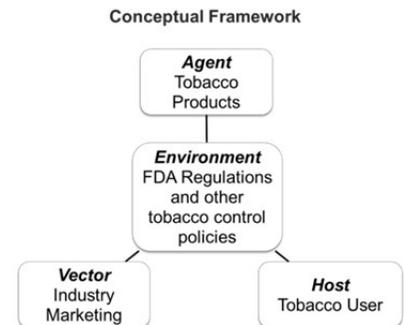


PART I: PUBLIC HEALTH SIGNATURE AREA: TOBACCO CONTROL

Tobacco use is responsible for more than 5 million deaths globally per year and is the single most preventable cause of death. *Tobacco control* is a field of public health science, policy and practice that requires multi-disciplinary expertise, including but not limited to behavioral science, health economics, law, environmental science and toxicology, to reduce tobacco-caused morbidity and mortality. Tobacco control efforts are aimed not only at behavior (i.e., prevention and cessation), but also at the broader environmental context that supports positive behavior change. As such, tobacco control relies on the traditional public health model of disease causation (see Figure) which highlights the complex inter-relationship of tobacco users (host), tobacco products (agent), tobacco companies (vector) and socio-economic, media, policy, and regulatory factors (environment). Of special note, both the *agent and vector of the tobacco epidemic are man-made* and thus controllable. That possibility moved closer to reality in the U.S. when in 2009, for the first time and after nearly 2 decades of debate, the landmark *Family Smoking Prevention and Tobacco Control Act* gave the U.S. Food and Drug Administration (FDA) authority over tobacco products to regulate the manufacturing, marketing, and distribution of tobacco products in order to reduce youth tobacco use and ultimately protect *public health*. In this section, we review existing tobacco control efforts at the Rutgers School of Public Health (SPH) and recommendations which leverage existing strength and address critical gaps that require attention to propel this signature area to “best in class.”



ANALYSIS

Strengths

The tobacco control research at SPH can be best understood over three time periods: The Early Years - largely dedicated to supporting state tobacco control efforts; The Mid Years - extramural diversification; and, the Present -, which is largely dedicated to ***Tobacco Control Regulatory Science***.

The early years: 2000 to 2004. In 1998, the Master Settlement Agreement (MSA) between the major tobacco companies and 46 US states resulted in the largest civil litigation settlement in US history. Many states dedicated a portion of the annual settlement to tobacco prevention programming, including NJ (\$30 million annually). The Comprehensive Tobacco Control Program (CTCP at NJDOH) partnered with SPH in 1999 to evaluate the program, resulting in the creation of the Tobacco Surveillance & Evaluation Research Program (TSERP) under the direction of Dr. Cristine Delnevo; and to expand existing Tobacco Dependence Program (TDP) activities to provide tobacco treatment and training across the State. In the early years, SPH was awarded roughly **\$5 million annually**. During this time, TSERP conducted over 13 population surveys to evaluate CTCP, reaching 29,200 youth, 11,500 adults, 2,400 clinicians, 2,200 pregnant women, and 1,500 worksites. Despite the fact that SPH leadership provided little senior mentorship, the evaluation work coming out of NJ was recognized early on as an “exemplar” by CDC’s Office on Smoking and Health. Dr. Delnevo was frequently invited to speak at CDC and between 2001 and 2002, and served as an expert panel member for several CDC reports Control” report. Likewise, the Tobacco Dependence Program (TDP) at SPH, led by Dr. John Slade with Dr. Jonathan Foulds (Director) and Dr. Michael Steinberg (Medical Director), excelled. TDP treated over 1,600 smokers, of whom 27% remained tobacco-free, significantly exceeding national quit rates. In addition, TDP provided intensive training for tobacco dependence treatment specialists, providing them with the skills to administer effective and evidence based interventions. Between 2000 and 2004, TDP trained over 2,000 health professionals from various settings (e.g., hospitals, mental health agencies, worksites). While TSERP and TDP remained separate due to the need to evaluate all CTCP activities (including TDP), scholarly collaborations on publications was common. **Moreover, while these two programs did not have any extramural funding outside of NJDOH, the junior faculty produced 51 research publications between 2000-2004 and began to establish a national reputation.**

Mid years: 2004 to 2009. In July 2004, the state slashed funding for the NJCTCP by 66%, which severely

reduced the SPH funding for tobacco control. While both programs continued on with their state efforts, notable reductions were made in staffing. TSERP conducted 7 population surveys while TDP treated 1,500 smokers and trained another 2,000 providers, now from each of the 50 states and from 30 countries around the world. Given the severe reduction in the state funding, faculty began to apply for NIH and Foundation funding to continue and diversify their tobacco control research agendas. Between 2004 and 2010, they secured two grants from the *Robert Wood Johnson Foundation, Substance Abuse Policy Research Program*, a cooperative agreement from CDC, one R21 from NIH/NCI, three R03s from NIH/NCI, and a contract from NIH/NCI; totaling \$1,090,00. During this time, Dr. Jane Lewis also expanded the *Trinkets and Trash Collection* (T&T) (previously belonging to Dr. John Slade, who passed away in 2002), into a nationally recognized tobacco industry marketing surveillance system and online archive of tobacco advertising materials (www.trinketsandtrash.org). This unique resource was and continues to be used by tobacco control educators, advocates, researchers, policy-makers as well as policy enforcers, such as the National Associations for Attorneys Generals (NAAG). In addition, the TSERP program became a Center in 2007 (Center for Tobacco Surveillance & Evaluation Research (CTSER)) with Dr. Delnevo as its founding Director. **Between 2005 and 2009, the faculty produced 58 research publications.**

Current Period: 2010 to date. In 2010, the state ceased support for the CTCP; zero funding was allocated for TDP and most staff were laid off; Dr. Jonathan Foulds left UMDNJ for Penn State. Dr. Michael Steinberg, with some support from CINJ, continued with TDP's mission to treat smokers and expanded its training program as a revenue enhancer. CTSER received modest support from NJDOH to conduct the biennial NJ Youth Tobacco Survey and was thriving extramurally, having secured three additional R21s (Delnevo, Lewis, and Steinberg), an R03 (Wackowski) and one R01 (Delnevo). It was during this time period that the FDA partnered with NIH to create the **Tobacco Regulatory Science Program** (TRSP) at NIH to support research responsive to FDA's regulatory authority. Of special note, NIH- TRSP is funded by tobacco industry fees and as such, has not been subject to the low NIH paylines of recent years. With the departure of Foulds, the core faculty were down to four and those responsible for the metrics reported in the Table include Cristine Delnevo (SPH), Jane Lewis (SPH), Michael Steinberg (RWJMS, secondary appt in SPH), and Olivia Wackowski (SPH). During this time period, CTSER changed its name to the Center for Tobacco Studies (CTS) given the expanded mission beyond evaluating state tobacco control activities. Over these 5 years, the core tobacco control faculty generated almost \$8 million in extramural funding, 57% of which was from NIH. Of note, this percentage has increased over time, with 86% of 2013 extramural funds coming from NIH.

Summary of tobacco control extramural funding and publications in past 5 years			
	Extramural Funding	(% NIH)	Publications
2009	\$1,649,713	0%	8
2010	\$1,583,475	37%	13
2011	\$1,220,491	88%	18
2012	\$1,517,782	74%	4
2013-date*	\$2,005,172	86%	16
Total	\$7,976,633	57%	59
*includes 2014 funding and publications			

In addition to the volume of publications produced by this small group of researchers, several of these manuscripts have had a significant impact on tobacco policy and practice including those on **flavored cigars** (Delnevo in *Tobacco Control* 2014); **menthol cigarettes** (Wackowski, Delnevo in *Nicotine & Tobacco Research* 2014; Delnevo in *Tobacco Control* 2013; Delnevo, Steinberg in *Am J of Prev Med* 2011; Wackowski, Delnevo, Lewis in *Nicotine & Tobacco Research* 2010; Delnevo, Wackowski in *Prev Med* 2009), **e-cigarettes** (Steinberg, Delnevo in *J of Gen Internal Med* in press; Delnevo, Lewis in *Am J of Prev Med* 2014); and **pipe and cigar use** (Steinberg, Delnevo in *Annals of Internal Med* 2010), as well as national policy regarding **tobacco age of sale** (Steinberg, Delnevo in *Annals of Internal Med* 2013), **healthcare provider behaviors** regarding tobacco (Steinberg, Delnevo in *Prev Med* 2011), and **tobacco treatment** (Steinberg in *Addictive Behaviors* 2011); Steinberg in *Drug and Alcohol Dependence* (2011); Steinberg in *Annals of Internal Med* 2009). These research findings have had an immediate impact on the FDA's tobacco regulatory process. Our research was heavily cited in FDA reports on menthol cigarettes (i.e., they promote youth initiation and hinder cessation relative to non-menthol) as well as FDA's newly released regulations on cigars and e-cigarettes. Moreover, the FDA's Center for Tobacco Products (CTP) has specifically sought our expert testimony on *Modified Risk Tobacco Product Applications* (Delnevo), *Modifying Labeling Related to Nicotine Replacement Therapy* (Steinberg), and *Tobacco Surveillance Data For Population Modeling* (Delnevo).

Critical Gaps

Two major gaps hinder the efforts of the SPH tobacco control researchers to become best in class: scientific

expertise and logistical support. Each is discussed below.

Scientific expertise. FDA has identified several categories of research priorities (see Figure). Delnevo is an expert in product diversity, including harm reduction, Steinberg is an expert in Addiction, and Lewis is an expert in Communication and Marketing. Wackowski, a junior faculty member with a K01 pending award from NIH/FDA is focused on Product Diversity and Communication and Marketing. While all of the work conducted by these faculty is done with the goal of influencing policy, the group is deficient in two key areas—economics and toxicity/carcinogenicity. It is important to understand FDA tobacco regulatory policy within a legal framework. In addition, as public health researchers and professionals, we would be remiss to not address the *Global Tobacco Epidemic*. As regulations tighten for big tobacco in the U.S., the tobacco industry is increasingly exporting its deadly product globally, targeting low and middle income countries. These countries are still in the early phases of the epidemic, and intervention is required. The WHO Framework Convention on Tobacco Control (WHO FCTC) outlines strategies for countries to implement tobacco control. As such, we recognize that to date our researchers have not focused on global tobacco issues, but need to do so.

FDA Tobacco Control Regulatory Science Priority Research Areas
Product Diversity
Addiction
Communication and Marketing
Toxicity and carcinogenicity
Economics and policy

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Logistical gaps. The group is small. While Delnevo and Lewis are tenured, Wackowski is soft money funded and Steinberg is a clinician with multiple responsibilities and no dedicated time for research pursuits. In addition, the SPH-Center for Tobacco Studies (CTS) Director (Delnevo) has other administrative responsibilities that prevent focused dedication to the CTS. *Despite generating hundreds of thousands of indirect dollars annually for SPH, the leadership of the school has never strategically invested or supported the CTS*, beyond part time coverage of one secretary (as required under NIH guidelines that salaries of administrative and clerical staff should be treated as indirect costs). The group has no resources for pilot studies, and would also benefit from dedicated resources for junior faculty hires and post-docs.

Opportunities for Collaboration

As shown in Table, there are ample opportunities for tobacco control researchers at SPH to collaborate broadly with others within SPH, RBHS and Rutgers University, some which have been initiated and need to be sustained or cultivated to maximize potential, and others that could be developed. For example, new relationships are starting with members of SPH’s Environmental & Occupational Health Department (ENOH). Dr. Delnevo is Co-Investigator on a CINJ pilot project with two ENOH faculty members (Meng & Schwander) to study e-cigarette vapor particles, and this group has also submitted an R03 to NIH/FDA for funding (June 2014 review). Dr. Judith Graber’s (EOHSI) focus on coal miners’ health, including their occupational use of smokeless tobacco is a potential collaboration. In addition, Delnevo and Graber are collaborating, with Dr. Nan Stroup (NJ Cancer Registry Director, CINJ) on an R03 submission (June 2014) on tobacco use status measurement quality in the cancer registry. The Director of SPH’s Center for Global Health (Schwander) is in discussions with CTS members to conduct activities for a tobacco-focused project in Mexico, presenting opportunities for both cross-departmental and global tobacco control

Individuals	Rutgers Unit	Stage
Q. Meng	SPH-ENOH	Ongoing
D. Schendell	SPH-ENOH	Developing
J. Graber	EOHSI	Developing
S. Schwander	SPH-Global Health	Developing
A. Stroup	CINJ	Developing
T. Janevic	SPH-EPI	Potential
S. Chandwani	SPH-EPI	Developing
S. Echeverria	SPH-EPI	Ongoing
J. Williams	RWJMS- Psychiatry	Ongoing
M. Steinberg	RWJMS- Psychiatry	Ongoing
K. Greene	RU-SCIC	Developing
D. Gundersen	RWJMS-Family Med	Ongoing
P. Thomas	NJMS-Prev Med	Potential
J. Schwab	NJMS-Pediatrics	Potential
A. Petersen	RU-Sch of Social Work	Developing
R. Chen	RU-Law Sch	Potential
A. Akincigil	IHHCPAR	Developing

work. Natural opportunities for collaboration also exist with members of SPH’s Epidemiology department (EPI) on topics that relate to international and disparities work. For example, Dr. Teresa Janevic has a research interest in the high rates of smoking during pregnancy among Roma women in Serbia, and Dr. Sheenu Chandwani is collaborating with Dr. Delnevo and Steinberg on their R21 on South Asians tobacco use. CTS has already worked collaboratively with Dr. Sandra Echeverria (EPI) with respect to tobacco disparities among Latinos, and the use of menthol cigarettes. Outside of SPH, Addiction Psychiatry researchers at RWJMS (Williams) have conducted clinical research on smoking topography and menthol

cigarettes, which complements existing CTS work. CTS faculty have also begun conversations with Dr. Kathryn Greene (RU-School of Communication and Information (SC&I)) to discuss mutual interests. Collaborative opportunities are not limited to the New Brunswick campus. For example, Drs. Pauline Thomas and Joseph Schwab (NJ Medical School – Newark) have interests in youth tobacco use and Schwab also shares an interest in health providers' tobacco behaviors that is a natural fit with previous CTS work (Delnevo, Steinberg). Dr. Delnevo has also recently connected with Dean Ronald K. Chen from the Rutgers School of Law (Newark), who is enthusiastic about the prospect of working together. Although CTS has already made contributions to policy development and debate, efforts could be strengthened by working with such law and policy experts.

Successful Tobacco Control Research Programs in the Big10

Rankings do not exist, but we did review tobacco control research programs at Big10 Universities, as well as 41 NCI comprehensive cancer centers. Among the Big10 Universities, six had no focused research program related to tobacco control while two universities (Indiana University, University of Michigan) had small programs, but no significant NIH track record. The University of Wisconsin has a well known tobacco program that is almost exclusively focused on cessation and clinical practice. The University of Minnesota and Ohio State have solid tobacco research programs located in their Cancer Center. Likewise, within Cancer Centers, strong tobacco control programs are also noted at University of California San Francisco (UCSF), and Roswell Park Cancer Institute (RPCI). Of the institutions we reviewed, we consider two to be “best in class” – UCSF and RPCI. UCSF's Center for Tobacco Control Research has 46 faculty, although only a quarter of them have active NIH research funding. UCSF currently holds a R25 post doctoral training grant, and is one of 14 Tobacco Centers of Regulatory Science (TCORS) funded by NIH/FDA. RCPI is a much smaller program than UCSF, and more on par with Rutgers. There are six researchers at RCPI engaged in tobacco control research and RPCI is the scientific lead on the Population Assessment of Tobacco and Health (PATH) Study, which is a \$117 million national longitudinal cohort of study of 59,000 people ages 12 and older, funded by NIH and FDA.

We also sought feedback from colleagues at the April 2014 NIH *Tobacco Regulatory Science Conference*. This was an invite-only conference with roughly 150 non-federal researchers in attendance. Anecdotally, many colleagues concurred with our assessment of the UCSF and RPCI tobacco research programs as among the “best in class.” Of note, our own collaboration with these two programs was well known. Lewis has been collaborating with UCSF for five years on a R01 project looking at the smokeless tobacco marketing. Delnevo is a subcontractor on the PATH study to research cigars and electronic cigarettes and has submitted grants recently with RPCI investigators including a R01 to evaluate the cigar and e-cigarette market following FDA's new regulation (June 2014 review). Many colleagues were surprised we did not apply during the 2012 round for P50 TCORS funding. Our decision to not apply was difficult given that we had recently lost Foulds to Penn State and Wackowski was a brand new junior faculty. Simply put, we had the scientific expertise but did not have the manpower to compete due to our small size.

Relative Opportunities to become best in class

We have a small group of national recognized researchers who are poised to become “best in class” in Tobacco Control and this relatively new subfield: *tobacco control regulatory science*. In addition, there is currently a robust climate for funding to support research that would inform regulatory activities over tobacco products and our work is highly responsive to FDA's specified research priorities. One perceived advantage of the NIH-TRSP initiative is that funding comes from tobacco industry fees, not the federal budget. Perhaps because of the influx of new monies, relative to conventional NIH funding mechanisms, the award rates for FDA funded grant applications are higher. In addition, the NIH-TRSP investment is expected to grow as FDA asserts authority over cigars and electronic cigarettes (to date it only has authority over cigarettes and smokeless tobacco), generating more industry user fees into FDA and justifying expansion of their scientific portfolio to include research on these tobacco products. This bodes well for building momentum with our solid research base in non-cigarette tobacco products and offers an opportunity for CTS to leverage future NIH-TRSP funding. Indeed, CTS faculty have been very successful to date with obtaining FDA funding as principal investigators on primary awards and as co-investigators on subcontracts with important collaborators outside of Rutgers including UCSF, RPCI, and University of Texas. Lastly, like other successful tobacco control research programs, our Comprehensive Cancer Center is a key stakeholder in our success (e.g., UCSF, RPCI, Ohio State and Minnesota), given that tobacco control is one of three thematic foci in CINJ's Cancer Prevention and Control Program. In conclusion, we believe this small but productive group of researchers can

be moved from excellent to best in class with minimal investment.

PART II: PUBLIC HEALTH COMPLEMENTARY PROGRAMS: CONSULTATION AND TRAINING

While public health research, service and training involve a diverse range of topics, all rely on methodological expertise, including expertise in the areas of biostatistics, epidemiology, survey research and health economics. With these tools public health professionals can efficiently develop competitive applications for grant funding from foundations, state government, the NIH, and other federal granting agencies. Data from well designed and analyzed studies will allow multi-disciplinary faculty to respond swiftly to emerging needs within the surrounding community, across the state, the nation and around the globe. The **complementary Public Health** program at Rutgers will bring this expertise to signature areas across RBHS and will continue to extend work beyond RBHS and Rutgers by training new public health professionals. This complementary program will provide added value to most if not all of the potential signature areas. Aside from **Tobacco Control** described in this report, other potential signature areas that can benefit from the complementary programs in **Public Health at RBHS include: Alcohol, Tobacco, and Other Drugs, Cancer, Clinical Research, Community and Urban Health, Drug Development, Environmental and Occupational Health, Global Health, Health Disparities, Infection and Inflammation, Informatics, Mental Health, Nutrition, Obesity and Diabetes, Pediatric Health, Quality and Safety and Women's Health.** Faculty and staff from the RBHS are well positioned to provide this expertise through methodological consultation to support increasing basic, clinical and outcomes research, including the training of methodologists to assist in consulting. This can be accomplished by building infrastructure capacity and leadership through a new **Public Health Consultation and Training Center** housed in the Rutgers School of Public Health.

ANALYSIS

Strengths

To conduct high quality research and produce competitive grant applications for public health and clinical and basic science research, technical skills in biostatistics, epidemiology, survey science, and health economics are essential. Faculty from the Departments of Biostatistics and Epidemiology in the School of Public Health (SPH) on the Piscataway campus and those in the Departments of Preventive Medicine at New Jersey Medical School (NJMS)/Quantitative Methods: Epidemiology & Biostatistics in the SPH on the Newark Campus have expertise in biostatistics and epidemiology as well as survey research methodology. The Department of Biostatistics has been instrumental in supporting the ongoing funding of the Cancer Institute of New Jersey as a Comprehensive Cancer Center through the NIH. Biostatistics faculty provide support in planning and analysis for studies throughout CINJ, ranging from systems biology to randomized clinical trials to population science projects. The expertise and skills of the faculty in the Department of Biostatistics were also instrumental in the grant renewal for EOHHSI's Center for Environmental Exposures and Disease (CEED) through the NIH. Within the CEED, faculty provide the expertise for the Integrated Health Facilities Core, the nexus for the Center's interdisciplinary and translational research mission. Within the Department of Preventive Medicine and Community Health at NJMS, the Biostatistics Core Laboratory provides biostatistics and epidemiologic support services to biomedical and laboratory researchers located primarily at NJMS, but also within other RBHS schools and the surrounding metropolitan area. One recent example of funded research supported by the Biostatistics Core is an R01 research project involving NJIT and Rutgers School of Health Related Professions, entitled *Optimizing Hand Rehabilitation Post-Stroke Using Interactive Virtual Environments*. The Department of Quantitative Methods is also working to develop an MOU with the Rutgers Eagleton Institute in order to offer robust survey capacity on the Newark Campus, which currently exists at the Eagleton Institute in New Brunswick. In addition, there is survey methodology expertise in SPH Department of Health Education /Behavior Science. Faculty there have received NIH funding (i.e., R21 and R01) to advance survey sampling methodology via cell phone random digit dialing. Lastly, individual faculty in SPH and NJMS have successful track records of collaborating with numerous individual principal investigators in most of the signature areas discussed above to obtain grant funding through state, federal and foundation sources. Providing expertise in biostatistics, epidemiology, survey research methods, and in additional areas such as health economics to support the research of basic and clinical scientists at all levels of training will be essential for fostering the "best in class" areas that are eventually identified through the RBHS strategic planning process.

RBHS also provides consultative services through collaborative partnerships with community and state

government in the New Jersey, which has led to existing funded work, current research proposals and other types of strategic partnerships. SPH has established longstanding partnerships with, and serves as an important resource for, the New Jersey Department of Health (NJDOH) as well as for local health departments and community organizations engaged in public health related activities. **Perhaps most noteworthy was SPH and EOHSI faculty's critical efforts in the early days following the September 11th attack on the World Trade Center, having been called up by the NY/NJ Port Authority to assess the environmental and human health impacts of the tragedy.** Faculty from NJMS (who are also part of the Department of Quantitative Methods, SPH) are funded to provide public health consultation services to the *Newark Department of Child and Family Wellbeing* in a variety of public health areas, provide epidemiologic support and statistical analysis for the NJDOH in the area of TB surveillance and are working collaboratively with New Brunswick SPH faculty and the NJDOH to conduct a CDC-funded study of the health impact of *Hurricane Sandy*. NJMS in partnership with NJDOH and local health departments is also funded by the Robert Wood Johnson Foundation to participate in the Public Health Services and Systems Research. As another example, SPH's Office of Public Health Practice with its network of public health contacts and university resources, was instrumental to the success of *New Jersey Health Officers Association* in receiving and implementing a multi-year practice improvement grant that ultimately led to improved relations between local and state health agencies and continues to be a resource for these agencies. Faculty from the Department of Epidemiology at the SPH have also developed strong partnerships with community-based groups and community leaders in the city of New Brunswick to implement intervention research projects targeting underserved Latino populations. These pilot initiatives have focused on key risk factors for cancer and heart disease (e.g., obesity, physical inactivity and diabetes) and have been consistently funded through private foundations; an application is currently being prepared for submission to NIH that builds on this academic-community partnership. A similar initiative is taking place in the city of Newark to improve birth outcomes among African-American women. In another successful collaboration, the NJDOH, SPH, and CINJ manage and administer the *New Jersey Statewide Cancer Registry* (NJSCR), translating into the annual enrollment of thousands of cancer patients into population-based investigations of cancer prevention, etiology, treatment, and outcomes. **These connections and others provide a context for future research and educational opportunities as well as increased visibility for RBHS strengths in public health. Community linkages such as these are crucial if RBHS is to leverage its position not only for conducting rigorous and innovative research but also for making a tangible difference in the health of the communities that surround its campuses.**

Finally, for over 30 years faculty from RWJMS, NJMS and SPH has been training students at both the masters and doctoral level in the areas of biostatistics and epidemiology as well as in the other public health disciplines. SPH students are closely involved in research as part of their program requirements and many serve as consultants for clinical and basic scientists and for public health practice programs at state and local health departments and at non-profit organizations.

Critical Gaps

The methodology units at the SPH on the New Brunswick Campus and NJMS/SPH on the Newark Campus have limited capacity due to competing faculty responsibilities. To date, these groups cannot fully meet all of the research needs of the RBHS faculty. Areas in which we have some expertise, but which need expansion and depth include: health economics, data management, survey methodology; and genetic, epigenetic and molecular epidemiology and statistics. There is also a need for integration of the SPH programs on the New Brunswick and Newark Campuses. These programs have complementary strengths but need organizational mechanisms and IT infrastructure to foster collaboration. IRB and Contracts approval processes are also extremely cumbersome and serve as a substantial barrier to collaborations; efforts are needed to minimize these as they deter faculty from pursuing such collaborations. As well, the interpretations of the laws which safeguard data confidentiality in NJ (Title 26 Health and Vital Statistics) often serve as an impediment to research collaboration with the state Health Department. Finally, while some SPH students serve as biostatistics and epidemiology consultants, we lack mechanisms to supervise and support these students.

Opportunities for Collaboration

As pressures have mounted to increase translational research, particularly those initiated by physician-researchers, the need for expertise in sophisticated methodological collaboration has also expanded. Similarly, in this time of scarce government resources, the NJDOH is in great need of methodological assistance and Rutgers public health faculty can continue to and even expand the provision of these services. The development of a robust RBHS-wide **Public Health Consultation and Training Center**, with expertise in

additional areas such as health economics, data management, survey sampling methodology; and genetic, epigenetic and molecular epidemiology and statistics, housed within the SPH, would consolidate efforts to provide this expertise across RHBS units, campuses and the State. The migration of the Department of Environmental and Occupational Medicine into the SPH will add expertise in evidence base medicine to the consulting center as well. A **Public Health Consultation and Training Center** will also provide a vehicle by which to integrate the expertise of the Rutgers Statistics Department within these efforts. Additional dedicated faculty, staff, and student funding would assist with the development of innovative methodological approaches to new research questions, provide technical support for developing competitive applications for grant funding for human subject research from the NIH, as well as foundations, state government, and other federal granting agencies, and facilitate the development of community partnerships and initiatives for community-based research across RHBS. One mechanism for the enhancement of consulting on both campuses would be to train and support masters and doctoral level students to provide some of these functions. This support would help to overcome the current lack of funding for post-doctoral, doctoral and masters training at the SPH, which has been a significant barrier to attracting top-tier students.