

**ADOLESCENT DECISION MAKING AND THE PREVENTION OF UNDERAGE
SMOKING**

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Executive Summary

Between 80 and 90 percent of smokers begin smoking before the age of 18, with the modal age of initiation around 15 years. Although cigarette smoking among adolescents in the EU declined substantially during the past several decades, in many countries the rate of decline has slowed or come to a virtual standstill, and the proportion of teenagers who report having smoked within the last 30 days remains above 20 percent in the vast majority of EU member countries. A variety of different strategies have been proposed to further reduce underage smoking – often without proper consideration of what in fact leads young people to smoke. This report considers adolescent decision making and risk taking, including recent research in this regard, and examines the implications for discouraging and/or preventing underage smoking.

My conclusions can be summarized as follows:

1. Experimentation with cigarettes during adolescence must be seen in the wider context of adolescents' greater propensity than adults for risk taking behaviors of all kinds. The high rate of risky behavior among adolescents relative to adults has been the focus of much theorizing and empirical research by developmental scientists for at least three decades.
2. This research has disproved, rather than validated, several widely-held beliefs about adolescent risk taking: for instance, that adolescents are more likely than adults to believe they are invulnerable; that adolescents are deficient in their information-processing, or that they think about risk in fundamentally different ways from adults; and that adolescents do not perceive risks where adults do, or are less risk-averse than adults. None of these assertions is correct. Indeed, most studies find few, if any, age differences in individuals' evaluation of the risks inherent in a wide range of potentially dangerous behaviors (e.g., smoking, driving while drunk, having unprotected sex). Research consistently shows that adolescents are well aware of the health risks of smoking, but that many smoke anyway.
3. Contemporary models of adolescent risk taking informed by neuroscience have proposed more satisfactory explanations for heightened risk taking in adolescence. According to these models, such risk taking behavior is a *natural* by-product of the asynchronous maturation of brain systems that govern incentive processing (which is responsive to emotion, reward, and novelty) and cognitive control (which is responsive to emotion regulation and planned decision making). The fact that the incentive processing system develops faster than the cognitive control system helps explain why middle adolescence is a prime time for experimentation with smoking and other risky activities.
4. Consistent with the above, decision making during adolescence is characterized by:
 - a. a heightened sensitivity to rewards, including rewarding stimuli like social status or admiration, versus risks;

- b. a tendency to focus on the immediate consequences of a decision, rather than the longer-term consequences;
 - c. a susceptibility to peer influence; and
 - d. weak self-regulation, as evidenced by a greater tendency to act before thinking or making plans.
5. Research into the reasons for adolescents' experimentation with smoking reflect these views of adolescent risk taking. This research shows that the main risk factors for smoking among adolescents are a psychological profile characterized by sensation-seeking, peer and family influence (i.e. peers and family members who smoke), and the availability of cigarettes. The latter two risk factors are interlinked because in contrast to adults, who are legally permitted to purchase cigarettes, and whose primary source of cigarettes are retail stores, adolescents frequently obtain cigarettes through other means: primarily, by "bumming" or buying them from friends, some of whom may be of legal age to purchase cigarettes, or by asking older individuals to purchase them for them (i.e., proxy sales).
6. The decision making models and research that I have described above inform any discussion of the measures that are most likely to be effective in reducing underage smoking in the EU. In my report, I draw five main conclusions in this regard.
- a. First, since the modal age of smoking initiation is 15, and since this age also coincides with the period of middle adolescence where, on the basis of contemporary neuroscientific models of risk taking behavior, adolescents are most vulnerable to risk taking, it makes sense to focus measures on middle adolescents. (It is therefore surprising that very few studies of policies designed to reduce smoking systematically examine the differential impact of these policies among adolescents versus adults, and that virtually no studies compare their differential effectiveness among adolescents of different ages, which is a severe limitation in the literature.)
 - b. Second, the very notion that adolescents' knowledge of the risks of smoking has a strong influence on their decision to smoke, which has motivated most efforts to discourage underage smoking, is questionable. Decisions to engage in any potentially dangerous activity are based not only on the perceived risks of the activity but on its perceived benefits, and adolescents privilege the latter over the former (particularly where the risks are long-term and the perceived rewards immediate).
 - c. Third, the proportion of adolescents who, despite regulatory efforts, continue to experiment with cigarettes may be disproportionately composed of individuals who are especially high in the psychological characteristics associated with heightened risk for smoking, such as sensation-seeking, impulsivity, and unconventionality. Efforts to convince this proportion of adolescents not to try

cigarettes, for example by appealing to rational decision making, are unlikely to be effective. Equally, because adolescents focus on rewards rather than risks, efforts to prevent adolescents from smoking by emphasizing the potential harms of smoking (of which they already well aware) are unlikely to be effective.

- d. Fourth, many measures that are being proposed in the context of revisions to the Tobacco Products Directive 2001/37/EC are unlikely to have any meaningful impact on adolescent smoking. For example:
- Proposals to expand health warnings or emphasize the risks of smoking to adolescents by means of graphic warnings are unlikely to be effective, because adolescents are already knowledgeable about the risks of smoking and are predisposed to pay less attention to long-term risks than they do to immediate rewards (including rewarding stimuli like social status or admiration that have little connection with health risks).
 - Banning in-store displays of tobacco products on the basis that this will discourage impulse-purchasing by adolescents is unlikely to be effective, because it is unlikely that impulse purchasing in retail stores plays any role in adolescents' acquisition of cigarettes (adolescents who purchase cigarettes in retail stores need to decide in advance where they will do their shopping, so that they can select a vendor who will sell to underage individuals, arm themselves with a fake ID, or prepare a response to a salesclerk who asks for proof of age).
 - More generally, the impact on adolescent smoking of changes in cigarette packaging or in the display of cigarette packages is likely to be very small at best. There is no evidence to support the proposition that changes in cigarette packaging affect adolescents' experimentation with or use of cigarettes.
- e. However, fifth, policies that limit adolescents' ability to obtain cigarettes are likely to have a greater impact than those that attempt to diminish adolescents' interest in smoking. Limiting adolescents' access to cigarettes is challenging, because adolescents often obtain cigarettes through means other than retail store purchases. Because many adolescents obtain cigarettes from older individuals who have purchased them legally, criminalizing proxy purchasing should receive serious consideration.
- f. Above all, removing cigarettes from the social networks of teenagers is crucial. A range of policies may be effective in this regard. The two strategies most likely to accomplish this are:

- raising the minimum legal purchase age (MLPA¹), and effectively enforcing these laws (e.g., fining merchants who are caught violating the law, rather than merely attempting to raise their awareness), perhaps in conjunction with a prohibition on proxy purchases; and
- increasing the price of cigarettes.

Both strategies will greatly diminish the likelihood that individuals under the age of 18 will be in social situations with peers who have cigarettes.

¹ I use the terms “minimum legal purchase age” and “MLPA” to refer to laws that restrict merchants’ ability to sell cigarettes to minors.

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Introduction

1. This report was commissioned by the law firm Freshfields Bruckhaus Deringer, LLP, whom I understand have been instructed by JTI, in connection with possible revisions to the Tobacco Products Directive under consideration by the European Commission's Health and Consumer Directorate General (DG SANCO). The objective of the Tobacco Products Directive 2001/37/EC, issued in June, 2001, was to "approximate the laws, regulations and administrative provisions of the Member States concerning the maximum tar, nicotine and carbon monoxide yields of cigarettes and the warnings regarding health and other information to appear on unit packets of tobacco products, together with certain measures concerning the ingredients and the descriptions of tobacco products". The Directive established maximum yields of tar, nicotine, and carbon monoxide for cigarettes; created labeling requirements; and banned the marketing of oral tobacco in the EU. The Directive has since been accompanied by recommendations on a number of topics, including the use of pictorial warnings on cigarette packages, consistency in reporting formats, and cooperation among laboratories engaged in the analysis of tobacco content and smoking byproducts.
2. In September, 2010, DG SANCO issued a public consultation (the "Consultation Document") on the possible revision of the Directive in six areas: expanding the scope of the Directive to include e-cigarettes and other products; amending the ban on some smokeless tobacco products; changing the Directive's rules on health warnings and packaging, e.g., by mandating picture (graphic) warnings or introducing generic (plain) packaging; amending provisions concerning the reporting and registration of ingredients; regulating ingredients; and further restricting access to tobacco products, e.g., by restricting access to vending machines to adults or banning vending machines, restricting or banning cross-border sales of tobacco products, and restricting or banning in-store display and promotion. The need to prevent or reduce underage smoking has often been cited by regulators and other experts in connection with proposals concerning packaging, display and access to tobacco products.
3. This document focuses specifically on underage smoking, defined here as cigarette smoking among individuals under the age of 18 in the EU (18 is the minimum legal age for the purchase of tobacco in most EU countries, although several set this age somewhat lower). This document does not address issues involved in the use or purchase of tobacco products by adults; the content, manufacture, or testing of tobacco products; cigarette smuggling or other illicit trade issues; or the underage use of products other than cigarettes. (Cigarettes by far account for most tobacco use among minors; only 3% of adolescents and young adults in the EU are regular or daily users of non-combustible tobacco products, and Sweden is the sole EU member with a significant number of users of non-combustible tobacco products.) The report draws on research on adolescent decision making and risk taking and on the implications of this research for discouraging and/or preventing underage smoking.
4. I am the Distinguished University Professor and Laura H. Carnell Professor of Psychology at Temple University, in Philadelphia. I have published extensively on

adolescent judgment, decision making, and risk taking. I am a former President of the Society for Research on Adolescence (the largest professional organization of scholars interested in this stage of development) and of the Division of Developmental Psychology of the American Psychological Association. I am the author of more than 300 scholarly articles and numerous books on adolescent development, including a leading college textbook on the subject. I was retained by Freshfields Bruckhaus Deringer, LLP, but the opinions expressed in this document reflect my views as an independent scientist.

Background

5. The desirability of discouraging or preventing adolescents from smoking is not disputed. This evidence has been extensively reviewed and will not be discussed here. Smoking during adolescence significantly increases the risk of chronic smoking in adulthood. This, in turn, is associated with the most serious and potentially fatal health consequences of smoking: cardiovascular disease, emphysema, and various types of cancer.
6. Although cigarette smoking among adolescents in the EU declined substantially during the past several decades, in many countries the rate of decline has slowed or come to a virtual standstill. According to a recent report prepared for the European Commission Directorate-General for Health and Consumer Protection (RAND Europe, 2010), the proportion of 15-year-olds who report having smoked within the last week (a frequently used metric to track underage smoking) remains around 20 percent. The proportion of minors who smoke weekly does not appear to have changed significantly in recent years (SCENIHR, 2010). The overall pattern, which is surprisingly consistent across an array of countries whose regulatory policies vary considerably, indicates that there remains a substantial minority of young people who, for reasons that remain unknown, have not responded to the various efforts implemented during the past two decades to discourage underage smoking (including anti-smoking education, changes in package warnings, and further restrictions on marketing). Accordingly, governments and regulators have proposed additional or different steps to those taken previously, in the belief that these may bring rates down below where they stand today.
7. It is well understood that many individuals find it difficult to quit smoking once they have begun. Some experts now believe that adolescence – and early to middle adolescence in particular – is a period of heightened susceptibility to the pharmacological effects of nicotine (Schochet et al., 2004) and other drugs, owing to the greater “plasticity” of the brain’s reward processing regions during this time (Volkow & Ting-Kai, 2005). As a consequence, exposure to tobacco during adolescence has more serious implications for chronic use than does the same degree of exposure at later ages. In fact, the proportion of individuals who try cigarettes during adolescence and who become regular smokers as adults is strikingly high (Chassin et al., 2009) – about 40%, according to recent data. (For instance, about 45% of U.S. adolescents try cigarettes before high school graduation, and about 20% of adults are regular smokers, only 10% of who never smoked during adolescence). Conversely, the chances are low that an individual who

abstains from smoking until age 21 or later will become a regular adult smoker (Orlando et al., 2004).

8. In light of the fact that smoking during adolescence substantially elevates the risk for regular adult smoking, and, consequently, for the serious health consequences associated with chronic smoking, many have called for policies and practices designed to reduce the number of adolescents who experiment with tobacco and the number of those who experiment who progress to regular smoking, as well as measures designed to encourage regular adolescent smokers to quit. Measures designed to discourage underage experimentation with smoking or that decrease the chances of adolescents progressing from experimentation to regular use are of special interest, because it appears that the most significant reductions in the prevalence of smoking are likely to come from policies and practices that reduce the number of individuals who try cigarettes, rather than from those that encourage cessation among those who have become regular smokers (Gilpin et al., 2006). Many smokers find it difficult to quit, and smoking cessation interventions are only modestly successful, with chronic smokers reporting multiple failed efforts to quit (IOM, 2007). For this reason, the present report focuses mainly on policies that will discourage underage experimentation with smoking and/or progression from experimentation to regular use, rather than on smoking cessation efforts.

Smoking in Adolescence

9. Adolescence, defined here as the second decade of life, is the primary period for the onset of smoking. Between 80 and 90 percent of smokers begin smoking before the age of 18 (DHHS, 1994), with the modal age of initiation around 15 years (NCI, 2010). People report finding it difficult to forego smoking relatively soon after they begin smoking, and the earlier an individual begins smoking, the longer he or she is likely to smoke and the more cigarettes he or she is likely to consume, elevating the risk for long-term health problems (IOM, 2007). More than a third of all adolescents who initiate smoking at this age become daily smokers by the time they are 18. Thus, preventing adolescents from smoking has important long-term, as well as immediate, health consequences.
10. Evaluating the likely effectiveness of policies or practices designed to reduce underage smoking presents several substantial challenges. First, there are vast differences among adolescents of different ages in emotional, social, and intellectual maturity, and measures that are effective with one age group may not be effective with another. A subtle or ironic anti-smoking advertisement that may appeal to a 17-year-old may pass completely over the head of an 11-year-old. A 16-year-old may be able to comprehend a cigarette package warning whose wording is written at an adult reading level, but a 12-year-old may have considerable difficulty doing so. Similarly, enforcement of point of sale age restrictions may be far more effective in limiting the cigarette purchases of younger adolescents but can be more easily circumvented by older teenagers, many of whom have friends who are legally permitted to purchase tobacco. Very few studies of policies designed to reduce smoking systematically examine the differential impact of these policies among adolescents versus adults. Virtually no studies compare their differential

effectiveness among adolescents of different ages, which is a severe limitation in the literature. Many studies and sources of data group together adolescents and young adults, two very different populations with respect to psychological and social characteristics, and with respect to their legal right to purchase tobacco. Ironically, only a handful of studies look specifically at the impact of various policies on younger adolescents (those 15 and younger), who constitute the age group most likely to initiate smoking and therefore the age group against which measures to combat smoking initiation should most effectively be targeted.

11. Second, because adolescence is a transitional period in the development of smoking, within the same age group are individuals at markedly different stages of smoking. For the purposes of this report, it is useful to distinguish among at least four groups of individuals, for whom different measures to discourage smoking may be differentially effective: *non-smokers*; *experimenters*; *occasional users*, who smoke regularly, but not daily, or who smoke only under certain circumstances, such as weekend socializing, a pattern referred to as “chipping”; and *regular users*, who smoke daily or near-daily. Most experts agree that the overarching goal of anti-smoking efforts should be to prevent adolescents from smoking at all, because many adolescents who believe that they can be occasional users become, in adulthood, regular users who wish, but then find it difficult, to quit. Importantly, different approaches to discouraging underage smoking may be differentially effective among adolescents at different stages of smoking. Consider, for example, package warnings that stress the addictive properties of nicotine. Such warnings may be more effective among adolescents who have never tried cigarettes than among long-term “chippers,” who may see themselves as living proof that one can smoke without becoming addicted, and such warnings conceivably may cause occasional users to become skeptical about the honesty of package warnings in general.
12. Third, in contrast to adults, who are legally permitted to purchase cigarettes, and whose primary source of cigarettes is retail stores, adolescents who smoke tend to obtain cigarettes through other means: primarily, “bumming” or buying them from friends and family, some of whom may be of legal age to purchase cigarettes, or by asking older individuals to purchase them for them (i.e., proxy sales); purchasing them from vending machines in countries where they are not banned and where access to them is not restricted; or shoplifting, in countries where products are displayed within the easy reach of customers. Some adolescents circumvent age restrictions by purchasing them from vendors whom they know are less likely to comply with laws prohibiting sales to minors. It does not appear that adolescents’ purchase of cigarettes over the Internet is yet a significant problem in the EU, and only small numbers of adolescents appear to obtain cigarettes from vending machines.
13. The fact that much adolescent smoking involves cigarettes that they themselves did not purchase creates tremendous challenges in limiting adolescents’ access to tobacco and therefore diminishes the reach of policies aimed at regulating what takes place in retail outlets. For instance, even if the evidence showed that banning the display of tobacco products in-store might discourage some adolescents from buying cigarettes (which, as I say later, is not the case), such a measure would have no impact on adolescents who do

not obtain cigarettes from stores. Sales restrictions in stores (e.g., MLPA laws) are in any event unlikely to be effective if not vigorously enforced. A recent qualitative study of UK teenagers found that many youth obtained cigarettes by purchasing them from vendors who are known to sell cigarettes to minors or to fail to ask for ID, or by waiting outside stores and asking young adults to purchase cigarettes for them (Robinson & Amos, 2010).

Risk Taking in Adolescence

14. The high rate of risky behavior among adolescents relative to adults, despite massive, ongoing, and costly efforts to educate teenagers about its potentially harmful consequences (including a tremendous investment in anti-smoking education), has been the focus of much theorizing and empirical research by developmental scientists for at least three decades (Steinberg, 2008). Much of this work is relevant to the prevention of underage smoking, because it informs our understanding of why adolescents experiment with cigarettes and the likely effectiveness of various strategies for reducing such experimentation. In the absence of much systematic evaluation of many anti-smoking policies, looking to the broader literature on adolescent risk taking is potentially useful.

Traditional Approaches to the Study of Adolescent Risk Taking

15. The three dominant traditions in this research have come from cognitive-developmental (e.g., “Piagetian”) theory, which has emphasized adolescents’ alleged shortcomings in logical reasoning, which presumably leave them open to feelings of invulnerability; information-processing theory, which has emphasized adolescents’ alleged deficiencies in basic cognitive abilities, which presumably lead to short-circuited decision making; and a variety of theories that emphasize individuals’ perceptions about the consequences of their actions and their perceptions of vulnerability to those consequences, including the Health Belief Model (Rosenstock, 1974), the Theory of Reasoned Action (Fishbein & Ajzen, 1975), and the Theory of Planned Behavior (Ajzen, 1985). By and large, these theories emphasize the rational process through which adolescents weigh the costs and benefits of a risky decision and select a course of action that follows from the outcome of this evaluation process. Understanding adolescents’ perceptions about the risks of smoking, discussed later, is therefore of central importance in these models.
16. Most of the research on adolescents’ reasoning about risk taking has been informative, but in an unexpected way (Steinberg, 2008). In general, where investigators have looked to find differences between adolescents and adults that would explain the more frequent risky behavior of youth, they have not been successful. Among the widely-held beliefs about adolescent risk taking that have *not* been supported empirically, for instance, are (a) that adolescents are more likely to believe that they are invulnerable; (b) that adolescents are deficient in their information processing, or that they reason about risk in fundamentally different ways than adults; and (c) that adolescents do not perceive risks where adults do, or are less risk-averse than adults. None of these assertions is correct: Adolescents are no worse than adults at estimating their vulnerability to risk (and, like adults, *overestimate* the dangerousness associated with various risky behaviors); by the

time they are 15 or 16, the logical reasoning and basic information-processing abilities of adolescents are comparable to those of adults (Millstein & Halpern-Felsher, 2002; Reyna & Farley, 2006; Steinberg & Cauffman, 1996; see also Rivers, Reyna, & Mills, 2008). Indeed, most studies find few, if any, age differences in individuals' evaluations of the risks inherent in a wide range of potentially dangerous behaviors (e.g., smoking, driving while drunk, having unprotected sex), in their judgments about the seriousness of the consequences that might result from risky behavior, or in the ways that they evaluate the relative costs and benefits of these activities (Beyth-Marom et al., 1993). In sum, adolescents' greater involvement than adults in risk taking does not stem from delusions of invulnerability, faulty calculations, ignorance, or irrationality (Reyna & Farley, 2006).

17. The fact that adolescents are knowledgeable, logical, reality-based, and accurate in the ways in which they think about risky activity raises important considerations for policy-makers, practitioners, and scientists. Most anti-smoking educational interventions (including proposals in relation to on-pack health warnings) are premised on the notion that adolescents would not smoke if they knew that smoking was harmful to their health. But extant research on adolescent risk taking suggests that providing adolescents with information/attempting to foster decision making skills will be of limited effectiveness in curbing experimentation with tobacco, since it does not appear that adolescents are either ill-informed or intellectually incapable of making rational decisions about smoking.

Contemporary Models of Adolescent Risk Taking Informed by Neuroscience

18. The failure of most extant research to uncover or document differences between adolescents and adults in risk assessment or logical reasoning has stimulated the development of new perspectives on adolescent risk taking that draw on recent advances in developmental neuroscience, the study of the ways in which the brain changes as a result of biological maturation and experience. The dominant framework to emerge is what has been called a "dual systems model" (Casey et al., 2008; Steinberg, 2010). According to this model, heightened risk taking in adolescence is a *natural* byproduct of the asynchronous maturation of two different brain systems, a "reward system" (sometimes referred to as an "incentive processing system" or a "socioemotional system"), which is responsive to emotion, reward, and novelty, and a "cognitive control system," which is critical for impulse control, emotion regulation, and planned decision making. Briefly, the dual systems model posits that the incentive processing system becomes especially aroused early in adolescence, shortly after puberty, and that this arousal pushes the adolescent to engage in sensation-seeking in the pursuit of immediate rewards, but that this arousal takes place before the cognitive control system has matured enough to provide much-needed self-control. The combination of a highly responsive incentive processing system and a still immature cognitive control system sets the stage of risk taking. It has been suggested that, during late adolescence and early adulthood, there is a decrease in the incentive system's responsiveness to rewarding and emotionally arousing stimuli and improvements in the functioning of the cognitive control system, and, as a consequence, risk taking declines. There is growing support in the scientific literature for the dual systems model, in the fields of both neurobiology and psychology.

19. A very brief overview of adolescent brain development may be helpful in understanding why risk taking may be a normative feature of adolescence and so difficult to discourage. It is now well-accepted that adolescence is a critical period in brain development, second in importance only to the first five years of life. Two of the regions of the brain that change especially dramatically during adolescence are the limbic system and the prefrontal cortex (Casey et al., 2010). Changes in the limbic system are especially important for understanding the increase in reward-seeking that takes place during adolescence. The brain's reward system includes several components, most importantly, a limbic system structure called the nucleus accumbens. In experiments in which individuals are presented with rewards while undergoing brain imaging, the accumbens shows a profound increase in activity.
20. We now know that, during early and middle adolescence, there is substantial remodeling of receptors for the neurotransmitter, dopamine, in the accumbens, and in its connections to other brain regions (Casey et al., 2010). Dopamine activity in this area of the brain increases dramatically during the first part of adolescence, and then declines – in fact, there is more dopamine activity in this part of the brain during adolescence than at any other point in development (Steinberg, 2008). Dopamine is an important neurotransmitter for the experience of pleasure, and it plays a significant role in our responses to all sorts of rewarding stimuli, including food, sex, and drugs (including nicotine), as well as more abstract, but no less rewarding, stimuli like social status or admiration. (Brain imaging studies indicate that the same regions activated by the prospect of receiving a physical reward are activated by the prospect of receiving a social reward; Guyer et al., 2009.)
21. Current thinking is that the increase in dopaminergic activity during adolescence is a main reason that adolescents are especially responsive to reward and especially susceptible to drugs. Simply put, rewarding stimuli elicit a stronger response from the brain during adolescence than during other periods of development. Moreover, recent research on reward processing indicates that adolescents' heightened responsiveness to reward, relative to adults, is particularly pronounced when individuals are anticipating the reward, and less so when they are actually being rewarded (Galvan, 2010). In view of this, it is not surprising that young people are especially inclined to attend to the potential rewards of a risky choice and to discount the potential costs, as I discuss later in this report. The decline in reward-seeking that takes place after mid-adolescence is paralleled by a concomitant decline in the brain's responsiveness to rewarding stimuli. The heightened sensitivity of rewards during adolescence, relative to children or adults, applies to social as well as physical rewards, which in part explains why adolescents are especially sensitive to the influence and opinions of their peers. Importantly, even though individuals' ability to systematically consider the costs and benefits of a risky decision matures over the course of adolescence, as I note in the next paragraph, teenagers generally place more weight on potential rewards than on potential costs when evaluating them.
22. Important changes take place during adolescence in the prefrontal cortex as well as in the limbic system (Casey et al., 2010). The prefrontal cortex is the brain's CEO. It is the part

of the brain that is especially active when we engage in deliberative reasoning, thinking ahead, and self-control. In brain imaging experiments, when individuals are asked to make decisions, activity in the prefrontal cortex increases markedly. Between preadolescence and young adulthood, there are important structural changes in the prefrontal cortex that make communication within the brain more efficient – faster and more accurate. Unused, and unnecessary, connections between neurons are eliminated (a process called “pruning”), and those that remain become more entrenched, as if a network of a large number of unpaved roads is replaced with a smaller number of superhighways. Moreover, these superhighways become increasingly “insulated” with a white, fatty substance called myelin, which increases the speed of transmission across these brain circuits by a factor of 100. Not surprisingly, as the prefrontal cortex matures, individuals become better at the specific skills that are underpinned by this brain region: between preadolescence and young adulthood, individuals become better at planning ahead, controlling their impulses, and weighing the costs and benefits of a decision before acting. Maturation of the prefrontal cortex, and the cognitive control that results from this maturation, is largely complete by young adulthood.

23. The timetable and pattern that characterizes maturation of the prefrontal cortex differs from that which characterizes the reward-related changes in the limbic system described earlier. Whereas most of the changes in the limbic system follow an inverted U-shaped curve, with a steep increase in arousal occurring during early adolescence and peaking in middle adolescence, development of the prefrontal cortex is more gradual and protracted. Middle adolescence is therefore a period of heightened susceptibility to risk taking because dopamine activity in the brain’s reward regions is at its peak, but prefrontal functioning is still relatively immature (Steinberg, 2008). It is not coincidental that middle adolescence is also a prime time for experimentation with smoking and other risky activities that are potentially rewarding. Accordingly, efforts to prevent smoking should be targeted mainly toward this age group.

Adolescent Decision Making

24. Decision making during adolescence is characterized by six key features that distinguish it from other periods and that directly bear on questions concerning the likely effectiveness of alternative approaches to deterring or preventing tobacco use by young people.
25. First, as noted in the previous section, adolescents are especially sensitive to rewards (Galvan et al., 2006), including rewarding stimuli like social status or admiration. This heightened sensitivity to rewards is manifested in two different ways: in what adolescents attend to, and in what carries particular weight when they are making decisions. Thus, when faced with a choice between two alternative courses of action (e.g., trying versus forgoing smoking), adolescents will pay relatively greater attention to the potential rewards of each alternative (e.g., gaining the admiration of one’s friends versus pleasing one’s parents) than to the costs of each (e.g., potentially developing cancer versus looking “uncool” in front of one’s friends). In contrast, adults tend to pay equal attention to both rewards and costs (these age differences in what psychologists call the “risk-reward

calculus” tend to disappear after age 17; Cauffman et al., 2010). In addition, even though they might be made aware of both the rewards and costs of a choice, adolescents will likely be more influenced by the rewards than will an adult. There is some evidence that differences between adolescents and adults are more consistently seen with respect to the ways in which each age group weighs rewards than with respect to the ways that they weigh costs. That is, differences between adolescents’ and adults’ “risk-reward calculus” tend to be driven mainly by differences in their perceptions of rewards than by differences in their perceptions of costs. One important implication of this is that efforts to prevent smoking by emphasizing the potential harms of smoking are unlikely to be effective among adolescents.

26. Second, compared to adults, adolescents are more likely to focus on the immediate consequences of a decision, rather than think about the longer-term ones (Steinberg et al., 2009). This applies both to their consideration of the potential rewards of a choice and to their consideration of the potential costs. For example, in research using what behavioral economists call a “temporal discounting” or “delay discounting” paradigm, individuals are asked to choose between a smaller reward received sooner and a larger one received later (e.g., “Would you rather have \$500 today or \$1,000 in one year?”). Studies show that adolescents discount the value of the future reward much more steeply than do adults, opting to receive a smaller amount in order to receive it sooner (Steinberg et al., 2009). This does not appear to be due to poor impulse control but instead to the generally weaker orientation to the future evinced by young people, especially during the early adolescent years (i.e., before 16). Thus, it is not so much that teenagers are incapable of delaying gratification (as one might see in a small child) as it is that they just prefer not to. This stronger preference for immediate rewards, coupled with their greater sensitivity to rewards than costs, contributes to adolescents’ greater sensation-seeking relative to adults.
27. Third, the weaker future orientation seen during adolescence also affects the ways in which adolescents evaluate the potential costs of a decision, in that they are more likely to pay attention to and focus on the immediate and short-term drawbacks of a choice (e.g., that smoking will cause bad breath, or that not smoking will lead to social exclusion by peers) than on the longer-term ones (e.g., that smoking may cause lung cancer or heart disease) – although, as I have already stated, consideration of *any* negatives (long or short term) is likely to be less important than consideration of rewards (and particularly short-term rewards). Thus, even when adolescents are made aware of the long-term harms associated with smoking, they are less likely than adults to use this information in making a decision about whether to smoke. This stronger orientation toward the present rather than future and their focus on rewards rather than risks together help explain why many adolescents, who are well aware of the potential adverse health consequences of smoking, nevertheless try cigarettes. To a sensation-seeking 15-year-old focused on what he experiences to be the here-and-now rewards of smoking, preventing experimentation with cigarettes by emphasizing the possibility of developing a disease 40 years in the future is not likely to be a deterrent. This is true, whatever the size of the package warnings and whether or not it features graphics.

28. Fourth, adolescents' decisions about risk taking are more easily swayed than are adults' by the influence of their peers; susceptibility to peer influence is high during early and mid-adolescence and declines steadily until about age 18, at which point it levels off (Steinberg & Monahan, 2007). Moreover, peer influence tends to exacerbate adolescents' sensitivity to rewards and their preference for immediate rewards (Gardner & Steinberg, 2005). As a consequence, when making a decision in the presence of their peers, adolescents, but not adults, are more likely to show activation of the brain's reward system than is the case when they are alone, and more likely, as a consequence, to make a riskier decision. This pattern is consistent with actuarial and survey studies showing that a relatively greater proportion of risky activity among adolescents occurs when they are in the company of their friends. For instance, the presence of same-aged passengers dramatically increases the risk of a crash among adolescent drivers but has no such effect among adult drivers (Simons-Morton et al., 2005). This peer effect on risky decision making is apparent well into late adolescence. To the extent that individuals' early use of cigarettes occurs in the company of their peers, adolescents' already heightened inclination to attend to the potential rewards of smoking will be even stronger, and their likelihood of attending to the costs of smoking even lower.
29. Fifth, owing to immaturity in brain regions associated with cognitive control, adolescents, relative to adults, are less able to regulate their behavior (Galvan et al., 2007; Steinberg et al., 2008). This is reflected in adolescents' greater tendency to act before thinking and their lesser inclination to make and carry out plans, as well as the greater difficulty adolescents have in regulating their emotions, both positive (e.g., exuberance) and negative (e.g., anger). Consistent with findings concerning maturation of the brain's cognitive control regions, impulse control continues to mature well into young adulthood. Although it is unlikely that adolescents' decisions to *purchase* cigarettes are impulsive, because in order to circumvent age restrictions on the sale of tobacco, they must devise some sort of plan (e.g., decide which retail store is least likely to ask for ID, rehearse what they will say to the salesclerk in case ID is requested or to a stranger to ask for a proxy purchase), their decision to *try* cigarettes for the first time may be made on the spur of the moment – and particularly in circumstances where peer influence is strong and cigarettes are readily available. One implication of this is that it is especially important to remove cigarettes from adolescents' social networks, so that such decisions to try smoking are less likely to be realized.
30. Finally, adolescents' decision making is more easily disrupted by emotional and social arousal than is that of adults (Albert & Steinberg, in press). In studies that compare adolescents' and adults' decision making when they are alone and under conditions where emotional arousal is minimized (e.g., when individuals come to a university office and complete a questionnaire about risk taking), age differences in decision making are much smaller (or even non-existent, depending on the specifics) than they are when emotions run high or when they are with their peers (e.g., when an individual is angry or when a group of people are at a party). An important implication of this is that conventional research that finds few differences between adolescents and adults in the way they think about risk may reach very different conclusions than would be the case if the same decision making were studied when individuals were actually in the moment.

To be more concrete about it, asking questions about the potential risks of smoking during a telephone survey may yield very different responses than one would get if one asked the same questions to a group of adolescents who were drinking beer with their friends at a party. It is very likely that surveys of adolescents' conscious attitudes toward smoking yield a picture of young people that presents them as more similar to adults than is genuinely the case. Accordingly, it is wise to interpret the results of research on adolescents' responses to hypothetical changes in packaging or other aspects of marketing with great caution. How adolescents respond to a hypothetical cigarette pack when they are alone and completing a research questionnaire may bear no or little resemblance to how they respond to a real pack when they are offered a cigarette by a friend at a party.

31. Taken together, these six key features that distinguish adolescence from other periods both support the extant research concerning the risk factors for smoking in adolescence – and, in particular, the importance of peer influence and access to cigarettes – and suggest that measures to tackle adolescent smoking are only likely to be effective if they acknowledge and address the very real differences between how adolescents and adults make risk-based decisions. I discuss the risk factors for smoking in adolescence in the next section of my report, before concluding with a discussion of the measures that offer the greatest prospects for reducing underage smoking in the EU (and those which are unlikely to be effective).

Risk Factors for Smoking in Adolescence

32. Adolescents' experimentation with, and use of, tobacco, is best viewed as a specific instance of the more general category of risk taking. Smoking shares many characteristics with other forms of risky behavior in which adolescents engage: like reckless driving, the use of alcohol and illicit drugs, delinquency, or unsafe sex, smoking is a potentially rewarding behavior that also has potentially harmful consequences that are of uncertain likelihood for any given individual. Moreover, data on age trends in smoking suggest a picture that is similar to that observed for other forms of risk taking. Generally speaking, almost all types of risk taking are higher in adolescence and young adulthood than before or after, with most forms of risky behavior increasing steadily from preadolescence through mid-adolescence, peaking sometime in late adolescence, and declining during early adulthood (Steinberg, 2008). As noted earlier, middle adolescence, a period during which many forms of risk taking peak, is the time during which most individuals who smoke first try cigarettes.
33. Three sets of risk factors for smoking during adolescence have been studied extensively: psychological characteristics that incline individuals to smoke, interpersonal influences that encourage and support smoking, and a community context in which smoking is seen as normative and in which cigarettes are readily available. Generally, the more risk factors that are present for an individual, the more likely she or he is to smoke (Hawkins, Catalano, & Miller, 1992; Ostaszewski & Zimmerman, 2006; Petraitis, Flay, & Miller, 1995). In addition, many of the identified risk factors have interactive effects, where the

impact of one factor (e.g., having friends who smoke) accentuates the impact of another (e.g., ease of availability of cigarettes).

Psychological characteristics of adolescents who smoke

34. It is well established that individuals with certain personality characteristics and beliefs are more likely to smoke than their peers. These characteristics include high sensation-seeking, negative affectivity (the tendency to experience negative emotions, such as anger or anxiety), impulsivity, and inattentiveness (Chassin et al., 2009; Tapert, Baratta, Abrantes, & Brown, 2002; Wills, Sandy, Yaeger, & Shinar, 2001; Wong et al., 2006). In addition, individuals who have more tolerant attitudes about smoking (and about deviance from social norms in general, a trait that is sometimes referred to as “unconventionality”) are at greater risk for smoking (Schulenberg, Wadsworth, O’Malley, Bachman, & Johnston, 1996; Petraitis et al., 1995).
35. One important possibility is that those adolescents who continue to smoke, despite concerted efforts to persuade them not to, may include a disproportionate number of individuals who are characterized by a psychological profile that inclines them toward risk taking behavior, including smoking. There is evidence from one study of cohort changes in marijuana use that as the size of the marijuana-using population declined, the relationship between deviance-proneness and use increased, suggesting that when there are historical reductions in substance use, the residual population of users may be more “hard-core” (Little et al., 2008). If true with respect to tobacco, this has important implications for achieving further reductions in underage smoking, because individuals who are impulsive, inattentive, or high in sensation-seeking may be even less responsive to information-based interventions that appeal to rational decision making than other adolescents (and, as I have said, information-based interventions are, at best, only marginally effective in any event). In other words, if the remaining 20 percent of adolescents who choose to smoke are different from those who do not in ways that render the former less responsive to the sorts of preventive interventions that have been implemented to date, which often have aimed at increasing adolescents’ knowledge of the health risks of smoking, there is further reason to doubt that “more of the same” will be effective. One important priority for future research is to better understand the psychological characteristics of adolescents who continue to take up smoking despite the anti-smoking measures that have now been in place in most EU countries for many years.

Interpersonal influences on adolescent smoking

36. The role of peer and societal influences as the primary explanations for smoking uptake by young people is widely acknowledged. Consistent with what I have said about the especially rewarding nature of peer approval, adolescent smoking is very much influenced by the behavior of others in the adolescent’s social network. Most directly, adolescents are very likely to obtain cigarettes from friends and relatives. Beyond this obvious influence, however, adolescent smokers are more likely than non-smokers to have family members and friends who use and tolerate the use of tobacco (Chassin et al., 2009). Consistent with this, adolescents who expect smoking to improve their social

relationships also are more likely to smoke (Griffin, Epstein, Botvin, & Spoth, 2001; Smith, Goldman, Greenbaum, & Christiansen, 1995).

Community context

37. Adolescents who become smokers are more likely to live in a context in which smoking is perceived as normative and in which there is easy access to cigarettes (Chassin et al., 2009). Important community factors are the price of cigarettes, the ease of availability of tobacco, the adolescent's perceptions of the prevalence of smoking, and the ways in which smoking is portrayed in the mass media (Allison et al., 1999; Li, Stanton, & Feigelman, 2000; Petraitis et al., 1995). A fair amount of research indicates that adolescents, because of their relatively more limited discretionary income, are especially sensitive to cigarette pricing; increases in cigarette prices have a relatively greater impact on underage smoking than any other single factor. Smoking is also reported to be more common among adolescents who live in neighborhoods with relatively more stores that sell tobacco (Novak, Reardon, Raudenbush, & Buka, 2006), although cause and effect is hard to demonstrate.
38. Much attention has been devoted to the portrayal of smoking in the mass media, in part because adolescents are theorized to be especially susceptible to the influence of celebrities. Although there is no doubt that mass media include many instances of characters who smoke, often in a way that associates smoking with traits like sexiness or stylishness, determining whether exposure to smoking in entertainment media causes adolescents to begin or continue smoking is nearly impossible. Observed correlations between adolescents' exposure to smoking in the mass media and their cigarette use may be due to the fact that those adolescents who, for other reasons, are inclined to smoke (e.g., they are high in sensation-seeking) are also likely to choose to watch films that include a lot of smoking (e.g., action pictures). The scientific evidence indicating that exposure to smoking in mass media actually leads adolescents to smoke is non-existent.

Adolescents' Understanding of the Health Risks of Smoking

39. Many attempts to prevent underage smoking are predicated on the assumption that individuals who are made aware of the dangers of smoking will be less likely to begin smoking, or more likely to stop smoking if they have started. For this reason, much of the effort invested in preventing underage smoking has been targeted toward reducing adolescents' desire to smoke, generally by seeking to increase their awareness of the adverse health consequences of smoking. It is therefore of interest to ask whether and to what extent adolescents understand the health risks of smoking and whether improving their understanding of these risks leads to a reduction in underage smoking. Several broad conclusions can be drawn from the extant literature.
40. First, it is abundantly clear that adolescents understand the risks of smoking and know that it has harmful long-term health consequences. Some studies find that adolescents overestimate the likelihood of these effects, other studies find that they underestimate them, and still others find a mix of inaccuracy and inaccuracy depending on the specific

consequences inquired about (IOM, 2007). For example, adolescents tend to overestimate the likelihood of smoking leading to lung cancer but underestimate the likelihood of dying from a smoking-related cause (most probably because anti-smoking education may emphasize cancer more than other smoking-related illnesses). Nevertheless, the vast majority of adolescents believe that smoking is linked to serious long-term illness and disease, although adolescents who smoke are somewhat less likely to share this belief than are non-smokers. (About half of adolescents overall, and about two-thirds of those who have never smoked, also believe that occasional smoking has adverse health consequences (Statistics Canada, 2004)). It is important to note, however, that the differences between smokers and non-smokers in their beliefs about the long-term health consequences of smoking are small in magnitude and do not explain why some adolescents smoke and others do not. Indeed, one study found that adolescent smokers were actually *more* likely than non-smokers to report feeling vulnerable to the health consequences of smoking, a feeling that was especially pronounced among smokers who reported greater difficulty in quitting and who had stronger intentions to keep smoking, suggesting that adolescents who are committed smokers are either resigned to the adverse health consequences or unconcerned about their health (Milam et al., 2000). In any case, these studies suggest that highlighting the long-term health risks of smoking would have little impact on adolescent smoking, a conclusion that emerges from many studies of adolescents' responses to anti-smoking advertising (Zhao & Pechmann, 2007) and with the literature on adolescent decision making reviewed earlier in this report; indeed, some experts caution that fear-based anti-smoking ads may sometimes do more harm than good (Pechmann & Reibling, 2006).

41. Second, adolescents also believe that they can mitigate the health risks of smoking by limiting their smoking, either with respect to the amount they smoke or how often they smoke. In other words, many adolescents believe that there are steps one can take to make smoking a less risky activity.
42. Finally, and most importantly, studies find that adolescents do not fully appreciate the difficulty of quitting smoking (IOM, 2007). Virtually all adolescents (smokers and non-smokers alike) know that it can be difficult to quit smoking. Virtually all adolescents believe that the longer one smokes, the harder it is to stop. But adolescents do not appreciate that, for some individuals, one does not need to smoke very long before finding it difficult to quit. As a result, adolescents frequently believe that smoking during adolescence is not problematic because they will stop without difficulty when they no longer wish to smoke. Thus, many adolescents distinguish between smoking during adolescence (which they see as a casual, voluntary activity that can easily be terminated, and that therefore has no serious long-term risks) and smoking during adulthood (which they see as reflecting an underlying dependence that is difficult to break and that therefore has serious harmful consequences). Adolescents who smoke are more likely to hold these views than non-smokers. In one study, about a third of all high school seniors who smoked at least a pack each day believed that they would not be smoking five years later, but a longitudinal follow up found that, after 5 years, only 13 percent had quit, and nearly three-fourths were still smoking a pack a day or more (Slovik, 1998).

43. Although this evidence indicates that it is important to emphasize to adolescents that many people find it hard to quit smoking, doing so is more challenging than it might appear. Very little research has examined adolescents' understanding of the concept of "addiction." However, in one interesting study of this issue, the researchers compared adolescents' and adults' understanding of the appetitive (e.g., the enjoyable feelings one gets from the substance) and compulsive (i.e., the loss of control one experiences once addicted) aspects of addiction (Chassin et al., 2007). Whereas adults characterized addiction primarily with respect to its compulsive aspects, adolescents emphasized both appetitive and compulsive components. The authors suggest that adolescents may therefore process messages about the addictive nature of tobacco differently than adults, perhaps viewing the message that smoking is potentially addictive as indicating that its use is highly pleasurable as well as potentially dangerous. As I have said, adolescents tend to place more weight on the potential benefits of a risky decision than do adults, which therefore raises the possibility that health warnings which emphasize that "smoking is addictive" may have mixed, or even unintended, consequences as far as adolescent smoking is concerned.
44. Taken together, these findings help explain why adolescents' beliefs about the risks of smoking are not highly predictive of whether they actually smoke (at least one study finds that they are not predictive at all). As many have pointed out (e.g., Slovic et al., 2004), experimentation with cigarettes is likely driven not by planned decision making but by emotional and social factors, such as enjoying the new experience, feeling sophisticated and mature, or having fun with friends. If adolescents believe that the risks of smoking are mainly the result of smoking for a long period of time, and if they also believe that (a) they are capable of limiting their smoking to their teen years, (b) that they can minimize the effects of smoking by limiting how much or how frequently they smoke, and (c) that the risks of finding it hard to quit later in life may be offset by the immediate benefits of engaging in a highly pleasurable activity, it is easy to see how an individual can be perfectly aware that smoking causes serious and potentially fatal illnesses but choose to smoke anyway. It is not so much that adolescents suffer from delusions of invulnerability, as that they either value the rewards highly or simply underestimate the risks of dependence relative to the rewards of smoking, and believe that they can take steps to avoid it.
45. In my view, and as I have already described, the very notion that adolescents' knowledge of the risks of smoking has a strong influence on their decision to smoke, which has motivated most efforts to discourage underage smoking, is questionable. Decisions to engage in any potentially dangerous activity are based not only on the perceived risks of the activity but on its perceived benefits. An adolescent who believes that smoking will help her control her weight or elevate his status in the peer group will balance these potential rewards against the potential harms. Moreover, an adolescent's decision to smoke is often influenced by emotional and social factors, and not simply by the information he or she has about the activity. As discussed in an earlier section of this report, contemporary views of adolescent decision making have challenged the view that adolescents' decisions about risky activities can be understood as the result of rational or logical reasoning.

46. To the extent that this view is correct, merely telling adolescents about the health risks of smoking, whether through package warnings, traditional school-based anti-smoking education, or anti-smoking media campaigns, may not be a very effective strategy. Attempting to dissuade adolescents from smoking by educating them about its potential health risks presumes a level of planned decision making that may not adequately capture the process through which many adolescents decide to smoke. If adolescents' choice to experiment with smoking is impulsive or driven mainly by non-health related concerns (e.g., fitting in with peers, feeling adult-like), appealing to reason may have limited success, especially with individuals who are characterized by a psychological profile associated with greater risk for smoking.

One Possible Strategy to Reduce Underage Smoking: Limiting Adolescents' Ability to Purchase Cigarettes

47. It flows from my review of the science of adolescent decision making, as described above, that policies that limit adolescents' ability to obtain cigarettes are likely to have a greater impact than those that attempt to diminish adolescents' interest in smoking (indeed, the evidence to support measures with the latter objective is sparse, as I discuss in the final section of my report, below). A proportion of adolescents in the EU smoke cigarettes, in spite of their knowledge of the health risks of doing so and society's best efforts for the last three decades to deter them from doing so, and it is likely that they will continue to do so for so long as cigarettes are available to them. Stopping them from obtaining cigarettes, and combating peer influence by removing cigarettes from peer networks, is key.
48. Limiting adolescents' access to cigarettes can be attempted in a number of ways, but broadly these fall into two categories: making cigarettes harder to obtain by restricting adolescents' ability to buy them from stores or vending machines; and, raising the price of cigarettes so that adolescents are less able to afford them, and adults are less likely to be willing to share their cigarettes with adolescents. As I describe below, the two strategies most likely to succeed in combating minors' access to cigarettes are raising the MLPA (combined with effective enforcement) and increasing the price of cigarettes, both of which will greatly diminish the likelihood that individuals under the age of 18 will be in social situations with peers who have cigarettes.
49. Some authors have suggested that measures such as banning vending machines or requiring vending machines to be locked (where a customer must request a salesperson to unlock the machine) may be effective (DiFranza et al., 2006). Banning or restricting vending machines, in those Member States that permit them, has also been proposed in the Consultation Document. However, as I have already described, adolescents primarily obtain cigarettes by "bumming" or buying them from friends and family, some of whom may be of legal age to purchase cigarettes, or by asking older individuals to purchase them for them (i.e., proxy sales). Vending machines account for only a small proportion of the cigarettes smoked by underage smokers and, in view of the existence of alternative

sources of supply, prohibiting them is unlikely to have any significant effect on underage smoking in the EU.

50. A strategy that is more likely to be effective in reducing access is raising and/or more effectively enforcing MLPA laws (the legal age for the sale of cigarettes to adolescents varies across the EU, but most countries set the age at 18).
51. Research shows that achieving the sustained compliance of merchants with state laws on the MLPA for cigarettes has been difficult in the U.S. (IOM, 2007). The inconclusive results obtained from studies of the impact of increasing merchant compliance on underage smoking are likely due to a combination of factors. First, different approaches to this practice are differentially effective; for instance, there is evidence that actual enforcement (i.e., fining merchants who are caught violating the law) is more effective than merely raising merchants' awareness of the law. Second, merchant compliance may be relatively more effective in reducing underage smoking among younger teenagers than among older ones, because older ones can more easily pass themselves off as being of legal age (either because merchants are less likely to ask them for identification or because it is easier for them to use fake ID cards).
52. An additional challenge is that increasing merchants' compliance with the law, without in addition adopting measures to tackle alternative sources of supply to adolescents (see below), may not lead to significant decreases in the prevalence of underage smoking. A recent Cochrane review (Stead & Lancaster, 2006) concluded that although attempts to increase merchant compliance can be successful in reducing the number of merchants who sell cigarettes to minors, these policies have no effect on underage smoking, suggesting that even when compliance has increased, underage smokers find ways to circumvent age restrictions, either by obtaining cigarettes from friends (Ahmad & Billileck, 2007) or by finding merchants who are willing to break the law (Robinson & Amos, 2010). In fact, studies find that a decline in adolescents' retail purchase of cigarettes is associated with a concomitant increase in their obtaining cigarettes from social sources (IOM, 2007).
53. Studies of the UK's recent decision to raise the MLPA from 16 to 18 are informative. One recent report indicated that raising this measure led to a significant drop in the prevalence of smoking among 16-17-year-olds (Fidler & West, 2010). Another study, admittedly one that was based on focus groups conducted with 12-15 year old participants, concluded that the UK's ban on selling cigarettes to those under 18 appeared to be easily circumvented, and one important route appeared to be 'proxy sales' in which young people approach strangers outside retailers and ask them to purchase cigarettes on their behalf (Robinson & Amos, 2010).
54. Because of findings that attempts to reduce youth access to cigarettes through the more vigilant enforcement of age restrictions on retail sales can be undermined by adolescents' ability to obtain cigarettes from friends or adults willing to purchase cigarettes on their behalf, some experts have asked whether more effective enforcement of age of purchase restrictions should be combined with laws criminalizing "proxy purchases" (purchasing

cigarettes for minors). At this point, only one EU nation (Estonia) prohibits supplying cigarettes to minors (Scotland recently approved legislation to this effect, but it will not be implemented until 2011), so the data are not yet available to permit the actual effectiveness of this policy to be evaluated. However, it is probable that such laws, if vigilantly enforced, would help restrict proxy sales and therefore reinforce access measures based on ensuring compliance with legal purchase age requirements.

55. Given the fact that adolescents frequently obtain cigarettes from friends, and because adolescents tend to be friends with people of the same age, raising the minimum purchase age will likely limit the availability of cigarettes in the social networks of younger individuals. It has also been suggested that raising the minimum purchase age to 21 would be one of the most effective strategies for limiting the availability of cigarettes to older adolescents and therefore reducing underage smoking overall. There are two potential advantages to raising the MLPA beyond 18. First, because many 16- and 17-year-olds have friends, romantic partners, and schoolmates who are 18, permitting 18-year-olds to purchase cigarettes guarantees an easy flow of legally purchased cigarettes into the social networks of many underage smokers, especially if they attend school together. In contrast, far fewer adolescents under 18 socialize with individuals who are significantly older, and therefore would encounter more difficulty obtaining cigarettes socially if the MLPA were raised several years beyond age 18. Second, given research, discussed earlier, indicating that the chances of an individual becoming a chronic smoker are far less if the initiation of smoking is delayed until after adolescence, discouraging more people from smoking as teenagers will have a significant long-term impact on the health of the adult population. It would seem prudent, at a minimum, to ensure that the MLPA throughout the EU is at least 18, and worthwhile to consider raising it beyond this age. In order to be effective, raising the MLPA must be accompanied by vigilant enforcement and ideally also by measures to counter adolescents' attempts to source cigarettes from elsewhere (e.g., bans on proxy purchase).
56. As well as raising the MLPA as a means of combating minors' access to cigarettes, a second measure that is likely to be effective (either separately or in conjunction with other access measures) would be to increase the price of cigarettes. There is strong evidence that price increases are directly related to reductions in smoking and that adolescents, because of their limited income, are especially sensitive to price increases (Ahmad & Franz, 2007; IOM, 2007; Lewit et al., 1981), although there has been some debate over the relative impact of price increases on initiation versus cessation (DeCicca et al., 2008; Lewit & Coate, 1982).
57. It is important to note that raising the MLPA to 18 and increasing taxes on cigarettes have different effects on adolescents than adults. Raising taxes on cigarettes affects both adults and adolescents, although the relative impact on adolescents is greater given their more limited economic resources. Raising the MLPA, in contrast, has no immediate impact on adults, but a substantial one on adolescents under the age of 18. (Raising the MLPA beyond 18 would, of course, affect existing smokers over the age of 18, but below the new MLPA, who would be prevented from lawfully obtaining cigarettes.)

Other Strategies to Reduce Underage Smoking

58. As well as access-based measures, which I consider to offer the greatest potential to diminish underage smoking, other strategies to do so have been proposed, studied and in some cases implemented. These fall into three broad categories: (1) anti-smoking education programs and media campaigns; (2) regulations on cigarette packaging; and (3) regulations on in-store display of tobacco products and/or point-of-sale advertising. For completeness, I will consider these briefly in this final section of my report. Before I do so, it is worth making some general observations about research on attempts to reduce underage smoking.
59. First, few anti-smoking interventions in these broad categories have been shown, in and of themselves, to have sizable effects on underage smoking.
60. Second, with the exception of studies of school-based anti-smoking programs, well-controlled studies of the impact of most interventions on underage individuals are few and far between, and this is especially the case with respect to studies of individuals who are at the prime age for smoking initiation (around age 14 or 15). Findings from studies of adults are not generalizable to adolescents, for two reasons. First, as explained in an earlier section of this report, there is considerable evidence that adolescents and adults differ significantly in their decision making. Second, the primary targeted behavior in anti-smoking interventions aimed at adults (smoking cessation) is not the same as the primary targeted behavior in anti-smoking interventions aimed at adolescents (prevention of smoking initiation). There have been efforts to encourage smoking cessation among committed adolescent smokers, but by and large efforts to reduce underage smoking have (correctly, in my view) focused on preventing experimentation or progression from occasional to regular use. Interventions that are effective at encouraging smoking cessation may not be effective in discouraging smoking initiation. Studies that separate smokers from non-smokers in evaluations of anti-smoking interventions frequently find differential effectiveness in these groups, as would be expected given the differing relevance of messages about smoking to those groups.
61. Third, as increasing numbers of adolescents eschew smoking, the remaining percentage of those who become or remain smokers may become less and less representative of the broader population, making it increasingly difficult to know whether intensifying or modifying a strategy that appear to have worked in the broader population will result in any additional impact. Given the deceleration in the decline of underage smoking that has occurred in most countries in recent years, and the fact that few countries have successfully lowered the prevalence below 20 percent – an observation that holds across countries that have varied considerably in the extent and nature of their anti-smoking policies – there is some danger that “more of the same” will have diminishing returns. Put concretely, it may take an entirely different strategy to reduce underage smoking from 20 percent to 10 percent than it did to reduce it from 30 percent to 20 percent, and evaluations of strategies that contributed to the latter may not be generalizable to those that attempt the former.

62. Finally, without knowing whether there are unique characteristics of contemporary adolescents who decide to smoke that make these individuals less responsive to extant anti-smoking policies and practices, it is hard to predict the outcome of any policy that has been evaluated when the proportion of individuals who were smokers was larger. All in all, these factors, considered together, make it difficult to predict whether and to what extent changes in the regulation of the marketing of cigarettes – as compared to measures restricting adolescents’ access to cigarettes – will be effective in further lowering the prevalence of underage smoking.
63. There are those who no doubt respond to this conclusion by suggesting that there is no downside risk of implementing policies of unproven or unknown effectiveness that on the face of it least seem likely to work, because even if they turn out to be ineffective, they are unlikely to have adverse consequences. There are three counterarguments to this line of reasoning. First and foremost, as a matter of general principle, it seems to me that changes in regulations should be based on solid, scientific evidence. Second, all interventions have some associated cost, if only because resources that are devoted to an intervention of uncertain effectiveness cannot be used for another that may have a better track record. Finally, an unevaluated policy – even one that seems on the face of it to be potentially effective – may have iatrogenic effects, actually increasing rather than decreasing the problem it is hoped to diminish. For example, some evaluations of media campaigns encouraging parents to talk to their teenagers about the dangers of smoking or drug use have found that these lead to *increases* in adolescent substance use, perhaps by appealing to teenagers’ desire to appear autonomous from parental control (see Wakefield et al., 2006a). Similarly, as I have said, there is some danger that efforts to emphasize to adolescents that many people find it hard to quit smoking may make smoking more, not less, attractive, because this message may appeal to adolescents’ already heightened tendency to pay attention to the rewards of a risky decision. In other words, in the absence of evidence that the policy change will have the intended effect, it is imprudent to endorse a policy change simply because it seems, on its face, reasonable. The history of regulation is full of instances of well-intentioned policies that have had unintended effects.

Anti-Smoking Education and Media Campaigns

64. Historically, efforts to persuade adolescents not to smoke have been based on the idea that providing adolescents with information about the health risks of smoking will deter them from trying and using cigarettes. The chief form that these efforts have taken is school-based health education; later, this approach was expanded to include mass media anti-smoking campaigns. School-based anti-smoking programs have been extensively evaluated, and these evaluations have been subjected to many meta-analyses that have sought to draw overarching conclusions based on the totality of the evidence, usually, by giving relatively greater weight to more scientifically rigorous studies.
65. The literature on school-based anti-smoking programs is inconclusive. Several authoritative meta-analytic reviews of this literature have concluded that, by and large, school-based health education is not very effective in reducing adolescent smoking (e.g.,

Thomas et al., 2009). However, a recent reanalysis of these meta-analyses questioned the criteria by which studies were included or excluded, and concluded that school-based programs were in fact effective, so long as they were well-implemented, included more than information about health effects (e.g., social skills training), and lasted long enough (Flay, 2009). These findings are consistent with my opinion that merely telling adolescents about the risks of smoking (of which they are already well aware) is unlikely to have a strong influence on their decision to smoke.

66. Experts disagree about what needs to be provided along with information about health risks, however. Some believe that the information needs to be accompanied by a strong emotional message, with examples of individuals whose health was harmed by smoking (Schar et al., 2006). Others insist that the information needs to be accompanied by training in how to resist peer pressure and respond to peers who encourage smoking. Some believe that educational efforts should be accompanied by messaging that plays on adolescents' needs to feel autonomous (i.e., that choosing not to smoke in the face of industry or peer pressure to do otherwise is an assertion of one's independence). Virtually everyone agrees that any educational effort must be sustained over a considerable period of time to be effective, but that the way the message is conveyed must be "refreshed" periodically in order to maintain adolescents' interest and attention.
67. Mass media campaigns also have been evaluated, but these evaluations have not been subjected to formal meta-analyses. In 2006, the United States Centers for Disease Control and Prevention sponsored a review that summarized the results of evaluations of mass media campaigns from multiple countries (Schar et al., 2006), but distinctions were not drawn among evaluations of differing scientific quality.
68. Evaluations of the effectiveness of anti-smoking mass media campaigns are extremely difficult. As in studies that have examined the impact of pro-smoking mass media messages in films, studies that examine the impact of anti-smoking messages are either laboratory-based experiments that rely on adolescents' attitudes toward smoking as the chief outcome variable (and attitudes are not very good predictors of actual behavior) or non-experimental field-based studies that cannot distinguish cause and effect. Further, individuals who have certain behavioral inclinations are differentially likely to pay attention to different sorts of messages. Someone who has decided not to smoke is more likely to pay attention to and remember an anti-smoking commercial than is someone who enjoys smoking, so any correlation between anti-smoking mass media exposure and actual smoking may be due to reverse causation.
69. As a consequence of these methodological problems, the best studies of anti-smoking media campaigns tend to yield information about the relative appeal of different types of messages (e.g., whether emphasizing health consequences is more or less effective than emphasizing anti-industry sentiment) rather than the impact of media campaigns on smoking. Although there are points of consensus among the different summaries of media campaign research, there are still many areas of disagreement, and the conclusions presented in some reports often contradict those contained in others. For example, one review of the mass media literature concludes that focusing on the social disapproval that

results from smoking is a more effective strategy than focusing on the adverse health effects (Pechmann, 2003) while another (Schar et al., 2006) reached the opposite conclusion. One evaluation concluded that fostering anti-tobacco industry sentiment (e.g., that the tobacco industry is deliberately deceptive) is not effective (Pechmann, 2003), while other evaluators have reached positive conclusions about the effectiveness of the “Truth” campaign, an anti-smoking media effort that was based on persuading adolescents that the tobacco industry has not told the truth about the potential effects of smoking (Davis et al., 2007). The CDC review (Schar et al., 2006) also concluded that focusing on the cosmetic consequences of smoking (e.g., bad breath, yellow teeth) is ineffective (because adolescents saw that the consequences were easily remedied), as is the use of celebrities to convey anti-smoking messages.

70. If there is any consensus in evaluations of anti-smoking education and campaigns, it is around the observation that simply providing adolescents with information about the health risks of tobacco in and of itself is unlikely to dissuade them from smoking. Information of this type alone has sometimes been shown to change adolescents’ attitudes, knowledge, and beliefs, but it seldom changes their behavior, especially when the behavior has its own significant rewards.

Regulations on Packaging

71. For some time, cigarette packages have carried warnings about the potential health risks of smoking. In recent years, there have been calls to add pictorial images to the text warnings, increase the size of the warnings, or to require plain packaging, so as to make the warning stand out more. However, there is no evidence to support the proposition that changes in cigarette packaging affect adolescents’ experimentation with or use of cigarettes. This is true both with respect to the addition of pictorial warnings and with respect to the substitution of plain or generic packaging.
72. First, studies of packaging variations frequently confuse respondents’ knowledge or opinions with their actual behavior – despite the fact that the connection between the two is often tenuous. Demonstrating that, when presented with a particular pack design by a researcher, a person will say that he or she would be more likely to quit smoking, or never to take it up, is not the same as demonstrating that the packaging actually leads to a drop in smoking. Asking respondents their opinion of the likely impact of a change in packaging on *other people’s* behavior is even less reliable than asking respondents about own behavior. There are, in fact, few systematic studies documenting the impact of changes in warnings on actual smoking *behavior*.
73. Second, virtually all research on cigarette packaging has been conducted with adults, and most of it with adult *smokers*, so it is difficult to say whether changes in package warnings have a comparable impact on adolescents or on nonsmokers. Thus, it is not clear if adolescent non-smokers (i.e., those considering experimenting with cigarettes) or smokers who are not thinking about quitting will pay as much attention to package warnings as do adult smokers who are interested in quitting and whose attention will therefore be drawn to information associated with this desire.

74. Third, many studies of packaging that include teenagers rely upon asking young people whether they believe that the warnings have an impact, an outcome measure of unknown, but likely questionable, validity or reliability. However, people often believe that their behavior is influenced by something when it is not, and without actual behavioral evidence, one must be cautious about interpreting these sorts of findings. In fact, many studies that purport to show that certain types of packaging will reduce smoking base their conclusions on survey respondents' uneducated guesses about the likely impact of the policy. Indeed, one widely-cited Canadian study based its conclusions about the likely impact of packaging alternatives on adolescent smoking in part on the mere opinions of 12- to 14-year-olds (Rootman & Flay, 1995). Particular caution is needed when interpreting the results of survey research on adolescents' responses to hypothetical changes in packaging or other aspects of marketing, in view of the susceptibility of adolescent decision making to be disrupted by emotional and social arousal (*supra.*). Surveys of adolescent opinion are generally administered under conditions of low emotional and social arousal.
75. In sum, there is no evidence that changes in cigarette packaging affect adolescents' experimentation with or use of cigarettes. Indeed, it would be surprising if warning-related pack changes did have a significant impact on adolescents' decisions to smoke. As noted earlier, adolescents are well aware of the risks of smoking, but many of them smoke anyway, and there is no evidence that those who do are ignorant of the health consequences of smoking. Thus, the impact of changes in cigarette packaging on adolescent smoking is, at best, likely to be very small.

Regulations on Point of Sale Display and In-store Advertising

76. It has been argued by those who support a ban on the in-store display of tobacco products (i.e., who believe that tobacco products should move "under the counter") that the display of tobacco products increases impulse purchasing of cigarettes (Wakefield et al., 2008). However, it is unlikely that impulse purchasing in retail stores plays any role in adolescents' acquisition of cigarettes: whereas adolescents' decisions to *try* smoking may be impulsive, their decisions to *purchase* cigarettes are likely to be far less so. Adolescents who purchase cigarettes in retail stores need to decide in advance where they will do their shopping, so that they can select a vendor who will sell to underage individuals, arm themselves with a fake ID, or prepare a response to a salesclerk who asks for proof of age (Fidler & West, 2010). Cigarettes are also relatively costly for many adolescents, particularly in countries where tobacco taxes are high. It is therefore not likely that an adolescent will enter a store for some other purpose and decide on the spur of the moment to add cigarettes to his shopping list. Consistent with this, a recent analysis of the implementation of a display ban on smoking among teenagers and young adults in Iceland found no impact of the change in regulation (Padilla, 2009).
77. It also has been asserted that in-store marketing creates a more favorable view of smoking, by conveying the notion that smoking is normative and cigarettes are widely available and popular, such that it becomes easier for adolescents to rationalize smoking

(Slater et al., 2007). The research that is commonly cited to support these assertions is mainly cross-sectional, in which adolescents' reports of having seen an in-store display or advertisement are correlated with their reported smoking behavior, attitudes, beliefs, or intentions, or where aggregate (i.e., community-level) measures of in-store display or advertising and adolescent smoking are correlated (see e.g., Paynter, et al., 2009; Slater et al., 2007; Wakefield et al., 2006b; Paynter & Edwards, 2009). However, the cross-sectional nature of these studies makes it impossible to draw causal inferences (Feighery, et al., 2006; Paynter & Edwards, 2009), because it is likely that individuals who smoke, intend to smoke, or are curious about smoking will be more likely to attend to cigarette advertisements and displays.

78. In sum, my analysis of the scientific literature on adolescent decision making, as well as of the few studies that have examined means of reducing adolescent smoking, lead me to conclude that the access-based solutions which I have described are likely to be far more effective at combating smoking among adolescents than any other measure.

ANNEX A: REFERENCES

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ANNEX B: CURRICULUM VITAE

Curriculum Vitae

Laurence Steinberg

Department of Psychology
Temple University
Philadelphia, PA 19122

PRESENT POSITIONS

Distinguished University Professor, Temple University (1999-)
Laura H. Carnell Professor of Psychology, Temple University (1998-)
Professor of Psychology, Temple University (1988-)

EDUCATION

The Johns Hopkins University, Baltimore, Maryland (1970-71)
Vassar College, Poughkeepsie, New York (1971-74)
A.B. in Psychology
Cornell University, Ithaca, New York (1974-77)
Ph.D. in Human Development and Family Studies

PREVIOUS POSITIONS

Director, John D. and Catherine T. MacArthur Foundation Research Network on Adolescent Development and Juvenile Justice (1997-2008)

Director of Graduate Studies, Department of Psychology, Temple University (1994-1999, 2001-2007)

Director, Division of Developmental Psychology, Department of Psychology, Temple University (1991- 94)

Professor of Child and Family Studies, University of Wisconsin--Madison (1983-89)

Faculty Associate, National Center on Effective Secondary Schools, School of Education, University of Wisconsin--Madison (1985-89)

Associate Professor of Social Ecology, University of California, Irvine (1982-83)

Faculty Associate, Public Policy Research Organization, University of California, Irvine (1979-83)

Associate Director for Undergraduate Studies, Program in Social Ecology, University of California, Irvine (1981-82)

Assistant Professor of Social Ecology, University of California, Irvine (1977-82)
Lecturer in Human Development and Family Studies, Cornell University (1976-77)

PROFESSIONAL LICENSURE AND CERTIFICATION

Licensed Clinical Psychologist, California (1982-83)

Licensed Psychologist, Pennsylvania (1993-)

National Security Clearance (Secret) (2008-)

PROFESSIONAL MEMBERSHIPS

Society for Research in Child Development

Society for Research on Adolescence (President, 1998-2000)

American Psychological Association (Fellow) (President, Division 7 (Developmental), 2007-2008)

Association for Psychological Science (Fellow)

EDITORIAL BOARDS

Developmental Cognitive Neuroscience (2009-)

Developmental Psychology (1984-95)

Journal of Youth and Adolescence (1985-92)

Child Development (1987-91; 1993-95; Associate Editor, 1995-98)

Journal of Research on Adolescence (1990-93)

Psychological Bulletin (1992-93)

Parenting (2006-2009)

Psychological Science in the Public Interest (2008-)

HONORS AND AWARDS

Phi Beta Kappa and Graduation with Honors and Distinction in Psychology, Vassar College (1974)

National Science Foundation Graduate Award, Honorable Mention (1975)

Cornell University Fellowship (1976-1977)

Aspen Institute for Humanistic Studies, Participant, Forum on the First Twenty Years of Life (1982)

Command Performance (Student Initiated Teaching Award), University of California, Irvine (1983)

Faculty Scholar, William T. Grant Foundation, Program in the Mental Health of Children (1983-1988)

Fellow, American Psychological Association, Division 7 (Developmental Psychology) (elected 1987)

Faculty Excellence Award, University of Wisconsin School of Family Resources and Consumer Sciences Alumni Association (1988)

Highest Impact Authors in Psychology, 1986-1990, Institute for Scientific Information (1992)
Great Teacher Award, Temple University (1994)

Scientific Core Group Member, John D. and Catherine T. MacArthur Foundation Research Network on Psychopathology and Development (1994-2000)

Anathan Family Foundation Visiting Professorship, Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center (November, 1995)

Top Developmental Psychology Authors in Productivity and Impact, Developmental Review (1995)

Matthew Vassar Lecture, Vassar College (1996)

Editor's Choice for non-fiction, *Booklist* (for *Beyond the Classroom*) (1996)

President, Society for Research on Adolescence (1998-2000)

Visiting Scholar, Institute of Child Development, University of Minnesota (April, 1998)

Laura H. Carnell Professor of Psychology, Temple University (1998-)

Gallagher Lecturer, Society for Adolescent Medicine (1999)

Distinguished University Professor, Temple University (1999-)

Visiting Professor of Adolescent Medicine, Morristown Memorial Hospital (December, 1999)
22nd Annual Konopka Lecturer, University of Minnesota (2000)

John P. Hill Memorial Award for Outstanding Contributions to the Study of Adolescence, Society for Research on Adolescence (2000)

Paul W. Eberman Faculty Research Award, Temple University (2003)

Invited Master Lecture, Society for Research in Child Development (2003)

Urie Bronfenbrenner Award for Lifetime Contribution to Developmental Psychology in the Service of Science and Society, American Psychological Association (2003)

Invited Master Lecture, Italian Conference on Developmental Psychology, Associazione Italiana di Psicologia (Italian Association of Psychology) (2004)

Highly Cited Researcher, Institute for Scientific Information (2004-)

Distinguished Scientist Lecturer, American Psychological Association (2005)

Invited address, American Psychological Society (2005)

Barbara Lemann Memorial Lecture on Emerging Trends in Mental Health, Tulane University Health Sciences Center (2005)

5th Annual Russell Barkley Lecture, Department of Psychiatry, University of Massachusetts Medical School (2006)

President, Division of Developmental Psychology, American Psychological Association (2007-2008) Fellow, World Innovation Foundation (elected 2007)

Robert Wood Johnson Foundation Plenary Address, Joint Meeting on Adolescent Treatment Effectiveness (2007)

Invited Plenary Address, Jean Piaget Society (2008)

Presidential Citation, American Psychological Association (2008)

Fellow, Association for Psychological Science (elected 2008)

Award for Distinguished Contributions to Research in Public Policy, American Psychological Association (2009) (citation and biosketch in *American Psychologist*, 2009, November, 737-739).

Inaugural Laureate, Klaus J. Jacobs Research Prize for Productive Youth Development (2009)

Stauffer Award for Outstanding Faculty Service, Temple University Alumni Association (2010)

Social Policy Book Award, Society for Research on Adolescence (for *Rethinking Juvenile Justice*) (2010)

SELECTED RECENT PROFESSIONAL ACTIVITIES

NIMH Research Network on Affect Regulation and Adolescent Brain Maturation (2002-2007)

Board of Directors, Juvenile Law Center, Philadelphia (2003-2010)

Lead scientific consultant, Amicus curiae brief filed by the American Psychological Association in U.S. Supreme Court case, *Roper v. Simmons* (2004)

Committee on the Science of Adolescent Health and Development, The National Academies (2005-2006)

Board on Children, Youth, and Families, The National Academies (2005-2008)

Advisory Board, Allstate Foundation Teen Safe Driving Program (2005-)

Technical Review Panel, Moving to Opportunity Demonstration (2007-)

Invited briefing, U.S. Senate Judiciary Committee (2007)

Research Advisory Panel, The National Campaign to Prevent Teen and Unintended Pregnancy (2007- 2009)

Chair, Committee on the Science of Adolescence, The National Academies (2008-)

Scientific Steering Committee, Life Science Gallery, Marian Koshland Science Museum, National Academy of Sciences (2009-)

National External Advisory Board, University of Virginia Tobacco Research Program (2009-)

Invited briefing, U.S. House of Representatives Committee on Education and Labor (2009)

Lead scientific consultant, Amicus curiae brief filed by the American Psychological Association in U.S.

Supreme Court cases, *Sullivan v. State of Florida* and *Graham v. State of Florida* (2009)

National Advisory Commission on Substance Use among America's High School Students, National Center on Addiction and Substance Abuse at Columbia University (2009-)

Advisory Board, The U. Va. Center to Promote Effective Youth Development (2011-)

RESEARCH GRANTS, AWARDS, AND CONTRACTS

John D. and Catherine T. MacArthur Foundation

Laurence Steinberg (PI), “Models for Change Research Initiative, Phase V”
(2010-2013) (Role: Principal Investigator)

Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice
Elizabeth Cauffman (PI), “Crossroads: Formal versus Informal Processing in the Juvenile Justice
System” (2010-2013) (Role: Co-Principal Investigator)

John D. and Catherine T. MacArthur Foundation
Laurence Steinberg (PI), “Models for Change Research Initiative, Phase IV”
(2009-2010) (Role: Principal Investigator)

Jacobs Foundation
Klaus J. Jacobs Research Prize in Productive Youth Development (2009) (Role: Inaugural Prize
Recipient)

John D. and Catherine T. MacArthur Foundation
Laurence Steinberg (PI), “Models for Change Research Initiative, Phase III” (2008-2010) (Role:
Principal Investigator)

Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice
Edward Mulvey (PI), “Pathways to Desistance: A Prospective Study of Serious Adolescent
Offenders, Renewal Proposal” (2008-2009) (Role: Co-Principal Investigator)

John D. and Catherine T. MacArthur Foundation
Laurence Steinberg (PI), “Models for Change Research Initiative, Phase II” (2007-2009) (Role:
Principal Investigator)

John D. and Catherine T. MacArthur Foundation
Laurence Steinberg (PI), “Models for Change Research Initiative” (2007-2008) (Role: Principal
Investigator)

Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice
Edward Mulvey (PI), “Pathways to Desistance: A Prospective Study of Serious Adolescent
Offenders” (2007-2009) (Role: Co-Principal Investigator)

Pennsylvania Council on Crime and Delinquency
Edward Mulvey (PI), “Pathways to Desistance: A Prospective Study of Serious Adolescent
Offenders” (2007-2008) (Role: Co-Principal Investigator)

National Institute of Drug Abuse
Laurence Steinberg (PI), “Peer Effects on Neural and Behavioral Markers of Risk-Taking”
(2006-2010) (Role: Principal Investigator)

John D. and Catherine T. MacArthur Foundation
Laurence Steinberg (PI), “Continuation of the Pathways to Desistance Study: Renewal Proposal”
(2006-2009) (Role: Principal Investigator)

Pennsylvania Council on Crime and Delinquency

Edward Mulvey (PI), "A Prospective Study of Serious Adolescent Offenders in Philadelphia"
(2006-2007) (Role: Co-Principal Investigator)

Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice

Edward Mulvey (PI), "A Prospective Study of Serious Adolescent Offenders, Renewal Proposal"
(2006-2007) (Role: Co-Principal Investigator)

National Institute of Drug Abuse

Edward Mulvey (PI), "Pathways to Desistance from Substance Use Problems and Crime" (2005-
2010) (Role: Co-Principal Investigator)

National Institute of Child Health and Human Development

Laurence Steinberg (PI), "NICHD Study of Early Child Care and Youth Development, Phase
IV" (2005-2009) (Role: Principal Investigator)

Pennsylvania Council on Crime and Delinquency

Edward Mulvey (PI), "A Prospective Study of Serious Adolescent Offenders in Philadelphia"
(2005-2006) (Role: Co-Principal Investigator)

Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice

Edward Mulvey (PI), "A Prospective Study of Serious Adolescent Offenders, Renewal Proposal"
(2005-2006) (Role: Co-Principal Investigator)

Pennsylvania Council on Crime and Delinquency

Edward Mulvey (PI), "A Prospective Study of Serious Adolescent Offenders in Philadelphia"
(2004-2005) (Role: Co-Principal Investigator)

National Institute of Mental Health

Nathan Fox (PI), "The Effects of Early Temperament on Social Behavior in Adolescence"
(2004-2007) (Role: Co-Principal Investigator)

Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice

Edward Mulvey (PI), "A Prospective Study of Serious Adolescent Offenders, Renewal Proposal"
(2004) (Role: Co-Principal Investigator)

Pennsylvania Council on Crime and Delinquency

Edward Mulvey (PI), "A Prospective Study of Serious Adolescent Offenders in Philadelphia"
(2003-2004) (Role: Co-Principal Investigator)

Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice

Edward Mulvey (PI), "A Prospective Study of Serious Adolescent Offenders, Renewal Proposal"
(2003) (Role: Co-Principal Investigator)

Pennsylvania Council on Crime and Delinquency
Edward Mulvey (PI), “A Prospective Study of Serious Adolescent Offenders in Philadelphia”
(2002-2003) (Role: Co-Principal Investigator)

National Institute of Mental Health
Ronald Dahl (PI), “Affect Regulation and Adolescent Brain Maturation” (2002-2006) (Role: Co-
Investigator)

William T. Grant Foundation
Edward Mulvey (PI), “A Prospective Study of Serious Adolescent Offenders” (2002-2005)
(Role: Co-Principal Investigator)

John D. and Catherine T. MacArthur Foundation
Laurence Steinberg (PI), “Research Network on Adolescent Development and Juvenile Justice”
(2002-2007) (Role: Principal Investigator)

William Penn Foundation
Laurence Steinberg (PI), “A Prospective Study of Serious Juvenile Offenders in Philadelphia”
(2002-2005) (Role: Principal Investigator)

Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice
Edward Mulvey (PI), “A Prospective Study of Serious Adolescent Offenders, Renewal Proposal”
(2001-2002) (Role: Co-Principal Investigator)

Robert Wood Johnson Foundation
Edward Mulvey (PI), “A Prospective Study of Serious Adolescent Offenders” (2001-2004)
(Role: Co-Principal Investigator)

William T. Grant Foundation
Edward Mulvey (PI), “A Prospective Study of Serious Adolescent Offenders” (2001-2004) Role:
Co-Principal Investigator)

Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice
Edward Mulvey (PI), “A Prospective Study of Serious Adolescent Offenders, Renewal Proposal”
(2000-2001) (Role: Co-Principal Investigator)

National Institute of Justice, U.S. Department of Justice
Edward Mulvey (PI), “A Prospective Study of Serious Adolescent Offenders, Renewal Proposal”
(2000) (Role: Co-Principal Investigator)

Open Society Institute, The Soros Foundations
Laurence Steinberg (PI), “The Competence of Adolescents as Trial Defendants” (1999-2002)
(Role: Principal Investigator)

John D. and Catherine T. MacArthur Foundation
Laurence Steinberg (PI), “Research Network on Adolescent Development and Juvenile Justice”
(1999-2001) (Role: Principal Investigator)

MacArthur Foundation Research Network on Psychopathology and Development
Laurence Steinberg (PI), “Development of Assessment Modules for Middle Childhood,
Extension and Supplement,” (1999-2000) (Role: Principal Investigator)

MacArthur Foundation Research Network on Psychopathology and Development
Laurence Steinberg (PI), “Assessment of Life Stress in Children and Adolescents: Development
of the PACE/LEDS” (1999) (Role: Principal Investigator)

John D. and Catherine T. MacArthur Foundation
Laurence Steinberg (PI), “Research Network on Adolescent Development and Juvenile Justice,
Supplement” (1998) (Role: Principal Investigator)

MacArthur Foundation Research Network on Psychopathology and Development
Laurence Steinberg (PI), “Assessment of Life Stress in Children and Adolescents: Development
of the PACE/LEDS” (1998) (Role: Principal Investigator)

MacArthur Foundation Research Network on Psychopathology and Development
Laurence Steinberg (PI), “Development of a Context Module for Middle Childhood,
Supplement” (1998) (Role: Principal Investigator)

MacArthur Foundation Research Network on Psychopathology and Development
Laurence Steinberg (PI), “Assessment of Life Stress in Children and Adolescents” (1997-1998)
(Role: Principal Investigator)

MacArthur Foundation Research Network on Psychopathology and Development
Laurence Steinberg (PI), “Development of a Context Module for Middle Childhood”
(1997-1998) (Role: Principal Investigator)

John D. and Catherine T. MacArthur Foundation
Laurence Steinberg (PI), “Research Program on Adolescent Development and Juvenile Justice”
(1997-1998) (Role: Principal Investigator)

MacArthur Foundation Research Network on Psychopathology and Development
Laurence Steinberg (PI) “Child and Adolescent Life Events Development” (1996-1997) (Role:
Principal Investigator)

MacArthur Foundation Research Network on Psychopathology and Development
Laurence Steinberg (PI), “Development of a Context Module” (1996-1997) (Role: Principal
Investigator)

John D. and Catherine T. MacArthur Foundation

Laurence Steinberg (PI), “Adolescent Development and Juvenile Justice: Planning Grant” (1996)
(Role: Principal Investigator)

MacArthur Foundation Research Network on Psychopathology and Development

Laurence Steinberg (PI), “Adolescent LEDS Collaborative Project” (1995-1996) (Role: Principal Investigator)

MacArthur Foundation Research Networks on Successful Pathways Through Middle Childhood and on Psychopathology and Development

Laurence Steinberg (PI), “Establishment of a Joint Task Force on Family Processes (1995-1996)
(Role: Principal Investigator)

William T. Grant Foundation

Laurence Steinberg (PI), “Family, Peer, and Community Influences on Psychological Adjustment in Late Adolescence” (1991-1995) (Role: Principal Investigator)

Temple University Biomedical Research Fund

Laurence Steinberg (PI), “Parenting Practices Related to Aggressive and Nonaggressive Rule-Breaking Behavior in Adolescence” (1990) (Role: Principal Investigator)

The Lilly Endowment

Laurence Steinberg (PI), “Family, Peer, and Community Influences on Adolescent Achievement” (1990-1993) (Role: Principal Investigator)

Temple University Research Incentive Fund

Robert Fauber (PI), “Adolescent Autonomy and Parenting Style” (1989-1990)(Role: Co-Principal Investigator)

Graduate School Research Committee, University of Wisconsin--Madison B. Bradford Brown

(PI), “Ethnographic Study of Three High Schools” (1988-1990) (Role: Co-Principal Investigator)

National Center on Effective Secondary Schools, U.S. Department of Education

B. Bradford Brown (PI), “Noninstructional Influences on Academic Achievement” (1988-1990) (Role: Co-Principal Investigator)

William T. Grant Foundation

Laurence Steinberg (PI) “Adolescent Autonomy and Family Relations” (1987-1988) (Role: Principal Investigator)

National Center on Effective Secondary Schools, U.S. Department of Education

B. Bradford Brown (PI), “Noninstructional Influences on Academic Achievement” (1987-1988) (Role: Co-Principal Investigator)

Graduate School Research Committee, University of Wisconsin
Laurence Steinberg (PI), “Family Transitions During Adolescence,” (1986-1987) (Role: Principal Investigator)

National Center on Effective Secondary Schools, U.S. Department of Education Laurence Steinberg (PI), “Student Achievement and Responsibility” (1985-1986) (Role: Principal Investigator)

Graduate School Research Committee, University of Wisconsin
Laurence Steinberg (PI), “Changes in Family Relations During Adolescence” (1984-1985) (Role: Principal Investigator)

William T. Grant Foundation
Laurence Steinberg (PI) “Faculty Scholars Award” (1983-1988) (Role: Principal Investigator)

University of California Focused Research Program
Ellen Greenberger (PI) “Early Work Experience and Adolescent Stress” (1979-1982) (Role: Co-Principal Investigator)

The Ford Foundation
Ellen Greenberger (PI), “Early Adolescents at Work: Dissemination of Findings to National and International Policy-Makers” (1979-1982) (Role: Co-Principal Investigator)

The Spencer Foundation
Ellen Greenberger (PI), “Early Adolescents at Work: Effects of Part-Time Employment on Family Relations, Peer Relations, and Psychosocial Development” (1979-1982) (Role: Co-Principal Investigator)

National Institute of Education
Ellen Greenberger (PI), “Early Adolescents at Work: Costs and Benefits to Learning and Social Development” (1979-1981) (Role: Co-Principal Investigator)

National Institute of Education
Ellen Greenberger (PI), “Early Adolescents at Work: Effects of Part-Time Employment on Literacy and Maturity” (1978-1979) (Role: Co-Principal Investigator)

Committee on Instructional Development, University of California
Laurence Steinberg (PI), “Development of Instructional Materials for ‘Human Development over the Life Cycle’.” (1978) (Role: Principal Investigator)

College of Human Ecology, Cornell University
Laurence Steinberg (PI), “A Longitudinal Study of Physical Growth, Intellectual Growth, and Family Interaction in Early Adolescence” (1977) (Role: Principal Investigator)

BOOKS AND EDITED VOLUMES

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- Albert, D., & Steinberg, L. (in press). Age differences in strategic planning as indexed by the Tower of London. *Child Development*.
- Albert, D., & Steinberg, L. (in press). Judgment and decision making in adolescence. *Journal of Research on Adolescence*.
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- Burchinal, M., McCartney, K., Steinberg, L., Crosnoe, R., Friedman, S., & McLoyd, V. (in press). Examining the black-white achievement gap using the NICHD study of early child care and youth development. *Child Development*.
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- Lee, J., Steinberg, L., & Piquero, A. (in press). Ethnic identity and attitudes toward the police among African American juvenile offenders. *Journal of Criminal Justice*.
- Lee, J., Steinberg, L., Piquero, A., & Knight, G. (in press). Identity-linked perceptions of the police among African American juvenile offenders: A developmental perspective. *Journal of Youth and Adolescence*.
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- Schubert, C., Mulvey, E., Loughran, T., Fagan, J., Chassin, L., Piquero, A., Losoya, S., Steinberg, L., & Cauffman, E. (in press). Predicting outcomes for transferred youth: Findings and policy implications. *Law and Human Behavior*.
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- Steinberg, L., & Monahan, K. (in press). Response to Brown and to Collins et al. *Developmental Psychology*.
- Williams, L., & Steinberg, L. (in press). Reciprocal relations between parenting and adjustment in a sample of juvenile offenders. *Child Development*.

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ESSAYS, EDITORIALS, AND BOOK REVIEWS

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- Steinberg, L. (1997). "Whose Rational Choices?" Review of J. Owen, *Why Our Kids Don't Study*. Baltimore: Johns Hopkins University Press, 1995. Reviewed in *Teachers College Record*, 1997, 1, 1-4.
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- Steinberg, L. (1996, Summer). Ethnicity and student achievement. *American Educator*, p. 28 and ff.
- Steinberg, L. (1996, July 11). Failure outside the classroom. *The Wall Street Journal*, p. A14. (Reprinted in W. Evers, L. Izumi, & P. Riley (Eds.). *School reform: The critical issues*. Pp. 117-120. Stanford, CA: Hoover Institution Press.
- Steinberg, L. (1996, August 6). School reform won't work if students don't value education. *School Board News*, p. 2 and ff.
- Steinberg, L. (1996, September 13). Do Mom and Dad deserve an F in education? *The Forward*, p. 21. Steinberg, L. (1996, September). Checked out parents. *The American Enterprise*, p. 45.
- Steinberg, L. (1996, October 7). Q: Is the crisis in American education created by conservatives? No: The drop in achievement is genuine across ethnic, socioeconomic and age groups. *Insight Magazine*, p. 23 and ff.
- Steinberg, L., & Sessa, F. (1996). "At Long Last, A Scholarly Compendium of Parenting Research." Review of M. Bornstein (Ed.), *Handbook of Parenting*. Mahwah, NJ: Erlbaum, 1996. Reviewed in *Contemporary Psychology*, 41, 875-877.
- Steinberg, L. (1995). "The End of the Life-span?" Review of D. Featherman, R. Lerner, and M. Perlmutter (Eds.), *Lifespan Development and Behavior* (Volume 12). Hillsdale, NJ: Erlbaum. Reviewed in *Contemporary Psychology*, 40, 1081-1082.
- Steinberg, L. (1995, Winter). Problems and promises of community research. *SRA Newsletter*, p. 1 and ff.
- Steinberg, L. (1994). Review of *Early adolescence: Perspectives on research, policy, and intervention*. R. Lerner (Ed.). Hillsdale, NJ: Erlbaum, 1993. Reviewed in *American Scientist*, May/June.
- Steinberg, L. & Steinberg, W. (September, 1994). Crossing paths. *Ladies Home Journal's Parent's Digest*, pp. 44-47.
- Steinberg, L. (1993). Review of *Parent-child relations throughout life*. K. Pillemer and K. McCartney (Eds.). Hillsdale, NJ: Lawrence Erlbaum, 1991. Reviewed in *Child Development Abstracts and Bibliography*, 67, 99-100.

- Steinberg, L. (February, 1993). Home alone: Practical tips for working parents of young adolescents. *Ladies Home Journal*.
- Steinberg, L., & Levine, A. (April, 1992). Surviving adolescence. *Ladies Home Journal's Parent's Digest*, p.45 and ff.
- Steinberg, L., & Greenberger, E. (1990, July 8). Lousy jobs, worse futures. *The Washington Post*, p.C5. (Reprinted in: J. Marting, (ed.). (1993). *Making a living: A real world reader*, pp. 159-161). New York: HarperCollins.)
- Steinberg, L., & Levine, A. (Fall, 1990). Enjoying your child's teenage years. *Temple Review*, 20-23.
- Brown, B., & Steinberg, L. (Fall, 1989). Skirting the "Brain-Nerd" connection: How bright students save face among peers. *Newsletter of the National Center on Effective Secondary Schools*, 4, pp. 2-4.
- Steinberg, L. (1989). "Surprise Endings, at Least for Some." Review of F. Furstenberg, Jr., J. Brooks-Gunn, and S. Morgan. (1987). *Adolescent mothers in later life*. New York: Cambridge University Press. Reviewed in *Contemporary Psychology*, 34, 229-232.
- Steinberg, L. (1987, April 25). Why Japan's students outdo ours. *The New York Times*, p.A15.
- Steinberg, L. (September, 1987). Bound to bicker: Pubescent primates leave home for good reasons. Our teens stay with us and squabble. *Psychology Today*, pp. 36-39. (Reprinted in J. Olson-Fallon, (ed.). (1992). *Growing up, growing old*. New York: HarperCollins, pp. 48-54; and in D. McQuade and R. Atwan, (Eds.). (1998). *Thinking in writing: Rhetorical patterns and critical response* (4th edition). New York: McGraw-Hill, pp. 374-379.
- Greenberger, E., & Steinberg, L. (1986, December 10). The debit side of adolescent employment. *Education Week*, p. 24.
- Steinberg, L. (1984). "What Makes a Lifespan Development Text Good?" Review of J. Turner and D. Helms. (1983). *Lifespan development* (2nd edition). New York: Holt, Rinehart, and Winston; J. Gibson. (1983). *Living: Human development through the lifespan*. Reading, MA: Addison-Wesley; and R. Lerner and D. Hultsch. (1983). *Human development: A life-span perspective*. New York: McGraw-Hill. Reviewed in *Contemporary Psychology*, 1984, 29.
- Steinberg, L. (1984). Review of *The serious business of growing up*. E. Medrich, J. Roizen, V. Rubin, and S. Buckley. Berkeley, CA: University of California Press. 1982. Reviewed in *Children and Youth Services Review*.
- Steinberg, L. (1982). Review of *Developmental perspectives on child maltreatment*. R. Rizley and D. Cicchetti (Eds.). San Francisco: Jossey-Bass, 1981. Reviewed in *Child Development Abstracts and Bibliography*.
- Steinberg, L. (1982). Review of *The adolescent: A psychological self-portrait*. D. Offer, E. Ostrov, and K. Howard. New York: Basic Books, 1981. Reviewed in *Social Casework*.
- Steinberg, L. (1980). Review of *Child influences on marital and family interaction: A life-span perspective*. R.M. Lerner and G.B. Spanier (Eds.). New York: Academic Press, 1978. Reviewed in *Contemporary Sociology*, 9, 545-546.
- Steinberg, L., & Green, C. (1979). What parents seek in day care. *Human Ecology Forum*, 10, p. 14 and ff.

COLLOQUIA, CONFERENCE PRESENTATIONS, AND INVITED ADDRESSES

- Gubman, E., & Steinberg, L. (March, 1976). Regarding research: Ask any grandmother. Paper presented at the annual meeting of the Groves Conference on Marriage and the Family, Kansas City, Missouri.
- Steinberg, L., & Hill, J. (April, 1977). Family interaction in early adolescence. Paper presented at the Biennial Meeting of the Society for Research in Child Development, New Orleans.
- Steinberg, L. (August, 1977). Research in the ecology of adolescent development: A longitudinal study of the impact of physical maturation on changes in the family system in early adolescence. Paper presented at the Foundation for Child Development conference on Research Perspectives in the Ecology of Human Development, Ithaca, New York.
- Steinberg, L. (March, 1978). Changes in family relationships at adolescence: A developmental perspective. Paper presented at the Arizona Symposium on Families and Adolescents: Toward a Practical Understanding, Tucson, Arizona.
- Invited participant, Foundation for Child Development Conference on Work as a Context for Human Development, Palo Alto, California, November, 1978.
- Steinberg, L., & Green, C. (April, 1979). How parents may mediate the effects of day care. Paper presented at the Biennial Meeting of the Society for Research in Child Development, San Francisco.
- Steinberg, L. (April, 1979). Changes in family relations at puberty. Paper presented as a part of a symposium entitled "Psychological Correlates of Pubertal Changes" at the Biennial Meeting of the Society for Research in Child Development, San Francisco.
- Invited speaker, National Institute of Education, Washington, March, 1979.
- Steinberg, L., & Greenberger, E. (April, 1979). Part-time employment during high school: Some costs and benefits to schooling and learning. Paper presented as a part of a symposium entitled "*Youth: Transition to Adulthood* Reconsidered: The Place of Work in the Education of Adolescents" at the annual meeting of the American Educational Research Association, Boston.
- Steinberg, L., & Greenberger, E. (June, 1979). Continuities and discontinuities in occupational development: The nature and effects of early adolescent work. Paper presented at the Biennial Conference of the International Society for the Study of Behavioural Development, Lund, Sweden.
- Greenberger, E., Steinberg, L., & Vaux, A. (April, 1980). Adolescents in the workplace: Effects of part-time employment on family and peer relations. Paper presented at the meeting of the Western Psychological Association, Honolulu.
- Steinberg, L., Greenberger, E., & Garduque, L. (April, 1980). Part-time employment during adolescence: Costs and benefits to schooling and learning. Paper presented at the meeting of the Western Psychological Association, Honolulu.
- Invited discussant, Symposium on Maternal Stress, Western Psychological Association, Honolulu, April, 1980.
- Invited speaker, National Center for Vocational Education, Ohio State University, May, 1980.
- Steinberg, L., Greenberger, E., & Garduque, L. (August, 1980). Adolescent learning and intellectual development: The contribution of work. Paper presented at the annual meeting of the American Psychological Association, Montreal.
- Steinberg, L., & Greenberger, E. (April, 1981). Is work experience valuable? Some unanswered questions. Paper presented as a part of a symposium entitled "Evaluating School-to-Work

- Transition Models” at the annual meeting of the American Educational Research Association, Los Angeles.
- Steinberg, L. (April, 1981). (Chair). Working: Effects of early work experience on adolescent development. Symposium presented at the Biennial Meeting of the Society for Research in Child Development, Boston.
- Steinberg, L., Catalano, R., & Dooley, D. (April, 1981). Economic antecedents of child maltreatment. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Boston.
- Greenberger, E., & Steinberg, L. (August, 1981). Part-time employment of youth during high school. Paper presented as a part of a symposium entitled “Youth and Work in Cross-Cultural Perspective” at the annual meeting of the American Anthropological Association, Los Angeles.
- Greenberger, E., & Steinberg, L. (August, 1981). The workplace as a context for the socialization of youth. Paper presented at the annual meeting of the American Psychological Association, Los Angeles.
- Invited speaker, Bush Foundation Program in Child Development and Social Policy, UCLA, September, 1981.
- Invited speaker, College of Human Development, Pennsylvania State University, November, 1981.
- Invited participant, Aspen Institute for Humanistic Studies, Forum on the First Twenty Years of Life, Aspen, Colorado, July, 1982.
- Greenberger, E., & Steinberg, L. (1982). Invited testimony on proposed changes in child labor regulations. Hearings of the House Subcommittee on Labor Standards, United States House of Representatives, Washington (co-authored testimony presented by E. Greenberger).
- Invited participant, Social Science Research Council, Committee on Child Development in Life-Span Perspective, Conference on “Winning and Losing,” Santa Barbara, California, December, 1983.
- Steinberg, L. (March, 1985). The ABCs of transformations in family relations at adolescence: Changes in affect, behavior, and cognition. Invited paper presented at the Third Biennial Conference on Adolescence Research, Tucson.
- Steinberg, L. (April, 1985). Emotional autonomy in early adolescence. Paper presented as a part of a symposium entitled “Parent-Child Relations in the Transition to Adolescence: Family Adaptations to Developmental Change,” at the biennial meetings of the Society for Research in Child Development, Toronto.
- Steinberg, L., & Greenberger, E. (July, 1985). The changing ecology of adolescent development. Invited presentation as a part of a symposium entitled “Adolescent Development in Context” at the annual meeting of the International Society for the Study of Behavioural Development, Tours, France, July, 1985.
- Co-organizer, Symposium on “Youth Employment and Unemployment” at the annual meeting of the International Society for the Study of Behavioural Development, Tours, France, July, 1985.
- Steinberg, L., & Silverberg, S. (August, 1985). Emotional autonomy during early adolescence. Paper presented as a part of a symposium entitled “Family Factors in Adolescent Development: Recent Research” at the annual meeting of the American Psychological Association, Los Angeles.

- Invited colloquium, Department of Human Development and Family Studies, Cornell University, December, 1985.
- Steinberg, L. (March, 1986). Recent research in adolescent development. Invited workshop at the annual meeting of the Society for Adolescent Medicine, Boston.
- Silverberg, S., & Steinberg, L. (March, 1986). Adolescent individuation and adult identity. Paper presented at the biennial meeting of the Society for Research on Adolescence, Madison, Wisconsin.
- Invited participant, National Invitational Conference on the Health Futures of Adolescents. Daytona Beach, Florida, April, 1986.
- Steinberg, L. (October, 1986). Parents, neglectful and neglected. Invited address presented at the Pennsylvania Juvenile Court Judges Seminar, National Center for Juvenile Justice, Hershey, Pennsylvania.
- Steinberg, L. (November, 1986). An evolutionary perspective on parent-adolescent conflict. Invited paper presented at a symposium entitled "In Search of Man," Temple University Medical School.
- Steinberg, L. (April, 1987). Pubertal status, hormonal levels, and family relations: The distancing hypothesis. Paper presented as a part of a symposium entitled "Hormone Status at Puberty: Consequences for Adolescents and Their Families" at the biennial meeting of the Society for Research in Child Development, Baltimore.
- Steinberg, L. (April, 1987). Emotional autonomy, parental permissiveness, and adolescents' susceptibility to antisocial peer pressure. Paper presented as a part of a symposium entitled "Family and Peer Influences on Adolescent Problem Behavior" at the biennial meeting of the Society for Research in Child Development, Baltimore.
- Invited keynote address, Empire State Organization of Youth Employment Services 9th Annual Conference, "Tipping the Balance for Youth at Risk: Employment Blueprints for the 21st Century," Syracuse, New York, June, 1987.
- Invited speaker, Joint Faculty Development Day, Puget Sound Community Colleges, Seattle, September, 1987.
- Steinberg, L. (November, 1987). New and old knowledge about old and new families. Invited keynote address, Grantmakers for Children and Youth Conference, San Francisco, November, 1987.
- Steinberg, L. (November, 1987). Reciprocal relation between marital happiness and child development among midlife parents of teenagers. Paper presented as a part of an invited symposium entitled "Marriage, Parenting, and Child Development: Reciprocal Relationships" at the annual meeting of the National Council on Family Relations, Atlanta.
- Invited colloquium, Department of Psychology, Stanford University, January, 1988.
- Invited colloquium, Stanford Center for the Study of Families, Children, and Youth, January, 1988.
- Invited speaker, Department of Psychology, Southern Illinois University at Edwardsville, January, 1988.
- Discussant, "Hormone Contributions to Adolescent Behavior." Symposium presented at the biennial meetings of the Society for Research on Adolescence, Alexandria, Virginia, March, 1988.
- Steinberg, L., & Elmen, J. (March, 1988). Authoritative parenting and school success. Paper presented as a part of a symposium entitled "Noninstructional Influences on Adolescents'

- School Achievement: An Ecological Approach,” at the biennial meetings of the Society for Research on Adolescence, Alexandria, Virginia.
- Elmen, J., & Steinberg, L. (March, 1988). Achievement orientation in early adolescence: Social correlates and developmental patterns. Paper presented at the biennial meetings of the Society for Research on Adolescence, Alexandria, Virginia.
- Invited lecture, Laboratory for the Study of Adolescence, Department of Psychiatry, Michael Reese Hospital and the Committee on Human Development, University of Chicago, May, 1988.
- Invited speaker, Workshop on Supporting Families with Adolescents. Carnegie Council on Adolescent Development, Washington, September, 1988.
- Invited symposium, Institute of Child Development, Department of Pediatrics, Robert Wood Johnson Medical School, New Brunswick, New Jersey, October, 1988.
- Invited speaker, National Council for Families and Television. Studio City, California, December, 1988.
- Steinberg, L. (March, 1989). Parenting adolescent achievers: When families make a difference (and when they don't). Paper presented as a part of a symposium entitled “The Ecology of Student Achievement in High Schools: Non-instructional Influences” at the annual meetings of the American Educational Research Association, San Francisco.
- Steinberg, L., & Brown, B. (March, 1989). Beyond the classroom: Family and peer influences on high school achievement. Invited paper presented to the Families as Educators special interest group at the annual meetings of the American Educational Research Association, San Francisco.
- Lamborn, S., Brown, B., & Steinberg, L. (March, 1989). The social contexts of adolescence: Influences on student engagement. Paper presented as a part of a symposium entitled “Student Engagement in High Schools” at the annual meetings of the American Educational Research Association, San Francisco.
- Speaker, John P. Hill Memorial Symposium. Biennial meetings of the Society for Research in Child Development, Kansas City, April, 1989.
- Mounts, N., Lamborn, S., & Steinberg, L. (April, 1989). Relations between family process and school achievement in different ethnic contexts. Paper presented as a part of a symposium entitled “Ethnic Comparisons of Parent and Peer Influences on Adolescent Development,” at the biennial meetings of the Society for Research in Child Development, Kansas City.
- Invited speaker, 40th Annual Conference of the Council on Foundations, Toronto, April, 1989.
- Invited colloquium, Russell Sage Foundation, New York, June, 1989.
- Bogenschneider, K., & Steinberg, L. (August, 1989). Maternal employment and adolescent achievement: A process model. Paper presented as a part of a symposium entitled “Maternal Employment and Child Outcomes: New Perspectives on ‘Process’ Issues,” at the annual meeting of the American Psychological Association, New Orleans.
- Chair and organizer, Symposium entitled “Social Influences on Maturation Timing,” presented at the biennial meetings of the Society for Research on Adolescence, Atlanta, March, 1990.
- Belsky, J., & Steinberg, L. (March, 1990). Toward a biosocial theory of pubertal timing. Paper presented as part of a symposium entitled “Social Influences on Maturation Timing” at the biennial meetings of the Society for Research on Adolescence, Atlanta.

- Dornbusch, S., Steinberg, L., & Ritter, P. (March, 1990). Ethnic differences in beliefs about the value of school success: An empirical assessment of Ogbu's hypothesis. Paper presented as part of a symposium entitled "Ethnic Variations in Adolescent Experience" at the biennial meetings of the Society for Research on Adolescence, Atlanta.
- Brown, B., Steinberg, L., Mounts, N., & Philipp, M. (March, 1990). The comparative influence of peers and parents on high school achievement: Ethnic differences. Paper presented as part of a symposium entitled "Ethnic Variations in Adolescent Experience" at the biennial meetings of the Society for Research on Adolescence, Atlanta.
- Steinberg, L. (August, 1990). Adolescent development in ecological perspective. Invited address, Division 7 (Developmental Psychology), American Psychological Association, Boston, August, 1990.
- Invited colloquium, Department of Individual and Family Studies, University of Delaware, October, 1990.
- Invited testimony, National Commission on Children, St. Paul, Minnesota, October, 1990.
- Invited keynote address, Delaware Association of School Administrators, Conference on Work and Family, Dover, January, 1991.
- Steinberg, L., Mounts, N., Lamborn, S., & Brown, B. (April, 1991). Authoritative parenting and adolescent adjustment across varied ecological niches. Paper presented as a part of a symposium entitled "Authoritative Parenting and Adolescent Adjustment" at the biennial meetings of the Society for Research in Child Development, Seattle.
- Mounts, N., Brown, B., Lamborn, S., & Steinberg, L. (April, 1991). Parenting style and crowd membership: Contributions to adolescent development. Paper presented as a part of a symposium entitled "From Family to Peer: Family Influences on Peer Relations from Early Childhood through Adolescence" at the biennial meetings of the Society for Research in Child Development, Seattle.
- Steinberg, L., & Darling, N. (May, 1991). The broader context of social influence in adolescence. Paper presented at an international conference on "The Development of Motivational Systems in Adolescence: Inter individual Differences and Contextual Factors in Interaction," German Research Foundation and the University of Geissen, Schloss Rauischholzhausen, Germany.
- Steinberg, L., & Weinmann, L. (July, 1991). Adolescent adjustment as a function of timing of parental divorce and remarriage. Paper presented as a part of a symposium entitled "Adolescents and Divorce: International Perspectives from Longitudinal Research" at the biennial meetings of the International Society for the Study of Behavioural Development, Minneapolis.
- Invited symposium, Institute of Child Development, Department of Pediatrics, Robert Wood Johnson Medical School, New Brunswick, New Jersey, December, 1991.
- Invited speaker, Department of Child and Family Development, University of North Carolina at Greensboro, February, 1992.
- Discussant, "Psychosocial Antecedents of the Timing of Puberty." Symposium presented at the biennial meetings of the Society for Research on Adolescence, Washington, March, 1992.
- Steinberg, L., & Lamborn, S. (March, 1992). Autonomy redux: Adolescent adjustment as a joint function of emotional autonomy and relationship security. Paper presented as a part of a symposium entitled "Adolescent Autonomy: Is It All It's Cracked Up To Be?" at the biennial meetings of the Society for Research on Adolescence, Washington.

- Invited colloquium, Department of Human Development and Family Studies, Penn State University, April, 1992.
- Invited presentation, Pennsylvania Family Policy Seminar on “Enhancing Development in Early Adolescence through Creative Partnerships,” Harrisburg, April 30, 1992.
- Fletcher, A., Darling, N., & Steinberg, L. (May, 1992). Parenting practices as moderators of peer influence on adolescent deviance. Paper presented at the annual meeting of the Society for Life History Research, Philadelphia.
- Invited participant, Social Science Research Council working group meeting on Community and Neighborhood Influences, New York, May 14, 1992.
- Invited discussant, PRIDE Conference on the Impact of Social Context on Early Adolescent Trajectories, Pennsylvania State University, October 2-3, 1992.
- Steinberg, L., Fletcher, A., & Darling, N. (March, 1993). Influence of parental authoritativeness in the adolescent’s peer network on adolescent misconduct. Paper presented as a part of a symposium entitled “Interactive Influences of Parents and Peers on Adolescent Misbehavior” at the biennial meetings of the Society for Research in Child Development, New Orleans.
- Darling, N., Steinberg, L., & Gringlas, M. (March, 1993). Community integration and value consensus as forces for adolescent socialization: A Test of the Coleman and Hoffer hypothesis. Paper presented as a part of a symposium entitled “Community and Neighborhood Influences on Adolescent Behavior” at the biennial meetings of the Society for Research in Child Development, New Orleans.
- Lamborn, S., Steinberg, L., Darling, N., Mounts, N., & Dornbusch, S. (April, 1993). Adolescents’ perceptions of parenting styles: Short-term longitudinal implications for adjustment. Paper presented at the annual meetings of the American Educational Research Association, Atlanta.
- Co-organizer, Society for Research on Adolescence study group on Research on Ethnic Minority Adolescents and Families, University of Michigan, May 21-23, 1993.
- Invited presentation, Urie Bronfenbrenner Symposium, Cornell University, Ithaca, September 24, 1993.
- Steinberg, L., & Belsky, J. (October, 1993). A sociobiological perspective on psychopathology in adolescence. Invited paper presented at the Rochester Symposium on Developmental Psychology, University of Rochester.
- Steinberg, L. (October, 1993). Coming of age in the ‘90s: Challenges to Parents and Teachers. Invited speech, Josselyn Center for Mental Health, Northfield, IL.
- Steinberg, L. (October, 1993). Coming of age in a climate of violence and fear. Invited presentation, New Jersey Public Health Association, statewide symposium entitled “Violence: A Society in Crisis,” Jamesburg, New Jersey.
- Invited speaker, Center for Substance Abuse Prevention Conference on Adolescent Drug Trafficking, School of Medicine, University of Maryland, Baltimore, November 18, 1993.
- Invited colloquium, Department of Sociology, The Johns Hopkins University, Baltimore, Maryland, December, 1993.
- Invited colloquium, Center for Family Research, University of Georgia, Athens, Georgia, January, 1994.
- Invited speaker, Department of Adolescent Medicine, Children’s Hospital of Philadelphia, February, 1994.

Fletcher, A., & Steinberg, L. (February, 1994). Generational status and country of origin as influences on the psychological adjustment of Asian-American adolescents. Paper presented as part of a symposium entitled "Psychosocial Adjustment of Asian-American Adolescents" at the meetings of the Society for Research on Adolescence, San Diego.

Participant, roundtable discussion on parent-peer linkages in adolescence at the meetings of the Society for Research on Adolescence, San Diego, February, 1994.

Participant, roundtable discussion on adolescent sexuality at the meetings of the Society for Research on Adolescence, San Diego, February, 1994.

Invited keynote address, 17th Goucher College Educational Conference, Towson, Maryland, March 24, 1994.

Invited presentation, Penn State University Conference on "Excellence in Education: Asian and American Approaches," Delaware County Campus, Media, Pennsylvania, April 16, 1994.

Invited colloquium, Department of Educational Psychology, University of Illinois, Champaign, Illinois, April, 1994.

Pediatric Grand Rounds, Memorial Sloan-Kettering Cancer Center, New York, May 26, 1994.

Invited colloquium, Department of Psychology, New York University, New York, September, 1994.

Discussant, "Developmental Processes: Similar or Different Across Ethnic and Racial Groups?" Symposium held at the Biennial Meetings of the Society for Research in Child Development, Indianapolis, March, 1995.

Cauffman, E., and Steinberg, L. (March, 1995). Moderating effects of neighborhood parenting on family socialization processes. Paper presented as part of a symposium entitled "Community Effects on Adolescent Development: New Approaches to the Study of Neighborhoods and Their Impact" at the Biennial Meetings of the Society for Research in Child Development, Indianapolis.

Chair and organizer, "Community Effects on Adolescent Development: New Approaches to the Study of Neighborhoods and Their Impact." Symposium presented at the Biennial Meetings of the Society for Research in Child Development, Indianapolis, March 1995.

Steinberg, L., and Cauffman, E. (September, 1995). Adolescent development and adolescent decision-making. Paper presented at the Temple University Law School conference on Children's Rights.

Invited speaker, Undergraduate Research Summer Institute and Psychology Forum, Vassar College, Poughkeepsie, New York, September 30, 1995.

Invited workshop, Central New York State Psychological Association, October 27, 1995.

Steinberg, L. (November, 1995). The family at adolescence: Transition and transformation. Sixth Annual Anathan Foundation Lecture, Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center.

Invited keynote address, Vermont Association for Middle Level Education, Burlington, Vermont, November 21, 1995.

Invited colloquium, Graduate School of Education, University of Pennsylvania, December, 1995.

Steinberg, L., and Greene, M. (March, 1996). Is 'Americanization' bad for adolescents' achievement and mental health? Paper presented as a part of a symposium on "The Development of Immigrant Adolescents," at the Biennial Meetings of the Society for Research on Adolescence, Boston.

Invited participant, Symposium on Conceptual and Methodological Issues in Research on Parenting, presented at the Biennial Meetings of the Society for Research on Adolescence, Boston, March, 1996.

Invited keynote address, European Association for Research on Adolescence, Liège, Belgium, May, 1996. Steinberg, L. & Avenevoli, S. (June, 1996). Disengagement from school and problem behavior in adolescence: A developmental-contextual analysis of the influences of family and part-time work. Invited paper, Conference on New Perspectives on Adolescent Risk Behavior, UCLA, Los Angeles.

Matthew Vassar Lecture, Vassar College, Poughkeepsie, New York, September, 1996.

Invited presentation, National Academy of Sciences, Commission on Behavioral and Social Sciences and Education, Division on Education, Labor, and Human Performance, September, 1996.

Invited keynote address, Golden Apple Foundation Annual Dutch Koldyke Forum, Chicago, October, 1996.

Invited presentation, Pennsylvania State Board of Education, Philadelphia, November, 1996.

Invited presentation, Center for School Study Councils, Annual School Directors' Dinner, University of Pennsylvania, December 4, 1996.

Invited presentation, Alliance for Education, Worcester, Massachusetts, December 10, 1996.

Invited presentation, Chester County Intermediate Unit, Exton, Pennsylvania, December 12, 1996.

Invited lecture, Florida Atlantic University, Ft. Lauderdale, Florida, January, 1997.

Invited presentation, National Urban League, Urban Policy Forum, National Press Club, Washington, February 14, 1997.

Invited keynote address, Colorado Principals' Center Winter Institute, Denver, February 26, 1997.

Invited lecture, Graduate School of Education, Harvard University, March 3, 1997.

Discussant, Symposium on "Adolescence and the Law: Developmental Perspectives." Presented at the biennial meetings of the Society for Research on Child Development, Washington, April, 1997.

Discussant, Symposium on "Children's Perspectives on the Family System." Presented at the biennial meetings of the Society for Research on Child Development, Washington, April, 1997.

Invited address, Fourth Annual Invitational Public Schools Conference, "Beyond School Reform: A Framework for the 21st Century," Temple University, May 3, 1997.

Invited presentation, Brookings Institution Conference on Education Policy, Washington, May 29, 1997. Invited presentation, Conference on Character Building, The Communitarian Network, Washington, June 14, 1997.

Invited presentation, Center for Research on Young Children and Families, Teachers College, Columbia University, June 18, 1997.

Invited workshop leader, Vice President and Mrs. Gore's "Family Re-Union" conference on Families and Learning, Nashville, June 24-25, 1997.

Invited address, Superintendents Work Conference, Teachers College, Columbia University, July 17, 1997.

Invited colloquium, Department of Psychology and Human Development, Bryn Mawr College, Bryn Mawr, PA, November 7, 1997.

Invited participant, Drug Abuse Multidisciplinary Integration Meeting, National Institute of Drug Abuse, Rockville, MD, November, 1997.

Chair and organizer, Invited Symposium, "Should Violent Juvenile Offenders Be Tried as Adults?" Presented at the Biennial Meetings of the Society for Research on Adolescence, San Diego, February, 1998.

Steinberg, L., Avenevoli, S., & Hecker, T. (March, 1998). Developmental perspectives on waiver of adolescents to adult court. Paper presented as part of an invited symposium entitled, "Should Violent Juvenile Offenders Be Tried as Adults?", at the Biennial Meetings of the Society for Research on Adolescence, San Diego.

Invited participant, Symposium on Healthy Sexuality in Adolescence. Biennial Meetings of the Society for Research on Adolescence, San Diego, February, 1998.

Invited colloquium, Institute of Child Development, University of Minnesota, April, 1998.

Invited presentation, National Workshop on Violent Youths Tried as Adults, Corrections Program Office, U.S. Department of Justice, Houston, May 13-15, 1998.

Invited testimony, Senate of Pennsylvania Committee on Education, Hearing on School Violence, June 30, 1998.

Invited seminar, Arkansas Public Defenders Commission, Little Rock, August 18, 1998.

Invited testimony, Arkansas Governor's Working Group on Juvenile Violence, August 19, 1998.

Invited speech, Family Resource Network of the School District of Philadelphia, Philadelphia, September 29, 1998.

Invited presentation, American Bar Association Criminal Justice Standards Task Force on Juveniles in the Adult Criminal System, Washington, October 9, 1998.

Steinberg, L. (November, 1998). The elephant in the room: Developmental perspectives on the adjudication of youthful offenders. Invited presentation, Interdisciplinary Conference on Youth Violence and Juvenile Justice Reform, Center for Children, Families, and the Law, University of Virginia, Charlottesville.

Invited participant, Robert Wood Johnson Foundation National Planning Meeting on Juvenile Justice and Substance Abuse, Annapolis, November 3-6, 1998.

Invited testimony, Subcommittee on Crime of the Committee on the Judiciary, U.S. House of Representatives, March 11, 1999.

Steinberg, L. (March, 1999). The family at adolescence: Transition and transformation. Gallagher Lecture, Society for Adolescent Medicine, Los Angeles.

Invited presentation, National Conference on Juvenile Justice, Minneapolis, March 22, 1999.

Invited presentation, 22nd Annual EdSource Conference on Public Schools, Irvine and San Ramon California, March 25-26, 1999.

Discussant, "Methodological Challenges in Research with Racial and Ethnic Minority Populations – The Unspoken Issues," symposium presented at the biennial meetings of the Society for Research in Child Development, Albuquerque, April, 1999.

Steinberg, L. (April, 1999). Should juvenile offenders be tried as adults? A developmental perspective on changing legal policies. Paper presented as a part of an invited symposium entitled "The Changing Landscape for Children: Important Issues as We Enter the Millennium," at the biennial meetings of the Society for Research in Child Development, Albuquerque.

Invited presentation, National Research Council, Committee on Law and Justice, Panel on Juvenile Crime: Prevention, Treatment, and Control, May 3, 1999.

- Steinberg, L. (July, 1999). A developmental perspective on the transfer of adolescents to adult court. Paper presented as a part of an invited symposium entitled "Separating the Men from the Boys: Thresholds for Criminal Punishment of Adolescent Offenders," at the joint meeting of the American Psychology and Law Society and the European Psychology and Law Society, Dublin.
- Invited presentation, U.S. House of Representatives Bi-Partisan Working Group on Youth Violence, September 15, 1999.
- Invited participant, the High School of Tomorrow Forum, National Association of Secondary School Principals, Hershey, PA, October 13-14, 1999.
- Invited colloquium, Department of Psychology, University of Delaware, October 20, 1999.
- Invited presentation, Rochester Child Health Congress, University of Rochester Medical Center, October, 1999.
- Organizer and chair, Invited symposium entitled "Lethal Violence in American Schools: Rhetoric, Reality, and Rational Responses," at the annual meeting of the American Society of Criminology, Toronto, November, 1999.
- Steinberg, L., and Cauffman, E. (November, 1999). A developmental perspective on school violence. Paper presented as a part of an invited symposium entitled "Lethal Violence in American Schools: Rhetoric, Reality, and Rational Responses," at the annual meeting of the American Society of Criminology, Toronto.
- Steinberg, L. (December, 1999). Adolescent Violence: The Roles of Parents, Peers, and Communities. Cummins Endowment for Adolescent Medicine Lecture, Morristown Memorial Hospital, Morristown, NJ.
- Invited participant, Transforming Secondary Education: A Strategy Building Workshop, sponsored by the Bill and Melinda Gates Foundation and the Daniel J. Evans Graduate School of Public Affairs of the University of Washington. December 5-6, 1999, Kirkland, Washington.
- Steinberg, L. (January, 2000). Should Juvenile Offenders Be Tried As Adults? Invited Congressional Research Briefing, Joint Center for Poverty Research, Washington.
- Steinberg, L. (February, 2000). Adolescent Violence: The Roles of Parents, Peers, and Communities. 22nd Annual Konopka Lecture, University of Minnesota.
- Steinberg, L., & Cauffman, E. (March, 2000). A developmental perspective on the commission, investigation, and judgment of adolescent crime. Paper presented as a part of a symposium entitled, "Justice for Juveniles: Factors Relating to the Commission, the Investigation, and the Judgment of Adolescent Crime" at the annual meetings of the American Psychology and Law Society, New Orleans.
- Steinberg, L. (April, 2000). We know some things: Parent-adolescent relations in retrospect and prospect. Presidential address, Biennial meetings of the Society for Research on Adolescence, Chicago.
- Discussant, "Autonomy during Adolescence: Developmental Processes in Diverse Contexts," Symposium presented at the Biennial meetings of the Society for Research on Adolescence, Chicago, March, 2000.
- Invited presentation, White House Conference on Teenagers, May 2, 2000.
- Invited colloquium, Center for Mental Health Services Research and Department of Law and Psychiatry, University of Massachusetts Medical School, Worcester, MA, May 4, 2000.
- Invited discussant, Brookings Institution Educational Policy Conference on National Standards, Washington, May 15, 2000.

- Invited presentation, Casey Journalism Conference, College Park, Maryland, June 13, 2000.
Discussant, symposium entitled "Assessment of psychopathy among adolescents and adults: Developmental and legal implications," at the annual meetings of the American Criminological Society, San Francisco, November 15, 2000.
- Steinberg, L. (March, 2001). The juvenile psychopath: Fads, fictions, and facts." Invited lecture, National Institute of Justice, Perspectives on Crime and Justice, Washington.
- Steinberg, L. (March, 2001). The role of the family in adolescent development: Preventing risk, promoting resilience." Invited keynote address, Children, Youth and Families at Risk Program Initiative, Cooperative Extension Service, U.S. Department of Agriculture, San Diego.
- Chair, invited symposium entitled "A New Framework for Studying Adolescent Development and Psychopathology," Biennial meetings of the Society for Research in Child Development, Minneapolis, April, 2001.
- Discussant, symposium entitled "Pathways to Parental Knowledge: Monitoring Research in the 21st Century," Biennial meetings of the Society for Research in Child Development, Minneapolis, April, 2001.
- Discussant, symposium entitled "The Impact Of Exposure To Community Violence On Children And Youth: Fact Or Fluke," Biennial meetings of the Society for Research in Child Development, Minneapolis, April, 2001.
- Invited colloquium, Irving B. Harris School of Public Policy, University of Chicago, June, 2001.
- Steinberg, L. (June, 2001). Parent-adolescent relations: What we know, what we need to know." Invited keynote presentation, Parent Education Institute IV, University of Minnesota, St . Paul.
- Steinberg, L. (June, 2001). Crossing paths: When adolescence meets midlife." Invited lecture, Young President's Organization Venice University, Venice, Italy.
- Steinberg, L. (June, 2001). You and your adolescent. Invited workshop, Young President's Organization Venice University, Venice, Italy.
- Steinberg, L. (July, 2001). The family at adolescence. Invited lecture, European Association for Research on Adolescence Summer School, Puidoux-Chexbres, Switzerland.
- Steinberg, L. (October, 2001). Adolescent development and juvenile justice. Invited campus-wide lecture sponsored by the departments of Psychology, Education, and Urban Studies, Vassar College.
- Invited colloquium, The Bush Center in Child Development and Social Policy, Yale University, October, 2001.
- Discussant, symposium entitled "Gender, Mental Disorder, and Juvenile Justice," annual meeting of the American Society of Criminology, Atlanta, November, 2001.
- Invited participant, Annie E. Casey Foundation Roundtable on Family Strengthening Youth Development, Baltimore, December, 2002.
- Steinberg, L. (March, 2002). Age differences in capacities underlying competence to stand trial. Paper presented as part of a symposium entitled "Juveniles' Competence to Stand Trial," at the annual meeting of the American Psychology and Law Society, Austin, Texas.
- Steinberg, L. (March, 2002). The juvenile psychopath: Fads, fictions, and facts. Paper presented as part of a symposium entitled "Recent Research and Legal Developments on Juvenile Psychopathy," at the annual meeting of the American Psychology and Law Society, Austin, Texas.

Steinberg, L. (March, 2002). Adolescent development and legal decisional capacity: A new legal horizon. Invited keynote address, University of Virginia Institute of Law, Psychiatry and Public Policy annual conference on juvenile forensic practice, Richmond, March 22, 2002.

Invited colloquium, School of Social Ecology, University of California, Irvine, April 1, 2002.

Chair, symposium entitled "Adolescents' Competence to Stand Trial as Adults: The MacArthur Juvenile Competence Study." Biennial meetings of the Society for Research on Adolescence, New Orleans, April, 2002.

Steinberg, L. (April, 2002). Age differences in capacities underlying competence to stand trial. Paper presented as part of a symposium entitled "Juveniles' Competence to Stand Trial," at the biennial meeting of the Society for Research on Adolescence, New Orleans.

Discussant, symposium entitled "Emotion Regulation in Adolescence," biennial meetings of the Society for Research on Adolescence, New Orleans, April, 2002.

Invited presenter, symposium entitled "What is the Meaning of Good Science in the Field of Adolescent Development?" Biennial meetings of the Society for Research on Adolescence, New Orleans, April, 2002.

Invited keynote address, National Family & Parenting Institute International Conference on Adolescence, London, April, 2002.

Invited speaker, Practical Parenting Partnerships annual meeting, Lake Osage, Missouri, April, 2002.

Invited speaker, Brookings Institution Educational Policy Conference, Washington, May 14, 2002.

Invited participant, National Consortium on Violence Research (NCOVR) Summer Workshop, St. Augustine, Florida, June, 2002.

Invited participant, White House Conference on Character and Community, June 19, 2002.

Steinberg, L. (June, 2002). Is decision-making the right framework for the study of adolescent risk-taking? Invited paper presented at the Adolescent Risk Conference, Institute for Adolescent Risk Communication, University of Pennsylvania, June, 2002.

Invited keynote speaker, Adolescent Health Institute, University of New Hampshire Cooperative Extension, Lake Winnepesaukee, New Hampshire, June, 2002.

Chair, invited symposium entitled "Juveniles' Competence to Stand Trial: The MacArthur Study." Annual meeting of the American Psychological Association, Chicago, August, 2002.

Steinberg, L. (August, 2002). Age differences in capacities underlying competence to stand trial. Paper presented as part of a symposium entitled "Juveniles' Competence to Stand Trial: The MacArthur Study," at the annual meeting of the American Psychological Association, Chicago.

Invited speaker, Satellite Series on "Healthy Teen Development," University Extension, Iowa State University, October, 2002.

Steinberg, L. (October, 2002). Are juveniles competent to stand trial in criminal court? Campus-wide lecture, Iowa State University, Ames, Iowa.

Steinberg, L. (October, 2002). Crossing paths: When adolescence meets midlife." Invited lecture, Young Presidents' Organization Prague University, Prague, Czech Republic.

Steinberg, L. (October, 2002). You and your adolescent. Invited workshop, Young Presidents' Organization Prague University, Prague, Czech Republic.

Steinberg, L. (November, 2002). Familial and neighborhood correlates of serious juvenile offending. Paper presented as a part of a symposium entitled "Serious Juvenile Offending," at the annual meeting of the American Society of Criminology, Chicago.

Steinberg, L. (December, 2002). Juveniles' competence to stand trial. Invited presentation, Florida Conference of Circuit Judges, Amelia Island, Florida.

Steinberg, L. (January, 2003). Juveniles' competence to stand trial. Grand rounds lecture, Child Study Center, New York University School of Medicine.

Invited presentation, Council of Juvenile Corrections Administrators, New Directors Seminar, Charlotte, January, 2003.

Invited colloquium, Department of Mental Health, Bloomberg School of Public Health, The Johns Hopkins University, March, 2003.

Invited address, annual meeting of the National Conference of Juvenile and Family Court Judges, Philadelphia, March, 2003.

Invited testimony, Hearing on Access to Mental Health and Drug & Alcohol Treatment, Pennsylvania House of Representatives, Committees on Health and Human Services and Children and Youth, April, 2003.

Steinberg, L. (April, 2003). Less guilty by reason of adolescence. Invited Master Lecture, Biennial meetings of the Society for Research in Child Development, Tampa, Florida.

Steinberg, L., & Chung, H. (April, 2003). Variations in patterns of offending: The impact of family and neighborhood. Paper presented as part of a symposium entitled "The Psychological Development of Serious Juvenile Offenders: The MacArthur Study of Pathways to Desistance," Biennial meetings of the Society for Research in Child Development, Tampa, Florida.

Discussant, Invited symposium entitled "Adolescent Decision Making and Drug Abuse," Biennial meetings of the Society for Research in Child Development, Tampa, Florida, April, 2003.

Invited presentation, Young Presidents' Organization Philadelphia Forum, April 28, 2003.

Invited participant, Reentry Roundtable on "The Youth Dimensions of Prisoner Reentry: Youth Development and the Impact of Incarceration and Reentry," Urban Institute, San Francisco, May, 2003.

Invited participant, National Consortium on Violence Research (NCOVR) Summer Workshop, San Juan, Puerto Rico, June, 2003.

Steinberg, L. (September, 2003). Risk-taking in adolescence: What changes, and why? Invited presentation, New York Academy of Sciences conference on Adolescent Brain Development: Vulnerabilities and Opportunities, New York City.

Invited campus-wide lecture, Cornell University, Ithaca, New York, November, 2003.

Steinberg, L. (January, 2004). You and your adolescent. Invited lecture, Young Presidents' Organization South America University, Rio de Janeiro, Brazil.

Steinberg, L. (January, 2004). The ten basic principles of good parenting. Invited lecture, Young Presidents' Organization South America University, Rio de Janeiro, Brazil.

Steinberg, L. (January, 2004). My parents are driving me crazy. Invited lecture, Young Presidents' Organization South America University, Rio de Janeiro, Brazil.

Invited lecture, Villanova University School of Law, February, 2004.

Cauffman, E., Schubert, C., & Steinberg, L. (March, 2004). Romantic relationships among serious adolescent offenders: Gender similarities and differences. Paper presented as a

- part of a symposium entitled “Improving Our Understanding of Female Offending,” at the annual meeting of the American Psychology-Law Society, Scottsdale, Arizona.
- Cauffman, E., Piquero, A., Mulvey, E., & Steinberg, L. (March, 2004). Predicting disposition among serious juvenile offenders: Who gets locked up? Paper presented as a part of a symposium entitled “Sanctions and Services for Serious Juvenile Offenders: Findings from the Pathways to Desistance Study,” at the annual meeting of the American Psychology-Law Society, Scottsdale, Arizona.
- Participant, invited conversation hour, “Human Subjects Issues in Research with Adolescents,” biennial meeting of the Society for Research on Adolescence, Baltimore, March, 2004.
- Chair and organizer, “Predictors of Re-Offending in a Sample of Serious Juvenile Offenders,” symposium presented at the biennial meeting of the Society for Research on Adolescence, Baltimore, March, 2004.
- Cauffman, E., & Steinberg, L. (March, 2004). Psychosocial maturity and recidivism among adolescent offenders. Paper presented as a part of a symposium entitled “Predictors of Re-Offending in a Sample of Serious Juvenile Offenders,” biennial meeting of the Society for Research on Adolescence, Baltimore.
- Invited presentation, Young Presidents’ Organization Philadelphia Forum, March 17, 2004.
- Gardner, M., Steinberg, L., & Garrett, R. (April, 2004). “Risk-Taking Across Three Age Groups: The Role of Susceptibility to Peer Influence.” Poster presentation at the Conference on Human Development, Washington, D.C.
- Steinberg, L. (April, 2004). Juveniles’ competence to stand trial. Invited address, Ohio Juvenile Defenders’ Summit, Dayton, Ohio.
- Invited presentation, Young Presidents’ Organization Philadelphia Forum, May 20, 2004.
- Steinberg, L. (June, 2004). A developmental perspective on risk-taking in adolescence. Paper presented as part of an invited plenary symposium sponsored by the National Institute of Drug Abuse at the meeting of International Society for Addiction Medicine, Helsinki.
- Steinberg, L. (September, 2004). Adolescent development in the family context. Invited Master Lecture, XVIII Congresso di Psicologia dello Sviluppo, Siacca, Italy.
- Invited panelist, Fred Friendly Seminar on Juvenile Justice (produced for PBS). Filmed in Berkeley, California, October, 2004.
- Invited presentation, Fall Mental Health Forum, Riverbend Foundation, Florence, Alabama, October, 2004.
- Invited testimony, Illinois State Legislature Taskforce on Trying Juveniles as Adults, Chicago, October, 2004.
- Invited presentation, Panel on the Juvenile Death Penalty, University of Virginia School of Law, November, 2004.
- Invited presentation, Department of Psychology, Ursinus College, November, 2004.
- Chung, H., Little, M., & Steinberg, L. (November, 2004). The transition to adulthood for juvenile offenders: A developmental perspective. Paper presented as part of symposium entitled “On Your Own Without a Net: The Transition to Adulthood for Youth Involved in the Justice System”, at the annual meeting of the American Criminological Society, Nashville.
- Piquero, A., Cauffman, E., Mulvey, E., & Steinberg, L. (November, 2004). Predicting disposition among serious juvenile offenders: Who gets locked up? Paper presented as

- part of symposium entitled “New Findings from the Pathways to Desistance Study,” at the annual meeting of the American Criminological Society, Nashville.
- Invited presentation, Panel on Juvenile Justice and Adult Corrections, Chapin Hall Conference on Adolescence and the Transition to Adulthood, University of Chicago, November, 2004.
- Invited colloquium, Department of Human Development and Family Studies, University of Wisconsin, Madison, December, 2004.
- Steinberg, L. (March, 2005). Less guilty by reason of adolescence. Barbara Lemann Memorial Lecture, Tulane University Health Science Center, March, 2005.
- Grand rounds, Department of Child Psychiatry, Tulane University School of Medicine, New Orleans, March 11, 2005.
- Discussant, symposium entitled “The Unintended Consequences of Social Policy on Youth Development.” Biennial meetings of the Society for Research in Child Development, Atlanta, April, 2005.
- Discussant, symposium entitled “Environmental Chaos and Children’s Development: Expanding the Boundaries of Chaos.” Biennial meetings of the Society for Research in Child Development, Atlanta, April, 2005.
- APA Distinguished Scientist Lecture, Rocky Mountain Psychological Association, Phoenix, April, 2005.
- Invited lecture, Rock Island/Milan School District, Rock Island, Illinois, April 25, 2005.
- Invited colloquium, School of Education, Western Illinois University, Moline Illinois, April 26, 2005.
- Invited address, American Psychological Society, Los Angeles, May, 2005.
- Steinberg, L. (June, 2005). You and your adolescent. Invited lecture, Young Presidents’ Organization Southern 7 Chapter, Greenbrier, West Virginia.
- Steinberg, L. (June, 2005). The ten basic principles of good parenting. Invited lecture, Young Presidents’ Organization Southern 7 Chapter, Greenbrier, West Virginia.
- Invited presentation, Bloomberg School of Public Health, The Johns Hopkins University, Baltimore, July 11, 2005.
- Invited testimony, Subcommittee on Select Education, U.S. House of Representatives Committee on Education and the Workforce, Washington, July 12, 2005.
- Invited presentation, National Institute of Justice Annual Conference on Research and Evaluation, Washington, July 19, 2005.
- Steinberg, L. (August, 2005). Between and rock and a soft place: Developmental research and the child advocacy process. Paper presented as a part of a cross-divisional symposium entitled “Psychology and Children: Translating Research into Better Policy and Services,” at the meetings of the American Psychological Association, Washington.
- Invited presentation, Annual meeting of Grantmakers for Children and Youth, Denver, September, 2005.
- Piquero, A., Fagan, J., Mulvey, E., Steinberg, L., & Odgers, C. (November, 2005). Developmental Trajectories of legal socialization among serious adolescent offenders. Paper presented as a part of a symposium entitled “Legitimacy, Procedural Justice, and Compliance,” at the annual meeting of the American Society of Criminology, Toronto.
- Invited testimony, Governor’s Commission on College and Career Success, Harrisburg, November 4, 2005.

- Invited lecture, Graduate School of Social Work and Social Research, Bryn Mawr College, November 29, 2005.
- Invited participant, NIH conference on Reward Neurocircuitry in Adolescent Development and Decision Making, Bethesda, January 20, 2006.
- Chair, symposium entitled “The MacArthur Juvenile Capacity Study: A New Approach to the Study of Adolescent Cognitive Development.” Biennial meetings of the Society for Research on Adolescence, San Francisco, March, 2006.
- Steinberg, L. (March, 2006). A new approach to the study of adolescent cognitive development. Paper presented as part of a symposium entitled “The MacArthur Juvenile Capacity Study: A New Approach to the Study of Adolescent Cognitive Development,” at the Biennial meetings of the Society for Research on Adolescence, San Francisco.
- Graham, S., & Steinberg, L. (March, 2006). Age differences in future orientation. Paper presented as part of a symposium entitled “The MacArthur Juvenile Capacity Study: A New Approach to the Study of Adolescent Cognitive Development,” at the Biennial meetings of the Society for Research on Adolescence, San Francisco.
- Discussant, symposium entitled “Transactional Relations between Adolescents and Parents: Who Influences Whom?” at the Biennial meetings of the Society for Research on Adolescence, San Francisco, March, 2006.
- Discussant, symposium entitled “Parent-Adolescent Relations and Adolescent Internalizing and Externalizing Behaviors” at the Biennial meetings of the Society for Research on Adolescence, San Francisco, March, 2006.
- Von Bank, H., Brown, B., & Steinberg, L. (March, 2006). Does awareness of peer crowd affiliation affect self-concept and well-being? a longitudinal, symbolic interactionist study. Paper presented as part of a symposium entitled “Peer Groups, Crowds, and the Social Network: The Longitudinal Study of Adolescent Peer Relationships” at the Biennial meetings of the Society for Research on Adolescence, San Francisco.
- Testa, C., & Steinberg, L. (March, 2006). Overweight adolescents’ struggle to lose: outcomes of dieting and exercise. Poster presented at the Biennial meetings of the Society for Research on Adolescence, San Francisco.
- Wilson, K., Lee, J., & Steinberg, L. (March, 2006). Adolescent sexual activity: links between relational context and depression. Poster presented at the Biennial meetings of the Society for Research on Adolescence, San Francisco, March, 2006.
- Wilson, K., Steinberg, L., & Alloy, L. (March, 2006). A test of the hopelessness theory of depression in adolescence. Poster presented at the Biennial meetings of the Society for Research on Adolescence, San Francisco.
- Blatt-Eisengart, I., Drabick, D., & Steinberg, L. (March, 2006). Sex differences in the longitudinal relations among family risk factors and preadolescent externalizing symptoms. Poster presented at the Biennial meetings of the Society for Research on Adolescence, San Francisco.
- Invited colloquium, Department of Psychology, Drexel University, Philadelphia, May 30, 2006.
- Steinberg, L. (August, 2006). How developmental science informs decisions about juvenile justice policy and practice. Paper presented as a part of an invited symposium entitled “Developmental Science: An Interdisciplinary Approach to Understanding Development,” at the annual meeting of the American Psychological Association, New Orleans.

- Testa, C., & Steinberg, L. (August, 2006). Depression and health risk-taking during adolescence. Poster presented at the annual meeting of the American Psychological Association, New Orleans.
- Keyser, J., & Steinberg, L. (August, 2006). Impact of ethnicity, socio-economic status, sexual attraction, and family structure on dieting among adolescent girls. Poster presented at the annual meeting of the American Psychological Association, New Orleans.
- Invited address, Annual meeting of Grantmakers for Children, Youth, and Families, Los Angeles, September 25, 2006.
- Blatt-Eisengart, I. & Steinberg, L. (November, 2006). Sex differences in the longitudinal relations among risk and protective factors and adolescent antisocial behavior. Poster presented at the Association for Cognitive and Behavioral Therapy, Chicago.
- 5th Annual Russell Barkley Lecture, Department of Psychiatry, University of Massachusetts Medical School, Worcester, Massachusetts, November 2, 2006.
- Invited colloquium, Child and Family Research Section, NICHD, November 17, 2006.
- Invited speaker, Woodrow Wilson School of Public and International Affairs and the Center for Research on Child Wellbeing, Princeton University, December 6, 2006.
- Invited presentation, City and Juvenile Judges Association Meeting, New Orleans, January 12, 2007.
- Invited colloquium, Department of Society, Human Development, and Health, Harvard School of Public Health, January 31, 2007.
- Invited presentation, Carrier Clinic, Bridgewater, New Jersey, March 9, 2007.
- Monahan, K., Steinberg, L., & Cauffman, E. (March, 2007). Peer groups and deviant behavior: the role of friendship quality and resistance to peer influence. Paper presented as part of a symposium entitled "Peer Relations of Aggressive and Delinquent Youth" at the Biennial Meetings of the Society for Research in Child Development, Boston.
- Goldweber, A., Cauffman, E., Piquero, A., & Steinberg, L. (March, 2007). Peer relationships and offending: what distinguishes group from solo offenders? Paper presented as part of a symposium entitled "Peer Relations of Aggressive and Delinquent Youth" at the Biennial Meetings of the Society for Research in Child Development, Boston.
- Bubier, J., & Steinberg, L. (March, 2007). Psychological adjustment among adolescents: does having friends outside of school make things better or worse? Poster presented at the Biennial Meetings of the Society for Research in Child Development, Boston.
- Lee, J., & Steinberg, L. (March, 2007). Ethnic identity and attitudes towards the police among African American juvenile offenders. Poster presented at the Biennial Meetings of the Society for Research in Child Development, Boston.
- Monahan, K., & Steinberg, L. (March, 2007). Gainful activity and adolescent offending: The role of employment and school attendance. Paper presented as a part of a symposium entitled "An Evaluation of Biological and Environmental Influences on Trajectories of Externalizing Behaviors Across the Lifespan" at the Biennial Meetings of the Society for Research in Child Development, Boston.
- Hodgdon, H., & Steinberg, L. (March, 2007). The impact of childhood maltreatment on adolescent psychological functioning and the effects of peer support. Poster presented at the Biennial Meetings of the Society for Research in Child Development, Boston.
- Belsky, J., Steinberg, L., Houts, R., Friedman, S., DeHart, G., Cauffman, E., et al., (March, 2007). Rearing antecedents of pubertal timing. Paper presented as a part of a symposium entitled "Gene X Environment Interaction and Differential Susceptibility: Promising

- Avenues for the Study of Child Development” at the Biennial Meetings of the Society for Research in Child Development, Boston.
- Invited speaker, Panel discussion on “Adjudicating Juveniles as Adults,” Philadelphia Prison Society and the Institute for Violence Research and Prevention, Saint Joseph’s University, Philadelphia, April 18, 2007.
- Invited speaker, National Conference of State Legislatures Spring Forum, Washington, April 19, 2007.
- Invited speaker, 2007 Annual Justin Wise Polier Colloquium, Citizen’s Committee for Children, New York, April 20, 2007.
- Robert Wood Johnson Foundation Plenary Address, Joint Meeting on Adolescent Treatment Effectiveness, Washington, April 25, 2007.
- Monahan, K., O’Brien, L., Steinberg, L., & Dmitrieva, J. (May, 2007). Impulsivity, anxiety, and offending: the role of context. Paper presented as a part of a symposium entitled “Interaction Effects of Personality Traits and Context on Problem Behaviors: Early Childhood Through Adolescence” at the annual meeting of the American Psychological Society, Washington.
- Invited speaker, Expert Meeting on Risks And Opportunities In Adolescent Brain Development, Leiden University, The Netherlands, May 29, 2007.
- Invited speaker, Coalition for Juvenile Justice Annual Conference, Washington, June 11, 2007.
- Invited briefing, United States Senate Judiciary Committee, Washington, June 11, 2007.
- Invited speaker, National Governors’ Association Service Policy Advisors’ Retreat, New Orleans, June 28, 2007.
- Sood, E., & Steinberg, L. (August, 2007). The role of potential protective factors for substance use among early- and non-early-maturing girls. Poster presented at the annual meeting of the American Psychological Association, San Francisco.
- Invited presentation, CAB Health and Recovery Services, Salem State College, Salem, Massachusetts, October 16, 2007.
- Invited presentation, Wisconsin Family Impact Seminar, Madison, Wisconsin, October 24, 2007.
- Invited participant, 2007 APA Grand Challenges Summit, Baltimore, October 29-30, 2007.
- Invited presentation, Norfolk Academy, Norfolk, Virginia, November 5, 2007.
- Invited colloquium, Colloquium Series on Health, Law, Ethics, and Society, Columbia Law School, November 7, 2007.
- Invited presentation, Adolescent Over-the-Counter (OTC) Drug Product Use: A Public Workshop, U.S. Food and Drug Administration, Washington, December 6-7, 2007.
- Invited speaker, 30th Annual National Institute on the Teaching of Psychology (NITOP), St. Pete Beach, Florida, January, 2008.
- Dmitrieva, J., Farruggia, S., Cauffman, E., & Steinberg, L. (March, 2008). A VIP in need is a VIP indeed: The role of very important caring adults in adjustment of juvenile offenders. Paper presented as part of a symposium entitled “Important Non-Parental Adults in the Lives of High-Risk Youth” at the biennial meetings of the Society for Research on Adolescence, Chicago.
- Panelist, “SRA from Birth to Maturity: A Roundtable on the First 22 Years.” Invited roundtable discussion at the biennial meetings of the Society for Research on Adolescence, Chicago, March, 2008.
- Monahan, K., Steinberg, L., Mulvey, E., & Cauffman, E. (March, 2008). Trajectories of offending among serious adolescent offenders. Paper presented as part of a symposium

- entitled “Trajectories of Problem Behavior From Adolescence Through Adulthood: Evidence From the U.S., New Zealand, and Puerto Rico” at the biennial meetings of the Society for Research on Adolescence, Chicago.
- Monahan, K., & Steinberg, L. (March, 2008). The impact of residential transition on antisocial behavior during adolescence. Poster presented at the biennial meetings of the Society for Research on Adolescence, Chicago.
- Dmitrieva, J., Steinberg, L., & Cauffman, E. (March, 2008). Arrested development: The effects of incarceration experiences on adolescents’ development of psychosocial maturity. Paper presented as part of a symposium entitled “Contact With the Juvenile Justice System and Adolescent Psychosocial Adjustment” at the biennial meetings of the Society for Research on Adolescence, Chicago.
- Chair, Organizer, and Discussant. “Neural Underpinnings of Psychosocial Maturity: Cross-National Findings From Three Studies.” Symposium presented at the biennial meetings of the Society for Research on Adolescence, Chicago, March, 2008.
- Cauffman, E., Shulman, E., Claus, E., Banich, M., Graham, S., Woolard, J., & Steinberg, L. (March, 2008). Responding to reward versus punishment: How adolescents differ from adults in performance on the Iowa Gambling Task. Paper presented as part of a symposium entitled “Neural Underpinnings of Psychosocial Maturity: Cross-National Findings From Three Studies” at the biennial meetings of the Society for Research on Adolescence, Chicago.
- Rankin, L., & Steinberg, L. (March, 2008). Does parenting have enduring effects on patterns of competency and adjustment among serious juvenile offenders? Poster presented at the biennial meetings of the Society for Research on Adolescence, Chicago.
- Dmitrieva, J., & Steinberg, L. (March, 2008). Adolescent offenders’ sense of self-worth: Exaggerated for leaders but low for followers. Poster presented at the biennial meetings of the Society for Research on Adolescence, Chicago.
- Discussant, “The Brain Bases of Executive Control and Reward Processing in Adolescence,” Symposium presented at the biennial meetings of the Society for Research on Adolescence, Chicago, March, 2008.
- Albert, D., Woolard, J., & Steinberg, L. (March, 2008). The development of strategic planning: Age differences on the Tower of London. Poster presented at the biennial meetings of the Society for Research on Adolescence, Chicago.
- Maslowsky, J., Keating, D., Banich, M., Cauffman, E., Steinberg, L., & Woolard, J. (March, 2008). Reasoned versus reactive risk taking: Unique contributions of impulsivity and risk assessment to adolescent risk behavior. Poster presented at biennial meetings of the Society for Research on Adolescence, Chicago.
- Invited keynote address, Minnesota Association For Children’s Mental Health, Duluth, Minnesota, April 28, 2008.
- Invited workshop, Minnesota Association For Children’s Mental Health, Duluth, Minnesota, April 28, 2008.
- Invited lecture, Newkirk Center for Science and Society and the Center for Psychology and Law, University of California, Irvine, May 28, 2008.
- Invited colloquium, Department of Psychology, UCLA, May 29, 2008.
- Steinberg, L. (June, 2008). Adolescent brain development: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion, and education. Invited plenary address, Jean Piaget Society, Quebec City.

- Steinberg, L. (July, 2008). A social neuroscience perspective on risk-taking in adolescence. Invited presentation, Jacobs Foundation Forum on Youth, Berlin.
- Chassin, L., Dmitrieva, J., Knight, G., Modecki, K., Cauffman, E., Steinberg, L., & Losoya, S. (July, 2008). Does adolescent alcohol and marijuana use suppress the development of psychosocial maturity? Paper presented as a part of a workshop entitled "Alcohol Use and Problems over Time: Latent Growth Curve Models in Alcohol Research," at the annual meeting of the Research Society on Alcoholism, Washington.
- Steinberg, L. (August, 2008). Adolescent development, social policy, and the law: Lessons from a decade in the trenches. Presidential address, Division of Developmental Psychology, American Psychological Association annual meeting, Boston.
- Invited testimony, Pennsylvania Senate Judiciary Committee, Harrisburg, Pennsylvania, September 22, 2008.
- Invited presentation, The World Bank, Washington, November 4, 2008.
- Invited presentation, Vulnerable Populations in the Juvenile Justice System: A Research & Policy Conference, Woodrow Wilson School of Public and International Affairs, Princeton University, November 14, 2008.
- DiSorbo, A., Albert, D., O'Brien, L., Steinberg, L., & Chein, J. (November, 2008). Adolescent risk-taking: Socio-emotional neural system vulnerability to peer influence. Poster presented at the annual meeting of the Society for Neuroscience, Washington.
- Invited keynote presentation, John D. and Catherine T. MacArthur Foundation Models for Change Annual Meeting, Washington, December 9, 2008.
- Invited presentation, Conference on Translating Biobehavioral Models of Adolescent Risk to Prevention Science: From Development to Implementation, University of North Carolina at Greensboro, January 29, 2009.
- Monahan, K., Steinberg, L., & Cauffman, E. (March, 2009). Age differences in peer selection, peer socialization, and offending: The role of resistance to peer influence. Paper presented at the annual meeting of the American Psychology-Law Society, San Antonio.
- Invited colloquium, Sackler Institute for Developmental Psychobiology, Weill Medical College of Cornell University, March 26, 2009.
- Hodgdon, H., & Steinberg, L. (April, 2009). The impact of child maltreatment and emotional regulation on mental health in a sample of juvenile offenders. Paper presented as part of a symposium entitled "Risk Factors for Antisocial Behavior: Gender Differences and Similarities" at the biennial meetings of the Society for Research in Child Development, Denver.
- Chein, J., DiSorbo, A., Albert, D., O'Brien, L., Eagan, D., & Steinberg, L. (April, 2009). Neural markers of peer influence on adolescent risk taking. Paper presented as part of a symposium entitled "Neuroimaging Peer Relations in Adolescence: fMRI Studies of Peer Influence, Peer Evaluation, and Social Exclusion" at the biennial meetings of the Society for Research in Child Development, Denver.
- Chair, organizer, and discussant, "Neuroimaging Peer Relations in Adolescence: fMRI Studies of Peer Influence, Peer Evaluation, and Social Exclusion." Symposium presented at the biennial meetings of the Society for Research in Child Development, Denver, April, 2009.
- Dmitrieva, J., & Steinberg, L. (April, 2009). Services that work: In search of juvenile justice programs that reduce recidivism. Paper presented as part of a symposium entitled "Improving Functioning of Incarcerated Adolescents: Effectiveness of Formal and

- Informal Interventions” at the biennial meetings of the Society for Research in Child Development, Denver.
- Steinberg, L., & Burchinal, M. (April, 2009). What matters most? Differential impact of early child care versus early parenting on adolescent functioning. Paper presented as part of a symposium entitled “Effects of Early Childcare and Parenting in Adolescence: New Results of The NICHD Study of Early Child Care and Youth Development” at the biennial meetings of the Society for Research in Child Development, Denver.
- Vandell, D., Belsky, J., Burchinal, M., & Steinberg, L. (April, 2009). The NICHD Early Child Care Research Network Do Effects of Early Child Care Extend to Age 15 Years? Results from the NICHD Study of Early Child Care. Paper presented as part of a symposium entitled “Effects of Early Childcare and Parenting in Adolescence: New Results of The NICHD Study of Early Child Care and Youth Development” at the biennial meetings of the Society for Research in Child Development, Denver.
- Booth-LaForce, C., Roisman, G., Susman, E., Barnett-Walker, K., Owen, M., Belsky, J., Bradley, R., Houts, R., Steinberg, L., & The NICHD Early Child Care Research Network. Early parenting and child-care antecedents of awakening cortisol levels in adolescence. Paper presented as part of a symposium entitled “Effects of Early Childcare and Parenting in Adolescence: New Results of The NICHD Study of Early Child Care and Youth Development” at the biennial meetings of the Society for Research in Child Development, Denver.
- Belsky, J., Steinberg, L., Houts, R., & Halpern-Felsher, B. (April, 2009). The development of reproductive strategy in females: Harsh maternal control, early menarche, increased sexual risk taking. Paper presented as part of a symposium entitled “The Belsky, Steinberg, and Draper Evolutionary Theory of Socialization: Prospects and Pitfalls” at the biennial meetings of the Society for Research in Child Development, Denver.
- Albert, D., O’Brien, L., DiSorbo, A., Uckert, K., Eagan, D., Chein, J., & Steinberg, L. (April, 2009). Peer influences on risk taking in young adulthood. Poster presented at the biennial meetings of the Society for Research in Child Development, Denver.
- O’Brien, L., & Steinberg, L. (April, 2009). Predicting externalizing behavior across middle childhood: The role of planning. Poster presented at the biennial meetings of the Society for Research in Child Development, Denver.
- Steinberg, L. (April, 2009). A social neuroscience perspective on adolescent risk-taking. Paper presented as part of a symposium entitled “Current Theories of Adolescent Risk Taking” at the biennial meetings of the Society for Research in Child Development, Denver.
- Burchinal, M., McCartney, K., & Steinberg, L. (April, 2009). Examining the black-white achievement gap among low-income children in the NICHD Study of Early Child Care. Paper presented as part of a symposium entitled “Early Achievement Disparities by Race/Ethnicity and Social Class: Strengthening our Understanding of Process” at the biennial meetings of the Society for Research in Child Development, Denver.
- Invited colloquium, Department of Psychology and Center for Drug Abuse Research Translation, University of Kentucky, April 16, 2009.
- Invited speaker, U.S. House of Representatives Education and Labor Committee Briefing on Juvenile Justice Reauthorization, Washington, April 24, 2009.
- Invited speaker, Conference on Learning and the Brain, Learning and the Brain Society, Washington, May 9, 2009.

Invited panelist, New York City Bar Association panel on “How Old is Too Young: Should New York Raise Its Age of Criminal Liability?” New York, May 14, 2009.

Steinberg, L. (August, 2009). Should the science of adolescent brain development inform public policy? Invited award address for Distinguished Contributions to Research in Public Policy, American Psychological Association annual meeting, Toronto.

Invited lecture, Curry School of Education, University of Virginia, September 25, 2009.

Invited presentation, inaugural meeting, Neuroscience and Public Health Initiative, Bloomberg School of Public Health, The Johns Hopkins University, Baltimore, October 2, 2009.

Invited colloquium, Department of Psychology & Neuroscience, Duke University, October 16, 2009.

Cherlin memorial lecture, Department of Psychology, Yale University, October 21, 2009.

Boessen, A., Hipp, J., Cauffman, E., Fagan, J., & Steinberg, L. Youth transition and neighborhood effects: Residential instability among serious adolescent offenders. (November, 2009). Paper presented as a part of a symposium entitled “Linking the Micro to the Macro for Understanding Patterns of Crime,” at the annual meeting of the American Society for Criminology, Philadelphia.

Invited lecture, Harris School of Public Policy Studies, University of Chicago, February 25, 2010.

Maslowsky, J., Buvinger, E., Keating, D., & Steinberg, L. (March, 2010). Cost/benefit analysis mediation of the relationship between sensation seeking and risk behavior. Paper presented as part of a symposium titled “Why Do Risk Behaviors Increase During Adolescence? New Studies on Individual and Developmental Mechanisms” at the biennial meetings of the Society for Research on Adolescence, Philadelphia.

Keating, D., Houts, E., Steinberg, L., & Morrison, F. (March, 2010). Executive function and adolescent risk behavior in a national sample. Paper presented as part of a symposium titled “Why Do Risk Behaviors Increase During Adolescence? New Studies on Individual and Developmental Mechanisms” at the biennial meetings of the Society for Research on Adolescence, Philadelphia.

Discussant, “Why Do Risk Behaviors Increase During Adolescence? New Studies on Individual and Developmental Mechanisms.” Symposium presented at the biennial meetings of the Society for Research on Adolescence, Philadelphia, March, 2010.

Chair, “Using Propensity Score Matching to Control for Selection Effects in Research on Extracurriculars, Employment, and Media Exposure.” Symposium presented at the biennial meetings of the Society for Research on Adolescence, Philadelphia, March, 2010.

Steinberg, L. (March, 2010). Does Exposure to Sexy Media Lead Adolescents to Have Sex? A Reanalysis and a New Conclusion. Paper presented as part of a symposium titled “Using Propensity Score Matching to Control for Selection Effects in Research on Extracurriculars, Employment, and Media Exposure” at the biennial meetings of the Society for Research on Adolescence, Philadelphia, March, 2010.

Hodgdon, H., & Steinberg, L. (March, 2010). The impact of emotional maltreatment on aggression in a sample of serious juvenile offenders. Poster presented at the biennial meetings of the Society for Research on Adolescence, Philadelphia.

O’Brien, L., & Steinberg, L. (March, 2010). Peer influence on delay discounting. Poster presented at the biennial meetings of the Society for Research on Adolescence, Philadelphia.

- Discussant, "Family and Peer Relations in Adolescence: Insights from Developmental Social Neuroscience." Symposium presented at the biennial meetings of the Society for Research on Adolescence, Philadelphia, March, 2010.
- Chung, H., Mulvey, E., & Steinberg, L. (March, 2010). Neighborhood context and depressive symptoms: A focus on serious juvenile offenders. Paper presented as a part of a symposium titled "Neighborhood Influences on Adolescent Mental Health and Behavior: A Dynamic, Process-Oriented Perspective" at the biennial meetings of the Society for Research on Adolescence, Philadelphia, March, 2010.
- Cauffman, E., Boessen, A., Hipp, J., Fagan, J., & Steinberg, L. (March, 2010). The Impact of Residential Instability on Juvenile Offending. Paper presented as a part of a symposium titled "Neighborhood Influences On Adolescent Mental Health And Behavior: A Dynamic, Process-Oriented Perspective" at the biennial meetings of the Society for Research on Adolescence, Philadelphia, March, 2010.
- Albert, D., Steinberg, L., & Banich, M. (March, 2010). Age differences in strategic planning as indexed by the Tower of London. Paper presented as part of a symposium titled "Immature, Impetuous, and Imprisoned: Examining the Relation Between Psychosocial Capacities and Antisocial Tendencies" at the biennial meetings of the Society for Research on Adolescence, Philadelphia.
- Grand rounds, Department of Psychiatry, Temple University, March 17, 2010.
- Invited colloquium, Carolina Consortium on Human Development, Center for Developmental Science, Chapel Hill, March 22, 2010.
- Invited colloquium, Institute for the Study of Child Development, Robert Wood Johnson Medical School, New Brunswick, April 15, 2010.
- Invited speaker, conference on "Creating Capabilities: Sources and Consequences for Law and Social Policy," University of Chicago School of Law, April 23-24, 2010.
- Steinberg, L. Why adolescents make risky decisions. Invited keynote address, 36th Annual School on Addictions and Behavioral Health, Alaska Addictions Professional Association, Anchorage, May 4, 2010.
- Steinberg, L. Understanding adolescent brain development. Invited workshop, 36th Annual School on Addictions and Behavioral Health, Alaska Addictions Professional Association, Anchorage, May 4, 2010.
- Invited presentation, State of Alaska Division of Juvenile Justice, McLaughlin Youth Center, Anchorage, May 4, 2010.
- Albert, D., & Steinberg, L. (May, 2010). Resistance to peer influence moderates pathways from parental monitoring to early adolescent risk behavior. Paper presented as a part of a symposium entitled "Adolescents at Risk: Examining Variables that Predict Sex, Drug Use, and Self-Injury" at the annual meeting of the Association for Psychological Science, Boston.
- Steinberg, L. (May, 2010). Peer influences on adolescent risk-taking: A social neuroscience perspective. Invited presentation, Association for Psychological Science, Boston.
- Invited presentation, "Workshop on Development as Action in Context," German Psychological Association, Dornburg, Germany, June 16-18, 2010
- Invited presentation, Corporate Alliance for Drug Education (CADE), Philadelphia, June 3, 2010.
- Invited lecture, "Workshop on Development as Action in Context," German Psychological Association, Dornburg, Germany, June 16-18, 2010.

Invited participant, National Institute of Child Health and Human Development conference on Cognition, Brain Function, and Learning in Incarcerated Youth. Rockville, MD, July 22-23, 2010.

Distinguished faculty lecture, Center for the Humanities at Temple (CHAT), Temple University, September 23, 2010.

Invited lecture, Center for Neuroscience and Society and Department of Psychology, University of Pennsylvania, Philadelphia, October 7, 2010.

Invited campus-wide lecture, Mercyhurst College, Erie, PA, October 19, 2010.

Invited keynote address, Mercyhurst Criminal Justice Conference: Minor Problems, Major Impact: Juveniles in the Adult System, Erie, PA, October 20, 2010.

Invited plenary, Third Annual El Paso County Mental Health Law Conference: Understanding Developmental and Mental Health Issues in Adolescents and Young Adults Who are in the System, El Paso, TX, October 29, 2010.

Invited presentation, Parents of Students of Phillips Academy, Andover, MA, November 9, 2010.

Invited keynote presentation, Wellness Week, Phillips Andover Academy, Andover, MA, November 10, 2010.

TEACHING

Undergraduate and Graduate Courses Taught

Cornell University (1976-77)

Adolescence and Adulthood

Adolescence in Modern Society

University of California, Irvine (1977-83)

Introduction to Human Behavior

Human Development Over the Life-Cycle Abnormal Behavior

Adolescent Development

Perspectives on Child Rearing

Seminar in Human Development (Graduate)

University of Wisconsin--Madison (1983-88)

Development from Middle Childhood to Late Adulthood

Adolescent Development in Social Context

Adolescence, Family, and Work (Graduate)

Adolescence and the Family (Graduate)

The Family at Mid-Life (Graduate)

Interdisciplinary Perspectives on Adolescent Development (Graduate)

Temple University (1988-)

Introduction to Psychology (Developmental Psychology Unit) Developmental Research Methods

Adolescent Development

Capstone Course in Psychology

Core Course in Developmental Psychology (Graduate) Developmental Research Methods

(Graduate)

Seminar in Socioemotional Development (Graduate) Seminar in Adolescent Development

(Graduate)

Seminar in Developmental Psychopathology (Graduate)

Supervision of Master's Students (Committee Chair/Thesis Advisor)

Raymond Aguilar (1980). "Value Systems, Attitudes, and the Effects of Job Experiences: A Comparison Between Mexican-American and Anglo-American Youngsters." Program in Social Ecology, University of California, Irvine.

Deborah Ogawa (1980). "Environmental Correlates of Classroom Aggression." Program in Social Ecology, University of California, Irvine.

Pamela Adelman (1982). "Achievement Attributions and Sex-Role Stereotypes." Program in Social Ecology, University of California, Irvine.

Christine Jackson (1984). "Measurement of Coronary Prone Behavior in Children." Program in Social Ecology, University of California, Irvine.

Ronald Saletsky (1986). "Adolescent Decision-Making Autonomy and Parent-Adolescent Conflict." Department of Child and Family Studies, University of Wisconsin--Madison.

- Dorian Schattell (1986). "Child Development Knowledge and Punitiveness in College Students." Department of Child and Family Studies, University of Wisconsin--Madison.
- Layli Phillips (1990). "Ethnic Identity and Adjustment in Adolescence." Department of Psychology, The Pennsylvania State University.
- He Len Chung (2000). "Investigating Violent and Nonviolent Criminal Offending Across Gender: Pre-/Perinatal Disturbances and Familial Factors as Predictors." Department of Psychology, Temple University.
- Lori Siegel (2000). "The Utility of a Checklist Versus the PACE/LEDS Interview in the Prediction of Children's Behavioral and Emotional Problems." Department of Psychology, Temple University.
- Jennifer Silk (2000). "The Interaction Between Parenting And Temperament In The Prediction Of Child Psychopathology: A Replication Using The Child's Perspective." Department of Psychology, Temple University.
- Jessica Keyser (2006). "The Impact of Ethnicity, Socioeconomic Status, Sexual Attraction, and Family Structure on Dieting Among Adolescent Girls in the Add Health Study." Department of Psychology, Temple University.
- Hilary Hodgdon (2006). "The Impact of Childhood Sexual Abuse, Physical Abuse, and Neglect on Adolescent Psychological Functioning and the Effects of Supportive Peer Relationships." Department of Psychology, Temple University.
- Cheryl Testa (2006). "Depression And Health Risk-Taking During Adolescence." Department of Psychology, Temple University.

Supervision of Doctoral Students (Committee Chair/Dissertation Advisor)

- Susan (Silverberg) Koerner (1986). "Psychological Well-Being of Parents with Early Adolescent Children." Dept. of Child and Family Studies, University of Wisconsin—Madison.
- Marguerite Clark (1987). "Patterns of Friendship among Middle-Aged Adults." School of Social Sciences, University of California, Irvine.
- David Norton (1988). "Adolescent Autonomy and Family Cohesion During Early Adolescence." Department of Child and Family Studies, University of Wisconsin—Madison.
- Julie Elmen (1988). "Achievement Orientation in Early Adolescence: Social Correlates and Developmental Patterns." Department of Child and Family Studies, University of Wisconsin—Madison.
- Karen Bogenschneider (1990). "Maternal Employment and High School Achievement: Mediators, Moderators, and Developmental Effects." Department of Child and Family Studies, University of Wisconsin — Madison.
- Nina Mounts (1990). "Peer Influence in Adolescence: An Ecological Approach." Department of Child and Family Studies, University of Wisconsin—Madison.
- Lance Weinmann (1991). "Patterns of Change in Middle Adolescent Adjustment: The Role of Relationships with Parents and Peers." Department of Psychology, Temple University. (Winner of the 1991 Georgoudi Dissertation Prize given by the Temple University Department of Psychology.)
- Frances Sessa (1991). "Family Structure, Parenting, and Adolescent Adjustment." Department of Psychology, Temple University.
- Marcy Gringlas (1994). "Parent-Adolescent Interaction in Homes of Depressed Mothers." Department of Psychology, Temple University.

- Aaron Hogue (1994). "Peer Influences on Adolescent Depression." Department of Psychology, Temple University.
- Layli Phillips (1994). "Psychological Adjustment and Identity Development Among Biethnic Adolescents." Department of Psychology, Temple University.
- Anne Fletcher (1994). "Psychosocial Influences on Academic Success of African-American Adolescents." Department of Psychology, Temple University.
- Doris Sasse (1995). "Personality Features, Familial Characteristics, Heterosocial Relations, and Body Fat as Risk Factors for Eating Disorder Symptoms in Early Adolescence: A Causal Modeling Analysis." Department of Psychology, Temple University.
- Audrey Gennes (1996). "Homophily of Disordered Eating in Middle School Peer Groups." Department of Psychology, Temple University.
- Elizabeth Cauffman (1996). "Maturity of Judgment in Adolescence: Psychosocial Factors in Adolescent Decision-Making." Department of Psychology, Temple University.
- Mitchell Greene (1997). "Psychological Adjustment of Hispanic-American Adolescents." Department of Psychology, Temple University.
- Suzanne Fegley (1997). "False Self Presentation in Early Adolescence." Department of Psychology, Temple University.
- Michele Reimer (1997). "The Development of Shame in Early Adolescence." Department of Psychology, Temple University. (Winner of the 1997 Page Award for Research on Personality and Psychopathology and the 1997 Georgoudi Dissertation Prize, both given by the Temple University Department of Psychology.)
- Victoria Green (1997). "Maternal Employment and Adolescent Adjustment." Department of Psychology, Temple University.
- Jennifer Shukat Rosenau (1998). "Familial Antecedents of Academic Difficulties Among Disadvantaged High School Youth." Department of Psychology, Temple University.
- Shelli Avenevoli (1998). "The Continuity of Depression from Childhood to Adolescence." Department of Psychology, Temple University.
- Thomas Hecker (1998). "Uses of Mental Health Evaluations in the Juvenile Justice System." Department of Psychology, Temple University. (Winner of the 1998 Georgoudi Dissertation Prize given by the Temple University Department of Psychology.)
- Amanda Sheffield Morris (2000). "Familial Influences on Emotion Regulation in Early Childhood." Department of Psychology, Temple University. (Winner of the 2000 Georgoudi Dissertation Prize given by the Temple University Department of Psychology.)
- Marjory Roberts Gray (2001). "Development of Romantic Relationships in Adolescence." Department of Psychology, Temple University.
- Michael Fraser (2001). "An Examination of the Specificity of the Link Between Stress and Disorder Using the Adolescent Life Events and Difficulties Schedule." Department of Psychology, Temple University.
- Amy Sugarman (2001). "Peer Influences on Adolescent Girls' Eating Behavior and Attitudes: A Grounded Theory Approach." Department of Psychology, Temple University.
- Jennifer Silk (2002). "Emotion Regulation in the Daily Lives of Adolescents: Links to Adolescent Adjustment." Department of Psychology, Temple University. (Winner of the 2002 Georgoudi Dissertation Prize given by the Temple University Department of Psychology and runner-up for the 2004 Hershel Thornburg Dissertation Award given by the Society for Research on Adolescence.)

- He Len Chung (2004). "Family, Peer, and Neighborhood Influences on Desistance Among Serious Juvenile Offenders." Department of Psychology, Temple University.
- Lori Siegel (2004). "Peer Relationships and Depression in Adolescence." Department of Psychology, Temple University.
- Margo Noel Gardner (2005). "A Typology of Serious Juvenile Offenders." Department of Psychology, Temple University. (Winner of the 2006 Hershel Thornburg Dissertation Award given by the Society for Research on Adolescence.)
- Michelle Little (2005). "Formal Legal Sanctions and Adolescent Social Development: Social Disruption and Iatrogenic Influence within Secure Juvenile Settings." Department of Psychology, Temple University.
- Joanna Lee (2008). "Black Youth And The Boys In Blue: Associations Between Police Treatment, Mental Health And Ethnic Identity In African American Juvenile Offenders." Department of Psychology, Temple University.
- Kathryn Monahan (2008). "The Development Of Social Competence From Early Childhood Through Middle Adolescence: Continuity And Accentuation Of Individual Differences Over Time." Department of Psychology, Temple University. (Winner of the 2010 Dissertation Award from Division 7 of the American Psychological Association.)
- Hilary Hodgdon (2009). "Child Maltreatment and Aggression: The Mediating Role of Moral Disengagement, Emotion Regulation, and Emotional Callousness among Juvenile Offenders." Department of Psychology, Temple University.

Supervision of Postdoctoral Fellows

- Susie Lamborn, Ph.D. (University of Wisconsin, 1986-1989)
- Nancy Darling, Ph.D. (Temple University, 1990-1993)
- Frances Sessa, Ph.D. (Temple University, 1995-1998)
- Joanna Lapkin, Ph.D. (Temple University, 1996-1998)
- Thomas Hecker, Ph.D. (Temple University, 1999-2003)
- Lela Rankin, Ph.D. (Temple University, 2006-2008)
- Julia Dmitrevia, Ph.D. (Temple University 2006-2008)

UNIVERSITY-LEVEL SERVICE

University of California, Irvine
Committee on Courses (1982-83)

University of Wisconsin--Madison (1983-88)
Executive Committee, Institute on Aging (1983-86)
University Senate (1984-86)
Chancellor's Search Committee for Dean of the School of Family Resources and Consumer Sciences (1984-85)
Vice-Chancellor's Committee to Review Child and Family Studies Doctoral Program (1985-86)
Graduate School Research Committee (1986-88)

Temple University (1988-)
Invited Participant, Faculty Senate Forum on the Future of Temple University (1991)
College of Arts and Sciences Committee on Interdisciplinary Activities (1991-92)
Director, Division of Developmental Psychology, Department of Psychology (1991-94) Chair,
Personnel Committee, Department of Psychology (1992-93, 1995-96, 2005-06) Awards
Committee, College of Arts and Sciences (1993-96) (Chair, 1994-95)
Provost's Committee on Strategic Planning for Girard College (1994)
Executive Committee, College of Arts and Sciences (1994-96)
Chair, Graduate Board, Department of Psychology (1994-99, 2001-07)
Great Teachers Award Committee (1995-97)
Graduate Committee, College of Arts and Sciences (1996-97)
Provost's Academic Planning Priorities Committee (1996-97)
University Affirmative Action Committee (1997-99)
Presentation of Camille Cosby for honorary degree at commencement (1997)
Commencement Address, President's Scholars Commencement (1998)
Exceptional Salary Adjustment Award Committee (1999-)
Commencement Marshal (1999-2002)
Research Policies Advisory Committee, College of Liberal Arts (2001)
Symposium Planning Committee, Center for Public Policy (2001)
Search Committee for Vice-President for Research and Dean of the Graduate School
(2001-02)
Internal Research Advisory Committee of the Vice-Provost for Research (2001-04) Co-Chair,
Million Dollar Club (2004-05)
Graduate Committee, College of Liberal Arts (2005-06)
Search Committee for Vice President for Research and Strategic Planning (2007-08)
Budget Priorities Committee, College of Liberal Arts (2008-)
Chair, Provost's Research Review Committee (2009-)
Search Committee for Senior Vice-Provost for Research Administration and Graduate Education
(2009-10)