The Screening of America: The Social and Legal Framework of Employers’ Use of Genetic Information

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I.
INTRODUCTION

Faced with rising health costs and an increasing threat of lawsuits stemming from worker disease, many employers have adopted health screening policies that focus on individuals who may pose a special risk in the workplace. The prospects of higher costs for insurance and workers’ compensation, along with lawsuits and further regulation, make any means of identifying those with threatening genetic traits or medical conditions especially attractive to employers who are concerned about the catastrophic potential of allowing high-risk workers to remain on the job. In recent years, employers have screened workers for genetic predisposition to disease, as well as for a broad array of health risks related to smoking, reproductive hazards, drug use, the AIDS virus, and biological traits. Genetic information is thus part of a major focus on screening out high-risk individuals of all sorts, as opposed to a search for occupational hazards from working conditions.\(^1\) Despite legal developments—such as the Americans with

\(^1\) See generally Assessing Genetic Risks: Implications for Health and Social Policy (Lori B. Andrews et al. eds, 1994); Elaine Draper, Risky Business: Genetic Testing and Exclusionary Practices in the Hazardous Workplace (1991); F. Allan Hanson, Testing Testing: Social Consequences of the Examined Life (1993). In attempts to identify workers who may be at increased risk of becoming sick on the job, employers have screened for certain genetic traits. An important example is possible genetic predisposition to beryllium disease. Beryllium is a metal that has been used in the manufacture of fluorescent lights, nuclear bombs, ink (as a colorant), brass fixtures (as a gilding material), ceramics for aerospace and defense programs, and automobile circuit boards. Although beryllium is highly toxic, employers have suggested that workers should undergo genetic tests, based on preliminary evidence that individuals who test positive may be more likely to develop clinical chronic beryllium disease. See, e.g., Kathleen Kreiss et al., Screening Blood Test Identifies Subclinical Beryllium Disease, 31 J. OCCUPATIONAL MED. 603 (1989) (discussing effectiveness of one type of beryllium test as a screening device).

This is only one of many examples over the past thirty years of strong interest by employers in applying genetic information to the workplace. Genetic screening is sometimes a component of wellness programs. Such programs may also include health screening for other diseases such as breast cancer and hypertension, and health promotion such as smoking cessation and exercise programs. See Office of Technology Assessment, Genetic Monitoring and Screening in the Workplace 5-7 (1990) [hereinafter OTA 1990]. See generally Peter Conrad & Diana Chapman Walsh, The New Corporate Health Ethic: Lifestyle and the Social Control of Work, 22 Int’l J. HEALTH SERV’S. 89 (1992)
Disabilities Act\(^2\) and the bar on fetal exclusion policies\(^3\)—employers still focus on identifying high-risk individuals. We must ask, then, whether existing laws and social policies are adequate to prevent the potentially adverse effects of screening.

A comparison of genetic screening and drug testing reveals that while the public is generally favorable toward drug testing but comparatively hostile toward genetic testing, the two in fact share several problems. Neither type of screening is effective at identifying “problem employees” and both exacerbate existing racial and class stratification, raise significant questions of employee privacy, and shift the burden of workplace hazards from management to workers and the public. Before genetic screening becomes more widespread, we should learn from the mistakes made in the drug testing arena.

Elaborating on these concerns, I first analyze genetic screening and drug testing as they have been applied in the workplace.\(^4\) I discuss four issues common to both: (1) the effectiveness and scientific validity of screening; (2) discrimination; (3) privacy; and (4) the limitations of using screening to identify “problem employees.” Next I explore some features of law and society that result in genetic screening and drug screening being treated similarly in some cases and differently in others—but with the general result that employees are treated in ineffective or inequitable ways. In particular, I focus on the fact that federal anti-discrimination law offers only limited and sporadic protection against genetic discrimination because genetic status does not fit neatly into the categories established by the law.

In an attempt to fill the gaps in current law, I discuss measures that could be taken to manage genetic information in employment more effectively and equitably, including: (1) preventive health programs; (2) anti-discrimination provisions and a single-payer health-care system; (3) limits on employers’ access to medical information and the separation of health services from employer control; and (4) laws, social policy protections, and organizational incentives that could foster individual accountability and social responsibility among employers.

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4. Doctors employed by corporations have played an important role in screening. While this article gained insights into corporate professionals from professional journals, private surveys, and trade association data, this article is also substantially informed by one hundred interviews I have done with managers, doctors, and various other corporate professionals. These interviews are part of a larger study of corporate professionals, supported in part by the Russell Sage Foundation and the Haynes Foundation (interviews on file with author) [hereinafter Interviews].
II.

GENETIC SCREENING

A. Genetic Screening Overview

As genetic technologies develop, assisted by the three-billion-dollar Human Genome Project to map the human genetic structure, employers have increasingly been able to identify genetic predispositions and diseases. They may obtain genetic information in a variety of ways: from tests, questionnaires, co-worker reports, or insurance records. In other words, they need not actually conduct their own testing programs. They can determine the employability, job placement, insurability, or general treatment of workers by using information gathered from outside sources.

Employers say they test for several reasons: to protect the safety of employees, to save money that high-risk employees would cost them, and to shield themselves against legal liability for possible adverse health effects caused by the work environment that management imposes. Company lawyers argue that if employers fail to use genetic information to prevent health problems, they will leave themselves vulnerable to lawsuits for health damage. Screening is also seen as a solution to declining profitability due to rising health-care costs: employers can remove “expensive” people from their payrolls or make them pay a higher share of the cost. Self-insured employers have a particularly strong incentive to reduce their own financial risk by identifying high-risk employees, thus saving medical expenses while (under ERISA) avoiding state laws designed to ensure adequate health insurance for employees. In addition, insurers argue that they must be allowed to use genetic information in their decisions to offer coverage and set premiums, so as to eliminate uncertainty in underwriting, protect their profits, avoid raising premiums for lower-risk individuals, and charge people rates that accurately reflect their risks. Even when employers are reluctant to use genetic information to exclude workers, insurance compa-
nies may pressure them to collect genetic information and to differentiate between high-risk and lower-risk individuals.

Screening out high-risk individuals has become a major alternative to monitoring and reducing hazards. Employers claim that sophisticated screening enables them to continue to offer a major medical policy and distribute risks and costs fairly without being burdened by individuals with an adverse genetic profile. Over the past ten years, many corporations have cut back on or eliminated their health and environmental staff. In addition, corporate medical personnel that could focus on preventing illnesses and monitoring the health effects of work are instead collecting genetic information and testing for drugs. This focus on identifying individual workers at risk, rather than on locating the hazards that all workers are exposed to, has intensified as employers have been held responsible for the effects of chemical hazards.

B. Issues Raised by Genetic Screening

Genetic screening raises a number of issues with regard to its effectiveness and scientific validity, discrimination, privacy and information access, and disadvantages of using genetic information to identify “problem employees.” In this section, I briefly consider those issues.

1. Effectiveness and Scientific Validity

Employers often initiate screening programs without determining if they are justified by adequate scientific evidence. Many screening tests suffer from narrow applicability and limited predictive ability, in addition to suggesting falsely that by screening out some workers, an employer can eliminate all health risks.

Genetic screening generally evaluates people according to stereotypes of future ability to function and the probability that disease will occur, rather than basing assumptions on evidence of actual disease and ability. In addition, some diseases are called “genetic,” and screened for as such, de-

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7. Diseases with a genetic component are prevalent. For example, colorblindness and diabetes have a genetic component, and employers have screened for these conditions for years. Heart disease and breast cancer are also in part genetic, as are many other diseases. See Andrews et al., supra note 1; OTA 1990, supra note 1, at 77-95, 128-29.


11. See OTA 1990, supra note 1, at 128-29.
spite evidence of important environmental causes for them. Moreover, screening does not adequately account for the fact that the source of disease is often difficult to pinpoint because a worker may be exposed to numerous hazardous chemicals.

2. Discrimination

Employers and insurance companies claim that genetic information enables them to identify at-risk individuals in a non-discriminatory way. However, job discrimination and exclusionary policies can be based on genetic information, even when workplace screening has been ineffective as preventive medicine. As genetic information accumulates, more people will find it virtually impossible to obtain health insurance or will be stigmatized as a bad risk for employment. People perceived as having a medical "disorder" can also be stigmatized in their personal lives, which can make it difficult for them to be perceived—or to perceive themselves—as normal again. Genetic information about individuals can affect family members' access to insurance as well. Furthermore, when new genetic information makes individuals appear to be high-risk, they are likely to experience as personal what is in fact a social problem that reflects stratification in the broader society.

Social stratification and discrimination are major problems with genetic information, in part because the layering of our society by race and ethnicity, gender, and social class affects the ways in which such information is used. Many genetic abnormalities are disproportionately found among specific ethnic or racial groups. For example, G-6-PD deficiency and sickle cell trait are found in high proportions among blacks, so screening out people with those traits will mean screening out blacks disproportionately. These groups then may experience discriminatory practices by employers and insurers.

Although under the Americans with Disabilities Act (ADA), employers cannot test people before offering them employment, that does not elim-

12. For example, spina bifida is prevalent in highly polluted industrial areas, such as South Wales, and sickle cell trait protects individuals from the environmental threat of malaria. See Troy Duster, Back Door to Eugenics 53-54 (1990); Andrews et al., supra note 1. Similarly, PKU is called "genetic," despite the fact that it can be prevented effectively through diet. See OTA 1990, supra note 1, at 10.


14. See Draper, Risky Business, supra note 1, at 83-94.

15. See OTA 1990, supra note 1, at 85.

inate the problem of discrimination on the basis of genetic information. The ADA does not offer clear-cut answers to several key questions, including whether a certain impairment impedes an individual's ability to do his or her job, whether excluding a person on the basis of a predisposition could qualify as a business necessity, how much effort is reasonable to put forth on job placement, and what constitutes reasonable accommodation for those with potential health problems. The ADA does not even mention genetics or genetic traits, and genetic susceptibility to disease and death was not a focus of the Congressional debate on the ADA.

The Equal Employment Opportunity Commission (EEOC) originally took the position that the ADA does not cover individuals until they are symptomatic and that the risk of future impairment is not a disability under the ADA. Then in its March 1995 interpretation of the ADA, the EEOC stated that disability under the ADA would include individuals who are genetically predisposed to, or presymptomatic for, a disabling disease. Yet even the EEOC's interpretation does not limit the employer's ability to conduct genetic testing or collect genetic information after making a conditional job offer, whether or not the information is job-related.

17. See Americans with Disabilities Act of 1990 (ADA), 42 U.S.C. §§ 12101-12213 (1994 & Supp. II 1996). The ADA protects from discrimination individuals who have, or are regarded as having, physical or mental impairments that substantially limit one or more of the individual's major life activities. See 42 U.S.C. § 12102(2). Employers can require physical examinations of applicants as long as they conduct them after they make an offer. See 42 U.S.C. § 12112(d)(3). Employers can withdraw an offer if they can prove that an applicant cannot do a job even with reasonable accommodation or if candidates pose a "direct threat." See 42 U.S.C. §§ 12111(3), 12113(b). The question of future risk is still open, as few cases have been decided under the ADA that deal with discrimination resulting from the belief that an individual who is diagnosed with a condition that is currently asymptomatic will become disabled in the future. See generally Joseph S. Alper, Does the ADA Provide Protection Against Discrimination on the Basis of Genotype?, 23 J.L. MED. & ETHICS 167 (1995); Mark A. Rothstein, Genetic Discrimination in Employment and the Americans with Disabilities Act, 29 Hous. L. REV. 23 (1992). The ADA explicitly states that prohibited discrimination does not include conventional risk underwriting by insurance companies or self-insured employers. See 42 U.S.C. § 12201(c). Instead, insurance regulation is left to the states. See McCarran-Ferguson Act, 15 U.S.C. §§ 1011-1015 (1994 & Supp. III 1997) (declaring that states regulate insurance unless specific federal action seeks to regulate the industry).

18. The EEOC's former position on asymptomatic individuals is discussed in Joseph S. Alper, Does the ADA Provide Protection Against Discrimination on the Basis of Genotype?, 23 J.L. MED. & ETHICS 167-72, nn.5-6 & 12 (1995).

19. See EEOC, Compliance Manual, Vol. 2, EEOC Order No. 915.0002, § 902 (Mar. 14, 1995). This new section in the EEOC Compliance Manual concludes that individuals who are subjected to discrimination based on "genetic information relating to illness, disease, or other disorders" are being regarded as having disabling impairments. Thus, the ADA covers these individuals. For discussion of the 1995 EEOC interpretation of the ADA regarding genetic disabilities, see Alper, supra note 18, at 168.

20. See EEOC, Compliance Manual, Vol. 2, EEOC Order No. 915.0002, § 902 (Mar. 14, 1995). In Bragdon v. Abbott, 524 U.S. 624, 118 S.C.t. 2196 (1998), the U.S. Supreme Court decided that people with asymptomatic H.I.V. infection can be covered by the ADA. The court ruled that a woman with asymptomatic H.I.V. infection who was refused care in a dentist's office met the ADA's definition of disability. See id. at 2202-09. The court did not rule that the ADA automatically covers H.I.V. infection, however, leaving it to the lower courts to determine if it constituted a direct threat in the dental-care
Even if employers do not use genetic information as a reason to bar high-risk workers outright, they can still use such information to exclude them from insurance coverage or charge them exorbitant insurance premiums. In McGann v. H & H Music Co., a small music company in Texas decreased the lifetime medical benefit for AIDS-related claims from $1,000,000 to $5,000 after they became self-insured, thus effectively denying benefits to McGann, a man with AIDS. In deciding against McGann, the Fifth Circuit ruled that, at least for the purposes of ERISA, self-insured companies may, in response to an employee's claim or test results, amend their medical benefit plans to provide inferior benefits for a certain condition or raise premiums for workers with a risk of contracting that condition.22

3. Privacy Concerns

Employers and insurers have access to vast amounts of information about the health history and use of medical services by individuals. Employers who provide health services themselves or pay contractors to provide employee health services for them generally argue that they should be entitled to information about health risks from employee medical records. They also generally maintain that existing laws, such as OSHA's access-to-medical-records rule, adequately protect employee rights of privacy and access to medical records.23

context. See id. at 2212. Although the Court's analysis relied heavily on the history of H.I.V. infection and its importance in the ADA Congressional debates, its recognition that asymptomatic conditions can be covered by the ADA may extend to genetic predispositions.


22. See id. at 407-08; see also Ostrer et al., supra note 6. The employee plaintiff filed suit under § 510 of ERISA, which provides, in part: "It shall be unlawful for any person to discharge, fine, suspend, expel, discipline, or discriminate against a participant or beneficiary for exercising any right to which he is entitled under the provisions of an employee benefit plan . . . or for the purpose of interfering with the attainment of any right to which such participant may become entitled under the plan." 29 U.S.C. 1140 (1994 & Supp. III 1997); McGann, 946 F.2d at 403. The McGann court held that a plaintiff is entitled to relief under § 510 only if he can demonstrate the defendant intended either to retaliate for the plaintiff's filing of claims for AIDS related treatment or to interfere with the plaintiff's attainment of any right to which he or she is entitled pursuant to an existing enforceable obligation assumed by the employer. See id. at 404-05. The plaintiff did not challenge the statute under the ADA because the conduct occurred before the ADA's effective date. However, it appears McGann remains valid, if somewhat vulnerable. See Nancy R. Mansfield et al., Insurance Caps on AIDS-Related Healthcare Costs: Will the ADA Fill the Gap Created by ERISA?, 14 GA. ST. U. L. REV. 601, 628-30 (1998); Parker v. Metropolitan Life Ins. Co., 121 F.3d 1006 (6th Cir. 1997) (provision of different benefits for mental versus physical disabilities under ERISA plan does not violate ADA). But see Carparts Distribution Ctr. v. Automotive Wholesalers Ass'n of New England, 37 F.3d 12 (1st Cir. 1994) (holding that caps on AIDS health benefits under ERISA plans may violate ADA).

23. See OSHA's Access to Employee Exposure and Medical Records Rule, 29 C.F.R. § 1910.20 (1994 & Supp. III 1997) (giving employees access to their own medical records and to certain exposure information). In addition to federal laws governing confidentiality of medical records, there are also state laws such as California's Confidentiality of Medical Information Act, CAL. CIVIL CODE § 56-56.37 (1982 & West 1998 Supp.).
Yet the act of screening itself is often a violation of employee privacy. Screening tests and questionnaires calling for medical information are usually voluntary in name only. Some individuals are pressured to take tests and provide medical information, some are threatened with losing their employment or insurance, and some find that the truly voluntary and independent counseling recommended for private patients is unavailable to them.\(^\text{24}\)

When individuals with few job alternatives and little information on workplace hazards are offered "voluntary" tests or opportunities to divulge health information, their choices are limited indeed. Those who refuse to be tested may simply not be considered for positions.

Once taken, genetic information is unlikely to remain confidential between physicians and patients, thereby raising further privacy concerns.\(^\text{25}\) Managers pressure company physicians for detailed health information on individual workers and medical test results. Whereas doctors in private practice view genetic susceptibility within the medical model of diagnosing and treating individuals, genetic information that is given to management and used to affect employment becomes part of a policing function that precludes any confidential doctor-patient relationship.\(^\text{26}\) The lack of confidentiality intensifies as employers turn to outside contractors to conduct tests and provide screening data. Contractors under competitive pressure to keep a company's business may well feel a higher level of pressure to disclose entire employee medical records with genetic information.\(^\text{27}\) Also, in the event of disputes with management, workers' compensation claims, or lawsuits, employee medical records typically become available to management, insurers, and company attorneys. Moreover, employees often are not informed of their employers' possession or use of genetic information.\(^\text{28}\)


\(^{25}\) See George J. Annas et al., Drafting the Genetic Privacy Act: Science, Policy, and Practical Considerations, 23 J.L. Med. & Ethics 360 (1995) [hereinafter Annas et al., Drafting the Genetic Privacy Act]; Gostin, supra note 13.

\(^{26}\) Cf. David Orentlicher, Genetic Privacy in the Patient-Physician Relationship, in Genetic Secrets: Protecting Privacy and Confidentiality in the Genetic Era 77, 80 (Mark A. Rothstein ed. 1997) [hereinafter Rothstein, Genetic Secrets] (discussing the dangers of misuse of genetic information by employers and the likelihood of such misuse).


\(^{28}\) In a related case involving federal and state governments as employers, plaintiff employees filed suit in the State of California against their employer, Lawrence Berkeley Laboratories (LBL) and others, on behalf of past and present LBL employees. See Norman-Bloodsaw v. Lawrence Berkeley Lab. 135 F.3d 1260, 1265-66 (9th Cir. 1998). The plaintiffs alleged that LBL for 30 years tested their employees for medical conditions and genetic characteristics, without notice or consent. The plaintiffs had four distinct claims. First, that the conditions LBL tested for were not reasonably related to the administrative and clerical jobs the employees had been hired to perform. See id. at 1273. Second, that LBL used race and gender classifications to decide which employees should be given which tests, in that
Health screening information also makes its way to managers after employees visit private physicians and file claim forms that insurance companies administer. Insurers then report to the employer on the workers' medical treatment. Periodically, insurers send to the benefits or human resources manager a report listing the people whose claims they paid. In this way, managers learn about the genetic predispositions and diseases of individual employees. Moreover, confidentiality problems within self-insured companies are generally more severe than within companies with outside insurance coverage, since claims processing and risk information are readily available in-house. Insurance companies and self-insured employers have a long history of screening, charging different rates according to risk, denying service to high-risk individuals, and failing to respect medical confidentiality.29

Electronic record-keeping and the growing sophistication of health data banks exacerbate problems of access and privacy. For example, employers and insurers can obtain employee medical information from the national Medical Information Bureau (MIB), the genetic data banks operated by various biotechnology companies, or the DNA forensic banks of state governments.30 They may use this information for employment-related reasons that go beyond insurance underwriting. MIB medical records include information about genetic and family diseases.31 When people apply for insurance, they sign a waiver authorizing the MIB to have the data and permitting insurance companies to obtain whatever records the MIB has.

LBL tested all employees for syphilis (and tested African Americans and Latinos more frequently), screened all women for pregnancy, and screened all African Americans for sickle cell trait and disease. See id. at 1265-66. Third, that LBL's policies and practices violated the ADA because the medical testing and inquiries served no legitimate employer purpose. See id. And fourth, that LBL's testing and inquiries violated Title VII of the Civil Rights Act of 1964 because of LBL's discriminatory selection process. See id. The employees contended that they did not give informed consent because they were given no information regarding the specific tests to be performed and the testing was required as a condition of employment. After the defendants prevailed at the trial court level, the Ninth Circuit reversed summary judgment and remanded the action. The Court found that knowledge and consent were material issues of fact. The Court held that employers can perform health- and occupationally-related medical testing if the testing is based on the reasonable probability of substantial harm to the tested employees or others. See id. at 1266; see also Dana Hawkins, A Bloody Mess at One Federal Lab, U.S. NEWS & WORLD REP., June 23, 1997, at 26; S. Rebecca Holmes-Farley, CRG Files Amicus Brief in Workplace Privacy and Discrimination Case, GENEWATCH, Feb. 1997, at 1, 4; Geoffrey Cowley, Flunk the Gene Test and Lose Your Insurance, NEWSWEEK, Dec. 23, 1996, at 49.

31. See Nancy E. Kass, The Implications of Genetic Testing for Health and Life Insurance, in Rothstein, GENETIC SECRETS, supra note 26, at 301-03 (discussing the Medical Information Bureau and genetic information available to insurers).
However, the MIB can mistakenly incorporate inaccurate data that can lead to discrimination against individuals seeking life insurance, health insurance, and employment. Serious injustices occur when the information in data banks and credit companies is incorrect.\(^{32}\)

Employers can hire computer-search companies to investigate a pool of prospective employees and get a great deal of information about them that may help predict future medical costs. Credit-reporting agencies like Equifax and TRW can perform low-cost searches on job applicants that give valuable information about a person’s health risks, prior exposure to health hazards, employment, medical history, past workers’ compensation claims, felony reports and legal records, driving records, insurance history, drug-treatment reports, and use of medications. In many cases, search companies provide employers with more valuable and inexpensive health risk information than the employers’ own questionnaires and in-house screening program, and employers can use these services without employee knowledge.

While concern about genetic data has usually focused on employers’ own screening tests, company testing is in fact an issue of minor importance compared with the flood of information coming from search companies, data banks, and credit reporting agencies — information easily abused by employers and largely beyond the control of medical professionals.

4. Identifying “Problem Employees”

Employers have an incentive to identify risk in an employee’s genetics rather than the work environment as a whole. Genetic screening, by its nature, seeks to eliminate workplace injury by excluding high-risk employees rather than by changing the corporate policies that created the hazardous work environment.

Employees, of course, view the problem differently. Labor unions generally take the position that the proper goal is to reduce the hazard itself, whether by engineering controls, product substitution, or vigilant government regulation.\(^{33}\)

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\(^{32}\) See NIH/DOE, supra note 27, at 794, 802-04, for an overview of the possible misuse and misinterpretation of health information that data banks have and resulting problems. Hundreds of health insurers in the U.S. share their computerized data on health-care costs and risks. See also Dorothy Nelkin & Laurence Tancredi, Dangerous Diagnostics: The Social Power of Biological Information 37-50 (1989) (discussing problems of accuracy, reliability, and validity of diagnostic testing).

Yet employers have nonetheless shown great faith in genetic screening's ability to identify and exclude "problem employees." The result has been that social and economic costs have shifted from employers to high-risk workers, their families, and the public.34

III.
DRUG SCREENING

The issues raised by genetic screening are closely related to the issues of scientific validity, privacy, and discrimination that drug testing presents. The problems that pervade drug testing provide further reason for concern about the increasing use of genetic screening.

A. Drug Screening Overview

The American Management Association found in 1996 that 81.1 percent of its member companies in the U.S. conducted drug testing.35 Large firms generally test all applicants for every position and offer jobs only to those who pass. Employers also periodically test workers in safety-sensitive jobs.36 Companies identify users of marijuana, cocaine, opiates, amphetamines, and other drugs in their efforts to determine whether employees have health or behavior problems that would hinder their job performance or raise medical costs.37

In the 1960s and 1970s, the U.S. Department of Defense began its drug testing of military personnel in response to a perception that service members had free access to a wide variety of drugs. It developed a surveillance program, which led to the development of cost-effective testing techniques. Many private companies then initiated drug testing because of the reduced cost, the Reagan Administration's mandate, and new regulations by the Department of Transportation and the Federal Aviation Administration. Pri-
vate-sector testing also increased following the Drug-Free Workplace Act of 1988 and other Congressional activity that provided tangible incentives to test employees. Management saw other positive gains as well, such as avoiding low-productivity employees and adverse publicity.

Companies that use drug tests generally test all applicants regardless of the position sought; employers test high-level executives along with production workers. However, the level of sophistication of testing varies widely. Nuclear power plants are at one end of the spectrum, with elaborate random and for-cause testing programs mandated by the Nuclear Regulatory Commission and the Department of Energy. Others, like banks and manufacturing companies, concentrate on for-cause and new-hire testing to evaluate whether workers are fit to do their jobs. Some companies only test for cause, after an accident or functional deficit creates the suspicion that individuals may be under the influence of drugs.

B. Issues Raised by Drug Screening

In many ways, drug testing is a problematic screening approach. Employers conceptualize and carry out drug screening in several problematic ways. As with genetic screening, problems arise with effectiveness and scientific validity of the tests, discrimination, privacy, and policing drug use of “problem employees.” Companies that screen will inevitably get some positive test results, with adverse consequences for individuals who are deemed high-risk. The results are even more dire for those who are falsely labeled as drug abusers.

1. Effectiveness and Scientific Validity

Employers use tests that they acknowledge are generally ineffective in detecting drug users and that produce few positive test results. An unfortunate parallel with genetic information is that employers and insurers have advocated ineffective screening policies to accomplish non-health-related goals.

38. See Lieberwitz, supra note 36, at 192. The Drug-Free Workplace Act of 1988 requires any company performing a federal contract or grant of $100,000 or more to certify that it intends to provide a drug-free workplace. See 41 U.S.C. §§ 701-07 (1994 & Supp. III 1997).

39. Federal agencies have established regulations for anti-drug programs, including the Nuclear Regulatory Commission, the National Aeronautics and Space Administration, and the Departments of Defense, Energy, and Transportation. The California Constitution does not permit random testing beyond what is required by federal law or by a compelling employer interest, but random testing programs outside of California typically apply either to everybody in the company or to people in safety-sensitive jobs as the DOD and DOT define them. See Benjamin W. Wolkinson & Richard N. Block, EMPLOYMENT LAW: THE WORKPLACE RIGHTS OF EMPLOYEES AND EMPLOYERS 295-96 (1996); see also Loder v. City of Glendale, 14 Cal. 4th 846 (1997).

40. See AMA, supra note 9, at 2; Martin Shain, Alternatives to Drug Testing: Employee Assistance and Health Promotion Programs, in DRUG TESTING IN THE WORKPLACE, supra note 33, at 259.

a. The Lemming Effect from Employers’ Wish to Deter Drug Users

Corporations that test for drug use in an established work force generally find that only a small fraction of workers use drugs illegally. From 1989 to 1995, the positive test rate of companies that routinely test job applicants and use for-cause testing fell from 8.1 percent to 1.9 percent.\(^{42}\)

Drug testing is time-consuming and not necessarily cost-effective. If drug use in a facility is relatively low—about 1 to 5 percent—companies can spend a great deal of money to identify a single drug user.\(^{43}\) The costs may outweigh the benefits, but even employers that detect only one or two cases a year fear that if they do not test, drug users will gravitate to them after the community becomes aware of their decision not to test. Employers may therefore initiate drug testing to deter drug users from applying for jobs with them.\(^{44}\)

This creates a lemming effect: when one company adopts drug testing other companies rush to follow it, even without strong evidence that the tests accurately detect drug abusers. Although companies rarely test employees randomly, except in power plants and other safety-sensitive positions, many employers announce that they are prepared to do random testing in an effort to keep drug users away from their company. This lemming effect in the spread of drug testing is similar to the “bandwagon” effect seen among research organizations that rush to develop medical technologies that are not necessarily the most promising scientifically.\(^{45}\) Thus, although some companies realize that drug testing is expensive and not the panacea they anticipated, they continue to test in part because other companies do.

b. The Failure to Detect Worker Impairment, Prescription Drugs, and Alcohol

Companies test for drugs that can affect perception, judgment, and the risk of accidents.\(^{46}\) If company policies were truly consistent and focused on major problems, they would discourage the abuse of any substance with

\(^{42}\) See AMA, supra note 9, at 2-3.


\(^{45}\) Aside from the concern with deterring drug users from their own company, some employers are on the moral bandwagon of using workplace testing to stop drug abuse in the country. See Judith C. Blackwell, Drug Testing, the War on Drugs, Workers, and the Workplace: Perspectives from Sociology, in DRUG TESTING IN THE WORKPLACE, supra note 33, at 327-28. For a related discussion of the molecular biological bandwagon in cancer research, see JOAN H. FUJIMURA, CRAFTING SCIENCE: A SOCIOHISTORY OF THE QUEST FOR THE GENETICS OF CANCER (1996).

\(^{46}\) See NORMAND ET AL., supra note 44, at 107-73.
these effects, including alcohol, prescription drugs (like Valium) and over-the-counter medications (like antihistamines). But employers have not been nearly as concerned with prescription medication and alcohol as with illegal drugs.

Nor have managers focused on factors unrelated to substance abuse that create a high risk of injury. Fatigue, faulty technology, poor work organization, and excessive overtime all contribute to accidents, yet management relies on drug use to explain injuries and fatalities. But studies have not correlated the concentration of drugs in the urine (whether cocaine, marijuana, or barbiturates) with impairment, whereas blood-alcohol levels do correlate with behavioral abnormalities. Controlled studies indicate that illicit drugs in general are a minor contributor to work-related accidents and fatalities compared with alcohol.\textsuperscript{47}

Furthermore, drug testing evidence is often misleading. It does not necessarily say anything about how long employees may have used the drug, whether they are chronic users, or whether they are addicted to it. It does not measure a person's character, morals, or work performance.

Drug testing by hair sample raises special problems. A hair is similar to a growth ring in a tree trunk, because its growth marks can show that someone used drugs several months ago but not necessarily very recently.\textsuperscript{48} However, more specificity about the time of use is important in identifying problems affecting work. For example, if employees took a drug during their vacation, the drug might show up in tests yet may not affect performance on the job.

Two purposes of an employment exam are to detect persons who have a health condition (such as asthma) that working conditions could exacerbate, or those (such as forklift operators) whose drug use could place others at risk. Drug testing, however, typically serves neither purpose. Even when a drug test is reasonably accurate, employers often handle positive test results in ways that are ineffective in preventing impaired work performance, and in ways that are punitive—as when a person is disqualified from a desk job because tests showed urine metabolites of marijuana smoked a few days or even weeks earlier.\textsuperscript{49} People are often denied jobs

\textsuperscript{47} Analyses of workplace fatalities find a minor contribution of nonalcoholic drugs to accidents and fatalities. Alcohol is associated with a significant minority. See Martin et al., supra note 37, at 6-7; see also Durbin & Grant, supra note 41, at 3-1 to 3-29. In The Impact and Effectiveness of Drug Testing Programs in the Workplace, in Drug Testing in the Workplace, supra note 33, at 139, Scott Macdonald and Samantha Wells conclude that "Too few empirical studies on the effectiveness of drug screening programs exist at this time to prove that programs are effective in reducing drug use among employees, accidents, and performance problems in the workplace, or drug problems in society as a whole."

\textsuperscript{48} See Durbin & Grant, supra note 41, at 2-21 to 2-22.

\textsuperscript{49} See id. In contrast, HIV testing in private practice is both a diagnostic and a preventive tool that educates those who do not know they are infected so they will not pass AIDS on to others.
even though a drug has not necessarily affected their health or performance or even their behavior at the time of the exam.\textsuperscript{50}

Aside from the fact that drug tests are poor predictors of job performance, workers develop methods to avoid them. For example, employers typically do not require them to undress for testing, so employees can carry clean samples with them. They also can briefly stop using drugs to circumvent specific tests, thereby rendering the tests useless.\textsuperscript{51}

2. Drug Testing and Discrimination

Local, state, and federal regulations require companies to develop mandatory random drug testing programs for people in safety-sensitive positions, such as interstate truckers and petroleum pipeline workers.\textsuperscript{52} Employees and unions have generally opposed random testing and said there should be a reason to conduct a test, especially when employees rather than applicants alone are screened.\textsuperscript{53} Still, government-mandated workplace drug policies exist whether employees oppose them or not. Employees have argued—largely unsuccessfully—that drug testing violates their constitutional rights and that companies must have valid reasons to test, such as poor job performance.\textsuperscript{54} Although laws vary by state, courts have generally recognized the right of an employer to drug test both employees and applicants if it has a written policy and has informed its employees of the policy; in these decisions the courts have considered safety and cost along with privacy rights.\textsuperscript{55} Employers may test for cause, test classes of individuals, and randomly test employees in dangerous jobs for which the federal government requires random testing, provided that they apply rules consistently to categories of employees without singling out particular workers solely for personal reasons. Employers may refuse to hire applicants who fail the drug test if drug use seems to account for their failure. Employers have wide latitude to do drug screening within these broad boundaries.\textsuperscript{56}

3. Privacy Concerns

Drug testing records are often not confidential, and employers can fire those who test positive. Physicians regularly report drug testing information to management, and many feel intense pressure from management to

\textsuperscript{50} See id.; Scott MacDonald & Samantha Wells, The Impact and Effectiveness of Drug Testing Programs in the Workplace, in Drug Testing in the Workplace, supra note 33, at 124, 129-40.
\textsuperscript{51} See Durbin & Grant, supra note 41, at 6-1 to 6-18.
\textsuperscript{52} See id.; Normand et al., supra note 44, at 284-301; Lieberwitz, supra note 36, at 192, 199-200.
\textsuperscript{54} See Normand et al., supra note 44, at 284-301.
\textsuperscript{55} For discussion of the law applying to employer drug testing, see Willborn et al., supra note 43, at 175-98; Wolkman & Block, supra note 39, at 287-307.
\textsuperscript{56} See id.; see also Lieberwitz, supra note 36, at 185-203.
divulge diagnostic information as well.\textsuperscript{57} Workers may fear that the medical department secretly performs drug tests, and thus will become less likely to cooperate with the medical department’s other programs when physicians are responsible for drug testing.

4. Policing Drug Use of “Problem Employees”

Although drug testing does not eliminate drug users from the workplace, corporate America has adopted what is essentially a police position: drug use must be stamped out. Drug testing is not necessarily a medical endeavor. It is designed to promote workplace safety and the ability of workers to do their jobs, but it also aims to protect employers against theft and embezzlement and safeguard the company’s reputation. Corporate officials’ interest in drug testing conflicts with the traditional medical priority of providing health care and rehabilitation; it puts physicians in the awkward position of policing workers rather than extending help to them.

Some corporate physicians try to disengage their clinical role of diagnosing and rehabilitating drug users from the corporation’s policing function. But managing drug testing makes it more difficult for them to separate these functions. Although doctors who conduct drug testing within companies may personally oppose it, particularly in the case of random testing, their opinions generally do not persuade companies to abandon testing. They work for the employer and generally carry out company policies—which in the area of drug testing are more an extension of law enforcement than a true effort to identify people who have problems that affect their ability to work.

The desire to locate “problem employees” is driven in part by a desire to avoid liability. Under California law, for example, employee intoxication is an affirmative defense in workers’ compensation cases,\textsuperscript{58} thus creating an incentive for employers to perform tests whenever a worker is injured. Management may also be able to escape corporate liability by holding workers responsible for their behavior when in fact it may simply reflect stressful jobs and dangerous working conditions.\textsuperscript{59}

Supervisors refer individuals they suspect of taking drugs and those they consider problem employees to the medical department for testing and

\textsuperscript{57} See Interviews, supra note 4. Many companies offer an Employee Assistance Program (EAP) for employees with drug problems. See Shain, supra note 40, at 260-65; Normand et al., supra note 44, at 241-68. Employee-assistance records of tests and communication with counselors are supposed to be more confidential than the company’s general medical records and to be kept separately. Some physicians deliberately put information they do not want management to see in the EAP file so they will not have to give it to company lawyers who ask simply for medical information. See Interviews, supra note 4.

\textsuperscript{58} See, e.g., California’s Workers’ Compensation Statute, CAL. LAB. CODE § 3600(a)(4) (West Supp. 1999), which specifies that the employer is not liable for compensation where the employee’s injury is caused by intoxication by alcohol or the unlawful use of a controlled substance.

\textsuperscript{59} See Normand et al., supra note 44, at 284-301; Lieberwitz, supra note 36, at 198.
an evaluation. Rather than consider the workplace as a source of conditions that affect health and productivity, management tends to look for problems that employees supposedly bring to the workplace, such as drug or alcohol abuse, depression, marital troubles, and financial difficulties. Although stress and wellness programs have become major concerns in occupational medicine, company programs tend to ignore workplace factors, such as occupational stress, that contribute to employees' behavioral problems and illness. Yet substance abuse may be a way that workers cope with a stressful work environment that management has imposed; in this sense the abuse is management-driven, rather than a problem that workers bring to the workplace. Work-related stress can come from a supervisor yelling at employees, work overload, poor air quality, repetitive motion at machines or computers, and broader issues such as anxiety over job insecurity and economic restructuring. Job satisfaction and control over work processes are also critical factors, because people who are dissatisfied and have less control over their work suffer greater psychological strain, chronic disease, and substance abuse. As a result, drug testing is often a short-sighted attempt to address work-environment factors that contribute to drug use.

Another reason companies tend to avoid the work-stress issue is their desire to minimize workers' compensation claims. Work stress has become a major cost concern, particularly in California, with many people filing stress claims. Companies that draw workers' attention to problems of work stress could thereby encourage claims against themselves.

A company's focus on worker health promotion can to some extent serve to "blame the victim" insofar as it tells people that they alone have full responsibility for their own health. Their behavioral problems and

60. For a discussion of chemical sensitization and psychological explanation of symptoms. See Patricia Sparks et al., Multiple Chemical Sensitivity Syndrome: A Clinical Perspective, 36 J. OCCUPATIONAL MED. 718 (1994). Employers who want to avoid workers with schizophrenia, depression, or other mental and emotional disorders are subject to the restrictions of the ADA. The employer must reasonably accommodate disabled workers. However, the ADA generally permits pre-placement drug screening. See 42 U.S.C. § 12211 (1994 & Supp. II 1996).

61. See Lieberwitz, supra note 36, at 198. Company Employee Assistance Programs started dealing with drug dependency and alcoholism in the 1970s, then broadened to encompass other factors affecting worker health and productivity, such as depression and family problems. Many companies offered incentive plans for wellness, such as additional benefits if employees would stop smoking or lower their cholesterol levels. Other companies established fitness facilities and no-smoking policies. See Shain, supra note 40, at 260-72.

62. See Robert Karacek & Tores Theorell, Healthy Work: Stress, Productivity, and the Reconstruction of Working Life (1990); Martin et al., supra note 37, at 15-20, for discussion of associations between job satisfaction, control over work, and health outcomes. Low levels of control over work processes increase job stress and are associated with higher risk of cardiovascular and other forms of chronic disease. Performance demands of jobs that exceed individual and social resources for accomplishing the required tasks create biologically harmful strain. Lower-status service and blue-collar occupations report the highest use of marijuana and cocaine. See Martin et al., supra note 37, at 11.


illnesses are seen to stem entirely from personal limitations, which they can remove with guidance from counselors and therapy programs.

Some employers have treatment programs so that they can retain workers with substance-abuse problems, partly to reduce the expense of turnover and training new employees. But such programs also cost money, and companies in financial trouble are likely to abandon them. Moreover, not all employers give employees an opportunity to rehabilitate themselves before being terminated.

IV.

COMPLEXITIES OF U.S. LAW AND SOCIETY AFFECTING GENETIC AND DRUG SCREENING

Overall, the legal and social environment is favorable to drug testing and comparatively hostile to genetic screening. However, a brief consideration of the legal and social framework surrounding screening reveals that in fact they raise many of the same issues and share similar characteristics.

A. Statutes That Mandate or Encourage Testing

The U.S. government requires certain kinds of drug testing, such as tests regulated by the Department of Transportation and the Nuclear Regulatory Commission. As a result, the common view is that drug testing is more prevalent than genetic testing because it is required while genetic testing is not. However, drug testing is not universally required. Moreover, employers have also claimed that they are required to screen workers for genetic susceptibility; almost twenty years ago, employers claimed that OSHA regulations required them to conduct genetic testing. More recently, employers have argued that the threat of employee lawsuits over workplace illness requires them to know who is at special risk. However, becoming aware of an employee’s special risks is quite different from denying that person a job.

The ADA requires employers to provide reasonable accommodation to people who are — or are perceived to be — disabled. Significantly, how-

65. See Shain, supra note 40, at 260-61, 67-68.

66. See, e.g., NORMAND ET AL., supra note 44, at 284-301.

67. Corporate officials reported that they believed OSHA required them to conduct genetic tests, such as those for sickle cell trait and G-6-PD deficiency. See Richard Severo, Federal Mandate for Gene Tests Disturbs U.S. Job Safety Official (Part Four), The Genetic Barrier: Job Benefit or Job Bias, N.Y. TIMES, Feb. 6, 1980, at A1. The director of OSHA, Eula Bingham, responded to the news coverage in a letter that insisted that OSHA regulations are not a mandate to screen. See Eula Bingham, Letter to the Editor, N.Y. TIMES, Mar. 22, 1980.

68. An employer must accommodate a disabled individual if the individual’s impairments are known to the covered entity and the accommodations would not impose an undue hardship on the entity’s business operation. See 42 U.S.C. §§ 12112(a), 12112(b)(5)(A) (1994 & Supp. II 1996). Under the ADA, disability means: (1) a physical or mental impairment that substantially limits one or more of
ever, employers are under no such obligation in relation to drug users.\textsuperscript{69} In addition, as noted above,\textsuperscript{70} while the ADA arguably prohibits employers from excluding workers through genetic screening unless they have a legitimate employer defense, employers may still collect genetic information after making a conditional job offer.\textsuperscript{71} The popular view that the law requires employers to perform drug tests but not genetic screening thus ignores the complexities of the legal requirements and the way employers have interpreted them. A close analysis shows that the current law may actually encourage employers to use genetic information about employees.

\section*{B. Culture and Politics}

The tough-on-crime rhetoric that pervades our political culture supports the punitive approach toward drug testing that employers generally support. This environment helps explain the unfavorable reception given to rehabilitation and prevention programs.\textsuperscript{72} In contrast, the general culture tends to be suspicious of genetic screening, associating it with eugenics, Nazi oppression, and brave-new-world fears of cloning and Frankensteinian nightmares.\textsuperscript{73}

It would oversimplify, however, to argue that culture and politics favor drug screening and oppose genetic screening. In some important respects, the general culture is also conducive to genetic screening. The great enthusiasm for genetic technology in areas as diverse as pharmaceuticals, agriculture, forensic medicine, and amniocentesis prenatal health screening — as well as the investor excitement generated by biotechnology stocks — has produced a “halo effect” that makes genetic screening in employment appear unduly promising.\textsuperscript{74} Screening high-risk individuals is likely to become even more pervasive as the fifteen-year Human Genome Project begun in 1991 uncovers more genetic information that can be used to screen out large segments of the population from employment.\textsuperscript{75} New genetic dis-

\begin{itemize}
\item the individual’s major life activities,
\item (2) a record of such an impairment, or
\item (3) being regarded as having such an impairment. See 42 U.S.C. § 12102(2).
\end{itemize}

\begin{itemize}
\item 69. The ADA excludes persons currently using illegal drugs from the term “individual with a disability” as long as the employer took its action against the person due to the drug use. See 42 U.S.C. § 12210.
\item 70. See supra notes 17-20 and accompanying text.
\item 71. See 42 U.S.C. § 12112(d)(3). Genetic tests are not specifically mentioned, but presumably could be included as part of medical exams and inquiries.
\item 72. See Shain, supra note 40, at 257-60.
\item 75. See generally Rowen et al., supra note 5; Kevles & Hood, supra note 5.
\end{itemize}
coveries and the favorable public response to them improve the prospects for workplace medical screening.\textsuperscript{26}

The general culture is also, in some respects, profoundly ambivalent about drugs. Social attitudes do tend to favor employer drug screening. However, aside from a recent toughening of drunk-driving laws, the culture in many ways supports alcohol and drug use; it promotes prescription drugs intensively, it indulges or encourages intoxication through positive associations in the media and through social environments conducive to it, and it facilitates use by children through favorable images of drug and alcohol use as adult or manly. These drug-favoring aspects of the culture encourage employee subterfuge in response to drug tests and lax or uneven employer enforcement of drug policies.\textsuperscript{77}

American culture and politics are generally unsupportive of prevention, a fact reflected in the law. This accounts for various anti-prevention phenomena that affect both genetic and drug screening. Three notable examples would be: (1) refusal to provide employees and the public with more useful information about risks;\textsuperscript{27} (2) funding research into unlikely cures rather than into preventable workplace and environmental conditions that produce disease;\textsuperscript{78} and (3) resistance to programs designed to reform workplace practices contributing to drug use and disease and to reduce drug use through rehabilitation and education.\textsuperscript{80}

Thus, the argument that genetic testing will not become as widespread as drug testing because it lacks popular support is unfounded. With employers widely adopting drug testing to combat the consequences of a so-called "permissive" culture, genetic screening may become more prevalent. That trend may be further reinforced by favorable publicity of genetic technologies and research.

\textbf{C. Immutable Characteristics vs. Lifestyle Choices}

In matters of employment, the law and society tend to favor differentiating among people according to "lifestyle choices," such as drug use,

\textsuperscript{76} See id.
\textsuperscript{77} See Durbin & Grant, supra note 41, at 6-1 to 6-18.
\textsuperscript{78} See generally Frederick Bruce Bird, The Muted Conscience: Moral Silence and the Practice of Ethics in Business (1996) (discussing tendency of American businesses to fail to identify risks associated with their products); William R. Freudenburg, Nothing Recedes Like Success? Risk Analysis and the Organizational Amplification of Risks, 3 Risk: Health, Safety & Env't 1 (1992) (looking at failure of organizations to encourage risk reduction in management, especially in low probability areas like nuclear catastrophe); Samuel S. Epstein, The Politics of Cancer 77-78 (1978) (analyzing the tendency of industry-sponsored research to avoid investigating and locating risk in preventable occupational and environmental hazards and publicizing such hazards).
\textsuperscript{80} See Blackwell, supra note 45, at 327-31.
rather than immutable characteristics. However, the public, courts, and legislatures are learning that drug use — including the use of illegal drugs, nicotine in cigarettes, and alcohol — may not be entirely volitional, given the addictive properties of the drugs themselves, deliberate company policies of increasing the drug content of products, and mass media advertising designed to encourage addiction. In addition, the fact that managerial choices may tend to produce drug use and disease, as in the case of unnecessarily high-stress or high-exposure work environments, weakens the argument that drug use is simply an employee "choice."

Genetic monitoring also weakens the case for an immutability-versus-choice distinction between genetic and drug testing. In contrast to genetic screening, genetic monitoring entails periodically examining the biological effects of environmental contaminants on workers to determine whether exposures are too high. In this type of testing, employers use genetic information to detect the effects of workplace exposures rather than to detect inborn genetic traits.

D. The Turf-Expanding Function of Testing

Drug testing is a principal way in which physicians define themselves as useful to management, even when they recognize that testing has limitations or causes harm. Having drug testing under the purview of in-house occupational physicians expands the resources that employers provide to support substance-abuse programs. Doctors who once complained about the burden of drug testing now say they are grateful for it because it helps them justify their time and their medical staff, especially when their medical departments are embattled or shrinking; without it, they might lose the infrastructure now devoted to it or even have their programs eliminated. In addition, medical units within large corporations increasingly have to defend how they serve their company's customers. Drug testing helps them do this because it is popular and has customer appeal.

Company medical departments typically conduct preplacement exams after applicants get a job-offer letter and review positive drug test results to make sure the use of a legitimate prescription drug or other excusable substance did not cause them. Federal regulations require medical review officers — who are licensed physicians knowledgeable in substance abuse —

81. See generally Conrad & Walsh, supra note 1.
82. See Draper, Risky Business, supra note 1, at 11-13.
83. Although company physicians and others in corporations occasionally see genetic information as a means by which they might expand their departmental turf and resources, this is a relatively minor factor spurring on the use of genetic information in corporations, compared with the major turf-expanding function of corporate drug screening. Thus, unlike the case of genetic screening, physicians have aggressively advocated drug testing by company physicians that would increase company resources devoted to screening. See American College of Occupational Medicine Council on Social Issues, Drug Screening in the Workplace: Ethical Guidelines, 33 J. OCCUPATIONAL MED. 651, 652 (1991).
to review the paperwork and give those who fail a drug test an opportunity to explain the result.\textsuperscript{84} However, a safety or human resources unit may carry out the actual mechanics of sample collection, packaging, and shipping the test, since it is not an inherently medical procedure requiring a doctor or nurse.\textsuperscript{85}

Some companies, instead of performing internal drug tests, hire contracting companies or outside physicians that perform drug tests for many employers. In these cases, in-house physicians oversee contracts with external laboratories to ensure that testing meets government certification and licensing requirements. However, the prospect of outside testing often serves to intensify the efforts of company physicians to defend their turf and resources.\textsuperscript{86}

In the late 1980s and early 1990s, legislators and government officials advocated eliminating physicians from drug testing, on the grounds that employers and government should not incur the cost of having physicians perform a function that lesser-paid employees could handle. In response, company doctors and their major professional organization, ACOEM, successfully fought this effort by opposing bills that would eliminate the physician's role in drug testing.\textsuperscript{87}

It is possible that genetic screening could serve a similar function for in-house physicians to that of drug testing, though on a smaller scale. Unfortunately, such an outcome would make it less likely that a company would eliminate genetic screening if it realized that screening had only limited effectiveness.

E. Title VII

Title VII of the Civil Rights Act of 1964 provides limited protection against genetic discrimination by making it illegal for employers to limit, segregate, or classify employees in any way that would tend to deprive individuals of employment opportunities or otherwise adversely affect their status as employees, where screening programs disproportionately affect a class protected under Title VII (such as race, sex, or ethnicity) or treat a

\textsuperscript{84} The medical division must be involved in drug testing that the Department of Transportation and Nuclear Regulatory Commission (NRC) require because regulations specify that a "medical review officer" (MRO) who judges positive test results be a physician. For example, the NRC's fitness-for-duty rule requires that an MRO be "[a] licensed physician . . . who has knowledge of substance abuse disorders and has appropriate medical training to interpret and evaluate an individual's positive test result together with his or her medical history and any other relevant biomedical information." 10 C.F.R. § 26.3 (1998).

\textsuperscript{85} See DURBIN & GRANT, supra note 41, at 2-1 to 2-37.

\textsuperscript{86} See Interviews, supra note 4.

protected class differently.\textsuperscript{88} If the genetic trait targeted by the employer is found disproportionately among one of these protected classes, the employer may be held liable whether or not the employer intended to discriminate on that basis.\textsuperscript{89} Prime examples of disorders that could give rise to disparate impact claims include G-6-PD deficiency, sickle-cell trait, and hypertension, all of which are found among blacks at a higher rate than the rest of the population.\textsuperscript{90}

An employer can avoid liability for a policy that discriminates according to protected status only upon presenting a valid business justification. If an employer discriminates intentionally, the employer must show that the exclusion based on genetic predisposition is a bona fide occupational qualification.\textsuperscript{91} If an employer is found to have a policy that unintentionally discriminates on the basis of protected status, the employer can escape liability by showing the classification is related to the position in question and consistent with a business necessity.\textsuperscript{92}

It is difficult for an employer to justify a discriminatory policy, as shown by the history of fetal exclusion policies. In the hopes of reducing worker injuries and potential liability, many employers adopted policies that barred all women from working in particular positions because of the risk of fetal injury.\textsuperscript{93} In 1991, however, the Supreme Court held in Johnson Controls that such policies violated Title VII.\textsuperscript{94} The Court found fetal exclusion policies were facially and intentionally discriminatory and therefore required the defendant corporation to show that maleness was a bona fide occupational qualification.\textsuperscript{95} The defendant offered a general safety justification but the Court rejected it because the employer had failed to show that a woman's potential fertility had any effect on her ability to perform her job.\textsuperscript{96} The defendant's "fear of prenatal injury, no matter how sincere, [did] not begin to show that substantially all of its fertile women [were] incapable of doing their jobs."\textsuperscript{97}

\textit{Johnson Controls} applies to genetic testing and the exclusion of workers on the basis of genetic predispositions that do not actually affect a person's work performance. However, it may only have limited practical


\textsuperscript{90} See OTA (1990), supra note 1, at 41-45; DRAPER, RISKY BUSINESS, supra note 1, at 83-88.


\textsuperscript{95} See id. at 197-200.

\textsuperscript{96} See id. at 200-07.

\textsuperscript{97} Id. at 207.
effect on employer practices. Even after Johnson Controls, some employers maintain fetal exclusion policies because they fear tort liability more than Title VII liability.98

Furthermore, Title VII reaches genetic testing and discrimination only if the genetic trait at issue traces gender, race, or ethnic lines. A limited number of genetic traits meet this qualification. And even if an employer's genetic policy discriminates on an impermissible basis, it is unlikely the discrimination would be intentional. If so, an employer would have to satisfy only the less-rigorous business necessity defense, making it more likely the policy would survive judicial scrutiny.99

One would hope that genetic claims of discrimination that do not fit the Title VII model would have a place under the ADA, but the status of such claims is uncertain at best. As discussed earlier, it is unclear whether genetic predisposition for a disease is a disability covered by the ADA.100 Even if it is, employers still enjoy potential defenses under the ADA similar to those available under Title VII.101

Thus, most genetic discrimination claims have, at best, an uncertain status under federal employment discrimination laws because genetic predisposition is not necessarily a disability and only occasionally follows race or gender lines. Genetic predisposition defies simple categorization yet employment discrimination laws require categorization as a prerequisite to relief.

F. Social Stratification and Class Distinctions

The law and U.S. popular culture tend to justify drug testing by associating drug use with "low-lifes" but tend to interpret genetic screening as affecting broader social groups.102 The social reality is somewhat different. Alcohol, prescription drugs, and illegal substances are also used and abused by middle- and upper-class people; and employers have focused on screening for genetic risk in jobs where a lower-status group — such as blacks or women — is a relatively new minority in an occupation.103 Thus, social stratification and class distinctions have affected the use of genetic screening as well as drug testing.

98. See Draper, supra note 93, at 97; Interviews, supra note 4.
99. See Johnson Controls, 499 U.S. at 198 (“The business necessity defense is more lenient for the employer than the statutory BFOQ defense.”).
100. See supra notes 17-20 and accompanying text.
102. See Nelkin & Lindee, supra note 74, at 13, 163-68; George J. Annas et al., The Genetic Privacy Act and Commentary i-ii (1995) [hereinafter Annas et al., Genetic Privacy Act].
103. See, e.g., Draper, Risky Business, supra note 1, at 65-96 (arguing that employers are more likely to screen for genetic risk in situations where women or minorities enter jobs traditionally held by men or non-whites).
G. Distinctions Between Applicants and Incumbents

Drug testing statutes and case law tend to distinguish between job applicants and incumbent employees — generally allowing broader testing of applicants. However, considerations of privacy, employment interests, fairness, and fundamental rights are not necessarily so different for applicants, compared with incumbents. Certainly they have comparable interests in earning a livelihood and in avoiding tests that could deprive them of health insurance and employment opportunities.

Another distinction between applicants and incumbents resides in the different uses of genetic screening and genetic monitoring. Unlike genetic screening, genetic monitoring involves periodic employee testing to detect possible genetic damage from workplace exposures; it therefore tends to be more useful to employees than to applicants, and thus works the opposite way from genetic screening and drug testing. Monitoring can benefit employees by detecting genetic abnormalities that may indicate exposure hazards to employed populations, whereas job applicants and new-hires have a minimal interest in such tests, except for gathering baseline data to compare with later alterations in their genes. Genetic monitoring thus undermines the notion that employee testing is more pernicious than applicant testing and that employees therefore need greater protection. At the same time, it illustrates the unproductive nature of genetic screening.

H. Privacy and Discrimination Effects

Genetic screening and drug testing share some comparable privacy and discrimination problems that are often overlooked. The law tends to emphasize employer prerogative in both types of screening in its continued support of at-will employment, the wide latitude it grants in medical testing after conditional employment offers, and the almost complete employer latitude it permits in applicant and for-cause drug testing. As noted above, the confidentiality of medical information is weaker in the employment context than in private medical practice; employers routinely obtain information about employees’ health and fitness to work, and they may successfully defend screening of high-risk workers with business justifications. Beyond employer testing, insurance records, data banks such as the MIB, and search companies pose substantial opportunities for discrimination and threats to privacy.

104. See, e.g., Loder v. City of Glendale, 14 Cal. 4th 846 (1997); see also Willborn et al., supra note 43, at 175-98.
Some employers have given people they consider to be genetically high-risk the option of performing hazardous work if they agree to sign a waiver of the right to sue. Others have required private doctors to sign statements confirming that they believe environmental exposures are safe before employers will permit employees to work in specific jobs.\textsuperscript{107} We can expect this practice to become more pervasive as genetic information becomes more widely available. However, individuals cannot freely choose risk in the hazardous workplace because of limited information and job alternatives, and as a matter of social policy they should not be able to choose jobs with avoidable life-threatening hazards. In addition, employees have limited legal ability to waive rights of their own or of third parties such as their offspring.\textsuperscript{108}

Health screening information in the workplace has been applied inappropriately in the case of fetal exclusion as well as in the case of genetic screening and drug testing. Under fetal exclusion policies, for example, employers often barred women from jobs that entailed exposure to lead, but the men who held these jobs, as well as the children they might father, remained vulnerable to damage from lead.\textsuperscript{109} Although individuals in a particular group may be considered high-risk because of their biological or personal characteristics, many others may also be at risk. Unfortunately, focusing on hazards to one potentially high-risk group can supplant concern with reducing more general health hazards of employment.

Genetic screening also encourages employers to ignore risks of the work environment. In doing so, it creates ample opportunity for improper exclusions and violations of employee privacy.

V.

\textbf{Policy Recommendations}

As the discussion above has shown, both drug testing and genetic testing raise fundamental issues of privacy and social stratification. Yet existing law provides little protection to victims of genetic discrimination. Individuals identified as high-risk for disease need further safeguards. Companies should not use worker exclusion as a means of protection and

\textsuperscript{107} Employers have argued that they must have the choice of how best to protect people's health when they deem it advisable and have used powerful pro-choice rhetoric to legitimize their policies. The pro-choice arguments, which center on the employer's choice, appear in the thousands of pages of briefs and transcripts related to the Johnson Controls cases in California, Illinois, and Supreme Court of the United States. \textit{See} International Union, UAW v. Johnson Controls, Inc., Case No. 89-1215, Proceedings (Official Transcript), Wash., D.C. (Oct. 10, 1990) [hereinafter Sup. Ct. 1990]; \textit{see also} Draper, \textit{Fetal Exclusion Policies}, supra note 93, at 97.

\textsuperscript{108} \textit{See}, e.g., \textit{Johnson Controls}, 499 U.S. at 187; Sup. Ct. 1990, supra note 107.

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should instead address hazards directly. The ability to introduce new genetic technologies and screening practices has outdistanced the dissemination of information about potential negative consequences. Medical technologies and scientific information about risks are often misapplied to the workplace. Corporate enthusiasm for genetic screening and drug testing, though understandable as a business interest, has had a destructive effect on employees and the public and has diverted attention from pressing environmental health hazards and problematic management policies.

Alternative policies that could encourage the use of genetic information in more protective, equitable, and rational ways would have four main goals: promoting effective preventive health measures to reduce long-term corporate and social costs; developing anti-discrimination provisions and a single-payer health-care system; limiting employers' access to medical information and separating health services from employer control; and creating legal protections and organizational incentives for more individual accountability and social responsibility.

A. Promoting Effective Preventive Health Measures

Workplace screening should not gain support without careful examination of the evidence supporting it—especially since genetic and drug screening do not necessarily offer proof of impairment at work. By seeking to identify individuals with specific genetic risk factors, company officials implicitly argue that all others are safe, that current levels of contaminants are not generally harmful, and therefore that changing company policies or supporting further substance regulation is unnecessary. Their arguments resemble corporate arguments that low-level nuclear radiation is safe and that smoking does not cause cancer.

If risk is conceptualized in terms of the personal habits or biology of individuals, it naturally appears beneficial to develop screening programs to identify people who take drugs or have genetic characteristics that may present a health hazard on the job. But if employers want to provide a safe workplace, they should tighten engineering controls, monitor exposure hazards, replace hazardous products, and collect scientific information on risks to populations; only such efforts can reveal whether working conditions are indeed safe. Priorities in health policy should be redirected toward reducing risk without falsely making it appear that genetically high-risk workers and drug users are the problem and without needlessly penalizing individuals perceived to be susceptible. Investing in improved management policies and working conditions could prevent disease more effectively than broad genetic screening. The search for high-risk individuals should not
limit the use of effective strategies for reducing environmental hazards and disease that are already widely recognized but underfunded.  

Prevention must be institutionalized in society as well as in the workplace. Preventing illness is far less costly in human and dollar terms than acting after the fact. Effectively removing health hazards that employees perceive could also increase job satisfaction, make the workplace less stressful, and promote worker health generally. At the very least, recognizing ways in which adverse working conditions contribute to drug use, job dissatisfaction, and disease could be a first step toward beneficial alternative policies.

Preventive steps can represent an unwelcome short-term cost for managers, especially in times of corporate retrenchment, when many American corporations are struggling with declining profitability and loss of worldwide market share. Nevertheless, corporations should be given incentives to adopt measures that are cost-effective over the long term, as well as incentives to evaluate how well managerial job performance prevents illness and death. Social policy and the law could help ensure that employers, rather than individual workers or society as a whole, would bear most of the financial burden of dealing with occupational disease. The goal should be to promote more thorough consideration of workplace practices that impose costs on employees and the general public.

With regard to drug testing, except when there is reasonable cause, or for certain occupations like those of airplane pilot or truck driver, employee screening for drug use is generally unnecessary without evidence of inadequate work performance. Employees tend to find drug testing a demeaning procedure that unjustifiably treats them as guilty until proven innocent, even if they have a decade's experience with the company, rarely miss work, and have never had an accident. Companies need a working personnel function that successfully monitors employee performance for behavior changes within an initial employment period. Employers ought to look first for behavioral abnormalities such as absence or poor performance, and then consider drugs as only one possible explanation, along with family problems, physical or psychological illness, and management practices. Then, depending on the job's safety risk and how severe the problem appears to be, they could consult with occupational health professionals to determine whether there is a medical problem that requires intervention.

110. See, e.g., Pelletier, supra note 1, at 380-81 (summarizing results of studies of health promotion, concluding that most find such programs "health- and cost-effective"); John H. Cushman, Jr., U.S. Reshaping Cancer Strategy As Incidence in Children Rises, N.Y. Times, Sept. 29, 1997, at A1 (explaining that environmental causes are likely to blame for the larger rates of childhood cancer, and that the government is likely to expand research in this direction).

111. See Normand et al., supra note 44, at 215-40; see also Macdonald & Wells, supra note 50, at 125-27 (briefly discussing employee perception of drug testing and its effect on morale).
Unfortunately, management has embraced a generally punitive approach to drugs. While it is important to be able to run an airline without drug-abusing pilots, employers have oversimplified a complex issue. Concern about drug use by employees does not, in fact, require widespread drug testing. Reducing the frequency of drug use among workers instead requires a multifaceted program that must include rehabilitation. Employers that perform drug tests often lack non-punitive employee-assistance programs that could play a valuable role in prevention and treatment. Rather than terminate an employee who tests positive and spend thousands of dollars training a new person, an employer could offer treatment. Supervisors and worker representatives need to be trained to detect substance abuse problems, and company programs should address alcohol as well as drug use. Investing in improved management policies, work organization, and employee-assistance programs could deter drug use more effectively than broad testing.

B. Anti-Discrimination Measures and a Single-Payer Health-Care System

Anti-discrimination laws should be extended to cover genetic predispositions, to guard against individuals being labeled and penalized as high-risk. Although the ADA arguably covers individuals perceived to be susceptible to illness and not just those who are symptomatic, that coverage is by no means certain. Companies could offer individuals at risk an opportunity to move to an equal-status job in another area without any loss of pay, as the OSHA lead standard requires, but companies that are small or downsizing would have difficulty doing this.

States are now also voicing their opinions on genetic discrimination. At least twenty-six states have statutes that protect against genetic discrimination and most of those bar discrimination in health insurance based on

112. See AMA, supra note 9, at 3. The American Management Association, representing 9500 U.S. corporations, states that data “support, most emphatically, the deterrent effect of drug education and awareness programs, supervisory training, and employee assistance programs . . . Testing cannot and should not be expected to take the place of good supervision and management practices.” Id. at 7.


114. See Karen H. Rothenberg, Genetic Information and Health Insurance: State Legislative Approaches, 23 J.L. MED. & ETHICS 312 (1995); Gostin, supra note 13. For a promising comprehensive effort to protect individuals from unauthorized analysis of their DNA, see ANNAS ET AL., GENETIC PRIVACY ACT, supra note 102.

115. See supra notes 17-20 and accompanying text.

116. Government regulations could follow the lead of the OSHA lead standard, 29 C.F.R. § 1910.1025(B)(ii) (1998), which provides that if individuals are at special risk, they could be transferred temporarily to other jobs but retain their wages and seniority.
"predictive" genetic information.117 Several states have enacted legislation that either prohibits employers from requiring genetic testing as a condition of employment or prohibits the use of genetic health predictions in employment decisions.118 Over twenty states have laws that bar insurers from limiting coverage or establishing premiums based on results of genetic tests.119

New Jersey’s genetic privacy law, for example, bars employers and health insurers from discriminating against individuals based on genetic information, defined broadly as "information about genes, gene products or inherited characteristics that may derive from an individual or family member."120 Legislation with such a broad definition of genetic information is desirable because it would protect genetic information obtained from direct testing as well as from medical records, physical examinations, and family histories. New Jersey’s law is also advantageous because although life and disability insurers may use genetic information to set premiums or deny coverage, they are barred from "unfair discrimination" or discrimination not based on "anticipated claims experience."121

California legislation bars genetic discrimination against policyholders by health insurance companies based on genetic disorders that are currently asymptomatic.122 No California statute specifically prohibits employers from conducting genetic screening in the workplace, but in 1998, California amended the Fair Employment and Housing Act (FEHA) to prohibit employment discrimination based on asymptomatic genetic characteristics.123 Although existing California law already prohibited discrimination in em-

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117. For examples of state genetic discrimination laws, see: (1) Or. Rev. Stat. §§ 659.036, 659.277 (1996) (prohibiting health insurers from using genetic information to deny, limit, reject, cancel, refuse to renew, increase the rates of, or affect the terms and conditions of health insurance policies; and providing for informed consent and privacy protection of genetic information); (2) 1995 Minnesota Laws 251 (prohibiting health insurers from: using genetic testing information to determine eligibility, establish premiums, or limit or renew coverage; requiring a genetic test; or inquiring or determining whether an individual has had a genetic test); and (3) 1995 N.H. Laws 101 (prohibiting health insurers from conditioning provision of health insurance coverage on genetic test results, considering genetic testing to determine rates or benefits, requiring a genetic test, or inquiring or determining whether individuals have had genetic tests). For discussion of state laws that bar genetic discrimination, see Mark A. Rothstein, The Law of Medical and Genetic Privacy in the Workplace, in Rothstein, GENETIC SECRETS, supra note 26, at 281; Rothenberg, supra note 114; Gostin, supra note 13; Robert Pear, States Pass Laws to Regulate Use of Genetic Testing, N.Y. Times, Oct. 18, 1997, at A1 [hereinafter Pear, Genetic Testing Laws]; Jean E. McEwen & Philip R. Reilly, State Legislative Efforts to Regulate Use and Potential Misuse of Genetic Information, 51 Am. J. Hum. Genetics 637, 637-47 (1992); Jennifer Preston, Trenton Votes Strict Limit on Use of Gene Tests by Insurers, N.Y. Times, June 18, 1996, at A1. 118. See Philip R. Reilly, Laws to Regulate the Use of Genetic Information, in Rothstein, GENETIC SECRETS, supra note 26, at 69-91.

120. N.J. STAT. § 17B:30-12 (1998).
121. Id.
ployment-related matters on the basis of medical condition, physical disa-
bility, and mental disability, the new legislation provides that “medical
condition” includes genetic characteristics and clarifies the legislative intent
to prohibit genetic discrimination in companies with five or more employ-
ees. 124 This statutory protection is particularly important because of the
federal law’s gaps in protection. The ADA, to a limited extent, protects
genetically at-risk employees under federal law, 125 but it applies only to
employers with fifteen or more employees, 126 thus excluding from ADA
coverage the many California employees who work for smaller companies.

However, while state protections against discrimination by employers
and insurers are beneficial, comprehensive federal genetic discrimination
laws should be enacted. Federal bills have been proposed in Congress that
would prohibit genetic discrimination, but few protections are currently in
place. A major federal bill that would effectively address the genetic dis-

124. 1998 Cal. Stat. ch. 99 defines genetic characteristics to mean “any scientifically or medically
identifiable gene or chromosome, or combination or alteration thereof, that is known to be a cause of a
disease or disorder in a person or his or her offspring, or is determined to be associated with a statistically
increased risk of development of a disease or disorder that is presently not associated with any
symptoms of any disease or disorder.” Specifically, 1998 Cal. Stat. ch 99 makes it an unlawful employ-
ment practice under FEHA to discriminate in employment based on genetic characteristics.
125. See supra notes 17-20 and accompanying text.
128. See id.; see also Rothenberg, supra note 114, at 317-18 (discussing two policy recommenda-
tions). Two other major federal bills proposed before Congress would effectively address the problems
of genetic discrimination described above: (1) the Genetic Privacy and Nondiscrimination Act of 1995,
S. 1416, 104th Cong. (1995), that Senators Hatfield and Mack introduced; and (2) a similar bill, H.R.
The exclusion of people with a genetic defect from private insurance is a major issue, although some insurance companies, such as Blue Cross, have voluntarily stopped excluding people with pre-existing conditions from eligibility for insurance coverage.\textsuperscript{129} Most insurance is bought in groups, and people who obtain insurance virtually automatically with their employment are therefore not excluded for pre-existing conditions. However, insurance companies are resourceful in coming up with ways to exclude people whom they think will cost them money. Moreover, self-insured companies are largely exempt from state regulation of health benefits and therefore can exclude people or conditions from their insurance plans.\textsuperscript{130} Congress should close this loophole, so that employers cannot effectively exclude from insurance coverage those employees who need it most.

In addition to legal protections against genetic discrimination, universal access to health services is a crucial concern in addressing problems of genetic discrimination, privacy, and availability of health care. National health coverage and a single-payer health-care system of government-financed services could mean that high-risk individuals and groups would no longer be denied health coverage or affordable medical care. They would thus have less to fear from screening under such a system.\textsuperscript{131} Mandated national health coverage would remedy problems within the workers' compensation system that now encourage people to seek compensation benefits simply to get medical coverage. It would also assist people who now decline health insurance coverage because of the high cost of premium copayments that many companies require. With national health care, investigators could use national data systems to track suspected employee hazards and disease patterns by workplace or region, which would facilitate mortality and morbidity studies. Despite political obstacles to enacting a national single-payer system, political leaders could overcome opposition to reform by educating the public about the expense, the gaps in coverage, and the inequities of the current health care delivery system.

\textsuperscript{129} For a discussion of health insurance coverage, including denial for preexisting conditions based on the use of genetic tests and information, see Kass, supra note 31, at 303-12; Rosenblatt et al., supra note 6, at 36-368, 466-647.


\textsuperscript{131} For discussion of insurance companies' efforts to avoid insuring individuals they consider high risk, see Hudson et al., supra note 29; Pear, Health Insurers, supra note 29.
C. Limiting Employers' Access to Medical Information and Separating Health Services from Employer Control

The rapid expansion of medical information presents many opportunities for its inappropriate or harmful use by employers, company physicians, and insurance companies. Doctors increasingly will market genetic tests directly to patients, who could be tested and keep information about their genetic makeup to themselves. But too often, genetic test results that should be kept confidential are not. Since employers and agencies can ask people on questionnaires about their genes — and since genetic information is entered into data banks when individuals apply for insurance or third-party reimbursement — having private physicians perform tests will not solve the privacy problems.

The Genetic Privacy Act is a promising comprehensive effort to protect individuals from unauthorized analysis of their DNA. It would, among other things: (1) bar unauthorized disclosure of information resulting from genetic analysis; (2) require that authorization for collection or disclosure of an identifiable DNA sample be voluntary; and (3) require that a test subject be warned that “in the future someone else may ask if [the individual] has obtained genetic testing or analysis and condition a benefit on the disclosure of information regarding such testing or analysis.”

Individuals should have more rights over access to test results than current laws provide. Screening thereby could become less of a coercive and punitive invasion of privacy. People also ought to be fully informed about risks, the nature of tests, who will get the results, and what impact they may have. Most employees now have the right to obtain company medical records if they request them, so they can find out what tests have been conducted. Since misrepresentations of information can have devastating consequences for employment, insurance, and stigmatization, people should be able to learn of inaccuracies or unfair uses of their medical records. They need information on tests and health hazards collected by agencies independent of the employer, so that they can evaluate employer warnings and assurances more effectively. And they need trustworthy information about risks to individuals as well as aggregate data that may reveal patterns of health hazards and groups screened out.

132. See Annas et al., Genetic Privacy Act, supra note 102; see also Michael M. J. Lin, Confering a Federal Property Right in Genetic Material: Stepping Into the Future with the Genetic Privacy Act, 22 Am. J.L. & Med. 109 (1996); Annas et al., Drafting the Genetic Privacy Act, supra note 25. For discussion of an attempt to pass the act in Maryland, see Neil A. Holtzman, Panel Comment: Attempt to Pass the Genetic Privacy Act in Maryland, 23 J.L. Med. & Ethics 367 (1995).

133. See Annas et al., Genetic Privacy Act, supra note 102, at § 111.
134. See id. at § 101(b)(1).
135. Id. at § 101.
Physicians' services to employees are likely to improve when physicians are not employees of the company they serve. Physicians could instead work for a third party that both management and employee representatives choose. Regulation can serve a critical function in protecting health, but regulatory oversight has been limited by cutbacks in enforcement and a slow and cumbersome process of setting standards.\textsuperscript{137}

Government should strengthen occupational health standards and provide greater support for training occupational physicians, thereby encouraging the growth of a professional base that can advise companies on reducing work hazards. Because most physicians currently receive scant medical school training in occupational health,\textsuperscript{138} regional health resource centers staffed by board-certified occupational physicians could support them in many ways: by offering health consulting services, developing surveillance programs, dispensing information about work hazards, offering physical exams, and evaluating individuals who might be at special risk.\textsuperscript{139} These centers could more credibly study hazards and protect medicine from the constraints imposed by employers whose main concern is maximizing company profits. Companies and the government would jointly pay for the professional services of these centers; neither of them would employ doctors themselves or retain a legal right to see any of the center’s medical data about employees. Such a system would allow doctors to address health risks without worrying that employers could question their allegiance or threaten to fire them; it could make both research and clinical practice more independent of management control.

\textbf{D. Legal and Social Policy Protections and Organizational Incentives}

Corporate pressures on professionals have intensified over the past four decades as lawsuits, publicity about chemical risks, government regulation, and higher insurance and workers' compensation expenses have raised employers' costs. Corporate actors generally view their work through a web of allegiances within and outside the corporation, and these tend to place a higher value on loyalty to employers than on concern with social costs.\textsuperscript{140} The conflicting organizational demands from being both a

\begin{footnotesize}
\textsuperscript{137} See, e.g., McCaffrey, \textit{supra} note 79, at 31-69.


\textsuperscript{139} Regional centers would give even small employers coverage. Companies could send new-hires who require pre-placement physicals to such centers, which would tell employers whether the individuals are healthy enough to do the required work.

\textsuperscript{140} See Robert Jackall, \textit{Moral Mazes} (1988), in which Jackall analyzes what he calls the bureaucratic ethic of decision making by corporate actors. What he calls a problem of bureaucracy, though, is really insufficient bureaucracy and quasi-feudal loyalty to employers.
\end{footnotesize}
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Corporate employee and an autonomous professional constitute a social and structural problem rather than a problem of individual ethics. Professionals can be well-intentioned and conscientious, but if companies employ them, they usually end up conforming to the corporate culture and advancing the corporation's ends — or losing their jobs. This includes medical professionals responsible for carrying out the corporate mandate to screen. Doctors become involved in such activities as testing employees and determining fitness for work not because they have "bad values," but because they are doing the job they were hired to do. Bringing about effective policies therefore requires increasing the power of corporate professionals and employees to protect the long-term interests of the company, its employees, and society — including protecting health and the environment — and facilitating structural change that strengthens safeguards for them when they act to protect such long-term interests.

Organizational incentives could encourage professionals and employees to speak up and advocate preventive health measures in organizations, government, and in public forums. Those who do so should receive protection against retribution for engaging in socially responsible conduct.141

Once health and environmental problems come to light, employers should hold managers accountable. Professional societies and laws can increase both appropriate loyalty and individual accountability among company professionals for hazards and errors. For example, the Corporate Criminal Liability Act of California provides for significant fines (of up to a million dollars for a corporation) and the imprisonment of managers who violate the law, including those found responsible for workers' deaths.142

The threat of lawsuits can be useful in expanding individual accountability, getting companies to curtail hazardous conditions, and promoting beneficial social policies.143 Company physicians now know they can be held personally responsible and sued for their actions in a corporation. They also know

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141. See Terance D. Miethe & Joyce Rothschild, Whistleblowing and the Control of Organizational Misconduct, 64 Soc. Inquiry 322, 338-40 (1994) (arguing more protective statutes and financial incentives would encourage more whistleblowing); Willborn et al., supra note 43, at 79-112. California, for example, has a specific retaliation clause with criminal penalties for retaliation against employees who pursue their rights after a workplace injury. See Cal. Lab. Code § 132a (West Supp. 1998). See also General Dynamics v. Superior Court, 876 P.2d 487, 498 (Cal. 1994), in which the court upheld a cause of action for wrongful discharge by an in-house corporate lawyer who claimed that the employer made illegitimate demands that conflicted with the mandatory ethical norms in the California Rules of Professional Conduct.


143. Most states permit employers' intentional torts to fall outside the workers' compensation system's coverage, through statutes and case law. Standards for satisfying the intentional tort exception vary among the states. See 2A Arthur Larson, Workmen's Compensation Law § 68.13 at 13-10 (1990 & Supp. 1993). See also Millison v. E. I. duPont de Nemours & Co., 501 A.2d 505, 506 (N.J. 1985), in which the court held that although the defendants could not be held liable for the first injuries their products caused, they could be held liable for fraudulently concealing knowledge of those initial diseases.
they can face criminal charges against them as individuals.\textsuperscript{144} This perceived threat of individual legal accountability reinforces professional standards and bolsters independent professional judgment in corporations, even when employers directly hire physicians.

Yet when employees fear getting fired, have no employee organization to appeal to, and see doctors use information against them, it matters little how friendly the company physician is. Good doctor-patient relationships depend on the larger corporate and social structure. Conceivably, doctors could view workers' empowerment as being in their own professional interest rather than merely seeking to use their own power over employees. Employee demands for improved screening practices and working conditions could actually make it easier for physicians to function in the corporation, because they could advise their employers on how to respond to employee pressure.

Employees could strive to improve their own health — not only by reducing their drug use, but also by gaining a greater ability to identify health hazards and influence their working conditions. Company medical programs could be made responsible to the work force as well as to the employer through joint labor-management committees like those set up by General Motors and the United Auto Workers.\textsuperscript{145} Union membership is small and declining — only ten percent of the private sector is unionized, which of course limits possible union influence on company policies.\textsuperscript{146} Unions also have been constrained by limited information and lack of power under restrictive labor laws. Moreover, basic economic issues take precedence over issues of health and employee participation, especially in periods of layoffs.

\textsuperscript{144} See People v. Chicago Magnet Wire Corp., 534 N.E.2d 962 (Ill. 1989), in which five company officers were charged with aggravated battery, reckless conduct, and conspiracy to commit aggravated battery for causing the injury of 42 employees by failing to provide necessary safety precautions.

Workers can circumvent workers' compensation as an exclusive remedy for workers' injuries, such as if employers intentionally inflict injury or if employees file third-party suits against manufacturers of hazardous products and equipment. In addition, OSHA regulation is expanding the possibility that corporations and individual professionals can be held liable for willful negligence and criminal penalties for workplace hazards are becoming more common. On liability related to occupational health, see Wolkinson & Block, supra note 39; Michael B. Bixby, Was It an Accident or Murder? New Thrusts in Corporate Criminal Liability for Workplace Deaths, 41 LAB. L.J. 417, 421 (1990).

\textsuperscript{145} The U.A.W. and General Motors provided a good model with their UAW-GM board that meets with scientists acting as adjudicators, information specialists, and facilitators to try to address workplace concerns jointly. The U.A.W. has been particularly successful in negotiations with major auto companies over joint training funds and other issues. OSHA could mandate joint labor-management health committees and occupational medical services for employees nationwide.

\textsuperscript{146} In 1997, 9.7 percent of private sector U.S. workers were union members; 10.6 percent of private sector U.S. workers were covered by unions. See Bureau of the Census, U.S. Dep't of Commerce, \textit{Statistical Abstract of the U.S.} 1998, tbl. 712 (118th ed. 1998). Union membership for public sector workers is higher: in 1997, 37.2 percent were union members and 42.3 percent were covered by unions. For wage and salary workers overall in 1997, 14.1 percent were union members and 15.6 percent were covered by unions. See id.
Nonetheless, organized labor in heavily unionized industries and workplaces has pressed for specific services, a prohibition on certain tests, more access to information, expanded employee representation, and greater independence of company doctors.\textsuperscript{147} Along with public interest and community groups, they have sought transnational mobilization to counteract business's flexibility, wealth, and power in a globalizing economy.\textsuperscript{148} However, it is difficult to be optimistic about the prospect of a globalized counterweight to corporate power and control. Much depends on the strength and vigilance of community and labor organizations in demanding that corporations change their practices.

\textbf{VI. CONCLUSION}

Employers could change specific features of their employment practices related to genetics, including their safety practices, their policies concerning access to health care, job security, and anti-discrimination provisions, and their privacy protections. In the case of drug testing, employers will surely not abandon it while government agencies such as the Nuclear Regulatory Commission and Department of Transportation require it. Still, even for government-mandated drug testing programs, employers could be required to offer rehabilitation and change their surveillance programs, disciplinary policies, and safety and privacy provisions.

Current conflicts over whether individual workers, corporations, or society as a whole should bear the work-related costs of chemical exposure risks and medical care are likely to expand over the next decade. The initiation of new employment policies that could curtail the detrimental uses of genetic information will likely involve legal challenges, government regulation, education, and collective bargaining. Problems of health hazards, privacy, and discrimination will not be solved without adequately addressing the laws, power dynamics, and economic interests of the employment context within which genetic information is used. In particular, federal employment discrimination law is not capable of dealing with deeply entrenched disadvantages of social class. The law recognizes race and sex


distinctions as discrimination, but it has generally failed to take disadvan-
tages of social class into account as discrimination.

As genetic information proliferates, more and more people will be con-
sidered genetically flawed. Without additional social and legal safeguards, 
many individuals could become virtually uninsurable or unemployable be-
cause of the use of genetic information. The legal and social policy meas-
ures suggested here would protect employee health and alleviate the 
adverse social consequences of genetic information being used in matters of 
employment.