Licensing Age Issues: Deliberations from a Workshop Devoted to this Topic

Allan F. Williams¹
Anne T. McCartt²
Daniel R. Mayhew³
Barry Watson⁴

¹Allan F Williams LLC
Bethesda, MD

²Insurance Institute for Highway Safety
Arlington VA

³Traffic Injury Research Foundation
Ottawa, Canada

⁴Centre for Accident Research and Road Safety
Queensland, Australia
Abstract

**Objective:** To highlight the issues and discuss the research evidence regarding safety, mobility, and other consequences of different licensing ages.

**Methods:** Information included is based on presentations and discussions at a one-day workshop on licensing age issues, and a review and synthesis of the international literature.

**Results:** The literature indicates that higher licensing ages are associated with safety benefits. There is an associated mobility loss, more likely to be an issue in rural states. Legislative attempts to raise the minimum age for independent driving in the United States, e.g., from 16 to 17, have been resisted, although in some states the age has been raised indirectly through graduated driver licensing (GDL) policies.

**Conclusions:** Jurisdictions can achieve reductions in teenage crashes by raising the licensing age. This can be done directly, or indirectly by strengthening GDL systems, in particular extending the minimum length of the learner period.

**Keywords:** Teens; Licensing age; Graduated driver licensing; Legislation
Introduction

The age at which young people should be eligible to drive independently, and whether this age should be higher or lower, have always been controversial topics. In January 2012, the Transportation Research Board (TRB) Subcommittee on Young Drivers held a workshop at the TRB Annual Meeting in Washington, DC, to discuss licensing age issues. The purpose of the workshop was not to make recommendations or come to a consensus on licensing age questions or graduated driver licensing (GDL) policies in general. Rather, the intention was to highlight the issues and to discuss the research evidence regarding safety, mobility, and other consequences of different licensing ages.

There were 40 participants in the workshop (15 committee members and 25 guests) from Australia, Canada, and the United States, including many of the world’s experts on young driver issues (see Appendix). The group included primarily researchers but also representatives from national highway safety advocacy or policy groups working for stronger highway safety laws. The workshop was mostly oriented toward the United States situation, but the international representation provided valuable perspective. Australia has higher licensing ages than in the United States and has only recently adopted GDL policies more typical of North America, involving night and passenger restrictions. Canadian licensing ages more closely parallel those in the United States, but their GDL programs (along with those in Australia) apply to all novice drivers rather than only the youngest novices as in almost all U.S. states (Mayhew et al, 2005).

Presentations and discussions covered the following topics:

- Meaning and origins of and rationale for minimum licensing ages, international differences, pros and cons of later licensure.
- Relative influence of age and experience on teenage crash rates; influence of licensing age differences on safety and mobility; effects of extending graduated licensing to older teens.
- Parent and teenager views on the optimal license age; factors influencing when teenagers are getting licensed; trends in licensing practices and how these have been affected by GDL.
- How licensing age fits into national and state efforts to strengthen teenage licensing systems; implementation issues in raising licensing ages.
The present article is an effort by the four co-chairs to share highlights of the workshop with participants as well as with the broader research community. It is not an official report of the TRB Subcommittee on Young Drivers, and it does not necessarily represent the views of all the workshop participants, although it takes these into consideration. In preparing this report, PowerPoint presentations summarizing the most current, relevant research were reviewed along with extensive notes on the proceedings provided by volunteers. Information was drawn from these sources to illustrate and illuminate major themes and discussion points that emerged, and to provide some perspective on the licensing age and general GDL issues discussed. Basically, the paper covers what we have learned from research studies about the effects of later or earlier licensing on safety, and then highlights issues related to the implementation of later licensure. It concludes with a list of key research needs that emerged from the workshop and from subsequent discussions by the co-authors in the preparation of this paper. References to studies discussed at the workshop and to studies the co-authors identified as key to the licensing age issue are also provided.

**Licensing Age Definitions, Variations, Rationale**

The introduction of GDL has required an elaboration of licensing age categories. Licensing age commonly (and in this article) refers to the age at which independent driving can be commenced, typically upon passing a driving test. Under GDL, this initial license allows some independent driving but includes restrictions on unsupervised high-risk driving, for example, late at night and/or with young passengers. This license is variously called an initial, intermediate, provisional, restricted, or probationary license. It is followed by a full license (often called full privilege, open, or unrestricted) and preceded by a learner permit, sometimes called a learner license, that allows only practice driving under adult supervision. GDL, by introducing an intermediate period of restricted driving, raises the age of full privilege driving. It can, but does not necessarily impact the minimum permit age or the intermediate entry age.

Licensing ages permitting at least some independent driving have spanned a wide range worldwide, from 14 to 18. The United States is considered to be an early licensing country, with most jurisdictions allowing independent driving at age 16. There is variation within countries, however. Historically, in the 50 U.S. states and the District of Columbia, a handful of states have allowed independent driving at age 14 or 15, most have specified 16, and one state, New Jersey, licenses at age
17. Learner starting ages in the United States range from 14 to 16. In Canada the age of independent driving is generally 17. In Australia the minimum age for independent driving is 17 in all states with the exception of Victoria, where it has historically been 18.

The rationale for originally selecting one age over another is poorly documented. There is evidence that concern for the welfare of the public, protecting them from beginning drivers, and concern for the welfare of adolescents were considered, and that agricultural and rural needs played a role (Mayhew, Fields, & Simpson, 2000). There is no information available on why New Jersey in the United States chose 17, and Victoria in Australia decided on 18. Whatever the case, once set, licensing ages have largely remained fixed over the years.

Safety Effects of Higher Licensing Ages

Given the severity of the teenage crash problem, the question of what the appropriate driving age should be has come up periodically. In North America, the question has generally been whether the age of independent driving should be 16 or 17; in Australia the debate has been 17 versus 18.

There was some uncertainty among workshop participants about the exact safety effects of higher licensing ages, but all the accumulated research is indicative of crash-reduction benefits (Williams 2009). It is likely that much of the benefit results from reduced driving exposure, but there may also be an effect from increased maturation at older ages. Studies that have attempted to sort out the relative contribution of age and experience to crashes have indicated that both are important, experience somewhat more so (McCartt et al., 2009); both age and experience independently influenced crash risk even in studies where travel differences by age or experience could be accounted for. Notably, novice 16-year-olds have higher crash rates than older novice teenage drivers.

These findings suggest that delaying the licensing age would have safety benefits, but opportunity for quantifying the crash effects of higher ages has been hampered by the few jurisdictions that have changed age requirements. Most of the evidence has come from cross-sectional studies, comparing New Jersey with neighboring states, and Victoria with other Australian states. These studies have found positive effects of older ages (Drummond, 1986; Ferguson et al. 1996; Williams, Karpf, & Zador, 1983). Although there is an inexperience penalty, since drivers in the higher-age states have less experience than same-age drivers in neighboring states, the overall net benefits on teen crashes are
strongly positive. This outcome is to be expected. New Jersey allows independent driving one year later than in most other states, so there is a maturation effect, and having a licensing age of 17 virtually eliminates the many crashes that would otherwise occur at age 16, except for the few involving drivers with learner permits or unlicensed (Williams, et al., 2010). Data from the 1983 New Jersey study were used to estimate that 1,375 deaths in the United States would have been avoided in 1985 if all states had a licensing age of 17 (Rice et al., 1989).

In the Drummond study it was estimated that lowering Victoria’s licensing age to 17 would result in an additional 30-50 fatal and 650-700 injury crashes annually; lowering the age to 16 would mean 80-100 more fatal and 1,275-1,325 added injury crashes.

Legislation to increase the licensing age from 16 to 17 (or 18) has been proposed in several of the larger U.S. states, particularly in the years 2006-2007, but has not advanced. However, there are several states that have raised the age of licensure through GDL requirements, without fanfare or public outcry. This has happened by establishing an extended learner stage, one of the core components of GDL, in states where the minimum learner age is high enough that it results in a de facto increase in the licensing age. For example, in a state with a learner permit age of 15 years, 9 months, adding a six-month required holding period raises the age of the restricted license allowing some independent driving to 16 ¼. This has provided another way to study the effects of raising the licensing age. In two states that added a six-month permit holding period to a pre-existing minimum permit age of 16, positive effects were found. In Connecticut, establishing a permit period of six months (four with driver education) was associated with a 22 percent reduction in fatal crash/injury involvements for 16-year-old drivers (Ulmer et al., 2001). In Kentucky, which added a six-month holding period requirement, there was a 33 percent reduction in motor vehicle crashes for 16-year-olds (Agent et al., 1998). In the Canadian province of British Columbia, where an increase in the permit holding period from 6 to 12 months raised the minimum licensing age from 16 years, 3 months to 16 years, 9 months, crash reduction effects were also reported (Wiggins, 2006).

National U.S. studies of state licensing laws have indicated that higher license ages reduce teen crashes and insurance collision claims (McCartt et al., 2010; Masten, 2011; Trempel, 2009). In the McCartt study, delaying licensure by six months, e.g. from 16 to 16 ½, was associated with a 7 percent
lower fatal crash rate of 15-17-year-olds; delaying it for one year was associated with a 13 percent lower rate. In the Masten study, disallowing licensed driving until 16 ½ or 17 was associated with a 23 percent lower fatal crash incidence for 16-year-olds. In the Trempel study, a one-year delay was associated with a 9 percent reduction in collision claims among 16-year-old licensed drivers.

More opportunity to study the effect of higher licensing ages has become available in Australia, where the state of South Australia has increased the learner period from 6 to 12 months, thereby raising the restricted licensing age from 16 ½ to 17, and in New Zealand, which has raised the learner starting age from 15 to 16, thus increasing the restricted licensing age from 15 ½ to 16 ½. However, research to assess the safety effects of these increases in licensing age has not yet been conducted.

Most of the discussions at the workshop focused on the age at which independent driving can begin, but studies have also found some evidence that higher learner permit ages are associated with reduced crash involvement. In the McCartt et al. (2010) study, a one-year delay, from 15 to 16, was associated with a 13 percent lower fatal crash rate among 15-17-year-olds. In the insurance claims study by Trempel (2009), a one-year delay was associated with 4 percent lower claims for 16-year-olds and 3 percent lower claims for 17-year-olds, neither statistically significant. Masten (2011) concluded that delaying the learner starting age until age 16 had the most potential for fatal crash reductions but the evidence from his study was suggestive at best.

Increases in the permit age in states have been rare. California raised the minimum age for a permit from 15 to 15 ½ in 2003. This change did not increase the licensing age, which is 16, although combined with California's required six-month permit holding period, it may have delayed license acquisition.

Although more evidence about licensing age effects would be welcome, the existing evidence is strong that higher licensing ages have important safety benefits. There is, of course a tradeoff with higher licensing ages, in that mobility is affected, but there is a lack of research on the extent to which mobility concerns counter or erode the safety benefits. Ensuing discussions at the workshop focused on attitudes toward license age policies, current licensing practices, and how mobility is or would be affected by higher licensing ages and its implication for policies. Following this, implementation issues in regard to higher licensing ages were considered.
Licensing Age Preferences

Survey data on licensing age preferences were presented based on national online surveys of parents and teenagers (Williams, Braitman, & McCartt, 2011; Williams, 2011), a national telephone survey of parents conducted by the University of Michigan Transportation Research Institute (UMTRI) and state surveys of parents from the University of North Carolina Highway Safety Research Center (HSRC). National surveys of parents of teenagers in the United States have indicated some degree of support for a restricted license age of 17 or older. In the national online survey, 53 percent were in favor of 17 or older, although the national telephone survey of parents conducted by UMTRI indicated that only slightly more than one-third were in favor. The reasons for the discrepant results are unknown. National surveys, whatever the results, do not necessarily reflect views in individual states, and residents of smaller states are minimally represented in national surveys. HSRC results were presented indicating that in Iowa less than 10 percent of parents were in favor of a licensing age of 17; nearly two-thirds favored the current age of 16. In South Dakota (where a restricted license is available at 14 ½, or 14 ¼ with driver education), almost no parents were in favor of 17, but more than 40 percent preferred 16 and 30 percent favored 15.

Favorability ratings were higher for a learner starting age of 16. In the national online survey of parents, 66 percent said they preferred a starting age of 16 or older, as did the majority in the UMTRI national telephone survey. In the national online survey of teenagers, 59 percent of 18-year-olds approved of a learner starting age of 16, although only 31 percent of 15-year-olds, who would be directly affected by this policy, were in favor. HSRC data from North Dakota, South Dakota, and Kansas, all states in which the minimum learner age is 14, indicated minimal support for age 16, although the majority in North Dakota and Kansas, and about 40 percent in South Dakota, favored 15 or older.

The state survey data presented for parental licensing age preferences for learner and restricted licensing ages in the Dakotas, Iowa, and Kansas were accompanied by the opinion of some workshop participants that increasing the driving age was “politically toxic.” That may be the case for some rural states that license early, but not necessarily for all states, and Kentucky, considered a rural state, has long had a learner starting age of 16. States in the United States have the authority to establish their own licensing policies, but the federal government can have an influence by instituting monetary rewards and
penalties for having or not having specified policies. The backdrop for remarks about licensing age requirements in rural states was the STANDUP Act (Safe Teen Novice Driver Uniform Protection Act), which has been introduced and re-introduced in Congress, calling for incentives for states to enact minimum federal criteria for graduated systems and penalties for noncompliance. The criteria initially included a minimum learner permit starting age of 16 among other requirements. In the current version of the proposed legislation, penalties have been removed and it includes incentives only for meeting the criteria. In addition, there is no longer an age 16 requirement for a learner permit.

Workshop participants recognized that not all states would be receptive to increased licensing ages. Surveys have generally found that state residents prefer the requirements they have. Early licensing states give preference to the ages that have been law in their state. Similarly, a survey of parents of graduating seniors in New Jersey found that 92 percent endorsed a licensing age of 17 or older (Williams et al., 1998). In four 16-year-old licensing states included in this study, 56 percent of Florida parents and 61 percent of Delaware parents preferred 16, but 60 percent in Connecticut and 61 percent in upstate New York endorsed a minimum licensing age of 17.

**Mobility Issues**

Various issues in regard to teen mobility and higher licensing ages were discussed, with special emphasis on rural areas. These were based on parent surveys by UMTRI and comments by workshop participants. Issues included access to public transportation in some areas, and some of the nuisances involved (not pleasant or reliable, takes longer); difficulty in getting together with friends, going to social events; inability to ride a bike in winter months; safety issues in regard to biking, walking at night, traveling in bad neighborhoods in order to get to and from public transportation; difficulty in getting or keeping a job without a car; ability to participate in sports; and, in general, being an imposition to parents and others who would have to provide transportation. Earlier research had shown that New Jersey 16-year-olds were as able as 16-year-olds in states licensing at 16 to hold jobs and to participate in sports and social activities (Preusser, Williams, & Lund, 1985; Preusser et al., 2000). However, in rural and remote areas, where distances are greater, mobility problems are more likely to be acute without a license. Rural fatal crash rates are higher than in urban areas, and states basically have to decide how they want to strike the balance between safety and mobility. Although these rural issues are important and need to be
addressed, they should be balanced against the safety benefits that would result from a higher licensing age.

It was suggested that there are alternatives to higher licensing policies that should be pursued to improve teen driving safety, such as improving driver education, improving testing, and ensuring essential experience and practice driving. These are worthwhile goals that can be pursued and evaluated, although there is no reason to believe that they would be so beneficial as to equal the benefits of later licensure. It was also suggested that higher licensing ages could have downsides, for example by encouraging unlicensed driving, and that if licensing ages were raised, there should be a mechanism for exceptions for those with special driving needs, but not so broad as to dilute the safety effects of later licensure.

**Current Licensing Practices**

A topic that received considerable discussion involved the age at which teenagers choose to become licensed currently and what implications this might have for licensing age policies. Past research in three states (Minnesota, North Carolina, Rhode Island) indicated that although many parents think licensing ages should be higher, their teens got licensed at younger ages (McCartt, Hellinga, & Haire, 2007). The main reason given by parents for allowing early licensure is that this is what their teen wanted.

Workshop participants were reminded that in most states, the licensing age is in fact 18, and parents have to provide permission for their teen to obtain earlier licensure. In reality, it is evident that we know little about the factors that influence the decision making of parents and teens about license timing. Presumably the factors involved include interest on the part of the teen and on the part of the parent, what friends are doing, family economics, parenting styles, parents’ assessment of their teen’s readiness to start driving and to take the driving test, access to public transportation, time availability on the part of parents, assessment of GDL requirements, and other considerations. It was suggested that in considering the broad range of personal and social factors influencing decision making in this area, there may be value in adopting theory-based approaches in guiding research on this topic, such as the theory of planned behavior (Ajzen, 1991) or social learning theory (Scott-Parker, Watson, & King, 2009).
Trends in licensing rates are not really known. It is widely believed that teenagers in the United States and other countries are less interested in licensing now than they used to be, and that many are delaying licensure. This has become a theme in the popular press, usually including the notion that teens can connect with each other these days through electronic means and that having a license and a car is no longer so important. Unfortunately, the national U.S. data file for licensing counts is known to be inaccurate for counting the numbers of licensed teen drivers, or tracking them over time, limiting our ability to monitor licensing trends and address these issues (Ferguson, Teoh, & McCartt, 2007; TRB Subcommittee on Young Drivers, 2009). The national file relies on state-reported numbers which in some cases have been found to vary greatly from year to year for single-age categories, inconsistent with population changes. Workshop participants from Iowa and North Carolina said that licensing rates had not changed much in their states in recent years; one participant said there had been decreases in California. The national online survey of teenagers based on data collected in November 2010 indicated that sizable numbers of teens had not started the licensing process yet: 33 percent of 16-year-olds, 24 percent of 17-year-olds, and 22 percent of 18-year-olds. Whether this represents a change from prior years is not known, but it does underscore that some teens decide to license at an older age.

Two factors are speculated to have driven down licensing rates in the United States. One is the economic downturn of 2008-2009, which may have affected both licensure and amount of driving, given the costs associated with obtaining a license, including the costs of driver education and license fees, as well as vehicle operating expenses. The second speculation is that some drivers may be waiting to start until age 18 to avoid GDL requirements, which could be the case in the United States but not Canada, Australia, and New Zealand because GDL programs are time-based and not age-based in these countries – i.e., individuals cannot wait until they are older to avoid GDL requirements. Survey data from UMTRI indicate that some teenagers do say they waited until 18 to avoid GDL requirements. Most of the teens surveyed nationally in 2010 who had not started said they were interested in getting licensed as soon as possible, and that cost issues were the primary reasons for the delay.

If teens in the United States are waiting until 18 or later to get licensed, for whatever reasons, this is concerning, since in almost all states they will be at-risk inexperienced drivers not subject to GDL requirements. In the United States, only New Jersey subjects 18-20-year-olds to full GDL requirements.
including the learner phase and night and passenger restrictions. The obvious solution is to extend GDL requirements to older novices, as is the case in the other GDL countries. Quantifying the delay factor and the reasons for it may provide the necessary background information for consideration of this policy. Although applying GDL to 18-year-old novices is likely to be beneficial, it is plausible that starting at age 18 without GDL rather than at 15 or 16 with GDL has greater safety benefits.

Data were presented from a few Canadian provinces indicating that when GDL was introduced, teens got into the licensing system quicker than before GDL was in force, presumably because the new system was time based and they wanted to get through it as quickly as possible (Mayhew et al., 2001; Wiggins 2006).

**Full License Issues and Older Drivers in GDL Systems**

In the United States, a full license is generally available between 16 ½ and 18; in Canada it is generally 18 or 19. In Australia entry ages are higher plus some of the restricted periods are longer, so that full licensing ages range between 18 ½ and 22. Presumably, the longer a person is held in the system, the more effective it is but there is a need for research to address this issue as little information is presently available.

Some information was presented from Australia comparing teens who obtained learner permits at ages 16-17 with those obtaining permits at ages 18-19 (Scott-Parker et al., 2012). This research showed that there were demographic differences between the two groups. The 16-17-year-olds were mainly living at home and studying full time; those in the older group were more likely to be living on their own and working. The older group also spent more time in the learner stage, had more difficulty finding practice opportunities, and said they did more unsupervised driving. The experience of novices of all ages, including those in their twenties and thirties, and how they accommodate to GDL requirements when they are subject to them, is of interest, but not much is presently known.

**State and National Efforts to Strengthen GDL and How Licensing Age Fits In**

Several workshop participants have worked diligently to get states to upgrade young driver licensing systems, and they provided some perspective on current efforts. All states now have some form of GDL, and most have upgraded their systems one or more times over the years, adding or
strengthening learner period requirements (permit age, length, supervised hours), and night and passenger restrictions. The bulk of these changes took place in 2005-2010 (Insurance Institute for Highway Safety, 2012). However, although many upgrades that would further improve GDL systems are possible, additions since 2010 have been few in number.

State legislatures are reportedly now balking at adding GDL requirements, considering it as “too much government.” If this is an accurate reading of a trend and it continues, GDL changes will be increasingly difficult to achieve. The STANDUP Act presently exists in modified version (no learner age requirements; incentives only), with uncertain prospects. The current Senate version does have a requirement that the restricted license age needs to be at least 16, but there is no penalty associated with not meeting that criterion.

Licensing ages, both learner and restricted, have proved difficult to change in a direct manner, whereas GDL policies have been extremely popular and extensively applied. As Drummond (1989) noted, “licensing age is often viewed as a given in any jurisdiction rather than a variable that can be manipulated to achieve optimal safety outcomes.” Efforts to increase the restricted licensing age from 16 to 17 have repeatedly failed, although this represents a straightforward route to improving safety, and possibly will happen in the future in some states. However, there is not overwhelming public support for this action on a national basis. Many states are particularly resistant, not only in legislatures but in culture and public attitudes. One strategy is simply to accept existing learner and restricted licensing ages, and attempt to construct comprehensive GDL systems around them, e.g. strong night and passenger restrictions and extensive supervised hours requirements.

In terms of the implementation of higher licensing ages, building up GDL systems is the likely way forward. Higher licensing ages can result from increasing the permit age, but the more likely route is through extending the duration of the learner stage. As of May 2012, learners younger than 18 in all but four states must hold a permit a minimum of six months. Workshop participants were in general agreement that extending the learner stage to 12 months would be beneficial and politically viable. It has broad public support, with 60 percent of respondents in the online national survey in favor of it, and in the small rural states such as Iowa and North Dakota, where there was minimal support for higher learner or restricted licensing ages, the majority approved of a 12-month learner period. This policy would provide
more time for low-risk supervised practice driving. In the Masten (2011) study, learner permit lengths of 9-12 months were associated with 26 percent lower fatal crash incidence for 16-year-olds, and 17 percent for 17-year-olds. In the McCartt et al. (2010) study, learner period length did not have an independent effect on fatal crash rates. However, although not addressing licensing ages directly, shifting to a 12-month period and maintaining the current minimum permit age would raise the restricted licensing age in more than 20 states.

It was also pointed out that a 12-month learner stage would provide the opportunity for practice driving to take place in all seasons of the year, which is important in states that have significant seasonal variation in driving conditions. Presently, 8 U.S. states have a 12-month learner holding period, indicating its political feasibility, but this is a far lower application rate for this policy than in Australia and Canada. In Australia, five of the eight jurisdictions have a 12-month learner requirement, as do eight of the 13 Canadian jurisdictions.

In discussing this approach, it was noted that some states, in attempting to ensure more supervised practice time, have lowered the permit age. For example, in Missouri, when a six-month learner stage was introduced in 2001, the minimum permit age was reduced from 15 ½ to 15. In the McCartt et al. (2010) younger permit ages were associated with higher fatal crash rates among 15-17-year-olds. In the state of Queensland, the learner period was increased from 6 to 12 months, but at the same time the minimum learner age was reduced from 16 ½ to 16, so that the provisional licensing age remained 17 rather than increasing to 17 ½. Research presented at the workshop indicated that this resulted in no change in the average age at which provisional licenses were obtained (Scott-Parker et al., 2011). Jurisdictions considering increasing the learner period from 6 to 12 months will need to consider the greater crash reduction effects that will result from maintaining the existing permit age, since this would in many cases increase the age at which novice drivers can commence independent driving.

Research Needs

The time constraints of a one-day meeting precluded a full discussion of research needed to provide a better understanding of licensing age issues. There is good evidence for the safety benefits of higher licensing ages, but there are some tradeoff and implementation issues that could benefit from
further research and consideration. The following is a list of topics, prompted by the day’s presentations and discussions, where information would be useful in providing guidance.

- Whether teens are presently delaying license acquisition and if so why.
- Better understanding of the factors influencing how parents and teens decide on licensure timing. Views of teens and parents about the higher de facto licensing ages in states in which the age has been raised through learner period policies.
- Parental and public views of 12-month learner periods.
- Information on mobility issues in states that have raised the licensing age beyond 16, including impacts on both young drivers and their parents.
- Licensing-related attitudes and practices, and mobility needs in rural vs. urban states.
- The effect of individual exemptions from GDL rules for those with special travel needs (what is the nature of these exemptions; how frequently are they taken up; do they undermine the GDL message that time and experience are necessary precursors to full privilege driving; do they complicate enforcement, etc.)
- The effects of extending GDL to older novices (e.g., 18-20-year-olds in New Jersey) on mobility, compliance, crashes, and public acceptance.
- The effects of different age requirements for unrestricted licensing.
- The effects of GDL enhancements and raised licensing ages on non-compliance and unlicensed driving.

Acknowledgment

This work was supported by the Insurance Institute for Highway Safety. The opinions, findings, and conclusions expressed in this publication are those of the authors and do not necessarily reflect the views of the Insurance Institute for Highway Safety.
References


Drummond AE. Driver licensing age and accident involvement rates of young drivers. Victoria, Australia: Road Traffic Authority; 1986.


TRB Subcommittee on Young Drivers. Future directions for research on motor vehicle crashes and injuries involving teenage drivers. Transportation Research Circular. Washington DC: Transportation Research Board; 2009.


## Appendix A

### Workshop Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibrahim Alsghan</td>
<td>King Fahd University of Petroleum and Minerals</td>
</tr>
<tr>
<td>Ray Bingham*</td>
<td>University of Michigan Transportation Research Institute</td>
</tr>
<tr>
<td>Lisa Buckley</td>
<td>Centre for Accident Research and Road Safety, Queensland</td>
</tr>
<tr>
<td>Cher Carney</td>
<td>University of Iowa</td>
</tr>
<tr>
<td>Neil Chaudhary</td>
<td>Preusser Research Group</td>
</tr>
<tr>
<td>Richard Compton*</td>
<td>National Highway Traffic Safety Administration</td>
</tr>
<tr>
<td>Jonathon Ehsani</td>
<td>University of Michigan</td>
</tr>
<tr>
<td>Michele Fields</td>
<td>Insurance Institute for Highway Safety</td>
</tr>
<tr>
<td>Pam Fischer</td>
<td>Pam Fischer Consulting</td>
</tr>
<tr>
<td>Robert Foss*</td>
<td>University of North Carolina Highway Safety Research Center</td>
</tr>
<tr>
<td>Jacqueline Gillan</td>
<td>Advocates for Highway and Auto Safety</td>
</tr>
<tr>
<td>Vanessa Goetz</td>
<td>Iowa Department of Transportation</td>
</tr>
<tr>
<td>Barbara Harsha</td>
<td>Governors Highway Safety Association</td>
</tr>
<tr>
<td>Damian Hawkins</td>
<td>Globe Trust Inc.</td>
</tr>
<tr>
<td>Mary Hinch</td>
<td>National Highway Traffic Safety Administration</td>
</tr>
<tr>
<td>Charlie Klauer*</td>
<td>Virginia Tech Transportation Institute</td>
</tr>
<tr>
<td>Brian Lee</td>
<td>University of Vermont</td>
</tr>
<tr>
<td>Scott Masten*</td>
<td>California Department of Motor Vehicles</td>
</tr>
<tr>
<td>Dan Mayhew*</td>
<td>Traffic Injury Research Foundation</td>
</tr>
<tr>
<td>Anne McCartt*</td>
<td>Insurance Institute for Highway Safety</td>
</tr>
<tr>
<td>Catherine McDonald</td>
<td>University of Pennsylvania</td>
</tr>
<tr>
<td>Dan McGehee*</td>
<td>University of Iowa</td>
</tr>
<tr>
<td>John Nepomuceno</td>
<td>State Farm Insurance</td>
</tr>
<tr>
<td>Tyler Nolan</td>
<td>The Driver Training Group</td>
</tr>
<tr>
<td>Marie-Claude Ouimet*</td>
<td>Sherbrooke University, Quebec</td>
</tr>
<tr>
<td>Anuj Pradhan</td>
<td>National Institutes of Health</td>
</tr>
<tr>
<td>Erin Sauber-Schatz</td>
<td>Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>Tina Sayer</td>
<td>Toyota Technical Center</td>
</tr>
<tr>
<td>Bridie Scott-Parker</td>
<td>Centre for Accident Research and Road Safety, Queensland</td>
</tr>
<tr>
<td>Teresa Senserrick*</td>
<td>University of New South Wales</td>
</tr>
<tr>
<td>Jean Shope*</td>
<td>University of Michigan Transportation Research Institute</td>
</tr>
<tr>
<td>Ruth Shults*</td>
<td>Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>Bruce Simons-Morton*</td>
<td>National Institute of Child Health and Human Development</td>
</tr>
<tr>
<td>Eric Teoh</td>
<td>Insurance Institute for Highway Safety</td>
</tr>
<tr>
<td>John Ulczycki</td>
<td>National Safety Council</td>
</tr>
<tr>
<td>Barry Watson*</td>
<td>Centre for Accident Research and Road Safety, Queensland</td>
</tr>
<tr>
<td>Rusty Weiss</td>
<td>DriveCam Video Systems</td>
</tr>
<tr>
<td>Allan Williams*</td>
<td>Allan F Williams LLC</td>
</tr>
<tr>
<td>Flaura Winston</td>
<td>Childrens Hospital of Philadelphia</td>
</tr>
<tr>
<td>Maria Wojtczak</td>
<td>DrivingMBA LLC</td>
</tr>
</tbody>
</table>

*Committee member