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# “Something of an Adventure”: Postwar NIH Research Ethos and the Guatemala STD Experiments

*Kayte Spector-Bagdady and Paul A. Lombardo*

## Introduction

Since their revelation to the public, the sexually transmitted disease (STD) experiments in Guatemala from 1946 to 1948 have earned a place of infamy in the history of medical ethics. During these experiments, Public Health Service (PHS) researchers intentionally exposed over 1,300 non-consenting Guatemalan soldiers, prisoners, psychiatric patients, and commercial sex workers to gonorrhea, syphilis, and/or chancroid under conditions that have shocked the medical community and public alike.<sup>1</sup> Expert analysis has found little scientific value to the experiments as measured by current or contemporaneous research standards.<sup>2</sup>

Such an obvious case of research malfeasance, which violated research norms in place both in the past and now, has been uniformly repudiated. The Guatemala STD experiments were labeled “clearly unethical” by President Barack Obama and “reprehensible” by the Secretaries of State and Health and Human Services.<sup>3</sup> The Presidential Commission for the Study of Bioethical Issues, charged by the President to undertake a “thorough fact-finding investigation” into the Guatemala STD experiments,<sup>4</sup> described the studies as “clearly and grievously wrong.”<sup>5</sup> The public now knows what happened in Guatemala, and those actions have been universally condemned, but the question remains: if the Guatemala STD experiments were so “ethically impossible,” how did the U.S. government approve their funding in the first place? Much of the blame for the STD experiments in the

media reports has been directed at Dr. John C. Cutler, a senior surgeon at the PHS and the lead investigator in Guatemala.<sup>6</sup> His records, although inconsistent and incomplete, provide the most thorough documentation of what took place in Guatemala. They also provide clear evidence that Dr. Cutler knew some would conclude that this work was unethical. In the absence of his records, we would still not know about the Guatemala STD experiments — with their revelation, Dr. Cutler’s name has become synonymous with unethical research.

Public health research, however, is rarely an individual activity. The events in Guatemala did not just happen because a rogue scientist exploited a loophole in an underdeveloped administrative scheme. Making Dr. Cutler the focus of blame in the Guatemala STD scandal limits our understanding of the scope of responsibility for the experiments. Many others were complicit in planning, approving, advising, and participating in the STD research. Such a focus diminishes the lessons we can apply to ethical analysis of current human participant research. If Dr. Cutler had not joined the PHS, the Guatemala STD experiments might still have occurred. They were not merely the product of a malevolent individual; they were generated and supported by a structured grant system and a defined research environment.

This structured research grant system was the new National Institutes of Health (NIH) system. The World War II contract process of directed research

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**Kayte Spector-Bagdady, J.D., M. Bioethics**, is an Associate Director at the Presidential Commission for the Study of Bioethical Issues (Washington, DC). She received her J.D. from the school of law and M. Bioethics from the Perlman School of Medicine of the University of Pennsylvania (Philadelphia, PA). **Paul A. Lombardo, Ph.D., J.D.**, is a Senior Advisor at the Presidential Commission for the Study of Bioethical Issues (Washington, DC) and the Bobby Lee Cook Professor of Law at Georgia State University (Atlanta, GA).

gave way in 1946 to an NIH grant process encouraging scientific freedom under the Division of Research Grants (DRG). We argue in this article that tension existed at the time between the need for a system of governmental oversight and the desire to foster free scientific inquiry. The push towards scientific freedom coupled with a lack of attention to serious conflicts of interest at the grant review level did not offer sufficient protection to the subjects of federally funded research.

to prevent the abuses perpetrated on the subjects of the Guatemala STD experiments, it is critical for researchers to understand the impetus behind these regulations and be able to apply such ethical lessons to their daily interactions. Regulations and ethics are not coextensive — there will inevitably be times where a participant must rely on the ethical responsibility of an investigator. Ethics training is a critical element in a researcher's education to inform compliance with

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The failure to address these tensions adequately was a major element leading to the eventual corruption of the Guatemala experiments. In the Guatemala STD study context, respect for scientific freedom trumped administrative accountability, and the desire to engage the most preeminent experts for funding review overwhelmed attention to the conflicts and biases those experts faced. Without the detailed regulatory structure in place now for both grant review and treatment of research participants, this initial NIH process left protection of research subjects to the virtue of individual researchers, and the approval of their close colleagues and superiors.<sup>7</sup>

In this article we document the system of research review in place at the time of the Guatemala experiments and the ethos of scientific freedom for investigators that it promised. The NIH launched these experiments as part of a transition from the wartime contract process to a “new horizon” of postwar research grants. The inaugural NIH study section recommended approval of the Guatemala STD experiments at its first meeting. While the DRG required annual reports from its grantees, the Guatemala researchers were able to time their more questionable experiments so as to evade detailed reporting. We also look at the web of relationships that generated the experiments and provided a support system for them over time.

The needs to reconcile governmental oversight of research with scientific freedom and to mitigate conflicts of interest in areas requiring specialized expertise are issues that continue to challenge participant research today.<sup>8</sup> While current grant review and human subjects research regulations are designed

the spirit of even the most well-tailored regulatory structure. Comprehensive understanding of what could happen when “high ethical purposes and completely good morals”<sup>9</sup> of researchers are assumed and not cultivated is crucial to understanding the requisite value of ethics education and building the responsible investigator.

### **Science in Wartime: The Federal Medical Research Funding Process**

At the turn of the 20th century in the United States, Congress allotted minimal funding for research grants related to the investigation of disease. The agencies created to fund research focused on matters relating to war. Congress created the National Academy of Sciences in 1863 to identify and employ scientific talent that could advance national objectives during the Civil War.<sup>10</sup> The National Research Council began to carry out studies for the National Academy of Sciences, and in 1916 the Council of National Defense was established to coordinate resources and industry preparation for the U.S. effort in World War I.<sup>11</sup>

In 1935, President Franklin Roosevelt established the National Resources Committee to provide recommendations, plans, data, and information about the development of national resources.<sup>12</sup> The Committee went on to release a report entitled “Research — a National Resource” that argued that government agencies should be granted more latitude for the use of research funds so that scientists could tangentially build upon research as they were conducting it “following the unforeseen leads which research itself reveals.” The National Resources Committee saw research as “something of an adventure; and the more freedom

it enjoys, the more likely it is to achieve important results.”<sup>13</sup>

On the brink of the American involvement in World War II, the Roosevelt Administration established the Office of Scientific Research and Development (OSRD) to assume research contracts “issued for the purpose of assuring adequate provision for research on scientific and medical problems relating to national defense.”<sup>14</sup> The Committee on Medical Research was also inaugurated to “advise and assist the Director in the performance of his medical research duties with special reference to the mobilization of medical and scientific personnel of the nation [and]...to recommend to the Director the need for and character of contracts to be entered into with universities, hospitals, and other agencies conducting medical research activities for research and development in the field of medical science.”<sup>15</sup> (See Figure I).

Although the National Resources Committee had advised broad latitude for investigators, under the OSRD contract process, those who wished to receive funding had to complete a proposal including the: 1) “subject of investigation with its background, present state of knowledge, significance in national defense and plan of attack;” 2) “personnel, materials, and financial requirements;” 3) “investigative facilities available;” and 4) estimated duration of research. If an investigator received funding, he was required to conduct the research as defined in the contract, submit bi-monthly progress reports, and file a final report.<sup>16</sup>

Dr. Joseph Earle Moore was the Director of the Venereal Disease Division at Johns Hopkins University and Chair of the Subcommittee on Venereal Disease under the National Research Council (the

research arm of the National Academies).<sup>17</sup> Although Dr. Moore was excited by medical advancements during World War II, he warned that “[t]he success or failure of a National Research Foundation depends, not on money alone, but even more largely on the administration of it. Politics, bureaucracy, red tape, incompetent leadership – these can render sterile and futile the expenditure of any sum.”<sup>18</sup> In an early draft of *Organizing Scientific Research for War: The Administrative History of the Office of Scientific Research and Development*, Irvin Stewart conceded that a level of bureaucratic research oversight was appropriate in a time of war, when scientific “[c]oordination...could not be sustained through publication of results for that was either impossibly slow or, in classified fields, altogether absent.” In contrast, once hostilities ceased he argued that “supervision of research is unnecessary and coordination is gradually sustained by ordinary channels of publication and scientific meetings.”<sup>19</sup>

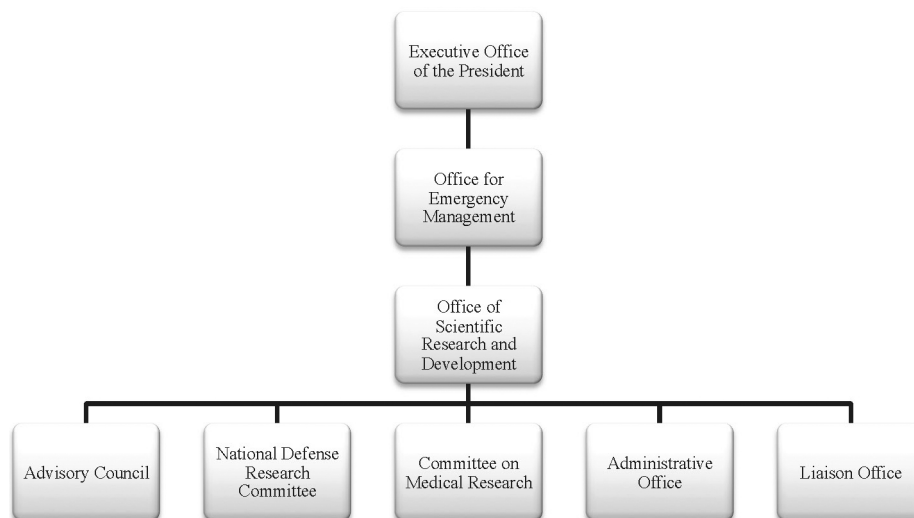
In four years OSRD administered some 2,515 contracts worth about \$454 million.<sup>20</sup> By 1944 and the impending defeat of Germany, however, OSRD Director Vannevar Bush decided that some of its contracts could be transferred to “a permanent civilian organization which might in peacetime supplement the work of the Army and the Navy...”<sup>21</sup> PHS Surgeon General Thomas Parran and the NIH Director Rolla Dyer advocated for assigning this ongoing work to the NIH<sup>22</sup> – the biomedical research laboratory of the PHS.<sup>23</sup> With the passage of the Public Health Service Act in July that same year, Surgeon General Parran and his Advisory Council assumed responsibility for the research grant system, the duty of recommending project funding, and any “additional means as [the

Surgeon General] deems necessary or appropriate” to administer such grants.<sup>24</sup> Upon dissolution of the OSRD in December 1945, 42 projects previously administered by that agency were taken over by the PHS.<sup>25</sup>

During World War II, OSRD directed research funding primarily toward topics of interest to the armed services. As many considered syphilis “one of the most pressing problems of military medicine,”<sup>26</sup> and an anticipated 7,000,000 work days a year were lost to gonorrheal infection,<sup>27</sup> contracts that supported research into

Figure I

### Structure of OSRD in 1941



the prevention and treatment of STDs took priority. When the war ended, “the lion’s share of research appropriations” remained tied up in military research and a major portion of that research — almost half of the contracts transferred from OSRD — involved penicillin therapy trials for syphilis.<sup>28</sup>

Studies of penicillin and other “miracle drugs” had heightened popular expectations for rapid scientific advancement during the war.<sup>29</sup> To the average citizen at the time, there was a “new optimism about the power of science.”<sup>30</sup> Government medical officials worked to channel this optimism into enthusiasm for federally-funded research. At a lecture at Dartmouth College in December of 1945, Surgeon General Parran identified the government as the most realistic source of support for medical research. He argued that such a program “must assure complete freedom for the institutions and the individual scientists in developing and conducting their research work.”<sup>31</sup> The financial significance of grant funding for researchers was obvious. Grant applications surged as the total expenditure for medical research rose from \$18,000,000 in 1941 to \$115,000,000 in 1946.<sup>32</sup> Congress also put aside a special appropriation of \$800,000 to produce antibiotics.<sup>33</sup> Under Dr. Parran’s leadership, the NIH presented plans for the federal expansion of public health initiatives when “[t]he time was ripe and the postwar budget could stand the cost.”<sup>34</sup>

### “New Horizons in Medical Research”: Scientific Freedom under the Division of Research Grants

Surgeon General Parran preferred a research grant structure over OSRD’s contractual requirements.<sup>35</sup> Contracts were for specific directed research on behalf of the government,<sup>36</sup> but a research grants structure lessened government control and encouraged investigator independence.<sup>37</sup> The PHS’s acceptance of OSRD’s contracts as grants, however, called for a new administrative structure. The NIH Director Dr. Dyer appointed Dr. Cassius Van Slyke, Assistant Chief of the PHS Venereal Disease Division, as the Chief of the new DRG in January of 1946.<sup>38</sup> With so much funding already devoted to penicillin and STD research, it made sense to place a physician with related experience in a leadership role in the new office under the NIH.

Dr. Van Slyke was committed to eliminating many of the burdens posed by the administrative oversight of contract research. One thing that had “especially bothered” him about the wartime contract process was that it “required a lot of paperwork....”<sup>39</sup> He shared his vision for the future of research grants in his article “New Horizons in Medical Research,” where he

declared that the establishment of the DRG signaled the “complete acceptance of a basic tenet of the philosophy upon which the scientific method rests: The integrity and independence of the research worker and his freedom from control, direction, regimentation, and outside interference.”<sup>40</sup> Dr. Van Slyke agreed with the National Resources Committee regarding the benefits of scientific latitude and endorsed maximum flexibility for researchers to change the direction of funded research as “bypaths quite often lead to more important findings than do the roads from which they branch.”<sup>41</sup> Dr. Van Slyke distributed the article to many academic scientists for their endorsement before publishing it in *Science*.<sup>42</sup>

Dr. Van Slyke structured his division so that “[r]esearch under the Research Grants programs is conducted with the full independence and autonomy of the research investigator.”<sup>43</sup> In contrast to the bi-weekly reporting requirement of the contract structure, he believed that only brief annual scientific progress reports should be required from grantees:

In order not to divert the time of the researcher unnecessarily from the actual conduct of the research investigation, only annual scientific progress reports are requested. It is not desired that the preparation of these reports present any long, tedious burden to the investigator, and it is therefore requested that they contain only such data in a brief, clear, and concise manner as will permit the appropriate Study Section and National Advisory Council to be adequately informed as to the conduct of the research investigations since the submission of the previous progress report.<sup>44</sup>

He later reported that under his system “wide latitude is allowed [for] the responsible scientific investigator in the use of research grants funds. Recipients of awards are given complete freedom to conduct projects in whatever ways they choose.”<sup>45</sup> In Dr. Van Slyke’s new “medical research program of scientists and by scientists,”<sup>46</sup> scientific freedom promised scientific progress, and governmental oversight required under the contract process had stifled that freedom. Dr. Van Slyke’s mantra of scientific freedom permeated the PHS research grants program. Dr. Ernest Allen, appointed from the PHS Venereal Disease Division by Dr. Van Slyke as Assistant Chief of the DRG,<sup>47</sup> noted that “[t]hose who established the [DRG] believed that maximum progress can be achieved only if the scientist enjoys freedom to experiment without direction or interference, and they drew up policies and procedures accordingly.”<sup>48</sup> Under Dr. Van Slyke’s

program “[t]he investigator works on problems of his own choosing and is not obliged to adhere to a pre-conceived plan. He is free to publish as he sees fit and to change his research without clearance if he finds new and more promising leads. He has almost complete budget freedom as long as he uses the funds for research purposes and expends them in accordance with local institutional rules.”<sup>49</sup> Dr. Van Slyke believed his was a system dealing with men of “high ethical purposes and completely good morals.”<sup>50</sup> He later observed that “[w]e didn’t have to worry about legalities, or a legalistic approach to this thing at all. We were just dealing with the kind of folks that wouldn’t cheat a penny.”<sup>51</sup> Dr. Van Slyke, and those who helped him create the grant review process, were “completely in favor of trusting the scientist and we set up such a program that trusted him. If [the scientist] let us down — well, that was the exception. It was far and away the exception.”<sup>52</sup>

This vision was the foundation of the NIH grant review process. Dr. James A. Shannon,<sup>53</sup> the Director of the NIH, testified before a committee of the House of Representatives in 1962 that investigators with research grants “are not conducting research for NIH. They are exploring ideas of their own choosing...” and are “free to plan and conduct their investigations as they see fit.”<sup>54</sup> This had been “true from the beginnings of the program...[and was] in response to a fundamental philosophy.” Dr. Shannon argued that “science will advance most rapidly, and that as a consequence, practical findings will emerge most rapidly and in the greatest profusion, if science is unfettered by restrictions — if scientists are given freedom to follow their ideas.... Selection of good men and good ideas — and rejection of the inferior — is the key.”<sup>55</sup>

The funding process under the DRG involved dual review of both a specialized study section and an appropriate Advisory Council. The goal of the study sections was to distance the grant review system from the government-driven research decisions of World War II and create a structure of “peer review” under which DRG placed advisory power in the hands of preeminent members of the relevant scientific community.<sup>56</sup> Dr. Van Slyke envisioned “the scientific community of America,” as opposed to the government, deciding who would receive grant funds because he believed that “if we couldn’t trust the scientists of this country to do a job properly, we couldn’t trust anybody.”<sup>57</sup>

The study sections had two responsibilities: (1) to be aware of the status of research generally in their field to identify areas to be expanded upon and encouraged, and (2) to review applications for grant money in that field and forward a recommendation to the appropri-

ate Advisory Council.<sup>58</sup> The study section reviewed the science; the Advisory Council approved the funding. The standard application reviewed by the study section was a four-page form with a 200-word summary of the project.<sup>59</sup> The form included information on objectives, methods, and the budget.<sup>60</sup> After the study section finished a review of “scientific merit and confidence in the principal investigator,” they formulated an official recommendation. Advisory Councils took DRG policy goals into consideration,<sup>61</sup> but study section recommendations were the primary factor in determining which grants to approve and send to the Surgeon General for final endorsement.<sup>62</sup>

### “Good Men and Good Ideas”: Approval and Scientific Freedom in the Guatemala STD Studies

#### *Necessary Review Expertise and Conflicts of Interest*

Because of the influx of wartime penicillin contracts, the Syphilis Study Section was the first to begin its work. It held its inaugural meeting on February 7-8, 1946.<sup>63</sup> Dr. Moore, who had earlier voiced his concerns on “politics, bureaucracy, red tape, and incompetent leadership” as barriers to the success of national research efforts,<sup>64</sup> moved from his prior appointment as Chair of the Venereal Disease Subcommittee of the National Research Council to become the Chair of the Syphilis Study Section. Drs. John Mahoney, of the PHS, Venereal Disease Research Laboratory (VDRL), and John Stokes, of the Institute for the Control of Syphilis, University of Pennsylvania, also relocated from the National Research Council’s Subcommittee to the Syphilis Study Section.<sup>65</sup>

Other members of the Syphilis Study Section included PHS officers Drs. Harry Eagle and John Heller, along with Dr. Thomas Turner, of the Johns Hopkins School of Hygiene and Public Health.<sup>66</sup> At their inaugural meeting, the Syphilis Study Section approved the Guatemala STD experiments, which they later described as “dealing with the experimental transmission of syphilis to human volunteers and improved methods of prophylaxis,”<sup>67</sup> for recommendation to the National Advisory Health Council.<sup>68</sup>

On March 8-9th, 1946 the Advisory Council met to discuss the new grant approval process and to review the recommendations of the study sections. At this meeting, the Advisory Council approved Research Grant (RG)-65 for the “[p]rophylaxis and treatment of gonorrhoea and syphilis.”<sup>69</sup> The Advisory Council named “Guatemala” as the “Grantee” of the funds and the “Pan American Union” as the “Investigator.”<sup>70</sup> Dr. Cutler explained that while the grant was made from the DRG to the Pan American Sanitary Bureau, the VDRL “assumed responsibility for scientific and tech-

nical direction of the project and provided necessary personnel," including himself.<sup>71</sup> Dr. John Mahoney was listed as the principal investigator of the grant.<sup>72</sup>

The primary goal of study sections was to evaluate grant applications using the best available expertise, and a small number of preeminent researchers, whose interests and allegiances overlapped, dominated the field of STD research. Conflicts of interest were a concern. As a later historian noted: "[d]espite the fact that individual members of these review groups are required to absent themselves whenever a grant application from their own institution is under consideration, there is unavoidably some conflict of interest built into this system. No man can be completely objective about a grant application from an esteemed colleague who has just stepped out of the room, or even from one of the colleagues' close associated."<sup>73</sup>

Dr. Mahoney was a member of the Syphilis Study Section and also the Director of the VDRL. All of the U.S. investigators were from his laboratory and Dr. Mahoney himself was later confirmed as the principal investigator.<sup>74</sup> However, there is no evidence to suggest whether or not he abstained from the Study Section discussion regarding the Guatemala STD experiments.<sup>75</sup>

In 1943, Drs. Mahoney and Richard Arnold of the VDRL discovered that penicillin could cure syphilis quickly and effectively.<sup>76</sup> (Dr. Mahoney also published with Dr. Van Slyke in 1943 concerning the use of penicillin for gonorrhea).<sup>77</sup> While Drs. Mahoney and Arnold continued refining their research on the administration and dosing of penicillin, they also turned to exploring the *prevention* of infection through a post-exposure prophylaxis wash called "orvus-mapharsen" that they had found to be effective in rabbits.<sup>78</sup> Small-scale studies of their orvus-mapharsen wash had been conducted, but "while the results were suggestive they were inconclusive."<sup>79</sup> Therefore, "[i]t was felt that carefully controlled studies on relatively small groups of individuals exposed to a high risk of infection were required before the preparation could be prepared for wide spread use, particularly in the Armed Services."<sup>80</sup> Indeed, the stated objectives of the Guatemala STD experiments were to continue testing the effectiveness of penicillin as well as research the efficacy of orvus-mapharsen in humans.<sup>81</sup> Dr. Cutler, who worked for Drs. Mahoney and Arnold at the VDRL, was selected to manage these studies in Guatemala. Both physicians acted as Dr. Cutler's supervisors.<sup>82</sup>

Due to his strong personal interest in the success of his prophylaxis and oversight of the study, Dr. Mahoney's involvement in the study section that

recommended the Guatemala STD experiments for approval raises serious concerns. When the grant for the study of "[p]rophylaxis and treatment of gonorrhea and syphilis" in Guatemala came before the Syphilis Study Section, not only was the principal investigator a member, the main therapies under investigation were a continuation of his work.

The personal interest of the Syphilis Study Section in the Guatemala STD experiments did not end there. Dr. Van Slyke was an STD physician himself. He received his initial training in the PHS Venereal Disease Division, rising to Assistant Chief of that unit. He had just completed his service as Associate Director of the VDRL under Dr. Mahoney.<sup>83</sup> Dr. Van Slyke served as the Syphilis Study Section Executive Secretary, responsible for coordinating the review of the applications.<sup>84</sup>

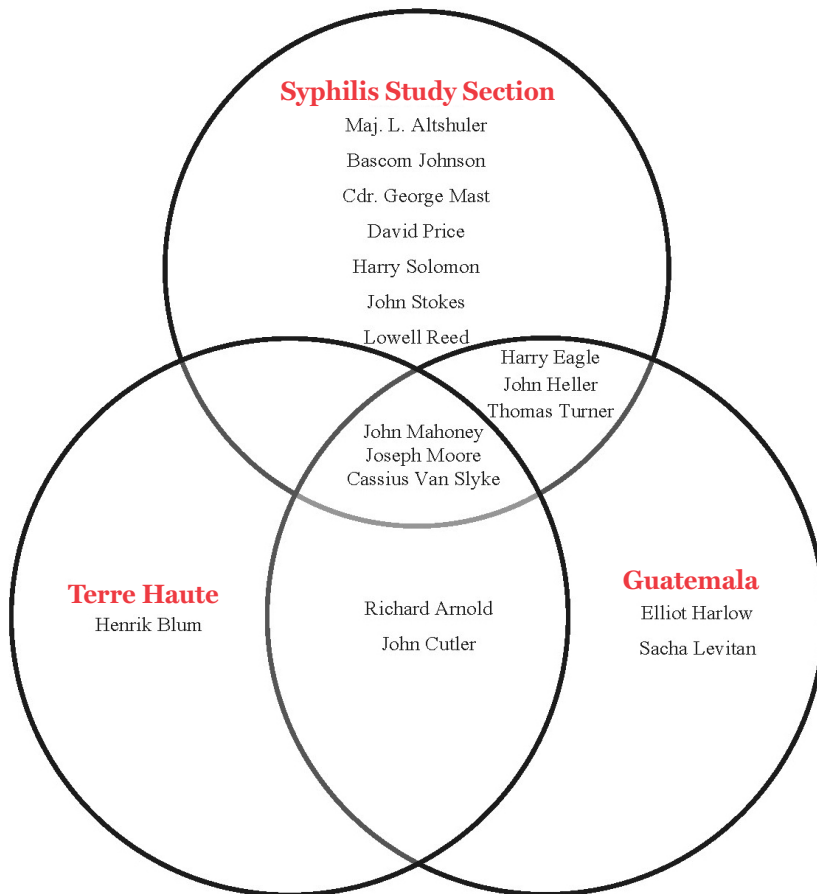
Dr. Heller of the Syphilis Study Section was the Chief of the Division of Venereal Disease at the PHS, where he worked with Dr. Mahoney and recruited Dr. Van Slyke (before his move to DRG).<sup>85</sup> After the renewal of the Guatemala STD experiments in 1947, Dr. Heller accompanied Drs. Van Slyke and Mahoney to visit the Guatemala City study site.<sup>86</sup> He asked Dr. Cutler to take "photographic records" of the experiments for him to use later for teaching.<sup>87</sup> Above and beyond the annual reporting requirements of grantees to study sections, Dr. Heller also received copies of Dr. Cutler's monthly reports from Guatemala, which Dr. Mahoney requested he keep confidential.<sup>88</sup> At the time Dr. Heller was approving the Guatemala STD experiments on the Syphilis Study Section, he was also overseeing his own syphilis experiments in Tuskegee, Alabama — experiments that Dr. Cutler would later join. (See Figure II).

Study Section Chair Dr. Joseph Moore also considered a site visit to Guatemala.<sup>89</sup> When Dr. Moore was the Chair of the National Research Committee's Venereal Disease Subcommittee, he was instrumental in the approval of gonorrhea prophylaxis experiments in Terre Haute, Indiana where researchers intentionally exposed prisoners to gonorrhea through many of the same intentional exposure methods used in Guatemala. His colleagues on the Terre Haute study included Drs. Van Slyke, Mahoney, and Cutler.<sup>90</sup>

Dr. Eagle of the Syphilis Study Section was doing his own work on penicillin and syphilis, using doses of the antibiotic as a prophylactic. When Waldemar Kaempffert, science editor for the *New York Times*, reported on Dr. Eagle's research in rabbits, Kaempffert noted that while Dr. Eagle's "case holds good for rabbits...no tests on human beings have yet been made. To settle the human issue quickly it would be necessary to shoot living syphilis germs into human bodies, just as Dr. Eagle shot them

Figure II

### Involvement in the Syphilis Study Section in the Terre Haute and Guatemala Experiments



into rabbits. Since this is ethically impossible, it may take years to gather the information needed.”<sup>91</sup> Dr. Eagle did not heed Kaempffert’s warning. In fact, he asked to travel to Guatemala to conduct human experiments on Dr. Cutler’s subjects *after* Kaempffert’s comment. Dr. Mahoney objected to Dr. Eagle joining the work, and warned Dr. Cutler that “Doctor Van Slyke made a hurried trip from Washington recently to tell us that Harry Eagle is about to complain to the Surgeon General [Parran] that I have not been extremely enthusiastic about allowing him to enter the Guatemala study.”<sup>92</sup>

Dr. Eagle was not the only Syphilis Study Section member who wanted to do his own research in Guatemala. Dr. Turner of Johns Hopkins asked Dr. Mahoney to have the Guatemala researchers “check on the pathogenicity in man of the rabbit spirochete” that he had been working on.<sup>93</sup> Even Surgeon General Parran, who had final approval authority for all grants before the DRG, was reportedly “familiar with

all the arrangements” of the experiments and was “very much interested in the project.” After a debriefing on Guatemala, “a merry twinkle came into his eye when he said, ‘You know, we couldn’t do such an experiment in this country.’”<sup>94</sup> When Dr. Parran left the Surgeon General’s office in late 1948, Dr. Mahoney noted his exit to Dr. Cutler: “we have lost a very good friend and that it appears to be advisable to get our ducks in line. In this regard we feel that the Guatemala project should be brought to the innocuous stage as rapidly as possible.”<sup>95</sup>

In sum, when the Guatemala STD experiments were recommended for funding by the Syphilis Study Section, one member of the study section was the principal investigator of the protocol; two members had worked with the principal investigator previously on the Venereal Disease Subcommittee; two members had been involved in the Terre Haute gonorrhea experiments with the Executive Secretary and the investigator on the ground in Guatemala; and two members and the Executive Secretary worked or had worked together at the PHS Venereal Disease Division — the laboratory which “assumed responsibility for scientific

and technical direction” of the protocol at issue. Out of the twelve members of the Syphilis Study Section, five members and the Executive Secretary either visited the experiments in Guatemala and/or tried to join in on the work.

#### *Governmental Oversight and Free Scientific Inquiry* REPORTING REQUIREMENTS

Although the wartime research contract process required bi-weekly progress reports from federal grantees,<sup>96</sup> Dr. Van Slyke avoided placing this burden on the investigators funded by grants — he requested only brief annual reports for the study section and Advisory Council.<sup>97</sup> Dr. Cutler did send monthly progress reports from Guatemala to Dr. Mahoney<sup>98</sup> and sent edited versions to the Pan American Sanitary Bureau.<sup>99</sup> However, the Pan American Sanitary Bureau closely aligned itself with the PHS at the time, which assigned “practically all of [the Pan American

Sanitary Bureau's] professional staff..." Dr. Hugh S. Cumming Sr. led both organizations as the U.S. Surgeon General until 1936, at which point he retired from the PHS but remained the Director of the Pan American Sanitary Bureau until 1947.<sup>100</sup>

Intentional exposure experiments began in the Guatemalan Army in February 1947 and followed in the penitentiary and psychiatric hospital in May.<sup>101</sup> The following month, Dr. Cutler wrote to Dr. Mahoney with concerns about even the limited reporting they were doing:

First, as you know, it is imperative that the least possible be known and said about this project, for a few words to the wrong person here, or even at home, might wreck it or parts of it. We have found that there has been more talk here than we like with knowledge of the work turning up in queer places.... The four of us in our project have carefully discussed the matter and all felt that we should do all possible to keep knowledge of our project restricted. Thus I should like to ask your permission to send the detailed reports and discussions of our work directly to you and not through any other person here. In order to conform to the [Pan American Sanitary Bureau] requirement for monthly reports we can continue to send the barest summaries of our progress.<sup>102</sup>

Dr. Mahoney agreed with Dr. Cutler in his response the following week and assured him that he would reiterate the secretive nature of his forwarded reports to Dr. Heller:

In regard to the amount of gossip which the work in Guatemala has engendered, we are doing our utmost here to restrict our own conversations and those of others bearing upon the matter. We have also been aware of considerable conversation and discussion being carried out in rather high places, much of which has not helped the work greatly. We are forwarding all of your reports to Doctor Heller in a way which we hope will prevent their being read by unauthorized persons. I will write him again in the matter.<sup>103</sup>

The National Advisory Council approved Guatemala funding in March 1946.<sup>104</sup> When the PHS researchers arrived in Guatemala, they began by conducting serology studies that compared the accuracy of different syphilis diagnostic blood tests in the Guatemalan population and by treating already-infected military patients with penicillin. In February 1947, they also

conducted an experiment in the Army in which 15 soldiers had intercourse with two commercial sex workers who were infected with gonorrhea.<sup>105</sup>

In March the brief annual report to the Syphilis Study Section and Advisory Council was due, and the Advisory Council renewed RG-65.<sup>106</sup> Within weeks of filing this report the PHS researchers began intentional exposure experiments in the penitentiary and the psychiatric hospital. They abandoned their initial experiment design of "normal exposure" to commercial sex workers and injected syphilis spirochetes directly into their subjects.<sup>107</sup> As the RG-65(c) funding drew to a close in June 1948, Dr. Cutler urged Dr. Mahoney that he should request further funding to continue the STD experiments.<sup>108</sup> Dr. Mahoney disagreed, saying "a new grant has some drawback in that it will require a progress report dealing with the work which has been accomplished. This we might not care to do at the present time."<sup>109</sup> Dr. Van Slyke, however, gave his approval to the researchers to continue to use any remaining grant funds in Guatemala for up to 6 months after the expiration of the grant.<sup>110</sup>

When the Guatemala researchers completed their first annual reporting requirement to the Division of Research Grants in March 1946, the major work they had completed was on serological testing; only one sexual intercourse prophylaxis experiment had been conducted. The next month, the PHS researchers moved into the Guatemala City Penitentiary as well as the Psychiatric Hospital and began exposing subjects to STDs via "artificial inoculation." Over the next year their research expanded to include injection of syphilis spirochetes into the blood stream and spinal column, abrading genitals to apply a syphilitic emulsion, and applying gonorrheal pus to subjects' mucus membranes. In 21 months of intentional exposure experiments, involving 1,300 subjects, the PHS investigators would have only filed one annual report to the Division of Research Grants describing only serological testing, penicillin treatment, and one sexual intercourse experiment of 15 subjects.<sup>111</sup>

#### SCIENTIFIC FREEDOM

Dr. Van Slyke's new research grants system adopted the perspective of the National Resources Committee that "[a] further advantage to research which would result from latitude in the use of funds is the possibility of following the unforeseen leads which research itself reveals."<sup>112</sup> Dr. Van Slyke later explained "we never did hold [the scientists] to their stated purpose. They were free to turn any way they wanted to."<sup>113</sup>

In the Guatemala STD experiments the original plan had been to test Drs. Mahoney and Arnold's orvus-mapharsen prophylaxis wash in prisoners who



were having sexual intercourse with commercial sex workers infected with syphilis. Sex work was legal in prisons in Guatemala, thereby allowing for “normal exposure” to STDs. The hope was to test the prophylaxis through as natural a method as possible to establish a “rapid and unequivocal answer as to the value of various prophylactic techniques.”<sup>114</sup>

The original PHS protocol immediately posed challenges. The subjects could not be infected with STDs dependably (the same problem that forced the abandonment of the Terre Haute prison gonorrhea study), which prevented the reliable testing of the post-exposure prophylaxis.<sup>115</sup> Dr. Cutler decided that the solution was more aggressive exposure techniques and

“unforeseen leads” and moved on to exposing subjects in the Psychiatric Hospital to syphilis through oral ingestion<sup>122</sup> and injecting syphilitic material “directly into the central nervous system” in the base of subjects’ skulls.<sup>123</sup> He also performed transmission experiments in which he applied gonorrheal pus to subjects’ urethras, rectums, and eyes.<sup>124</sup> After Dr. Mahoney refused to apply for more funding or to submit a new report to DRG, Dr. Cutler tested the orvus-mapharsen prophylaxis for a third STD, exposing the abraded skin of 131 soldiers and psychiatric patients to chancroid in October of 1948.<sup>125</sup> Dr. Van Slyke’s extension of the renewed RG-65 ended in December of 1948, after which Dr. Cutler left Guatemala.<sup>126</sup>

**Although much of the public commentary on the Guatemalan STD experiments has targeted the failings of Dr. Cutler, we offer a different critique by focusing on the institutional context and research ethos that shaped the outcome of the PHS STD research in Guatemala. Dr. Cutler had daily responsibility for the conduct of the experiments, but a “new horizon” of grant-based scientific review allowed this work to proceed.**

began abrading subjects’ penises by hand and rubbing in syphilitic material.<sup>116</sup> Around the same time, Dr. Mahoney wrote to Dr. Cutler that “Dr. Heller [of the Syphilis Study Section] would feel considerably more secure if we were to set up an advisory group of leading figures in the world of science to serve as a background for the study.” He went on to confide that “[t]here are several men whom I would not mind being associated with the work. There are several other leading figures who, I think, would be a distinct detriment.”<sup>117</sup> Dr. Mahoney also disapproved of Dr. Cutler’s more aggressive approach and argued that the scarification and abrasion techniques were “drastic...beyond the range of natural transmission and will not serve as a basis for the study of a locally applied prophylactic agent.”<sup>118</sup> Dr. Mahoney warned Dr. Cutler that if he was not able to resolve the prophylactic experiments, they would only have their serology and penicillin treatment work and “would surely have difficulty in selling an expensive project of this kind to the [Public Health] Service.”<sup>119</sup>

Dr. Cutler believed, however, that the more aggressive the exposure technique, the more vigorously he could prove the prophylaxis’ value in preventing both syphilis and gonorrhea.<sup>120</sup> Even though scarification and abrasion methods proved effective at infecting subjects,<sup>121</sup> Dr. Cutler decided to continue to follow his

### Conclusions and Implications

Although much of the public commentary on the Guatemalan STD experiments has targeted the failings of Dr. Cutler, we offer a different critique by focusing on the institutional context and research ethos that shaped the outcome of the PHS STD research in Guatemala. Dr. Cutler had daily responsibility for the conduct of the experiments, but a “new horizon” of grant-based scientific review allowed this work to proceed. The freedom that Dr. Cutler was able to exercise allowed him to ignore the heightened concern for the welfare of research participants that characterized planning for the Terre Haute experiments, as well as the general movement at the end of World War II. Dr. Van Slyke later emphasized that under his new structure federally funded researchers were supposed to “make sure that in treating [a research subject] we weren’t subjecting him to any unusual danger.” He insisted that if “untoward effects” occurred, treatment would be stopped “so that [the subject] wouldn’t be hurt.”<sup>127</sup> But with a new grant system based on the discretion of the investigator, no one held Dr. Cutler accountable to such considerations. Serious professional conflicts marked the review of RG-65. Many of the members of the Syphilis Study Section were close colleagues and had worked together and with the principal investigator before as researchers and

reviewers. Dr. Mahoney stood to benefit from the success of his new prophylactic treatment that Dr. Cutler was studying in Guatemala, and several other study section members attempted to advance their own work as part of the grant they had already approved.

The researchers in Guatemala abandoned their original ineffective exposure methodology in favor of much more invasive techniques. The flexible grant process allowed this change with federal funding. Dr. Cutler's correspondence affirms that he was aware that some colleagues might consider his new methods a violation of the norms of research ethics.<sup>128</sup> However, the investigators' efforts to keep the work secret and the lack of formal reporting under the grant structure allowed these violations to continue. While many of the Syphilis Study Section members had a detailed awareness of the work going on in Guatemala, it is clear from the researchers' emphasis on secrecy and discretion that if others found out about the STD work they believed it would have meant an end to the experimentation.

Twenty years after the Guatemala STD experiments, Dr. Henry K. Beecher argued in his seminal article on "Ethics and Clinical Research" that examples of unethical experimentation on humans had been growing since World War II. Dr. Beecher found that "[t]he data are suggestive of widespread problems" and that it was "evident...that unethical or questionably ethical procedures are not uncommon."<sup>129</sup> Dr. Beecher placed the onus of ethical behavior on "the more reliable safeguard provided by the presence of an intelligent, informed, conscientious, compassionate, responsible investigator."<sup>130</sup> The Guatemala STD experiments, however, demonstrate that reliance on such an investigator is not enough to protect all research participants all of the time. The new NIH peer review system, put in place just as the Guatemala studies were about to begin, and stressing "scientific merit and confidence in the principal investigator,"<sup>131</sup> revealed critical flaws in its first implementation.

Peer review still forms the basis of the NIH's dual review grant process. As late as 1996, the Director of DRG described the leadership style reflected in his agency as having been "inherited from Ernest Allen and Cassius Van Slyke, whose guiding precept was that no procedural obstacle should be allowed to stand in the way of scientific opportunity."<sup>132</sup> A plethora of infamous research scandals however led to modern scientific peer review and research participant regulations to combat just the types of problems present in Guatemala.<sup>133</sup> The NIH has reformed its policies on conflicts of interest in the peer review process. Regulations now prohibit those with real or apparent conflicts of interest from reviewing the applica-

tion at issue, conflicts including the possibility of financial benefit or any other interest likely to bias the reviewer's evaluation.<sup>134</sup> The perception that peer review groups "are biased toward one of their own" is "long-standing" and assumed<sup>135</sup> by the regulations and another qualified group must review a member's research proposal.<sup>136</sup> The NIH continues to refine its review process today, most recently considering a pilot program for anonymous grant review.<sup>137</sup> Institutional review board approval is also necessary for federally-funded human research, requiring protections such as minimization of risk, equitable subject selection, informed consent, and additional safeguards for vulnerable populations such as prisoners and people with mental disabilities.<sup>138</sup> These regulations support the grant review process so that participant protections do not solely rely on the discretion of an investigator.

Making Dr. Cutler the sole culpable party for what happened in Guatemala limits the breadth of the import of this case. There will always be immoral individuals. Critical for participant protection is a regulatory system that mandates, to the extent possible, correct behavior. Today, conflict of interest regulations, along with other layers of protections, make the funding of unethical research much less likely in the first place. Human subjects regulations and institutional review boards provide another layer of protection against unethical research once it is funded. But what is legal and what is ethical do not always have the same scope – sometimes regulations permit an action that is unethical, and sometimes the ethically optimal choice may fall outside regulatory boundaries. Ethics training is essential to encourage compliance with the spirit, as well as letter, of the law and inform actions in the space in which something may be legal but unethical. A comprehensive understanding of professional ethics also allows researchers to identify times where lawmakers should recalibrate regulations to reinforce ethical action. It is impossible to prevent a researcher from ever having to make an ethical assessment. The responsible investigator remains an important ideal.

Comprehensive ethics education can help build and support this responsible investigator. Scandals like the Guatemala STD studies give students stark examples of why "completely good morals" cannot be assumed, but must be taught, learned, and embodied. Ethical researchers do not self-select, they must be cultivated. A system built on the ethos of "good men and good ideas" alone is not enough to guarantee federal funding is used to advance good science. It takes regulatory research participant protections in addition to professional ethics education to achieve the longstanding ideal of the responsible investigator and ensure ethical research.

## Acknowledgements

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- Faulty scientific design plagued the studies. Investigators altered or omitted data and information in final reports. See Bioethics Commission, *supra* note 1, at 95.
- Secretary of State H. R. Clinton and Secretary of Health and Human Services K. Sebelius, "Joint Statement by Secretaries Clinton and Sebelius on a 1946-1948 Study" (2010), *available at* <<http://www.state.gov/secretary/rm/2010/10/148464.htm>> (last visited July 26, 2013); President B. Obama, "Memorandum re: Review of Human Subjects Protection (2010)," *available at* <<http://bioethics.gov/cms/sites/default/files/news/Human-Subjects-Protection-Letter-from-President-Obama-11.24.10.pdf>> (last visited July 26, 2013).
- See Obama, *supra* note 3.
- See Bioethics Commission, *supra* note 1, at 6.
- See K. Minogue, "U.S. Officials Apologize for 'Appalling' 1940s Syphilis Study," *ScienceInsider*, October 1, 2010, *available at* <<http://news.sciencemag.org/scienceinsider/2010/10/usofficials-apologize-forappalling.html>> (last visited July 26, 2013). While media accounts have generally focused on the role of Dr. Cutler, accounts in the scholarly literature, e.g. Reverby and the Bioethics Commission, *supra* note 1, as well as other more recent publications cited in this paper, have provided a broader analysis of the Guatemala episode.
- There has been a movement in the rhetoric of human research away from humans being "subjects of" research towards "participants in" research. See P. M. Boynton, "Letters: People should participate in, not be subjects of, research," *British Medical Journal* 317 (Nov. 28, 1998): 1521. The vulnerable populations involved in the Guatemala research, however, were clearly *subjects* of unethical research. In addition, 45 C.F.R. 46 currently uses the term "subject." Therefore, for the purposes of this paper, we used the term "subject" for the Guatemalans involved in the STD research and when referencing current federal regulation, but "participant" when discussing the current research environment. Also, the increasing importance of statistical argument in designing clinical trials, and the infrastructure that grew to support them is described in detail in H. M. Marks, *The Progress of Experiment: Science and Therapeutic Reform in the United States, 1900-1990* (New York: Cambridge University Press, 1997). Marks also discusses the early work on penicillin by scientists like Joseph Earle Moore on the National Research Council, and the transition of funding from the National Research Council to the NIH in detail, see *id.*, at 98-128. Victoria Harden also provides a history of the legislative and administrative initiatives that led to establishment of the NIH in V. Harden, *Inventing the NIH: Federal Biomedical Research Policy, 1887-1937* (Baltimore: Johns Hopkins University Press, 1986).
- See, e.g., the recent Advanced Notice of Proposed Rulemaking on "Human Subjects Research Protections" which still grapples with ensuring that government regulated participant protections are "commensurate with the level of risk of the research study" in order to protect participants in high risk studies, while allowing lower risk studies to proceed more efficiently. Human Subjects Research Protections, Department of Health and Human Services, "Enhancing Protections for Research Subjects and Reducing Burden, Delay, and Ambiguity for Investigators," 76 *Fed. Reg.* 44512, 44514-44521. See also, P. Basken, "NIH Considered Anonymity for Grant Applications," *The Chronicle of Higher Education*, December 10, 2012, *available at* <<http://chronicle.com/article/NIHConsidered-Anonymity-for/136227/>> (last visited July 29, 2013); and S. Wessely, "Peer Review of Grant Applications: What Do We Know?" *The Lancet* 352, no. 9124 (1998): 301-302. For a look at the continued challenges of conflict of interest disclosure generally see G. Loewenstein et al., "The Unintended Consequences of Conflict of Interest Disclosure," *JAMA* 307, no. 7 (2012): 669-670.
- C.J. Van Slyke, "Health Sciences," Oral History Research Office, Columbia University (1976): at 29.
- I. Stewart, *Organizing Scientific Research for War: The Administrative History of the Office of the Scientific Research and Development* (Boston: Little, Brown and Company, 1948): at 4.
- Id.*, at 5, 7.
- F. D. Roosevelt, Executive Order 7065, The National Resources Committee is Created, *available at* <<http://www.presidency.ucsb.edu/ws/index.php?pid=15075>> (last visited July 29, 2013).
- National Resources Committee, *Research - A National Resource* (Washington, D.C.: United States Government Printing Office, 1938): 16.
- An Advisory Council was also established "to advise and assist the Director with respect to the co-ordination of research activities carried on by private and governmental research groups..." See Stewart (1948), *supra* note 10, at 36-37. These contracts were originally that of the National Defense Research Committee, which was charged with coordinating, supervising, and conducting scientific research on problems underlying the development, production, and use of mechanisms and devices of warfare. The National Defense Research Committee later became advisory to the Office of Scientific Research and Development. *Id.*, at 7-8, 37-38.
- Id.*, at 39.
- Id.*, at 103.
- See Stewart (1948), *supra* note 10, at 5. In June of 1940, the National Research Council decided to create a Subcommittee on Venereal Disease to make "general recommendations to The Surgeons General of the Army and Navy concerning the prevention and treatment of the venereal diseases and with acting in a consultative capacity on questions in its special field that might originate from the armed services." P. Padgett, "Diagnosis and Treatment of the Venereal Diseases: Historical Note," *International Medicine in World War II, Vol. II: Infectious Diseases* (Washington D.C.: Office of the Surgeon General, Department of the Army, 1963): at 409.

18. Letter from J. E. Moore, Chairman, Subcommittee on Venereal Diseases to A. N. Richards, Chairman, Committee on Medical Research (Oct. 9, 1945) in PCSBI HSP I Archives, NARA-II\_0000117.
19. I. Stewart, First Draft of Proposed C.M.R. Chapter for Irvin Stewart's Administrative History of OSRD (1945): 20-21 in PCSBI HSP I Archives, NARA-II\_0000373-74.
20. R. Mandel, *A Half Century of Peer Review 1946-1996* (Bethesda, MD: Division of Research Grants, National Institutes of Health, 1996): at 8.
21. *Id.*, at 11.
22. *Id.*, at 12.
23. R. E. Miles, Jr., *The Department of Health, Education, and Welfare* (New York: University Press of America, 1974): at 169.
24. Mandel, *supra* note 20, at 11-12.
25. *Id.*, at 20.
26. J. F. Mahoney, "An Experimental Resurvey of the Basic Factors Concerned in Prophylaxis in Syphilis," *The Military Surgeon* (1936): 351-363, at 351.
27. Letter from J. E. Moore, Chairman, Subcommittee on Venereal Diseases, National Research Council to A. N. Richards, Chairman, Committee on Medical Research, National Research Council (Feb. 1, 1943) in PCSBI HSP I Archives, NARA-II\_0000176.
28. See Mandel, *supra* note 20, at 15-16, 23. Three physicians including Drs. John Mahoney and R.C. Arnold (both later involved in the Guatemala STD experiments) discovered in 1943 that penicillin cured syphilis. J. F. Mahoney, R. C. Arnold, and A. Harris, "Penicillin Treatment of Early Syphilis: A Preliminary Report," *American Journal of Public Health and the Nation's Health* 33, no. 12 (1943): 1387-91.
29. See Miles, *supra* note 23, at 169; see, e.g., "Medicine: New Magic Bullet," *Time Magazine*, October 25, 1943.
30. "The practical experience and specific progress from 1942 through 1945 brought about a new philosophical attitude toward government's role in science and health and new optimism about the power of science, particularly organized science." S. P. Strickland, *The Story of the NIH Grants Program* (New York: University Press of America, 1989): at 17.
31. "By carefully nurturing the peer review process and by cultivating rapport with Congress, Surgeon General Parran and NIH Director Dyer won the allegiance of a substantial majority of academic scientists and laid the institutional foundations for the nationwide extramural structure that would emerge in the following decade." Mandel, *supra* note 20, at 15-16.
32. K. M. Endicott and E. M. Allen, "The Growth of Medical Research 1941-1953 and the Role of Public Health Service Research Grants," *Science* 118, no. 3065 (1953): 337-43, at 337.
33. See Mandel, *supra* note 20, at 22.
34. See Miles, *supra* note 23, at 169.
35. See Mandel, *supra* note 20, at 19.
36. See Stewart (1948), *supra* note 10, at 103.
37. See C. J. Van Slyke, "New Horizons in Medical Research," *Science* 104, no. 2711 (1946): 559-67, at 559.
38. See Mandel, *supra* note 20, at 20, 22; C. J. Van Slyke, "Standard Form 61: Appointment Affidavits" (n.d.) in PCSBI HSP I Archives, NPRC\_0002846.
39. See Strickland, *supra* note 30, at 31.
40. See Van Slyke, *supra* note 37, at 559.
41. *Id.*
42. See Mandel, *supra* note 20, at 30. This article was a major policy statement about the direction that government funding grants would take and the role of scientific independence in that program.
43. See Van Slyke, *supra* note 37, at 563.
44. *Id.*
45. C. J. Van Slyke, 'Research Grants Awarded by National Institute of Health,' (Sept. 23, 1947) 1, in PCSBI HSP I Archives, MISC\_0000037.
46. See Strickland, *supra* note 30, at 32.
47. See Mandel, *supra* note 20, at 22. As Assistant Chief of the DRG during the Guatemala experiments, Dr. Allen was also the one to convey to the researchers that they could use the remaining grant money to continue their work in Guatemala for up to 6 months after the grant's expiration. Letter from E. M. Allen to J. R. Murdock (June 28, 1948) in PCSBI HSP I Archives, CTLR\_0001182.
48. See Endicott and Allen, *supra* note 32, at 341.
49. *Id.*
50. See Van Slyke, *supra* note 9, at 29.
51. *Id.*
52. *Id.*, at 42-43.
53. Dr. Shannon was the chair of the Malaria Study Section in 1947 and became the Associate Director of Research under Dr. Van Slyke at the National Heart Institute in 1948. See Van Slyke (1976), *supra* note 9, at 50. E. M. Allen, "Historical View: Early Years of NIH Research Grants," *NIH Alumni Association Newsletter* (II)(1980): 6-8, also in PCSBI HSP I Archives, MISC\_0000064.
54. This Committee was investigating NIH expenditures. J.A. Shannon, "The Administration of Grants by the National Institutes of Health," *Hearings Before the Subcommittee on Intergovernmental Relations of the Committee on Government Operations of the House of Representatives 87th Cong.* (March 28-30, 1962): at 14. Lawmakers had challenged the NIH budget, and other questions had been raised in light of the seeming avalanche of new funding that NIH had disbursed. L. Stark, *Behind Closed Doors: IRBs and the Making of Ethical Research* (Chicago: University of Chicago Press, 2012): at 147-48.
55. See Shannon, *supra* note 54, at 14.
56. See Mandel, *supra* note 20, at 1; Miles, *supra* note 23, at 177.
57. Van Slyke, *supra* note 9, at 28-29. Dr. Van Slyke later elaborated that setting up the Division this way was 'the easiest way to run it...It just puts your responsibilities on somebody else's shoulders. But those shoulders are a devil lot more competent to carry it than any single federal bureaucrat I know of.' *Id.*, at 64.
58. See Van Slyke, *supra* note 37, at 561.
59. See Mandel, *supra* note 20, at 46.
60. See Van Slyke, *supra* note 37, at 562.
61. See Miles, *supra* note 23, at 180.
62. See Van Slyke, *supra* note 37, at 562.
63. See Mandel, *supra* note 20, at 23; see also Memorandum from E.M. Allen to R.E. Dyer, (Mar. 8, 1946) in PCSBI HSP I Archives, NARA-II\_0000129.
64. Letter from J.E. Moore, Chairman, Subcommittee on Venereal Diseases to A.N. Richards, Chairman, Committee on Medical Research (Oct. 9, 1945) in PCSBI HSP I Archives, NARAII\_0000117.
65. See Padget, *supra* note 17, at 409; Van Slyke, *supra* note 37, at 567. Prior to the Subcommittee on Venereal Disease's recommendations, the diagnosis and treatment of syphilis in the Army followed the protocol outlined by Dr. Stokes in *Modern Clinical Syphilology*. J. H. Stokes, *Modern Clinical Syphilology* (Philadelphia: W.B. Saunders Co., 19236).
66. Other members included: David E. Price (NIH), Lowell J. Reed (Johns Hopkins School of Hygiene and Public Health), Harry C. Solomon (Boston Psychopathic Hospital), Maj. L. N. Altshuler (Army), Cdr. George W. Mast (Navy), and Bascom Johnson (Veterans Administration). Van Slyke, *supra* note 37, at 567.
67. [Draft] letter from J. E. Moore, Chairman, Syphilis Study Section to C.J. Van Slyke (May 1947), found in letter from J.E. Moore, Chairman, Syphilis Study Section to Members of the Syphilis Study Section, National Institute of Health (May 26, 1947), in PCSBI HSP I Archives, NARA-II\_0000033.
68. National Advisory Health Council Meeting, U.S. Public Health Service (Mar. 8-9, 1946): at 13, in PCSBI HSP I Archives, NARA-II\_0000547. Even though a later memo by Dr. Allen states that "[c]opies of the minutes of the meeting and of papers presented are on file in the Research Grants office..." the protocol for the Guatemala STD research or minutes of this meeting have not been located. Memorandum from E.M.

- Allen to R.E. Dyer (Mar. 8, 1946), in PCSBI HSPI Archives, NARA-II\_0000129.
69. See National Advisory Health Council, *supra* note 68 at 10, 13.
70. *Id.*
71. J. C. Cutler, Final Syphilis Report (Feb. 24, 1955): at 9, in PCSBI HSPI Archives, CTLR\_0000641.
72. Supplemental Information Submitted in Connection with 1948 Amendment to Budget: Status of Grants, State of Illinois; Grants Paid, Fiscal Yr 1946 & 1947: at 5, in PCSBI HSPI Archives, NARA-II\_0000076. When the grant was renewed in 1947, Dr. Fred Soper, the Director of the Pan American Sanitary Bureau, was listed as the Principal Investigator. National Advisory Health Council, U.S. Public Health Service, Minutes of Meeting (Mar. 14-15, 1947), in PCSBI HSPI Archives, NARA-II\_0000047. While it appears from correspondence that Dr. Soper did visit the Guatemala experiments, it is not clear how much he knew about what they entailed. See, e.g., Letter from J. F. Mahoney to J. C. Cutler (June 30, 1947), in PCSBI HSPI Archives, CTLR\_0001077.
73. "Organizational expert Harold Seidman has characterized scientific research as 'the only pork barrel for which the pigs determine who gets the pork.'" See Miles, *supra* note 23, at 179.
74. Supplemental Information Submitted in Connection with 1948 Amendment to Budget, *supra* note 72, at 5.
75. The minutes of this meeting have not been located, see *supra* note 68. However, the listing of "Guatemala" as the grantee and the "Pan American Union" as the investigator may have allowed Dr. Mahoney to recommend the grant. See National Advisory Health Council (1946), *supra* note 68 at 13.
76. See Mahoney, *supra* note 28.
77. J. F. Mahoney, C. Ferguson, M. Buchholtz, and C. J. Van Slyke, "The Use of Penicillin Sodium in the Treatment of Sulfonamide-Resistant Gonorrhea in Man," *The American Journal of Syphilis, Gonorrhea, and Venereal Disease* 27, no. 5 (1943): 525-528.
78. See Cutler, *supra* note 71, at 7, in PCSBI HSPI Archives, CTLR\_0000639. Orvusmapharsen was a 10-percent argyrol (i.e., silver) intra-urethral instillation.
79. *Id.*
80. *Id.*
81. *Id.*, at 22, PCSBI HSPI Archives, CTLR\_0000654. J. C. Cutler, Experimental Studies in Gonorrhea (Oct. 29, 1952): at 1, in PCSBI HSPI Archives, CTLR\_0001278.
82. See Cutler, *supra* note 71, in PCSBI HSPI Archives, CTLR\_0000629.
83. See Van Slyke, *supra* note 37.
84. See Mandel, *supra* note 20, at 25. By December, however, it appears Dr. Van Slyke was replaced with Dr. Price. See Van Slyke, *supra* note 37, at 567.
85. See Allen, *supra* note 53, at 1, in PCSBI HSPI Archives MISC\_0000063; Van Slyke, *supra* note 9, at 23.
86. Letter from J. C. Cutler to J. F. Mahoney (Mar. 12, 1947), in PCSBI HSPI Archives, CTLR\_0001054.
87. J. C. Cutler to R. C. Arnold (Aug. 21, 1946) in PCSBI HSPI Archives CTLR\_0001216. Almost 600 photographs in Guatemala were taken of the subjects, prophylactic procedures, and symptomatic results of the STD exposures. Bioethics Commission, *supra* note 1, at 110.
88. Letter from J. F. Mahoney to J. C. Cutler (June 30, 1947) in PCSBI HSPI Archives CTLR\_0001077. Those reports otherwise went to Drs. Mahoney and Arnold - not Syphilis Study Section members.
89. Letter from J. F. Mahoney to J. C. Cutler. (Oct. 15, 1946) in PCSBI HSPI Archives, CTLR\_0001200. It is unclear if Dr. Moore actually visited the Guatemala study site.
90. J. F. Mahoney, C. J. Van Slyke, J. C. Cutler, and H. L. Blum, "Experimental Gonococcal Urethritis in Human Volunteers," *American Journal of Syphilis, Gonorrhea, and Venereal Disease* 30, no. 1 (1946): 1-39.
91. W. Kaempfert, "Notes on Science: Syphilis Prevention," *New York Times*, April 27, 1947, at E9.
92. Letter from J. F. Mahoney to J. C. Cutler (May 5, 1947) in PCSBI HSPI Archives, CTLR\_0001243.
93. See Mahoney, *supra* note 89.
94. Letter from G. R. Coatney to J. C. Cutler (Feb. 17, 1947) in PCSBI HSPI Archives CTLR\_0001051. See Lynch, *supra* note 1, for further debate regarding the Parran comment. In addition, as this article was under review, the American Sexually Transmitted Diseases Association decided to remove the name of Dr. Thomas Parran from its lifetime achievement award, in large part because of his role in the Guatemala research described in this article. See L. K. Altman, "Of Medical Giants, Accolades and Feet of Clay," *New York Times*, April 1, 2013, at D3. For a series of essays discussing Dr. Parran's legacy, see also *Sexually Transmitted Diseases* 40, no. 4 (2013): 275-284.
95. Letter from J. F. Mahoney to J. C. Cutler (Feb. 19, 1948) in PCSBI HSPI Archives, CTLR\_0001223.
96. See Stewart, *supra* note 10, at 103.
97. See Van Slyke, *supra* note 37, at 563.
98. Letter from J. C. Cutler to J. F. Mahoney (Oct. 31, 1946) in PCSBI HSPI Archives CTLR\_0001199.
99. Letter from J. C. Cutler to J. F. Mahoney (June 22, 1947) in PCSBI HSPI Archives CTLR\_0001241. See, e.g., Letter from J. R. Murdock to J. C. Cutler, forwarded by W. J. McAnally, Jr. (Dec. 26, 1947) in PCSBI HSPI Archives, CTLR\_0001102.
100. F. L. Soper, *Report of the Director of the Pan-American Sanitary Bureau to the Member Governments of the Pan American Sanitary Organization: January 1947-April 1950* (n.d.): at 30, in PCSBI HSPI Archives, PAHO\_0000486. The Pan American Sanitary Bureau later became part of the Pan American Sanitary Organization, which then was renamed the Pan American Health Organization. M. Cueto, *The Value of Health: A History of the Pan American Health Organization* (Rochester: University of Rochester Press, 2007): 63-108.
101. See Bioethics Commission, *supra* note 1, at 116.
102. Letter from J. C. Cutler to J. F. Mahoney (June 22, 1947) in PCSBI HSPI Archives CTLR\_0001241.
103. Letter from J. F. Mahoney to J. C. Cutler (June 30, 1947) in PCSBI HSPI Archives CTLR\_0001077.
104. National Advisory Health Council, *supra* note 68, at 10, 13, PCSBI HSPI Archives, NARA-II\_0000544, NARA-II\_0000547.
105. J. C. Cutler, Gonorrheal experiment #1 (1947) in PCSBI HSPI Archives, CTLR\_0001736-79.
106. National Advisory Health Council, U.S. Public Health Service, "Minutes of Meeting March 14-15" (1947): at 58, in PCSBI HSPI Archives, NARA-II\_0000473, NARA-II\_0000530.
107. See Cutler, *supra* note 71, PCSBI HSPI Archives, CTLR\_0000694.
108. The funding was authorized through June 1948. Letter from J. C. Cutler to J. F. Mahoney, forwarded by W. J. McAnally, Jr., (Aug. 26, 1948) in PCSBI HSPI Archives, CTLR\_0001163.
109. Letter from J. F. Mahoney to J. C. Cutler, forwarded by F. L. Soper, Director, Pan-American Sanitary Bureau (Sept. 3, 1948) in PCSBI HSPI Archives, CTLR\_0001161.
110. Letter from E. M. Allen to J. R. Murdock (June 28, 1948) in PCSBI HSPI Archives, CTLR\_0001182.
111. This annual report has not been located, but would have described the "scientific progress" up to that point.
112. See National Resources Committee, *supra* note 13, at 16.
113. See Van Slyke, *supra* note 9, at 35.
114. See Cutler, *supra* note 81, at 2, PCSBI HSPI Archives, CTLR\_0001279; Cutler, *supra* note 71, at 8, PCSBI HSPI Archives, CTLR\_0000640.
115. If the researchers could not establish what percentage of subjects became infected after exposure to an STD naturally, they could not establish the preventative effect of the prophylactic wash.
116. See Cutler, *supra* note 71, at 8, PCSBI HSPI Archives, CTLR\_0000766.
117. Letter from J. F. Mahoney to J. C. Cutler (May 5, 1947) in PCSBI HSPI Archives, CTLR\_0001243.

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118. Letter from J. F. Mahoney to J. C. Cutler (Sept. 8, 1947) in PCSBI HSPI Archives, CTLR\_0001234.
119. Letter from J. F. Mahoney to J. C. Cutler (Sept. 8, 1947) in PCSBI HSPI Archives, CTLR\_0001233.
120. See Cutler, *supra* note 81, at 12, PCSBI HSPI Archives, CTLR\_0001290; Cutler, *supra* note 71, PCSBI HSPI Archives, CTLR\_0000701.
121. See Cutler, *supra* note 71, at 5, PCSBI HSPI Archives, CTLR\_0000763.
122. *Id.*, PCSBI HSPI Archives, CTLR\_0000728.
123. *Id.*, at 13, PCSBI HSPI Archives, CTLR\_0000836.
124. See Insane Asylum (Asilo de Alienados) and Prison Patient Records (Various dates), in PCSBI HSPI Archives, CTLR\_0004157.
125. J. C. Cutler, Chancroid Experiment (n.d.) in PCSBI HSPI Archives, CTLR\_0000951, CTLR\_0000969.
126. See Bioethics Commission, *supra* note 1, at 117.
127. See Van Slyke, *supra* note 9, at 22-23.
128. See Bioethics Commission, *supra* note 1, at 97-101.
129. H. K. Beecher, "Ethics and Clinical Research," *New England Journal of Medicine* 274, no. 24 (1966): 1354-60, at 1354-55.
130. *Id.*, at 1360.
131. See Allen, *supra* note 53, at 6-8, in PCSBI HSPI Archives MISC\_0000064.
132. See Mandel, *supra* note 20, at vii.
133. Examples include the Tuskegee syphilis experiments, the Jewish Chronic Disease Hospital cancer experiments, and the Willowbrook State School Hepatitis A experiments. See J. D. Arras, "The Jewish Chronic Disease Hospital Case," J. H. Jones, "The Tuskegee Syphilis Experiment," and W.M. Robinson and B.T. Unruh, "The Hepatitis Experiments at Willowbrook State School," in E. J. Emanuel et al., eds., *The Oxford Textbook of Clinical Research Ethics* (New York: Oxford University Press, 2008): at 73-96. 13442 C.F.R. 52h.2, 52h.5 (2004).
134. 42 C.F.R. 52h.5 (2004).
135. "Scientific Peer Review of Research Grant Applications and Research and Development Contract Projects," 69 *Fed. Reg.* 272, 275 (Jan. 5, 2004).
136. 42 C.F.R. Part 52h.5(d) (2004).
137. P. Basken, "NIH Considered Anonymity for Grant Applications," *The Chronicle of Higher Education*, December 10, 2012, available online at <<http://chronicle.com/article/NIH-Considers-Anonymity-for/136227/>> (last visited August 13, 2013).
138. 45 C.F.R. §46.111 (2009).
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