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Discussion White Paper on Multi-Disciplinary Research Opportunities at Wayne State University: Advancing Urban Health Disparities Research

Overview: The National Imperative to address Health Disparities and the Context for Urban Health Research

Health disparity research is a national priority. As NIH Director Frances Collins, writing together with and the Director of the National Institute on Minority Health and Health Disparities, states:

“The remarkable progress seen in biomedical science in recent years has improved the health and extended the average lifespan of most Americans to 77.9 years (*Health, United States, 2010*). However, due to a dauntingly complex set of factors, some of our citizens (often the most vulnerable) have lagged behind others in enjoying the fruits of our scientific and medical advances. This remains an unacceptable situation, and the National Institutes of Health (NIH) remains firmly and substantially committed to changing it for the better. As long as even one of our fellow Americans encounters barriers to optimal care—whatever the reason—our work is unfinished.”¹

In recognition of the national importance of health disparities research, the Affordable Care Act mandated the raising the status of health disparities research to a full Institute and charged the Director with the authority to coordinate, review and evaluate all minority health and health disparities research conducted and supported across all of NIH.

According to NIH’s Health Disparities Strategic Plan, research into the determinants of health disparities has documented that these conditions are extraordinarily complex and multi-factorial in nature. Health and ultimately health disparities are shaped by the interaction of multiple factors, including: social, environmental, behavioral, and biological factors. These interacting factors are dynamic and vary in their impact depending upon when in the life course they occur, access to appropriate and timely health care, and the existence of effective policies and interventions. It is not surprising then that the NIH Health Disparities Strategic Plan calls for a very broad-based approach to research in health disparities from basic biological and behavioral sciences to more applied cost effectiveness and health services research.

The NIH Health Disparities Strategic Plan Identifies Eight Areas of Research Emphasis

- Genetics and Biologic Factors
- Behavioral and Social Sciences
- Translational Research
- Comparative Effectiveness Research
- Social Determinants of Health
- Health Services Research
- Innovative Health Technologies
- Global Health

¹ Forward to the NIH Health Disparities Strategic Plan and Budget, Fiscal Years 2009-2013

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More importantly, the NIH Health Disparities Strategic Plan recognizes that research alone will not solve the health disparity problem. Therefore, the NIH Health Disparities Strategic Plan sets out a broad approach involving both conducting research and building research capacity, but also providing for community outreach, information dissemination, and public health education as well as engaging in efforts that integrate research, capacity building, and outreach.

Still, the health disparities facing different communities and populations are not all alike. It is the differences in the risk exposures and resources experienced by different populations in their specific environments that lead to health disparities. This is the context in which Urban Health Disparity Research stands out as an emerging field.

As the Journal of Urban Health explains what drives urban health disparity research:

“Urban cultures in America and around the world are growing, and with this growth comes a unique set of health issues. Traditional public health and medical practices and methods must be adapted to respond to the urban population ... Important changes in patterns of disease and disability have been noted in urban populations, encouraging health professionals to expand their vision to include social and economic determinants of health. For example, the parallel epidemics of substance abuse, teenage pregnancy, HIV, tuberculosis, and violence underscore the significance of such key factors as poverty, family disintegration, racial bias, and urban crowding in shaping the profile of urban morbidities.”² -

Similarly the World Health Organization recognizes Urban Health as a distinct public health challenge. According to the World Health Organization, urbanization is one of the leading global trends of the 21st century that has a significant impact on health. By 2050, over 70% of the world’s population will live in cities. The factors influencing urban health include urban governance; population characteristics; the natural and built environment; social and economic development; services and health emergency management; and food security. While cities can bring opportunities, they can also bring challenges for better health. Today’s cities and those of tomorrow are facing a triple threat: infectious diseases like HIV/AIDS, TB, pneumonia, diarrheal diseases; non-communicable diseases like asthma, heart disease, cancer and diabetes; and violence and injuries, including road traffic injuries.

In the U.S., health disparity populations are well defined through the National Institute for Minority Health and Health Disparities. P.L. 106-525 defines a population as a health disparity population, “if, as determined by the Director of the Center [NCMHD/NIMHD] after consultation with the Director of the Agency for Healthcare Research and Quality, there is a significant disparity in the overall rate of disease incidence, prevalence, morbidity, mortality, or survival rates in the population as compared to the health status of the general population.” As such racial and ethnic minorities (i.e., African Americans, American Indians and Alaska Natives, Asians, Hispanics, and Native Hawaiians and Other Pacific

² See more at: <http://www.nyam.org/news/publications/journal-of-urban-health/#sthash.sQsBM0R7.dpuf>

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Islanders), low socioeconomic status, and rural persons are currently designated as health disparity populations.³

Defining what is meant by health disparity research is less precise, but still important to consider. In the NIH Health Disparities Strategic Plan and Budget, Fiscal Years 2009-2013, there is no specific definition set out for health disparity research. Still the focus of NIH's efforts set out in the Strategic Plan do help in establishing what is currently considered for NIH funding of health disparity research. According to this Strategic Plan:

“In order to improve health and enhance efforts to eliminate health disparities, the NIH will increase and diversify biomedical, behavioral, social science, social epidemiological, and health services research it conducts so as to:

- Advance understanding of the development and progression of diseases and disabilities that contribute to health disparities among racial and ethnic minority, low-income, rural, and medically underserved populations;
- Develop new or improved approaches for detecting, diagnosing, preventing, delaying, or treating the onset or progression of diseases and disabilities that contribute to health disparities; and
- Advance the understanding of the multi-factorial causes of health disparities, including non-biological bases of disease incidence and progression.”⁴

The emphasis being placed by NIH is on having the intention of “eliminating health disparities” and not simply working on diseases that might have a disproportionately large representation of health disparity populations. So research efforts in HIV/AIDs, cardiovascular disease, diabetes, etc. do not automatically qualify as health disparity research, even if engaging large numbers of health disparity populations. Still, what is most unusual about health disparity research at NIH is that it is not the focus of just one Institute, but is found across every Institute at NIH. In fact, as Table ?? below from the NIH Health Disparity Strategy reveals, several Institutes, including the National Heart Lung and Blood Institute, National Cancer Institute, NIGMS and NICHD, spend more annually on health disparity research than does the National Institute of Minority Health and Health Disparities Institute.

³ NIH Health Disparities Strategic Plan and Budget, Fiscal Years 2009-2013, page 12

⁴ NIH Health Disparities Strategic Plan and Budget, Fiscal Years 2009-2013, page 17

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Table ??: NIH Health Disparities Budget

Institute/Center/Office	FY 2010 Actual ¹	FY 2011 Estimate ²
CF3	\$22,847,307	\$22,847,307
FIC	\$40,000	\$40,000
NCCAM	\$16,685,357	\$16,685,357
NCI	\$264,618,266	\$264,618,266
NCRR	\$65,698,752	\$64,056,283
NEI	\$39,353,596	\$39,353,596
NHGRI	\$21,579,493	\$21,579,493
NHLBI	\$340,030,124	\$340,030,124
NIA	\$108,871,672	\$108,871,672
NIAAA	\$73,259,075	\$73,259,075
NIAID	\$263,905,964	\$263,905,964
NIAMS	\$32,055,917	\$32,055,917
NIBIB	\$15,398,051	\$15,398,051
NICHD	\$196,586,419	\$196,586,419
NIDA	\$154,315,664	\$154,315,664
NIDCD	\$36,671,943	\$36,671,943
NIDCR	\$42,561,780	\$42,561,780
NIDDK	\$228,534,154	\$228,534,154
NIEHS	\$35,585,109	\$35,585,109
NIGMS	\$220,339,673	\$220,339,673
NIMH	\$152,046,928	\$152,046,928
NIMHD	\$192,016,485	\$192,016,485
NINDS	\$122,848,309	\$122,848,309
NINR	\$53,613,315	\$53,613,315
NLM	\$3,903,360	\$3,903,360
OD	\$24,427,818	\$24,427,818
TOTAL	\$2,727,794,531	\$2,726,152,062

Source: NIH Health Disparities Strategy Plan, Fiscal Years 2009-2013

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Wayne State University's Research Opportunities and Current Position in Health Disparity Research and Opportunities

Based on a detailed examination of Wayne State Universities existing research competencies reflecting areas where there is a critical mass of faculty scholarly and funded research activities, Battelle found a strong line of sight to focus WSU broadly as a leading university focused on the use-inspired and translational research challenges focused on “urban transformations.” This represents a broad theme and can be further delineated into specific platform areas. It would involve university-wide efforts to address urban public health systems (environmental urban health issues, health disparities, re-engineering of hospitals and health systems), pressing medical problems (reproductive health, cardiovascular, traumatic brain injury, and cancer), and urban behavioral health (child development, lifespan, workplace/societal violence).

More specifically, Battelle identified broad multi-disciplinary strengths at Wayne State University around the research platform areas of:

- **Urban Child and Lifespan Development** – Examining the challenges, characteristics and needs pertaining to children and adolescents in urban communities. This could encompass a diverse research universe, ranging from fundamental studies of gene expression and physiology through to studies of the social, family and environmental conditions impacting children, youth, and aging adults, and learning strategies.. May also include taking a holistic approach to the study of human health, environmental factors and changing physiology across the lifespan, seeking to elucidate childhood and adolescent antecedents to adult disease and changes in health and well-being from the fetus through old age.
- **Behavior and Behavioral Interventions** – Researching the causes and effects of risk behaviors and developing and testing interventions. At Wayne State, this can span a spectrum from fundamental studies in behavioral neuroscience to the development of specific interventions in areas of strength for the University such as: maternal lifestyles; drug abuse; STDs and infectious disease; violence; and obesity. Translational research can occur not just in the development of effective interventions, but also in the development of novel tools and technologies to facilitate interventions.
- **Environmental Health, Prevention and Livable Communities** – Working to identify and characterize elements of the environment that impact health, and to elucidate the relationships, and mechanisms of action, between environmental factors, disease morbidity, and health outcomes. This is becoming a reinvigorated area at Wayne State University with the recent CURES grant award. Looking forward, it offers opportunity for even more broad engagement with the university's strengths including establishing the gene-environment linkage drawing on

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the university's strengths in genetics and genomics including new diagnostics; prevention leveraging broader behavioral science applications for individuals; and broader community systems to monitor, educate and generate solutions to deep-rooted environmental health challenges.

Reinforcing Battelle's findings of Wayne State University's research strengths, FaegreBD Consulting in their recent report on Transforming Clinical and Translational Sciences at Wayne State University: A Roadmap to Lead the Nation In Urban Research Excellence recommended focusing on the theme of Urban Translational Sciences, with translational research priority platforms in six areas:

- Urban Maternal, Child and Life Span Development
- Urban Prevalence and Prevention of Cardiovascular Disease
- Urban Interface of Genes, Environment, Ethnicity and Health
- Bio---engineering In the Urban Clinic and Community Setting
- Brain Science and Neurological Health in the Urban Environment
- Cancer

Clearly Wayne State University is actively involved in research involving health disparity populations. A search of research grants active through 2014 based on health disparity populations targeted identified 39 grants involving \$6.9 million. It has been noted that this strong track record of activities with health disparity populations is also a critical advantage that Wayne State University brings to a wide range of health research efforts, including the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) program, the National Institute for Child Health and Human Development's Neonatal Network, and the Adolescent Trial Network for HIV/AIDS Interventions supported by a number of NIH institutes.

Of particular note are the efforts in the Population Studies and Disparities Research Program at the Karmanos Cancer Institute. Its research themes include investigating the distribution and determinants of cancer and cancer risk, survivorship and outcomes with an attention to racial and ethnic disparities, along with understanding the interactions and behavior of patients, family members, physician and community and conducting interventions to reduce and eliminate racial and ethnic disparities. This effort is particularly active in addressing prostate cancer, lung cancer, breast cancer and colon cancer. The Karmanos Cancer Institute has also been successful in garnering a number of specific grants for health disparity research in cancer, including the U54 Center grant for the Southeast Michigan Community Network Program, which is one of the research centers funded through NCI's Center to Reduce Cancer Health Disparities (CRCHD).

Efforts in health disparity research are also actively being pursued in environmental health, cardiovascular research and obesity research underway at Wayne State University. Wayne State University was recently awarded a P30 NIH Center Grant by the National Institute of Environmental Health Sciences for the Center for Urban Responses to Environmental Stressors (CURES), which is a broad-based effort at Wayne State University focused on examining how chemical and non-chemical stressors in Detroit's urban environment affect the health of Detroit's vulnerable populations. Key

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interest groups formed within the CURES Center and its 55 affiliated researchers include: environmental modulators of the immune system; environmental modulators of metabolism and metabolic disorders; gene-environment and cancer, and environmental stressors and mental health. Other NIH funding at Wayne State University through the Pediatric Prevention Research Center is examining ways to construct effective weight loss interventions for African American adolescents with obesity and to use computer motivational interventions to improve diabetes care in African-American youth. Plus, the Pediatric Prevention Research Center is actively involved in research in behavioral and mental health research around HIV/AIDS and other infectious diseases among low-income adolescents. It also brings particular focus to behavioral and mental health issues among Chinese migrants, especially around HIV/AIDS risk behaviors and mental health issues for rural to urban migrants. Finally, cardiovascular research at Wayne State is a growing research area, which leverages strengths at the Department of Physiology and Emergency Medicine, and is increasingly focused on health disparity issues. A recent NIH R01 award from the National Institute of Minority Health and Health Disparities is investigating the use of adjunct vitamin D to reduce the health disparities in cardiovascular disease.

What is generally true of all of these efforts underway at Wayne State University in health disparity research is their multi-disciplinary focus that involves faculty from multiple departments and often across schools and colleges at the university. One specific Department at Wayne State that does engage in health disparity research across cancer, environmental health, cardiovascular and obesity efforts is the Department of Family Medicine and Public Health Sciences, which also leads Wayne State University's Masters in Public Health program.

While it is hard to fully assess, the position of Wayne State University in health disparity research, a search of key terms from NIH awards, including "health disparity" and "minority", suggest that Wayne State is active, but not among the top universities in the nation. Using the search term "health disparity research" finds that there are 15 NIH-funded projects at Wayne State out of a total of 2,706. This ranks Wayne State University 56th in the nation. The top 10 universities in NIH-funded grants identifying using the search term "health disparity" all had more than 35 grants, with the University of Alabama at Birmingham leading the nation with 85 grants. Similarly for a search of NIH grants using the term "minority" (which does overlap with health disparity research), Wayne State University has a stronger presence with 28 out of over 4,000 active NIH awards, ranking 36th in the nation. The top 4 universities with active NIH grants involving the term "minority" had over 100 awards, including UCLA (114), Johns Hopkins (113), University of Alabama at Birmingham (101) and UCSF (101).

Another important federal agency funding health disparities research is the Centers for Disease Control. One particularly important CDC health disparities program is the Racial and Ethnic Approaches to Community Health (REACH). Currently there are 50 grantees under REACH found in 26 states, of which 10 are universities. In Michigan, the REACH grantees are the Genesee County Health Department, the Intertribal Council of Michigan and the Michigan Public Health Institute. The Prevention Research Centers is another important CDC program that addresses health disparities, with a focus on working with underserved communities on new ways to promote health and prevent disease. Currently, there are 37 centers associated with schools of public health or medicine. None are located in Michigan. For

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Fiscal Year 2013, CDC reports two grants to Wayne State University – one for the National Spina Bifida Patient Registry and the other for Strengthening Supports for Healthy Relationships.

So, while research involving health disparity populations and health disparity research is an active area of focus at Wayne State University, there needs to be a concerted and strategic approach for raising its level of activities to be among the national leaders.

Insights from Benchmarking

To help in assessing how Wayne State University can approach advancing its position to become a leading university in Urban Health Disparity Research it is helpful to consider other leading universities in both health disparities research and urban health.

Benchmarking Insights on Leading Universities in Health Disparities Research

For the university leaders in health disparity research, Battelle examined the ongoing programs associated with existing NIMHD-funded Centers of Excellence in Health Disparity Research (see <http://www.nimhd.nih.gov/fundedPgmList/coeList-p60.html>). What stands out about the NIMHD Centers of Excellence (COE) Program is that it is focused on establishing leading research centers within universities to address health disparities with a focus on building capacity through support for cores involving research, research training and education, and community engagement with a focus on translational research. These centers typically become local hubs for health disparities research, addressing the biological, environmental, behavioral, and social factors that contribute to health disparities.

Battelle has conducted a detailed web-based review of the 22 existing NIMHD Centers of Excellence in Health Disparity Research. Appendix A sets out a brief overview of each center. Below are a set of insights to help Wayne State University consider how it might position its own efforts in health disparity research around its urban health focus:

- **Advancing a center in health disparity research does not require a public health school.**
 - 11 universities have NIMHD Centers of Excellence and no school of public health, including: Georgetown University; Case Western University; New York University; Cornell; Yeshiva University's Albert Einstein School of Medicine; University of Massachusetts, Worcester; University of Miami; University of Pennsylvania; University of Southern California; Wake Forest; and UCSF.

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- Even for many of those with schools of public health, the Centers of Excellence is housed in other schools. Most typical are schools of medicine, though in the case of the University of Washington it is in the School of Social Work.
- **A university-wide center of excellence in urban health disparity would not be unprecedented.**
 - The University of Alabama, Birmingham has a Center that was approved by University of Alabama Board of Trustees and reports to the Vice President of Research.
 - The University of Illinois at Chicago has a more university-wide Institute for Health Research and Policy in which its NIMHD Center of Excellence is housed. This university-wide Institute is charged with improving health practices and policies through a multidisciplinary perspective. It is, though administered by the School of Public Health, but is guided in concert with the Deans of the other schools at the university.
- **Nearly all of the universities with Centers of Excellence also have an NIH-funded CTSI**
 - Of the 22 NIMHD Centers of Excellence in Health Disparities, only the University of Puerto Rico and Wake Forest University do not have an NIH-funded CTSI
 - This suggests that the NIMHD Centers of Excellence tap many of the same strengths found at universities with CTSI's, such as epidemiology, biostatistics and clinical research cores.
- **Four of the NIMHD Centers of Excellence are integrated into their universities CTSI**
 - This includes Georgetown University, Case Western, NYU and the University of Minnesota
 - These linkages often involve having the NIMHD Center of Excellence serve as the community engagement arm
 - In the case of the University of Alabama, Birmingham, it appears that the CTSI and NIMHD Center of Excellence share access to a one stop shop for recruiting participants to study
- **There is a wide variation in the range of diseases that the NIMHD Centers of Excellence focus on, though the prevalence are in the areas of chronic diseases** – suggesting that Wayne State University's unique strengths may help it stand out
 - Most of the NIMHD Centers focus on heart disease/cardiovascular (7), diabetes (6), cancer (6 – 2 in breast, 2 in prostate, 1 in colorectal, 1 in tumerognesis), obesity (4), stroke (2), kidney diseases (2), asthma (2), hypertension (1)
 - Many of the NIMHD Centers of Excellence offer a more focused effort on behavioral approaches to research – 4 apply behavioral research to studying other disease areas, 4

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study mental health/trauma, 2 tobacco cessation, 2 substance abuse, 2 HIV/AIDs management, 1 violence and 1 early childhood, 1 aging

- **While not explicitly recognizing Urban Health, it is striking how many of the NIMHD Centers of Excellence represent universities and academic health centers in urban areas and have very focused partnerships with urban communities.** Examples include:
 - Albert Einstein working with its teaching hospitals in the Bronx, NY
 - Case Western University working with MetroHealth in Cleveland
 - Columbia University working with two neighborhoods in Northern Manhattan
 - Cornell Weill working with local community groups in NY targeting population of black men
 - NYU working with asian groups in NY
 - UCLA working with community navigators for conducting health research
 - University of Miami working closely with its community at its El Centro campus
 - Virginia Commonwealth University working with the nearby Mosby Housing Project
- On education programs, a number of the NIMHD Centers of Excellence have leveraged their programmatic efforts to go beyond traditional career development and mentoring to establishing more formal education certificates and degree programs
 - Albert Einstein College of Medicine has teamed with Lehman College to offer a Masters Degree in Public Health
 - UCSF a new Master's Degree in Clinical Research
 - UMass created a Clinical & Population Health Research Doctorate

Benchmarking Insights on Urban Health

As indicated in the Overview, urban health as a formal, separate discipline is considered by many to be an emerging field. Urban health research requires interdisciplinary studies investigating the unique challenges present in the urban environment with the goal of improving treatment modalities and health outcomes and influencing public policy. Issues include the impact of the social environment (housing, employment) on health, participation of urban groups in clinical trials, effective evidence-based practice for urban populations, and healthcare disparities among minorities, the elderly, children and immigrant groups. Because of the wide range of questions and issues in urban health, institutions are found across a “continuum” of approaches, ranging from community based participatory research to

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those acting as conduits between community and clinical to those that are more clinically oriented. Since no single department or program is capable of providing all of the expertise needed to investigate key issues, the need for collaborations is essential.

Over the years, Battelle has reached out to national leaders in urban health, including at Johns Hopkins University, University of Illinois at Chicago, Columbia University and Harvard University. Below are the key best practices insights that were generated from our past interviews:

Top 3 to 5 Cutting-Edge Issues for Scientific Inquiry into Urban Health

- Gaining the trust and involvement of the community in their own health. A critical challenge for those engaged in health disparities research is barriers in access to and involvement of minority communities.
- Of particular focus is research on the barriers to development and use of therapies integrating a genomic medicine approach.
- Assessing the role of socioeconomic factors in the incidence and progression of diseases among minority populations, particularly in obesity and cardiovascular disease. Key behavioral and environmental factors, such as risky behaviors, lack of health care access, and environmental exposures, need to be integrated into disease models.
- Developing investigators capable of integrating and analyzing complex, diverse sets of data spanning the continuum from basic research to clinical information. Of particular importance is linking biomarkers identified from basic research to treatment approaches and outcomes.

Key Supporting Disciplines:

- Bioinformatics and key supporting disciplines of applied math, computer science, and statistics.
- Public Health with an emphasis on epidemiology and health outcomes research.
- Basic biomedical research fields, such as immunology, biology, biochemistry.
- Broad range of social sciences from sociology to economics to ethnography.

Key Characteristics that Distinguish Top Programs Nationally:

- **Level of Funding:** At least \$1-2M per year in NIH funding for credibility.
- **Publications:** The number of publications and journal location are important indicators of productivity and excellence.
- **Number of PIs:** Numbers of PIs are not as important as is the true interdisciplinary makeup of the research team.
- **Other Factors:** Community impressions and opinion of value of the program to their needs.

Critical Core Facilities and Specialized Equipment:

- Unlike other areas of biomedical-related research, access to specialized equipment is not the hallmark for a leading health disparity research initiative. It can certainly be an advantage, but is not essential.

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- Ability to host community meetings is important.
- Computer data storage and crunching capabilities are very important.
- Infrastructure to support investigators to be involved in the community, from policies on service activities and IRB to ease of use community and academic research agreements.

Potential Types of Collaboration and Applications:

- Link with basic/clinical investigators to obtain community feedback and input on major health issues that can become research projects.
- Link with local community groups that are interested in developing accessible medical care for underserved communities.
- Training of individuals' skills in the analysis of complex data sets.

INITIAL DISCUSSION QUESTIONS FOR WAYNE STATE UNIVERSITY ON ADVANCING URBAN HEALTH DISPARITIES

Opportunity to build in line with FaegreBD Consulting's recommendations in *Transforming Clinical and Translational Sciences: A Roadmap to Lead the Nation in Urban Research Excellence* to:

- Consider forming an Institute for Urban Health Disparities that would serve as the university-wide, multi-disciplinary effort on urban health and health disparities (FaegreBD Consulting called in a Center for Urban Medicine and Population Health and focused it as only a SOM center). Key is that this institute should go from genomics to behavioral research, and should have a strong health informatics orientation and evidence-based medicine approach.
- Consider forming a Center for Urban Community Engagement and Clinical Research as the centerpiece of creating a strong clinical research infrastructure at Wayne State University.

What Faculty Enhancements are Required at Wayne State University?

Battelle's initial examination suggests the following possibilities:

- Recruit a national leader in health disparities to lead the new multidisciplinary, university-wide Institute for Urban Health Disparities
- Strengthen epidemiology and biostatistics with key recruits
- Recruit more faculty in evidence-based medicine, including for School of Nursing and School of Pharmacy
- Recruit faculty and staff in clinical research management with a strong emphasis on community engagement

What (if any) Facility Enhancements are Required, Including Specialized Cores and Equipment?

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Battelle's initial examination suggests the following possibilities:

- Establish center for community engagement – with conference rooms, training facilities, specialized tools for tracking population health (spatial) and conducting biomarker research
- Establish research computing center with access to dedicated computing capacity and skilled staff able to handle data management, mining, and modeling applications related to population health and medical informatics

What Educational Program Enhancements at Wayne State Should be Pursued?

Battelle's initial examination suggests the following possibilities:

- Incorporate the master's in public health as part of the new multidisciplinary, university-wide Institute for Urban Medicine and Population Health, add an urban health disparities track and develop a PhD component.
- Development an undergraduate minor or certificate in urban health disparity, along with a post-baccalaureate certificate in urban health disparity research (1 year program with hands-on training and stipend)
- Training for community health navigators – possibly a certificate program for existing community health, nursing, and other workers in evidence-based practice, such as clinical trials management.

What Specific Connecting Activities to Engage Community:

Battelle's initial examination suggests the following possibilities:

- Establish the Center for Urban Community Engagement and Clinical Research with staff that has the expertise to assist in community outreach and communications as well as the ability to facilitate recruitment of participants to studies and manage clinical research activities (including software capabilities)
- Focus on developing pilot grants to advance multi-disciplinary, community-based participatory research activities facilitated to engage the community in defining research questions that multi-disciplinary faculty teams can address – seek to position for gaining pilot data to pursue federal and philanthropic research grants

As Wayne State University moves forward, it is likely that many of the key organizational and research capability ingredients to advance its health disparity research efforts can be leveraged from the many efforts underway. In particular, the efforts of the Karmanos Cancer Institute's Population Studies and Disparities Research Program and the newly funded Center for Urban Responses to Environmental Stressors (CURES) can bring capacity for efforts involving more systematic community engagement as

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well as bringing together behavioral and mental health research with more basic sciences, particularly involving genomics and diagnostic technologies.

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Analysis of Federally Funded Health Disparities Research Centers

University	Areas of Research Focus	Notable Research Collaborations	CTSI Award	Connections to Clinical Research	Educational/Community Engagement Activities of Note	Institutional Role	Presence of School of Public Health
Albert Einstein College of Medicine – Bronx Center to Reduce and Eliminate Ethnic and Racial Health Disparities	Focus on: <ul style="list-style-type: none"> Heart disease Stroke Diabetes Many pilot projects launched in these areas		Yes	Focuses on effectiveness research related to community interventions such as use of community health workers at improving glycemic control and on comprehensive lifestyle interventions Also has a prospective study on consequences of poor glycemic control on cognitive function of diabetics	Supports a new Masters Degree in Public Health at Lehman College-CUNY Supports Division of Equity in Women’s and Perinatal Health within Dept of Obstetrics, Gynecology and Women’s Health – a national model for integrating health disparities education Health Disparities Faculty Development Fellowships for 2 years to enroll in the Clinical Research Training Program (CRTP) and complete its Master’s degree program in Clinical Research Methods with full tuition paid by Bronx CREED	Part of Medical College’s initiative in building academic-community partnerships through Institute for Community and Collaborative Health	<ul style="list-style-type: none"> No

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University	Areas of Research Focus	Notable Research Collaborations	CTSI Award	Connections to Clinical Research	Educational/Community Engagement Activities of Note	Institutional Role	Presence of School of Public Health
Case Western Reserve Center for Reducing Health Disparities	Hypertension Kidney Disease Organ Donation		Yes	Center directs the Community Research Partnership Core of the CTSI involving CASE, MetroHealth, Cleveland Clinic and University Hosp	Community Research Scholars – drawn from health and human service non-profits in Cleveland – 2 year training program with focus on research design, methods, program eval and grant writing – focus on evidence based research Mentoring program for minority students in medical education track in collaboration with Cleveland State Community resident researcher training program – involves community residents in continuing education with Case	Center in Medical School and associated with CTSI	<ul style="list-style-type: none"> No
Columbia University – Center for the Health of Urban Minorities	Established in 2003 Diabetes Cardiovascular Disease Also works in mental health and injury prevention Target studies on Caribbean Latinos		Yes	Works in two northern Manhattan communities – one Latino and one African American Little information provided on clinical research activities – more project driven	Integrates research with MD/MPH students	Housed in Center for Community Health Partnerships at Columbia University’s Health Sciences Division Headed by Vice Dean for Community Health and reports to EVP for Health and Biomedical Sciences/Dean of Medical School	Yes – but PI is from Medical School and is a cardiovascular researcher (MD/MPH)

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University	Areas of Research Focus	Notable Research Collaborations	CTSI Award	Connections to Clinical Research	Educational/Community Engagement Activities of Note	Institutional Role	Presence of School of Public Health
Cornell University—Comprehensive Center of Excellence in Disparities Research and Community Engagement	<p>Focus on cardiovascular with research projects focused on behavioral interventions</p> <p>Seeks to translate basic behavioral science theories to understanding and developing health solutions</p> <p>Targets population of black men</p>	States collaborations with Hunter College of Nursing, CUNY	Yes	Focuses in clinical research on use of randomized control trials on behavioral interventions	Fellowship in Clinical Epidemiology and Health Services Research focused on Health Disparities	Appears to be a Center in the Department of Medicine ... focus on health services and clinical epidemiology	No
Georgetown University – Center of Excellence for Health Disparities	<ul style="list-style-type: none"> Breast cancer Stroke <p>Also advances “Research Affinity Groups”—for faculty ... now includes groups focused on disability; mental health, gender and sexuality, etc.</p> <p>Ideas Lab that offers pilot funding for projects with strong potential to bring in external funding:</p> <ul style="list-style-type: none"> Diabetes Education and Medication Therapy Mgt Service Developing a research agenda via CBPR with Immigrant Youth 	Howard University participates in the Center	Yes	Close ties to Georgetown-Howard CTS focused on community-academic research partnerships	Strong emphasis on community-based participatory research	<p>Led jointly by faculty member from Cancer Center (Minority & Health Disparities) and Department of Pediatrics (Child and Urban Development Center)</p> <p>University wide initiative – with steering committee involving Provost, Executive Vice Dean of Medical School and Dean or their representatives from Nursing, Law, School of Foreign Service, Public Policy and Business</p>	No

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University	Areas of Research Focus	Notable Research Collaborations	CTSI Award	Connections to Clinical Research	Educational/Community Engagement Activities of Note	Institutional Role	Presence of School of Public Health
Johns Hopkins University – Maryland Hopkins Center for Health Disparities Solutions	Established in 2002 Focus on exploring health disparities in integrated settings <ul style="list-style-type: none"> • Rural county • Hospital consortium • National effort with churches and community-based organizations Notes a novel study research design to study social determinants of health and healthcare disparities		Yes	Not discussed in any detail	Journal club focusing on issues in health disparities Certificate program in Health Disparities and Health Inequality offered to all JHU students Post-doctoral training	Center is in School of Public Health	Yes
NYU Center for the Study of Asian American Health	<ul style="list-style-type: none"> • Cardiovascular disease • Tumerogenesis • Mental Health • Social and cultural determinants of health 	Also connected to CDC Center of Excellence for Eliminating Health Disparities focused on hepatitis B Plus received a CDC Prevention Health Promotion and Research Prevention Center grant – focus on use of community health worker model approach to build community capacity	Yes	An affiliated center of the CTSI community engagement and population health research core at NYU	Community health worker training Health disparity research training for graduate and post docs	Part of NYU Institute of Community Health and Research	No

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University of Alabama, Birmingham: Minority and Health Disparities Research Center	<ul style="list-style-type: none"> Cancer Diabetes Aging African-American Men Major focus on pilot research funding to faculty, primarily at UAB – since 2005, 44 faculty funded at \$1.5m with \$30m in extramural awards to 20 of the faculty	Extensive engagement with numerous NIH funded P30 and U54 projects Plus many community collaborations across obesity, cancer control, patient navigators, etc. Dr. Fouad who leads Center is widely involved in health disparities research ... http://www.uabmhrc.com/	Yes	Close linkage to CTSI one-stop shop for recruiting participants for any study	Extensive Training and Career Development Program, especially targeted to minority students to conduct minority health and health disparities research – non-degree/non-certificate based	Approved by University of Alabama Board of Trustees Reports to Vice President of Research Has own Advisory and Steering Committees	Yes – but not leadership of Center ... drawn from Director of the Division of Preventive Health and Director of the Cancer Center
UCLA: Two centers: Bridging Research, Innovation, Training & Education Solutions for Minority Health Family and Neighborhood Interventions to Reduce Heart Disease	<ul style="list-style-type: none"> Neurosciences Behavior: External influences that contribute to disparities and the science behind internal, physical effects on brain function and the body – focus on mental health Focus on behavioral-environment interventions to reduce cardiovascular disease among Latinos 	Notes it engages faculty across school lines – Public Health, Public Affairs, Medicine	Yes	Does not appear to be an extensive part of the Center	Focused on training community navigators for conducting health research Mentions core on research training	Seems to be part of School of Public Health	Yes

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UCSF: Center for Health and Risk in Minority Youth and Adults	<ul style="list-style-type: none"> • Focus on chronic disease prevention – asthma, obesity, type 2 diabetes and tobacco use • Goal is to understand influence of behaviors adopted in youth and young adulthood and other biological, social, cultural and environmental factors that act as precursors to chronic disease • Makes use of a unique OurSpace Neighborhood Database using spatial data and project data 	Involves USF, SF State University, Northern CA Kaiser Permanente Division of Research, UC Berkeley, Stanford researchers	Yes	No separate clinical core, places emphasis on Community Engagement and Outreach – advance bi-directional communications with minority youth and young adults and researchers; plus advances community-based participation research methods	Training Core: <ul style="list-style-type: none"> • Master’s degree in Clinical Research • Mentors for health disparities research 	Part of UCSF Center for Vulnerable Populations at SF General Hospital affiliated with Department of Medicine	No
University of Illinois at Chicago	<ul style="list-style-type: none"> • New Center • Focus on: <ul style="list-style-type: none"> ○ Prostate and colorectal cancer ○ Breast cancer 	Affiliated with Center for Health Behavior Research at Institute for Health Research and Policy Integrates faculty from other health sciences colleges Partners with Rush University	Yes	Very specific goals to develop population based analysis of prostate and colorectal cancer	Developing a certificate program on health disparities research for students, faculty and the community	Housed in the Institute for Health Research and Policy, a large research institute at the university, designated by the Illinois Board of Higher Education in 1997 to improve health practices and policies through a multidisciplinary perspective -- Administered through the School of Public Health on behalf of deans of all UIC colleges	Yes – PI is from School of Public Health

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University of Colorado, Denver: Centers for American Indian and Alaska Native Health	<ul style="list-style-type: none"> • Targeted to Native Americans • Current focus on health impacts of psychological trauma • Other past efforts and collaborations focused on: <ul style="list-style-type: none"> ○ Substance abuse ○ Cardiovascular ○ Early childhood 	Extensive collaborations with other university research centers focused on Native Americans: <ul style="list-style-type: none"> • Native Elder Research Center • Center for Native Oral Health Research • Work with urban indian health centers • Head start 	Yes	Focus on health outcomes/ evidence-based practices	Focus on training AI/AN health scientists and practitioners with targeted efforts for: <ul style="list-style-type: none"> • College students at Tribal colleges • Postdoctoral researchers Community engagement focused on community research conferences to train in use of community assessment tools and community advocates for Digital Storytelling	A center in the school of public health	Yes – it is the lead

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UMass Center for Health Equity Intervention	<p>Established in 2012</p> <p>The primary projects funded are testing the impact of narrative-based interventions.</p> <p>Specific projects include: A multi-media campaign that uses community narratives to promote mother-child communication about sexuality and sexual health protection in a Puerto Rican community A new approach that incorporates the weight loss stories of women along with evidence-based weight loss strategies to facilitate post-partum weight loss among diverse low income new mothers An innovative adaptation of the community health-worker model that uses patients' stories to support hypertension management.</p>	Partnership of UMass Worcester and UMass Boston	Yes	Not discussed	<p>Developed a Health Equity Scholars Program with UMass Boston linked to their ethnic studies institutes</p> <p>Established a Clinical & Population Health Research (CPHR) doctoral to speed the translation of knowledge from the explosion in basic sciences to patient care interventions. Currently the program has more than 70 affiliated faculty representing 31 departments and centers at UMMS. Our students will graduate with the advanced skills and knowledge in biostatistics, epidemiology, and the genetic, behavioral, social, and health service predictors of individual health status needed to be successful clinical researchers. The program currently has 30 PhD and MD/PhD students, and admits a 4-6 students yearly.</p>	Not discussed	No

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University of Miami – Center of Excellence for Health Disparities	Focus on “behaviorally-rooted health conditions affecting minority populations: <ul style="list-style-type: none"> • HIV/AIDS and other sexually transmitted diseases • Substance abuse • Intimate partner violence Research core focuses on psychometric analysis, tools for effectiveness studies, costing and cost-effectiveness analysis		Yes	Provides IRB support, QA monitoring and biostatistics Supports Velos -- clinical research management suite (CRMS), includes modules to track and manage bio-specimens and compliance review.	Traditional training and mentoring for grad students and faculty	Center in the School of Nursing and led by the Dean	No
University of Michigan, Ann Arbor	Focus on cardiovascular disease in minority populations including African-American and Latino Supplemental grant to Center to create an Environmental Assessment Core to focus on neighborhood level measures relevant to cardiovascular disease – epidemiology, psychology, sociology, spatial analysis and genetics Plus supplemental grant for comparative effectiveness research in cardiovascular risk	Partnership with Jackson Heart Study involving University of MS Medical Center and Jackson State University New Environmental Assessment Core in partnership with Drexel University	Yes	Jackson Heart Study	Tradition career development and mentoring for UMichigan graduate students, post-docs and faculty Summer research training program with faculty and graduate students from Jackson State and University of Mississippi Medical Center	Center in the School of Public Health – PI is from SPH	Yes

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University of Minnesota Center for Health Equity	Smoking Cessation – randomized intervention trial using Community Health Workers and biomarker feedback Chronic Kidney Diseases – analysis of Medicare claims data		Yes	Part of CTSI	Career development and mentoring	Integrated into CTS Medical School investment of \$1 m to advance community based research and programs	Yes
University of Pennsylvania Comprehensive Center of Excellence in Health Disparities	<ul style="list-style-type: none"> Prostate cancer Builds on existing research on biomarkers, patterns of care, geospatial environment and obesity Evaluate role of obesity in prostate cancer outcomes Predictive models of individual risk factors in prostate cancer outcomes Determine whether variation in experienced and potential health care access and quality contributes to racial differences in treatment	Not discussed	Yes	Not discussed	Symposia on health disparities in cancer Close integration with training programs in clinical epidemiology, biostatistics and cancer	School of Medicine research center ... PI also affiliated with Cancer Center	No
University of Puerto Rico Making a Difference in Latino Health	<ul style="list-style-type: none"> Mental Health (self management, depression, substance abuse, nursing homes) Asthma 	Collaboration with Cambridge Health Alliance and Harvard Medical School	No	Randomized clinical trials Health effectiveness research	Mentoring process for junior investigators	Housed in Behavioral Sciences Research Institute that reports to Dean of Medical Sciences Campus –	Yes

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USC: Childhood Obesity Research Center	<ul style="list-style-type: none"> • Substantial longitudinal research into Latino adolescent obesity – very physiological in research, assessing body fat, physiological and psychological determinants of reduced physical activity, links to dietary intake, and impacts of various community health interventions • Supports a Metabolic Assay Core 	<p>Collaboration with Children’s Hospital of LA</p> <p>Active connections to other obesity research at USC</p>	Yes	Affiliated with Diabetes and Obesity Research Institute	Career development and mentorship	School of Medicine research center	No
University of Washington Indigenous Wellness Research Institute	<ul style="list-style-type: none"> • Focus on American Indian and Alaska Natives • Research theme on behaviorally rooted health conditions that disproportionately affect AIANs including: <ul style="list-style-type: none"> ○ Cardiovascular disease ○ Obesity ○ Diabetes ○ HIV/AIDs 	<p>Close connection to school of social work and other research centers at the School of Social Work including:</p> <ul style="list-style-type: none"> • Center for Indigenous Health Research • Center for Indigenous Child and Family Research 	Yes	<p>Leverages efforts of Center for Indigenous Health Research on community based participatory research</p> <p>Serves as a unique feature of the community engagement plan of the CTSI at UW to target AI/AN</p>	<p>Training of AI/AN health researchers to help them pursue grant funding</p> <p>Outreach to increase AI/AN students pursuing health careers</p>	Research center in the School of Social Work	Yes

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Virginia Commonwealth University Center of Excellence in Health Disparities Research	Established in 2007 Adverse pregnancy outcomes Focus on: <ul style="list-style-type: none"> • genetics of preterm birth • Environmental and biological predictors of preterm birth • periodontal infection 	Multidisciplinary within VCU Also Center through other funding focuses on interpreting social and physical environment and mediating behavioral factors and biologic pathways which determine health and disease including: <ul style="list-style-type: none"> • AA men prostate cancer study • Cigarette Dependence in AA Men Community based participatory research with Mosby public housing development	Yes	Focused around supporting specific research projects with recruitment of subjects and acquisition of samples	Clinical faculty scholars program for junior faculty leading to an NIH grant proposal and pubs – 3 year program Other programs for HS, undergrad, post-baccalaureate research program	Center is in the School of Medicine and Dean appoints the director Has a steering committee representing schools and departments at VCU	No

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Wake Forest University The Maya Angelou Center for Health Equity	<p>Established in 2012</p> <p>Focus on diabetes and obesity</p> <p>Research theme of “translating evidence based, lifestyle strategies to eliminate health disparities”</p> <p>Testing lifestyle intervention delivered either by physician-supervised group visits or by community health workers</p> <p>Latino Diabetes Prevention Trial testing church-based lifestyle intervention will reduce glucose</p>	Multidisciplinary within Wake Forest	No	Emphasis given research theme is on Community Outreach to transform how health and wellness information is translated and delivered to communities.	<p>Major focus on mentoring program for minority faculty</p> <p>Awareness of health care opportunities among minority students at all levels</p> <p>Health Disparities Policy Internship for Wake Forest undergrads</p>	Center in School of Medicine	No