, and recognizing the interrelationships between local meanings and social structure
- Developing improved specifications of the biological mechanisms involved in demographic phenomena through interdisciplinary collaborations

A particular focus for methodological studies is measurement issues, including the comparability of measures in the numerators and denominators of demographic rates; the changing meaning of demographic constructs and its implications for measurement; and the measurement of subjective phenomena and sensitive behaviors. Other methodological challenges include:

- Improved methodologies for causal modeling
- Further development of statistical methods for application to demographic studies, including statistical modeling of dependent data, and methods of modeling heterogeneity
- Research on simulation approaches, the integration of formal and statistical demography, and the dynamic modeling of population phenomena
- Research on methods of network analysis, including missing data problems and temporal aspects
- Improved application of spatial data and methods to demographic research
- Improved designs and methods for studies that collect biomarkers to understand the roles of biological processes in demographic phenomena
- Improved methodologies for facilitating the dissemination and linkage of demographic datasets, while protecting the confidentiality of study participants
- Development of methods to improve inclusion of language minorities (non-English speakers) in demographic studies

Action steps:

- Where appropriate, explicitly encourage applications that will advance theoretical and methodological approaches in PAs and RFAs issued by the Branch.
- Continue to emphasize interdisciplinary approaches to population research in workshops, program initiatives, and infrastructure and training programs.

- Cooperate with other NIH institutes and offices to re-issue an NIH-wide PA encouraging methodological research.

Cross-cutting Theme: Translation of Research

Promote the translation of research findings to make them accessible and useful to diverse audiences, and to better integrate the insights from basic research into programs and practice.

The vast majority of research supported by the DBSB has focused on basic science, with academic scholars as the primary audience for the results. Yet, many of the findings generated in these projects could be useful to public policy-makers and the general public if the results could be made more accessible. In addition, basic research findings may contribute to the development of more effective intervention programs, prevention strategies, or provider practices. Investments in outreach efforts and applied research are needed to improve the accessibility and utility of the research supported by the Branch and to maximize its value to society.

Journalists remain key gatekeepers for the dissemination of demographic research. To work effectively with journalists, researchers must provide them with accessible resources, including research summaries, statistics, access to materials via the Web, and personal interviews to support their stories. These same resources are used increasingly by policy makers and the public to inform their decisions. But, researchers generally communicate technical findings to research-sophisticated audiences and frequently do not possess the skills needed to communicate effectively to journalists and other non-technical audiences. There is a need for researcher education to improve the communication, and therefore accessibility, of research findings.

Population researchers must also develop common criteria for determining which research findings are appropriate for dissemination, and appropriate means of communicating different types of findings. All too often, non-scientific audiences can be misled when descriptive or correlational findings are confused with causal effects. In part, improved communication tools and skills can help to minimize confusion. In addition, improved integration of policy analysis into demographic training may strengthen researchers' own understanding of how and when research can inform policy.

Basic science can also be used as a basis for program development. The DBSB has supported the translation of basic research into HIV-prevention programs for many years. This research has demonstrated the effectiveness of new strategies for behavioral change and has also added to basic scientific knowledge through the use of randomized designs to test theory-driven hypotheses about behavior change. The Branch recently expanded its portfolio of intervention research to include studies for improving contraceptive use and could further develop research in the area of family interventions and health.

Action steps:

- Encourage the integration of training in policy analysis into demographic training programs and the development of incentives and training for effective communication of scientific findings in population centers.
- Encourage study sections and researchers to be aware of the value of both descriptive and causally informative data for policy and to be open to state- and local-level research that may not be generalizable to other populations.
- Expand support for intervention research and encourage experimental intervention components in basic scientific research.
- Support the translation and dissemination of research findings through existing infrastructure programs and explore the possibility of additional support through the Small Business Infrastructure Research program.
- Develop a session on issues pertaining to translational research at the annual meetings of the Population Association of America.

New Areas of Emphasis

Reflecting on the recommendation of the Workshop participants, DBSB staff identified five new topical areas that deserve focused attention in future DBSB activities and initiatives: (1) diversity and opportunity in American society; (2) intergenerational research; (3) children and child health—a population perspective; (4) sexuality, development, and health; and (5) macro-level population research.

New Area of Emphasis: Diversity and Opportunity in American Society

Support demographic, behavioral, and social science research on race and ethnicity, social and economic inequalities, and their intersections with immigration and other demographic phenomena.

In the past 30 years, the United States has become increasingly more diverse. The share of U.S. residents who are non-Hispanic whites has declined, as the share of those who are members of racial and ethnic minority groups—particularly Hispanics—has increased. The dominant factor driving this change has not been differences in natural increase (births and deaths) across racial/ethnic subgroups; rather, it has been increases in immigration from non-European countries following liberalization of U.S. immigration law starting in the late 1960s. In relation to opportunity and achievement, there are some indications that differences within racial/ethnic groups are as important as differences across groups. Furthermore, indices of income inequality in the United States have been rising in recent decades, reflecting not only immigration, but also other rapid social changes in the family and in gender roles, economic restructuring, and technological change. It is important to understand how each of these factors affects rising inequalities, and how changes in inequality affect demographic trends.

The DBSB seeks to extend and expand demographic, behavioral, and social science research on diversity and opportunity in the United States. A particular interest is how population diversity influences opportunity, especially socioeconomic opportunities, of U.S. residents. Since 1995, the Branch has supported a vigorous research portfolio on issues related to immigration and immigrants and plans to continue this research emphasis. The Branch plans to renew and expand its support of research on race and ethnicity and research related to social and economic inequality and stratification in the United States. Some of the issues to be addressed include the following:

- Research on how race, ethnicity, immigrant status, gender, and class intersect to affect socioeconomic outcomes
- Research examining the demographic processes—including migration, residential segregation and integration, education, and fertility and family formation—that affect and are affected by inequality
- Research that examines the processes and events in the lives of children that affect their socioeconomic outcomes as adults, especially those factors that explain racial, ethnic, and immigrant status differences
- Research that develops innovative models that capture, for the diverse populations within the United States, the processes affecting opportunity
- Research that looks at how the increasing diversity of U.S. society changes the opportunities available for the demographic subgroups within the United States

Action steps:

- Issue a PA for research on the demography of race and ethnicity in the United States.
- Re-issue the PA in U.S. immigration and emphasize issues related to how diversity and opportunity affect immigrants.
- In other Branch research initiatives, emphasize how issues related to racial, ethnic, immigrant status, economic, and other types of diversity are related to opportunity.

New Area of Emphasis: Intergenerational Research

Support research on resource flows across generations and age groups, the mechanisms through which assets, values, and behaviors are transmitted across generations, and the impact of intergenerational flows on children, families, and society.

Intergenerational research includes studies of how families transmit characteristics, attitudes, behavior, knowledge, and resources across generations, and the implications of these transmissions for the health, well-being, and life course of the individuals involved. It also includes the effect of public policy and intervention programs on intergenerational behavior. Intergenerational transfers may be private, as in the case of parents' assumption of child-rearing costs or children's support for elderly parents, or public, as in examples of public education, Social Security, Medicare, Medicaid, and other programs with an age component. Public transfers may be imposed directly by the public sector, or

indirectly, as when the public sector incurs debt that must be repaid or serviced by future generations.

Intergenerational transfers matter for several reasons. The investments parents plan to make in their children affect their fertility decisions, and the investments they actually make are an important determinant of the human capital of the next generation. Patterns of intergenerational transfers are a major determinant of the financial consequences of changing age distributions, and specifically of population aging. Transfers have a major influence on social and economic inequalities. Further, private transfers can be substituted for, or crowded out by, public transfers. These processes of substitution and crowding out can have significant effects on the impact of age-based or need-based public policies.

The DBSB Program on Intergenerational Research will support research on how private behaviors and public policy affect the allocation of family and other resources across the generations. It will examine how private family resource allocation decisions result in improvements in health, wealth accumulation (including human capital), and well-being for children, active adults, and the elderly. The Program will examine the implications of these transfers for individuals, families, and society, and how public policy interacts with family processes to alter these results. It will also examine how family behavior transmits health, behavior, and attitudes to children, and the long-term implications of these transmissions.

Action steps:

- Issue an RFA for research on intergenerational transfers.
- Issue a PA after the RFA to encourage continued research on intergenerational transfers.

New Area of Emphasis: Children and Child Health—A Population Perspective

Develop a comprehensive, population-based perspective on children and child health by building a research program on the status, well-being, and health of children in diverse populations, and on the influence of families, communities, and policies on child health and well-being.

Children are a critical element of population age structure, a major dependency group, and the major source of human capital for future populations. As such, it is necessary to understand the status, trends, determinants, and consequences of the health and well-being of children in our population. Attention to children has always been implicit in the DBSB Program, especially in reference to family and household dynamics. Supported research has examined the implications of changing family structures for child development and well-being, child support, child care, infant mortality, and child health, and the health of immigrant children. The DBSB has also supported the development of

indicators of child health and well-being and engaged in a national effort to institutionalize the annual production of these indicators by the federal government.

Building on this foundation, the DBSB seeks to broaden its program of research on children from social, economic, and demographic perspectives. Areas of emphasis include studies of the macro-circumstances of children, studies of the influence of family and community on child health and well-being, and studies of multi-level influences on child behavior, health, and development. There is an opportunity to blend social and behavioral sciences in exploring the behavioral and biological consequences of growing up in diverse environments—poor or rich, diverse or racially segregated, unsafe or protected.

Topics that have traditionally been part of the DBSB Program offer many new and continuing opportunities for research on children, for example:

- Studies of the impact of the major increase in children born into or living in families with cohabiting parents and other “new” family structures
- Studies of the processes that link family structure and child outcomes
- Research on family investments and resource allocations that affect children
- Research on parental employment and its effect on parenting and child outcomes
- Research on the impact of public policies on children’s health and well-being

New directions for research will help to fill out a comprehensive, population-based perspective on children. One example is research on children’s experiences with institutions outside the family (e.g., faith-based organizations, schools, recreational leagues), peer groups, the effects of such experiences on health and development, and the factors that influence whether and how children experience these institutions. Another is expanded research on the efficacy of policy and program interventions designed to improve the health and well-being of children, and the factors that enhance or diminish program or policy effects.

There are also important ways in which the well-being of children intersects with other important demographic topics. Most notable are the questions of health disparities in children, the well-being of immigrant children, the well-being and life course of disabled children, and the effects of high-risk behavior of children and adolescents on their health, well-being, and their life chances.

Action steps:

- Issue an RFA to initiate planning for a multi-site, multi-level study that examines how community, family, and individual influences interact with biological influences and result in health disparities in infant and early childhood mortality and morbidity.
- Continue to build the Science and Ecology of Early Development (SEED) initiative by supporting DBSB grants in the initiative and SEED workshops.

- Integrate a focus on children into ongoing and new initiatives of the Branch, where appropriate.

New Area of Emphasis: Sexuality, Development, and Health

Encourage basic research on sexuality and sexual behavior in relation to healthy development, the stability of family relationships, fertility, and the transmission of disease.

For many years, research on sexual behavior has been an essential component of the Branch’s research program on fertility, unintended pregnancy, and HIV/AIDS. Research on these topics, however, has been handicapped by the absence of a well-developed scientific body of knowledge that addresses basic issues in human sexuality and sexual behavior. Basic research on the development, expression, and consequences of sexuality, broadly defined, is essential to both strengthening research in now-funded areas and to extending research to other important outcomes. Theoretical approaches to understanding sexuality and its consequences should move beyond “medicalized” paradigms to recognize the developmental, social, cultural, economic, as well as psychological dimensions of these complex traits and behaviors. For example, sexuality and the management of sexual behavior are central to positive family functioning and marital stability, and to healthy development in adolescence and adulthood. There is a need for more theory, data, scholarship, and ultimately, more understanding of these connections. Particular attention should be paid to the role of gender in influencing sexuality and sexual behavior. Important but underdeveloped areas of research include:

- Normative development of sexual identity and behavior over the life course
- Meanings of sexual behavior to individuals and groups (e.g., as a marker of adulthood, an expression of intimacy, an expression of physiological need, and/or a means of creating life)
- Developmental, social structural, and cultural processes that shape norms, values, and “scripts” concerning sexuality and its expression
- Roles of sexuality and sexual behavior in partnerships of various types (e.g., casual partnerships, committed relationships, cohabitation, marriage), with attention to partnership stability, overall relationship quality, and the interrelationships between sexual and nonsexual domains
- Dynamics of sexual partnerships, including issues related to coerced or forced sex; emotional, social, and other factors relating to partnership choice and behavior in partnerships; bargaining and accommodation within partnerships; and the influence of gender on these processes
- Influence of families, social networks, and sexual marketplaces on sexual development and behavior
- Impact of laws and regulations relating to sexual behaviors

Action steps:

- In cooperation with other programs at the NICHD, develop strategies for encouraging research that addresses sexuality in *From Cells to Selves*, the NICHD Strategic Plan 2000, including the biological underpinnings of human sexual behavior, its developmental expression, and its responsiveness to influences in the social, economic, and cultural environment.
- Encourage the broadening of scientific approaches to the study of sexual behavior in research on contraceptive use and microbicide development, HIV prevention, and the avoidance of unintended pregnancy.

New Area of Emphasis: Macro-level Population Research

Support population research at the aggregate level and develop theories and methods that unify macro- and micro-level processes in population research.

For more than a century, population researchers have usefully applied a variety of powerful tools and theories to describe and analyze the processes that give populations their shape and drive population change. Such macro-level population research is integral to the DBSB mission of supporting research that provides an overall perspective on population characteristics, trends, and processes. For example, an aggregate perspective provides essential information on the implications of immigration for the growth and composition of the U.S. population, the meaning of the decline in non-marital fertility among teenagers, and trends in health disparities and the well-being of children and families in an age of welfare reform. Without a balanced portfolio of research that contains both micro- and macro-level research, the DBSB cannot offer a meaningful and coherent answer to questions such as these in the domains of interest to the program. Aggregate level research is also essential to inform and motivate research. Substantial and sophisticated analyses of population characteristics and trends help to focus research and program intervention on real problems and illuminate the factors that contribute to them.

Despite the importance of aggregate-level population research, the DBSB portfolio has become heavily dominated by research focused on understanding individual-level processes and behaviors. It is time to rectify this imbalance by encouraging and supporting more aggregate-level research. Accomplishing this goal will require attention to data needs and the accessibility of data on population characteristics and change. It will also involve encouragement of new developments in formal demography, such as stochastic forecasting, two-sex models, and research on the consequences, interpretation, and forecasting of changing demographic rates. It will benefit from innovative approaches to dynamic modeling and the integration of mathematical, simulation, and statistical approaches to studying population phenomena.

Unifying knowledge about population processes at the macro- and micro-levels is an emerging scientific frontier that needs new theory and methodology to fulfill its promise. Knowledge of individual-level behavior has grown much more quickly than the

understanding of how to aggregate such knowledge in population-level analyses. The mechanisms that link individual-level processes and aggregate-level processes are still poorly understood, but clearly involve feedback mechanisms, “tipping points,” and structural dependencies that complicate the direct translation, from micro to macro and vice versa. Development of dynamic models that link the “behaviors” of individuals and aggregates is a major challenge for social scientists and an important step in improving our understanding of demographic processes. Theoretical developments linking economic growth models to household decision-making and using social networks as a way of conceptualizing social processes are promising theoretical platforms upon which to build.

Action steps:

- Encourage and support the development of methods for advancing macro-level population research and integrating macro- and micro-level research, and support opportunities for specialized training in these methods.
- Encourage macro-level population studies and studies that link the micro- and macro-levels in RFAs, PAs, and other Branch initiatives.
- Convene a workshop on macro/micro linkages in population research.

New Challenges for Ongoing Areas of Emphasis

Participants in the *DBSB Long Range Planning 2001 Workshop* identified a great many ways in which the ongoing activities and scientific emphases of the DBSB could be extended and improved. These are summarized very briefly below.

Training

- Support the development of an inter-university consortium to provide high-quality training in formal demographic methods.
- Develop innovative mechanisms to deliver training, solving problems of “critical mass” in specialized areas.
- Support mechanisms for enhancing interdisciplinary training related to population research and for addressing emerging areas of population research.

Fertility and family

- Continue the emphasis on integrating fertility and family research and address the need for innovative, longitudinal, interdisciplinary, and multi-method data sets to serve an integrated research program.
- Continue to support research on decision-making related to fertility and family behaviors, drawing on evolutionary, intergenerational, and policy perspectives.

- Conduct research to improve conceptualization, measurement, and understanding of diverse types of partnerships and family structures, and the dynamic aspects of relationships and family structure.
- Continue to emphasize research on male fertility, fatherhood, and the role of gender in partnering and parenting.
- Support research on the allocation of time and financial resources in families.
- Encourage research on the causes and consequences of low fertility and family change around the world, including (but not limited to) comparative research.
- Encourage research on the timing of fertility, especially fertility at older ages and the impact of assisted reproductive technologies on fertility and fertility timing.

Population movement and distribution

- Continue to support research on migrant assimilation, including research on how immigrant settlement patterns and legal status affect assimilation.
- Strengthen research on internal migration, including developing theory and assessing and addressing data needs.
- Encourage the development of macro-level models of migration, models that integrate contextual factors into individual-level analysis, and models that integrate micro- and macro-level approaches.
- Encourage research examining how sending and receiving areas affect and are affected by migration, including research that examines beneficial consequences of migration, research based on innovative designs addressing migrant selectivity, and cross-national research, especially in understudied areas such as Asia and Africa.
- Encourage the development of new data sources and methods for studying illegal immigration.
- Encourage theory development and research that examines gender differences in migration.
- Encourage research on how migration interrelates with social and economic inequality, racial and ethnic diversity, health, family and fertility patterns, and other demographic outcomes.
- Support research on internal and international migration in developing countries.

Population and environment

- Encourage research exploring population-environment relationships in urban settings, including research on how population shapes the urban environment, and how the urban environment shapes human health, demographic behavior, and population redistribution.
- Encourage research in understudied areas such as Africa and Europe.
- Encourage research that focuses on issues related to water use, including use of ground and coastal waters.

- Develop models that work across different levels of analysis, including integrating micro- and macro-level analysis, micro and macro time scales, and scale dependency, while also developing models that go beyond traditional hierarchical, nested models.
- Support research that seeks to get into the field quickly to study the immediate demographic consequences of dramatic and unexpected environmental events.

Mortality and health

- Determine how poor health affects socioeconomic attainment, wealth accumulation, and intergenerational family support.
- Examine the influence of early lifetime experiences on later adult health, with special emphasis on whether early influences can be moderated via later interventions.
- Explore the long-term consequences of health problems, taking into account factors that mediate recovery from adverse conditions.
- Develop new measurement, data, and analytic techniques to illuminate how the socioeconomic context affects individual behavior and biological processes, with special emphasis on incorporating biomarkers in analytic models, development of new methods of multi-method, multi-level analysis, and integrating multi-state analysis to provide a long-term assessment of risk profiles.
- Examine the health and disability status of immigrants, with special emphasis on explaining the immigrant paradox.
- Examine how the social context affects biological processes and related health outcomes, especially the interplay among community, neighborhood, and family contexts.
- Examine the interrelationship of health disparities with social and economic disparities.

HIV/AIDS

- Examine social networks, dyadic relationships, and relationship dynamics (including relationship concurrency) as factors in HIV risk and as foci for intervention.
- Study the influence of policy, legal, normative, or other factors at the community or institutional levels, and develop and test creative intervention approaches based on such structural and normative influences.
- Continue to support research on the interplay of pregnancy and HIV prevention and emphasize research on youth.
- Emphasize HIV-related research in sub-Saharan Africa and U.S. minority populations and support research on emerging issues in India and China.
- Support research on the dynamics characterizing the spread of HIV in various settings and populations and the factors underlying variation in the dynamics of the epidemic.
- Support research examining how migration and migrant flows influence the spread of HIV.
- Encourage work focused on the social, economic, and demographic impact of HIV and AIDS.

- Study the process of adapting research-driven interventions for broad use, including identifying critical elements in successful programs, packaging interventions, and assessing the efficacy of programs delivered in community settings.

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Appendices

Appendix I: Description of the Long-Range Planning Process

1. Background

The DBSB has a tradition of conducting long-range planning workshops to identify those scientific areas and issues that offer the most exciting opportunities for the future development of population research. The Branch draws on the results and recommendations of these workshops in formulating program priorities and developing new initiatives such as conferences, PAs, and RFAs. Several such workshops were held previously: in 1980, 1986, 1991, 1993, and 1996. In 1999, the Branch began to plan a sixth workshop, to be held June 25-26, 2001. The goal of this workshop was to develop a research agenda to guide DBSB activities and priorities for the years 2002-2006.

This appendix details the steps taken to plan and conduct this workshop, and to develop the Long-Range Planning Report.

2. The DBSB Workshop

In 1999, the DBSB began to hold periodic ad-hoc workshops to consult with leaders in the fields associated with population research about program directions. These workshops were generically labeled “The DBSB Workshops.” These Workshops involved some consultants who attended repeatedly and others who attended only once. At the second workshop, held in January 2000, participants developed the initial plans for the *DBSB 2001 Long-Range Planning Workshop*.

3. The Planning Committee

Several participants in The DBSB Workshops agreed to form the core of a Planning Committee for the long-range planning effort. Dr. Ren Farley of the University of Michigan to agreed to chair the Planning Group, and several additional members were added to provide needed expertise. In addition to Dr. Farley, Planning Group members included Drs. Aletha Huston, Ronald Lee, James McCarthy, Sara McLanahan, Robert Michael, Martina Morris, Mary Waters, and Yu Xie.

4. Visions of the Future

To initiate long-range planning activities, the Planning Committee invited representatives of the newest generation of population scientists to share their ideas about future directions for population research. Dr. Yu Xie of the University of Michigan chaired this special event, *Visions of the Future: A Town Meeting on Future Directions in Population Research*, at the March 2000 meetings of the Population Association of America. Participants were nominated by population centers across the country, and six were selected to represent diverse disciplines and topics related to the DBSB mission.

Presented papers included:

- *Can Population Studies Teach Us How to Crowd With More Kindness?* – David Bishai, Johns Hopkins School of Public Health
- *Demography's Race Problem* – David R. Harris, University of Michigan
- *Biology, Culture and Demography: Interdisciplinary Opportunities and Directions in Population Research* – Darryl J. Holman, University of Washington
- *Familial Impacts of Age Structure Changes* – M. Giovanna Merli, University of Wisconsin, Madison
- *Visions of the Future: New Directions in Population Research* – Ted Mouw, University of North Carolina, Chapel Hill
- *Scientific Opportunities and Emerging Directions in Population Research: A Focus on the Family* – Megan M. Sweeney, Rutgers, The State University of New Jersey

Links to these papers are available at <http://www.nichd.nih.gov/cpr/dbs/sp/index.htm>.

5. *Assessing Program Progress*

DBSB staff prepared a comprehensive summary of activities and research supported by the Branch since 1995, to serve as background and foundation for the consideration of new program directions. The report, *Program Activities and Progress, 1995-2000*, was organized to reflect the six strategic goals developed during the 1996 Long-Range Planning Workshop. This report is available at <http://www.nichd.nih.gov/publications/pubs/dbsplan.htm>.

6. *Identifying Areas of Opportunity*

To lay the foundation for the *DBSB 2001 Long-Range Planning Workshop*, Planning Committee members and DBSB staff worked together to develop a list of 20 key areas of potential investment and growth for population research. Planning Group members began this process by developing, with the help of “key informants” in specific substantive areas, lists of potential future directions in eight areas of the DBSB mission. These areas included fertility and family planning; mortality and health; family and marriage; population movement; HIV/AIDS; sexual behavior; population composition; and child well-being. These lists informed the Planning Committee’s identification of the 20 *Areas of Opportunity* to be discussed at the meeting.

The *Areas of Opportunity* fell into three categories and included:

Ongoing Research Areas

- Fertility and family planning
- Families and households
- Well-being of children
- Immigration and population movement
- Population and environment
- Mortality and health
- AIDS

Tools: Theories, Methods, and Training

- Innovative methodologies
- Formal demography
- Culture
- Biodemography
- Translational research
- Training

Topical Areas to Explore or Expand

- Race and ethnicity
- Health disparities
- Intergenerational research
- Social and economic inequality
- Spatial demography
- Technological change
- Sexuality

7. *Workshop Preparation*

Invited participants for the Workshop included members of the Planning Group and 15 additional invitees chosen to provide broad expertise in the identified *Areas of Opportunity* and the other disciplines relevant to population research (see Appendix III). Each participant was given a notebook containing background materials on the Branch, recent progress and activities, and materials developed earlier in the planning process. Each was asked to prepare *short* (two to three pages) statements on two or three of the *Areas of Opportunity* prior to the meeting. These statements (available at <http://www.nichd.nih.gov/cpr/dbs/sp/statements.htm>) identified the most promising research opportunities, the most important scientific issues, and the challenges to moving forward in the specific area. Those participants who were assigned to topics that were ongoing research areas of the Branch were also asked to comment on the Branch's recent progress in those areas. At least two participants were assigned to each topic; one was asked to lead the discussion at the June meeting.

8. *The DBSB 2001 Long-Range Planning Workshop*

The Workshop was held in Rockville, Maryland, on June 25-26, 2001. The agenda (see Appendix II) set aside the first one and one-half days for discussing the *Areas of Opportunity*. The afternoon of the second day was devoted to a priority-setting activity. To facilitate discussion and track recommendations relating to the *Areas of Opportunity*, the DBSB prepared outlines of recommendations made by participants in their prepared statements. These outlines were revised and expanded to reflect discussion at the meeting. Section III of this report provides a brief summary of the discussion.

The priority-setting exercise began with a brainstorming exercise. Each participant was asked to give one or two recommendations reflecting his or her belief about the most valuable and important directions for the Branch. In all, 35 recommendations were generated. Participants then voted on the recommendations, distributing a fixed number of points among them.

9. *Developing the DBSB Plan*

On July 5, 2001, DBSB staff held a one-day meeting to reflect on the recommendations of the *2001 Long-Range Planning Workshop* and to distill them into a plan that would guide the Branch's activities for the next five years. The results of these deliberations are reflected in this report. The Branch's plan reflects not only the contributions of the participants at the Workshop, but also the Branch's consideration of its mission within the NICHD and the NIH, overlap with other programs, and Institute priorities. Although Workshop participants provided comments that greatly improved the quality and focus of the report, the DBSB takes full responsibility for its contents.

Appendix II: Workshop Agenda

Demographic and Behavioral Sciences Branch 2001 Long-Range Planning Workshop

Neuroscience Center
6001 Executive Boulevard
Room A1/A2

June 25, 2001

- 8:00 AM Welcome and introductory comments
Christine Bachrach, DBSB
Ren Farley, University of Michigan
Florence Haseltine, Director, CPR/NICHD
- "Pre-test" straw voting
- 9:00 - 10:30 Progress and Promise in Ongoing Research Areas
(* = Discussion Leader)
- Fertility and family planning
*John Casterline, Population Council**
Jim McCarthy, Columbia University
Jim Walker, University of Wisconsin
- Families and households
*Sara McLanahan, Princeton University**
Aletha Huston, University of Texas-Austin
- Well-being of children
*Aletha Huston, University of Texas-Austin**
Janet Currie, University of California - Los Angeles
Sara McLanahan, Princeton University
- 10:30 Break
- 10:45 – 11:45 Immigration and population movement
*Charles Hirschman, University of Washington**
Mary Waters, Harvard University
- Population and environment
*Myron Gutmann, University of Texas - Austin**
Barbara Entwisle, University of North Carolina
Andrew Foster, Brown University
- 11:45 Break to get lunch

- 12:15 – 1:15 Mortality and health
*Ron Lee, University of California-Berkeley**
Alberto Palloni, University of Wisconsin
 HIV/AIDS
*Peggy Dolcini, University of California-San Francisco**
Francis Doodoo, University of Maryland
Martina Morris, University of Washington
- 1:15 – 1:55 Tools: Theories, Methods, and Training
 Innovative methodologies
*Martina Morris, University of Washington**
Joshua Goldstein, Princeton University
- 1:55 – 2:35 Formal demography
*Joshua Goldstein, Princeton University**
Ron Lee, University of California-Berkeley
- 2:35 *Break*
- 2:50 – 3:30 Culture/preferences
*Jennifer Hirsch, Emory University**
John Casterline, The Population Council
- 3:30 – 4:10 Biodemography
*Jane Menken, University of Colorado**
John Haaga, Population Reference Bureau
- 4:10 - 4:50 Translational research
*Jim McCarthy, Columbia University**
John Haaga, Population Reference Bureau
Bob Michael, University of Chicago
- 4:50- 5:30 Training
*Alberto Palloni, University of Wisconsin**
Jane Menken, University of Colorado

June 26, 2001

- 8:00 – 8:40 Topical Areas to Explore or Expand
 Race and ethnicity
*Mary Waters, Harvard University**
Francis Doodoo, University of Maryland
Charles Hirschman, University of Washington

- 8:40 – 9:20 Health disparities
*Janet Currie, University of California - Los Angeles**
Andrew Foster, Brown University
- 9:20 – 10:00 Intergenerational research
*Ron Lee, University of California - Berkeley**
Sara McLanahan, Princeton University
Bob Michael, University of Chicago
- 10:00 *Break*
- 10:15 – 10:55 Social and economic inequality
*Yu Xie, University of Michigan**
Ted Mouw, University of North Carolina, Chapel Hill
- 10:55 – 11:35 Spatial demography
*Barbara Entwisle, University of North Carolina**
Myron Gutmann, University of Texas - Austin
Ted Mouw, University of North Carolina, Chapel Hill
- 11:35 *5-minute stretch*
- 11:40 – 12:20 Technological change
*Jim Walker, University of Wisconsin**
Yu Xie, University of Michigan
- 12:20 - 1:00 Sexuality
*Bob Michael, University of Chicago**
Jennifer Hirsch, Emory University
Peggy Dolcini, University of California-San Francisco
- 1:00 *Break to get lunch*
- 1:20 - 2:00 Discussion of recommendations
- 2:00 - 2:30 Straw voting
- 2:30 - 4:00 Discussion of priorities
- 4:00 *Adjourn*

Appendix III: Workshop Participants

Demographic and Behavioral Sciences Branch 2001 Long-Range Planning Workshop

Participants

Reynolds Farley, Chair ⁺
Population Studies Center
University of Michigan

John Casterline
Population Council
*Fertility and Family Planning**, *Culture*

Janet Currie
University of California, Los Angeles
*Health Disparities**, *Well-being of Children*

Francis Dodoo
University of Maryland
AIDS, Race and Ethnicity

M. Margaret Dolcini
University of California, San Francisco
*AIDS**, *Sexuality*

Barbara Entwisle
University of North Carolina
*Spatial Demography**, *Population and Environment*

Andrew Foster
Brown University
Population and Environment, Health Disparities

Joshua Goldstein
Princeton University
*Formal Demography**, *Innovative Methodologies*

Myron Gutmann
University of Texas, Austin
*Population and Environment**, *Spatial Demography*

John Haaga
Population Reference Bureau
Biodemography, Translational Research

Jennifer Hirsch
Emory University
*Culture**, *Sexuality*

Charles Hirschman
University of Washington
*Immigration and Population Movement**, *Race and Ethnicity*

Aletha Huston ⁺
University of Texas, Austin
*Well-being of Children**, *Families and Households*

Ronald D. Lee ⁺
University of California, Berkeley
*Mortality and Health**, *Formal Demography, Intergenerational Research**

James McCarthy ⁺
Columbia University
*Translational Research**, *Fertility and Family Planning*

Sara McLanahan ⁺
Princeton University
*Families and Households**, *Well-being
of Children, Intergenerational Research*

Jane Menken
University of Colorado
*Biodemography**, *Training*

Robert Michael ⁺
University of Chicago
*Sexuality**, *Intergenerational Research,
Translational Research*

Martina Morris ⁺
University of Washington
*Innovative Methodologies**, *AIDS*

Ted Mouw
University of North Carolina
*Social and Economic Inequality, Spatial
Demography*

Alberto Palloni
University of Wisconsin
*Training**, *Mortality and Health*

James Walker
University of Wisconsin
*Technological Change**, *Fertility and
Family Planning*

Mary C. Waters ⁺
Harvard University
*Race and Ethnicity**, *Immigration and
Population Movement*

Yu Xie. ⁺
University of Michigan
*Social and Economic Inequality**,
Technological Change

* Discussion leader

⁺ Planning Committee