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Mr Chairman, and members of the committee. Thank you for the opportunity to speak with you today on the proposed merger of NIAAA and NIDA. My perspective on this is shaped not only by my experience as NIAAA director for 15 years, but also by my prior years as both a laboratory researcher and then as founder and director of a large alcoholism treatment program, which served 15000 alcoholic patients during my tenure. I was an active member of the research community, but I also had much interaction with state and local government, community organizations, with treatment professionals and counsellors, as well as with Alcoholics Anonymous.

I will address two main issues: first, the uniqueness of NIAAA's vast scientific enterprise, and the long-standing reasons why this proposed merger would be a tremendous setback to public health.

My first main issue is the uniqueness of NIAAA science. Alcohol is unique both in the scale of its problems, and in the details of alcohol action. The statement regarding both institutes that "the science is the same", which comes so trippingly off the tongue, is a serious misrepresentation of the scientific reality, and results from a very narrow perspective of the universe in which alcohol issues, problems and science play out. Alcohol abuse and alcoholism cost more and kill more than all the illegal drugs together. 80000 deaths a year from alcohol, and an annual bill to society of 235 billion dollars. Much of this cost is attributable not only to alcoholics, that is alcohol dependent people who are addicted to alcohol, but to alcohol abusers who are not addicted but who drink excessively often enough to become ill themselves or to hurt others. NIAAA's mission goes far beyond addiction. This committee has heard before the staggering list of alcohol-related problems, so I will only restate some of them briefly: alcoholic liver disease including cirrhosis, neurological disease including dementia and peripheral neuropathy; pancreatitis; cardiac arrhythmias, alcoholic cardiomyopathy and hypertension; fetal alcohol syndrome and partial fetal alcohol syndrome; increased risk for suicide; trauma, including alcohol related auto accidents---13000 in the year 2006;

interpersonal violence, including fights, sexual assaults which figure prominently on college campuses; alcohol poisoning and toxic interactions with medications. The problem of alcohol abuse is especially great in the military.
The majority of alcohol abusers and alcoholics are not drug abusers. To repeat: the majority of alcohol abusers and alcoholics are not drug abusers. Of the 18 million adults with an alcohol use disorder, only 13 percent of them have a drug abuse disorder as well. Originally NIDA, now with SAMSHA, had a data base called DAWN---drug abuse warning network, which tabulated emergency room visits for drugs and for drugs combined with alcohol. When I once inquired why there was no category for alcohol alone, I was told that that would have "swamped the system". I want to be clear that I am in no way minimizing the tremendous problem of drug abuse: in fact I was privileged to be a member of Dr Vincent Dole's laboratory at the Rockefeller University in the exciting early 1960's when he and colleagues discovered the methadone maintenance method of treatment for heroin abuse, which 45 years later is still the single most effective treatment for any addiction. My interest in and concern about that problem remain.

Alcohol is unique, and the science supported by NIAAA reflects both alcohols unique properties and its extensive toxicity. Alcohol has remarkable properties: it is a metabolized substance, taken by mouth, a source of calories, quite inefficient as a psychoactive substance compared to other drugs, since it must be taken in gram amounts, not milligrams, to have an effect. NIAAA research has shown that alcohol interacts with many receptor systems, both in the brain and outside: gaba,serotonin, acetylcholine, dopamine, glutamate, NPY, cannabinoids, CCK, ghrelin and so on.

NIAAA has pioneered major advances in genetics, organ toxicity and clinical research. Alcohol dependence is highly heritable, and over the last 20 years, in a continuing large human study of alcoholism-dense families, several chromosomal areas have been found with genes very related to alcohol dependence. These findings have been verified in independent analyses by a consortium of international investigators. In general, the evidence shows that a family history of alcoholism is not predictive of drug abuse. NIAAA's portfolio has extensive work on all the alcohol medical complications mentioned previously. The effect of alcohol on one organ can affect function

in another, leading to the institute's emphasis on studying alcohol effects from a system's viewpoint.

NIAAA has supported important work in various mechanisms of hepatotoxicity, pancreatitis, endocrine problems, cardiomyopathy, brain damage, and of course the fetal alcohol syndrome. Alcohol is different in that much of the damage it causes arises from its metabolism and the formation of reactive oxygen species. In recent years, the effect of alcohol on epigenetics has been of great interest; for example, alcohol interferes with essential histone methylation. NIAAA researchers are studying the effects of alcohol on micro RNA control of gene expression in brain and liver. NIAAA supports widespread research in animal models both of drinking itself, and of the organ damage that alcohol produces.

NIAAA was created to solve the problems caused by alcohol. But as a responsible scientific agency, NIAAAA has also supported research on the benefits of moderate drinking, among them, decreased risk of coronary artery disease, ischemic stroke, and osteoporosis.

A major agenda for NIAAA has been rigorous large randomized clinical trials of existing therapies, both verbal and pharmacologic, including traditional approaches like Alcoholics Anonymous as well as newer ones such as cognitive-behavioral therapy, but also medications like naltrexone and acamprosate, which are approved by the FDA to treat alcoholism---an approval based substantially on NIAAA supported research. NIAAA's support for rigorous clinical research has led to the trial of many other drugs for alcoholism and in the last few years the pharmaceutical industry has become attracted to the search for new alcoholism medications. I cannot see where any of the research I have listed would benefit from a merger with NIDA.

Some of the dopamine-based reward circuits in the brain, which function normally to reward eating and sex, are involved both with alcohol and drugs. This commonality of certain neural circuits is hardly justification for merging two very different institutes. There is hardly any pair of NIH institutes where some scientific commonalities aren't found. Examples abound: for instance, the auditory cortex and visual cortex are part of the nervous system, have very similar synapses and receptors, but NIH, for very good reasons, has separate

institutes on vision and hearing distinct from the neurology institute. NIDA's interest in prevention and treatment of intravenous drug abuse is hardly independent of the NIAID's efforts to prevent and treat AIDS.

My second main issue is why I strongly believe that a merger of the two institutes would be a tremendous setback to public health.

Institutes don't arise in a vacuum: they arise each in their own special world of social attitudes and problems, neglected health and research needs, special populations, laws and regulations, and economics. On these matters, NIAAA and NIDA are radically different. NIAAA was created in the early 1970's largely through the efforts of Senator Harold Hughes, himself a recovered alcoholic and others. Hughes believed that this immense problem, much neglected by the public, (and to a large degree by NIMH where alcohol research had been housed), needed a highly visible agency with a unique focus. I might mention that Bill Wilson, the principal founder of AA, where anonymity is a guiding principle, broke his anonymity at that time in order to testify to congress on behalf of establishing the NIAAA.

Alcohol is a legal drug, used safely by most drinkers. It is sold, advertised, taxed, and incorporated in our culture in many ways. This is a very different world than NIDA's. NIDA deals mostly with illegal drugs, and the social milieu involves a large amount of criminal activity, law enforcement, courts, jail, international cartels and tremendous stigmatization of the drug addict by society. Drugs sales are not regulated or taxed, and drugs are not advertised on billboards and television. There are no legal drug outlets throughout communities.

So it should be no surprise that NIAAA's research on prevention and social policy is very different from NIDA. Topics which NIAAA supports in these areas include the impact of price changes on beverage use—a concept called elasticity (a politically sensitive since it involves taxation), the impact of advertising on young people's drinking, the effect of zoning restriction, that is, the effect of controlling the density of alcohol outlets on alcohol problems in a community, effects of enforcement of age restrictions on purchase of alcohol by young people, enforcement of host liability for consequences of serving alcohol to minors, the utility of driving interlocks and so on. NIAAA is very

proud of the fact that its research on the 21 year age limit on driving deaths and injuries was instrumental in the Supreme Court's decision to support the federal government when the federal government pressured the states to enact restrictions on drinking below the age of 21. The 21 year age limit has saved several thousand lives on the highways.

Progess in solving the problems of alcohol faces two main obstacles and such progress depends on NIAAA maintaining its independence, focus and visibility. The first obstacle is the reluctance, despite evidence assembled by now over many years, of the old line treatment community to accept new medical therapies for alcoholism. This reluctance stems from the failure of some older treatment programs to remember the views of Bill Wilson, the far-sighted founder of AA, in his memorable address to the New York Medical Society: his respect for science, and even for potential new treatments outside of AA's approach. The situation is changing now because of the visibility of NIAAA as the leader in bringing science to the clinical area, the attraction of evidence based practice to younger clinicians, and the long-standing mutual respect and friendship between Alcoholics Anonymous and NIAAA. A merger would weaken this important and visible effort. Alcohol would be further stigmatized like illegal drugs, and the pharmaceutical companies, having finally become interested in developing new drugs for alcoholism because of NIAAA research, would abandon their commitment.

But the second and bigger obstacle to progress is our whole country's inability to come to grips with the alcohol issue. As I mentioned, much, if not most damage from alcohol is not only the dependent, that is addicted person or alcoholic, but the high-risk non-dependent drinker, and that's a lot of people. The size of he problem is one feature that makes alcohol issues unique. The alcohol problem and its cost is like the "elephant in the living room": its big, its there, you sort of see it, but after a while you just walk by it. In the drug world there were years of a highly publicized federal "war on drugs", an Office of National Drug Control Policy" was established and continues, but no such focus was developed for alcohol, the far bigger problem, nor would anyone want a war on alcohol----what is missing is national science-based alcohol policy to reduce its misuse. The kind of policy related research I mentioned before, such as research on price, age restrictions, outlet density, and advertising is central to informing the public and their elected representatives

firmly and consistently about the alcohol problem. But a merger will bury these issues in the face of the country's continued preoccupation with drug abuse, to the great detriment to public health. And young scientists, who responded to the need for alcohol research and were attracted by the visibility of NIAAA, will now wonder if alcohol research has a serious home and whether they should make a career of it.

To conclude, this merger proposal will not improve the productivity of either institute and is a setback to public health. Alcohol is a unique substance: unique in its mode of action, in its metabolism, in its widespread damage to the organ systems and to society, and in its legal and regulatory world. Science and public health, both need the NIAAA's independence, visibility and focus. Where there are common interests, of course collaboration should be increased---with NIDA, as well as the other institutes with which NIAAA collaborates.
There are several easily instituted mechanisms that could be introduced to increase collaboration without a destructive reorganization.

Dr Collins has listed global health as one of his priorities. In January 2010, the World Health Organization (WHO) will be releasing its document called "Global Strategy on Reducing the Damage from Alcohol Abuse." Alcohol is the fifth leading cause of premature death and disability worldwide, according to the WHO. This is clearly not a time to bury the NIAAA. That would be a terrible message to the American public and to the global community. There is an old medical maxim: primum non nocere--first do no harm. At a time when the whole world will once again be hearing about the extent of the problems caused by alcohol, I ask this committee and the NIH: please don't take the sign off the door.

Thank you for hearing me out.