

***Brain and Behavior Research and Genetics:  
Understanding Connections  
and Implications for Education***

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- I. Some opening comments.
  - A. There are links between what we learn about how the brain works, but we need to be thoughtful when we make connections to our understanding of learning and implications for education...
  - B. As superintendents work to create structures to enable children to learn, to become productive citizens, economically successful, and make contributions to society.
  - C. You deal with a very diverse student population.
    1. School newspapers seem to focus on the accomplishments of the best students.
    2. But superintendents also think about students who are less successful.
  - D. As we think about that sort of variability, what we are learning about the brain – which is the organ that governs behavior.
    1. Western philosophy didn't always agree with this – didn't always agree that the brain was the organ that governed behavior.
      - a. Plato thought different organs governed different forms of behavior – heart governing courage, stomach the appetites, etc.
      - b. There were philosophers who thought the mind was located in the ventricles in the head.
        - 1) There is also the cerebral spinal fluid that circulates in our heads that carry important nutrients for our central nervous system.
      - c. Decartes thought it couldn't be the ventricles – had to be in the tissue.
      - d. But he had a problem. As a Catholic he believed in the unity of the mind and the soul, but the brain has two parts, that are connected only via fibers.
        - 1) He kept looking and found one part of the brain that is not divided into two – the pineal gland. He said because it was unity – it was the seat of the soul.
    2. Wasn't really until 1850 when the real science of the brain developed.
      - a. Started with Paul Broca, a French Neurosurgeon.
      - b. Phrenologists tried to look at the shape of the skull to hypothesize the workings of the brain.
        - 1) While we discount them, they were trying to do things scientifically.
        - 2) Some of their observations were close.

- a) For example: they thought people with high brows were more intellectual (a thought which remains today) and in fact the frontal part of the brain does have much to do with reasoning, etc.
  - 3) But some of their claims were outrageous.
    - a) They thought the right parietal area was devoted to wine appreciation.
    - b) Thought the lowest part of the brain was devoted to sex while the top of the brain devoted to religion.
- 3. Broca thought they might have some points, and argued that we should look at specific functions and where they are localized. And said we should look at the brain, not the shape of the skull.
  - a. Let's look at language – as one of the most central activities of humans.
  - b. He began to look for a patient who had lost his ability to talk. Found Monsieur LeLong, a successful person who began to lose his language function. By the time he had only seven words:
    - 1) Yes,
    - 2) No,
    - 3) One,
    - 4) Two,
    - 5) Three,
    - 6) Always, and
    - 7) His name (but pronounced three and his name incorrectly).
  - c. Broca showed that LeLong used these words correctly and to communicate beyond the seven words.
  - d. This showed LeLong was not demented.
  - e. Broca then waited for Mr. LeLong to die and then got the brain and found a huge lesion on the third frontal convolution. Broca hypothesized that was the location of speech output.
  - f. He published a paper in 1863 that started the field of behavioral neuroscience.
  - g. The field followed Broca's methods – find a patient with loss of ability, wait for that person to die and then study the brain.
- 4. Initially, thought the right side of the brain was a “spare” in case the left was damaged, but then found patients with spatial reasoning deficits and found lesions on the right side of the brain.

E. Now we have capacity for neuro-imaging so we can study living brains.

F. What does all of this have to do with education?

- 1. It is amazing both that all brains are so similar – all the same parts, yet no two brains are the same.
- 2. One question: does that variability explain some of the variability in human behavior.
- 3. The question is how to study normal brains and normal behavior.
  - a. Psychologists came to help neurologists.
  - b. Psychologists developed ways to measure the behavior in which neurologists are interested. E.g., by developing tests of normal verbal output or normal verbal comprehension.
    - 1) These are batteries of different abilities that have been linked to different lesions. You can give tests to patients and determine whether they are normal or not.

## II. Understanding the brain and behavior.

### A. Three corners of a puzzle linking behavior to neural substrates:

1. Behavior: cognition, emotion, sensory (olfaction)
2. Anatomy: MRI, DTI
3. Physiology: which is how the anatomy works. We measure this functional neuroimaging (PET, fMRI)
  - a. With imaging, you don't have wait to for the person to die to study their brain and lesions....
4. We once thought that the direction went only one way:
  - a. Anatomy governed physiology influences behavior. If you remove a part of the brain, the behavior will stop.
5. We are learning that the direction runs the other way: that behavior impacts physiology and impacts anatomy.
  - a. Experiments: take a mouse and hang it by its tails – which it doesn't like. If you do this for a short period of time, the hippocampus will shrink.
  - b. We find that stress in humans will shrink different parts of their brains.
  - c. This becomes scary when we think that we can change the physiology and anatomy of the brain by the programs we use. This raises interesting ethical questions.
  - d. Some of the programs have strong scientific base while others have a much weaker foundation.

### B. Brain development from crib to grave.

1. This helps us understand both the normal development of the brain and its behavioral implications.
2. Brain development is a dynamic process, it is constantly changing. Faster or more slowly in different periods.
3. And we can study differences and similarities in genders across time and ages.
4. The period between roughly 1<sup>st</sup> grade and roughly end of high school is period of most turmoil in terms of changes in the brain.

### C. The larger context: Genetics

1. We know that physical characteristics are genetic characteristics.
2. We are learning more and more how genetics influences our intellectual life, and how the brain works.
  - a. There are striking effects of genetics on intellectual abilities (including temperament, "IQ," etc.) across individuals and within families
3. So, we are beginning to study families – related people – to understand genetic effects.

### D. Implications for education

1. Teaching – does our understanding of normal brain development suggest changing pedagogies at different stages of development?
  - a. There are some issues of cost of implementing the research in the classroom.
  - b. For example, FastForward is based on some good research but it is very expensive.
  - c. One way around this is to partner with scientists who are developing programs on good scientific foundation.
  - d. For example, neuroscience advances best when they partner with schools in a variety of ways.
2. Detecting neurodevelopmental disorders.

3. Adjusting for neurodevelopmental dysfunction.
4. Educating for citizenship by research participation.
  - a. It is interesting to note that one can argue that the structure of the brain is a microcosm of the structure of society – which should not surprise us given that society is developed by people with brains....
5. Partnership in science education.
  - a. Indeed, science works through collaboration, because it has become so complex that it is beyond the expertise and talents of only one scientist.
  - b. So we need to find ways to involve students in doing science (not just studying it) so they understand its collaborative nature.

### III. Behavior: Domains of cognition

- A. There are different batteries of neuropsychological tests – typically what children get when they go for a neuropsychological exam (for ADHD, etc.).
- B. They are called neuropsychological because they are aimed at specific brain systems.
  1. ABF (Abstraction and Mental Flexibility): Lost with frontal lobe lesions.
  2. ATT (Attention): Frontal lobe and parietal lobes.
  3. VMEM (Verbal Memory)
  4. SMEM (Spatial Memory)
  5. LAN (Language)
  6. SPA (Spatial Functions)
  7. SEN (Sensory-perceptual)
  8. MOT (Motor Speed)
- C. When we give this battery to healthy men and women, ages 18-45 (those who don't qualify for major psychological disorder, no drugs), we found:
  1. Women have slightly higher scores than men in abstraction, attention and verbal memory, with significance only for verbal memory.
  2. Men score slightly higher in, spatial functions, sensory-perceptual and motor, with significance for spatial functions and motor speed.
  3. Hypothesis to explain this: although we are highly civilized, our brains were designed to survive in a hunter-gatherer society and gender differences necessary for that are still with us.
- D. There are also correlations with age. In general, our abilities go down, with men losing those abilities more than women. This is true until menopause.
- E. Some of the differences between men and women are not present between 3 and 18, but emerge at different developmental events (e.g., menarche).
- F. What we see from brain development:
  1. Boys and girls develop at different rates.
  2. There are biologically based individual differences.
    - a. So while we want people to focus on their strengths, they also need to develop facility in areas of weaknesses.
    - b. The question is how much do you need to do that? Argument is that we need to help people develop their strengths while insuring competence in areas of weaknesses.
- G. Discussion: How does environment influence this?
  1. As a brain researcher, we see differences in brain development and a range of other factors between mice raised in rich vs. mice raised in poor environments.

2. In this way, the environment influences neurodevelopmental patterns. But there is still an upper and lower range and one question is how to help children reach the upper levels of that range.
- H. Discussion: How does NCLB fit here? Does the science indicate NCLB is unrealistic?
1. Like any slogan, it has some accuracies and some overstatements.
  2. Given the impact of environment and genetics on the neurodevelopment of people, NCLB may be unrealistic – or it can suggest that all children need to be brought to specific minimal levels which will then be the cut-off scores for NCLB.
  3. If those cut-off points are really minimal for functioning, then NCLB may make sense.
  4. The problem is that those cut-off points are different in different states and there is not definite connection between those cut-off points and what's required.
- I. The battery of neuropsychological tests requires a great deal of time and testing expertise.
- IV. As we develop methods for brain imaging, we also develop the ability to measure very specific brain systems.
- A. Have developed a set of tests that require minimal instruction and that they can test while going through neuro-imaging.
  - B. They are based on demonstrations that behavior X activates part A in the brain.
  - C. The tests are narrowly defined and targeted.
  - D. They are all computerized and web-based.
  - E. This means we have a bunch of tests you can take on a computer, which we know measure different brain activities.
  - F. Because these tests can be done on the computer and over the web, we are able to establish international collaborations with 50 universities.
    1. Study families of schizophrenics and find the relatives of people with schizophrenics have the same profiles as schizophrenics with respect to speed, but are more accurate.
      - a. This is true in many areas:
        - 1) Memory
        - 2) Detecting fear on the face of another
        - 3) Detecting smells
      - b. These are areas which we can use to detect youth prone to schizophrenia.
  - G. We can see that men and women have roughly the same amount of great matter (brain cells), but different amounts of white cells.
    1. Men have more white cells which aids in their ability to transfer what they know across areas.
    2. Women have a high ratio of grey cells.
- V. A proposal:
- A. All of these studies can be done by school students.
    1. It takes only 30 minutes to teach students to administer these computerized tests.
  - B. We can also use MRIs to actually watch the brain working – and the cost for this has gone way down.
  - C. We need a lot of behavioral information that we don't have, about how they develop over the years.
  - D. We also need data on families – because that is the formative unit.

- E. Here's the opportunity:
1. Students collect and analyze data.
    - a. on themselves
    - b. on their peers and
    - c. on their families, and do it in teams (which means they learn how to do science and do it in teams)
  2. Scientists are scrambling to get data on large samples for genetic studies.
  3. Some of the data will be collected via computer/web program, and some via interviews.
  4. Students will then be taught how to analyze the data.
  5. Appropriate for students of average intelligence, can get reference from a teacher, can work independently and can work on this outside of classroom hours.
    - a. In Upper Moreland, "average students" participated with real success.
    - b. In Upper Moreland, it worked best when there was a teacher who had some interest in the area studied.
  6. It would involve:
    - a. Student training –science (data collection and analysis) and ethics of science
    - b. Student work outside of the classroom.



## ***High School of the Future***

*Mary Cullinane, Microsoft Project Manager*

*Al Bichner, Assistant Chief Academic Officer, School District of Philadelphia*

*December 6, 2006*

- I. Al Bichner – Assistant Chief Academic Officer, School District of Philadelphia
  - A. Al introduced the program noting that the High School of the Future is the 1<sup>st</sup> new high school in Philadelphia since the 60's.
  - B. He then introduced Mary Culinane, Microsoft's project manager for the High School of the Future, and Roz Chivis, Executive Director Secondary Education and Sherill E. Gilbert, Western Regional Superintendent, 28 schools, about 22,000 students.
  - C. High School of the Future is NOT a charter or magnet, but draws 75% of its students from the catchment area and the rest from across the students.
    1. All accepted by lottery and no admission criteria.
    2. Currently 170 9<sup>th</sup> graders, and will add a grade each year.
    3. Paperless school – all work on computer
  - D. Roz introduced Mary Cullinane as "Miss High School of the Future" – the energy and mainstay of this entire project.
  
- II. Mary Cullinane, Microsoft's project manager for the High School of the Future:
  - A. Working on the project since 2003 – a long time to be assigned to any project.
  - B. Past experience as a teacher, director of technology at a regional high school in NJ.
  - C. Our relationship with the SDP was a new kind of relationship for Microsoft.
  - D. Started with a meeting with Paul Vallas, from Chicago where he had built several new schools, but no new schools since 1960s.
  - E. Microsoft was planning to build a school of the future on their campus in Redmond, WA and Paul talked them into building it for real in Philadelphia.
  - F. Started by asking "Why are you here? Why are you investing so much of your time? What are you hoping to take back?"
    1. Just looking at the world students are moving into and speed of change, there hasn't been much change in schools. We know we need to shift. And that shift, particularly for high schools is difficult.
    2. Energizing our vision for the future. And how to get the buy-in from the board and the community to support what we need to do. And we know we need public-private partnership to make that happen (fiscal).
    3. I see that kids are hooked/joined to technology in their lives and how do we move more and more to the needs of the kids.

4. How to overcome the isolation of special education, minority students in a high achieving school district. The very location of this school suggests that isolation is not okay. That gives me hope.
  - a. Mary suggested we want this school to be the new norm.
5. Intellectual stimulation with peers.

### III. Rules for engagement:

- A. What we are doing is *not a prescription*.
  1. The answers are not the focus, but *process and questions are the key*. This is about raising the level of the conversation about education.
  2. We are on a journey.
- B. Value the opportunity to learn from different folks.
  1. Educators tend to find reasons *not* to learn from other districts. They tend to focus on the differences and the lack of applicability from one setting to another, *rather* than looking at what they can learn from success in that setting.
  2. Rather Microsoft values diversity of thought, experience and approach. So we went to places that were very different from where we are and sought to find similarities and what we can learn there.
  3. Only debate will enhance the conversation – challenge what we say so we can dig deeper together.

### IV. Principles behind the work.

- A. Background:
  1. There were several givens for the project:
    - a. Built on a traditional budget. This was not about Microsoft pouring money into the project.
    - b. A neighborhood school, not for the top kids.
      - i. We have kids in the school reading at all levels. This allows us to say this can be the new norm.
    - c. Technology not prime criteria for hiring teachers.
  2. Microsoft commitment was human capital – a person from Microsoft to drive the process, and many other people from Microsoft contributing to the project.
  3. Microsoft's other contribution is to provide the Microsoft magnifying glass to getting the bureaucracy moving.
- B. Principles:
  1. Learning first, technology later.
    - a. First focused on conversations about learning.
    - b. Didn't start talking about technology until 18 months into the project.
  2. Language is paramount.
    - a. The way we talk will determine much of how people see things.
    - b. For example, principal title is "Chief learner" which sends a message of what's important.
  3. Lack of process impedes success.
    - a. Change is difficult for organizations because people don't know where they are going and get anxious.

- b. Process allows us to give people sense of where the train is going and how we will get there.
    - 4. Identify the questions, worry about the answers later.
      - a. That learning process of “figuring it out” is central to the approach.
    - 5. Be comfortable not knowing.
      - a. Can’t act as if we know all the answers. We don’t.
      - b. Create environment in which not knowing is celebrated.
      - c. We identified folks who are comfortable not knowing (and can search for new knowledge) and involved them in the process.
- C. Essential questions – to which there are no right answers:
  - 1. What are you trying to create?
    - a. Do people have language to talk about this and is that language the same across people.
    - b. Trying to create a learning environment that is continuous, relevant and adaptive.
      - i. Continuous: make sure learning is not dependent on being in a specific place at a specific time.
      - ii. If you make learning independent of that – make it continuous across places and time – a lot opens up.
    - c. Everyone in the process talked about that – and when that happened we could move ahead.
  - 2. Content and curriculum tools which are current and relevant. Methods and practice which are rigorous.
    - a. Increasing relevancy does not need to decrease rigor.
    - b. We know that you don’t need to sacrifice rigor for anything.
      - i. 86% of kids enter high school believing that high school is crucial for their future. Yet, only about 20% believe that after they are in high school, probably because the work in high school is neither relevant nor rigorous.
  - 3. Adaptive
    - a. Kids today have a vertical adoption curve – give them new technology and they get it almost immediately.
    - b. We need to create an environment that can adapt to kids needs and to their fast adoption curve.
    - c. Adaptive:
      - i. Instructional methods
      - ii. Physical space.
  - 4. Microsoft and High School of the Future use the above five principles and three questions to filter and guide decisions.
    - a. Any vendor had to demonstrate how their products would meet those principles and questions.

V. Who are we creating this space for?

- 1. Motive – is crucial
  - a. Six question about motives:
    - i. What motivates them?
    - ii. What are their obstacles?
    - iii. What are their trends?

- iv. What are their interests?
    - v. What are their views?
    - vi. What are their environments?
  - 2. We need to have conversations about these six questions and come back to them frequently so we can adapt as the answers change.
    - a. And we need to have these conversations with the kids – to know what their issues and concerns are.
    - b. And then we need to create systems to support those motivation issues.
- B. How will you organize your work?
  - 1. Issue of scope creep: the scope of a project tends to enlarge, and as it creeps, quality tends to go down.
    - a. We worked hard to keep focus and not succumb to scope creep and have people in charge who could maintain that discipline.
  - 2. Five areas of innovation that support student achievement:
    - a. Learning
    - b. Building design
    - c. Business management
    - d. Technical architecture
    - e. Community engagement

## VI. Microsoft's six step process:

- A. Introspection
  - 1. Establish pedagogy, methodology, culture, success metrics and benchmarks.
- B. Investigation
  - 1. Review and identify: best practice, innovation, research, advisory board and SWOT process.
  - 2. We don't need to have the answer but can search all over the world and people to investigate possibilities and what this place needed to be.
- C. Inclusion:
  - 1. Engage community, key leaders, government partners
  - 2. Brought in the community in five groups representing the different parts of the community.
  - 3. Some argue we should have brought them in earlier. – and some were involved earlier, but public announcement and formal outreach was step 3.
- D. Innovation:
  - 1. Determine: personnel, building and IT architecture.
  - 2. People want to start building early, but need to build a foundation.
- E. Implementation – where we are now.
  - 1. Act: training → readiness → launch
  - 2. We are learning... and experiencing the “implementation dip.”
  - 3. And we are incubating the ideas and see how they work and how to export them to other schools.
- F. Introspection – need to take the time formally to review the process and start it over again on the same project.
  - 1. Without continued introspection, this becomes a pilot project and will not grow stronger over time.

G. These six steps may be the right process, or may not. *The key is to have a process and be explicit about it.*

VII. Critical success factors:

- A. Not everything can be critical. Must be a *finite* set of things which if you miss one you will fail.
  - 1. Once you say it is critical, you publicly commit to time and resources behind that factor.
  - 2. If you don't put time and resource behind it, you are saying it isn't really critical. If it was critical, the project will fail.
- B. Once we define them, we create a common language around each – agreement on what we mean by that provides operational definitions.
- C. The five critical success factors:
  - 1. Involved and connected learning community.
  - 2. Proficient and inviting curriculum-driven setting.
  - 3. Flexible and sustainable learning environment.
  - 4. Cross-curriculum integration of research and development.
  - 5. Professional leadership.
- D. Do a SWOT analysis for each critical success factor..
  - 1. SWOT: strengths, weaknesses, opportunities and trends.
- E. Then looked at all SWOT analyses and saw common buckets:
  - 1. governance
  - 2. skills development
  - 3. finance
  - 4. leadership
  - 5. policy
  - 6. technology
- F. Discovered that leadership was the most important of all.
  - 1. So went to CAO and said they needed to hire the principal or “chief learner” a year before the school opened..
    - a. All of the work that went into this point, made the argument for that.
- G. Then identified and built assets that mitigate against the weaknesses and threats and assets that strengthen the strengths and trends.

VIII. Microsoft is the most self-critical organization she has ever been in.

- A. Microsoft competency wheel – a list of 30 competencies that the organization must have/demonstrate to be successful.
  - 1. Not that each person must have all 30, but all 30 must be in the organization.
  - 2. Each person is responsible for their own development
    - a. Once identify a competency to develop (either by self or from supervisor) can go to the competency wheel on the web.
    - b. Can go to the wheel, click on the competency and find what it looks like for level 1-level 4, what it looks like to overdo, essential question, learning on the job, pd that doesn't cost anything, recommended readings.

- B. Microsoft worked to develop a parallel competency wheel for educators – which is available for free off the Microsoft website: [www.Microsoft.com/education/sof](http://www.Microsoft.com/education/sof) (ADD REST OF URL FOR COMPETENCY WHEEL)

## IX. Design:

### A. Learning space matrix:

1. Microsoft has research team working constantly to develop ideas of what makes learning space more collaborative.
2. Six characteristics of learning space:
  - a. 6 Characteristics of Effective Learning Spaces (with examples from the High School of the Future):
    - i. Motivating
      - Maximizes natural lighting throughout the building.
    - ii. Flexible
      - First floor designed to accommodate elements of an urban community center with a high degree of interaction among staff and students.
    - iii. Collaborative
      - Part of the Centennial District, enhances surrounding neighborhoods and adjacent parkland.
      - Fairmount Park and nearby Philadelphia Zoo become curricular tools for out-of-classroom ecological and environmental studies.
    - iv. Reflective
      - Sited and designed to reflect the tranquility of the natural setting; innovative, yet sited to take advantage of the park's natural beauty and its ability to stimulate personal reflection.
    - v. Performance Focused
      - Appropriate vegetation and landscaping elements including a “green roof” will align with the School of the Future prescribed ecological and environmental studies.
      - Adjacent to four athletic fields.
    - vi. Community Centric
      - First floor and lower elevation provide residents with easy access to appropriate resources.
3. Then as the space was designed, made sure that all six characteristics were available in the space.
  - a. Don't need to build a new building, but can renovate old building with those design characteristics.

## X. Curriculum issues:

- A. SDP allowed the High School of the Future to develop its own scope and sequence, while still being accountable to district tests and PSSA.
- B. Learning plan functions:
  1. Personal development.
    - a. Nutrition and fitness.
    - b. Research and effective reasoning.

- c. 11 core competencies.
    - d. Outreach, service and social awareness.
  - 2. Skill development.
    - a. Digital literacy.
    - b. Communication and collaboration.
    - c. Leadership.
  - 3. Relevant content:
    - a. Essential questions aligned to PSSA 11<sup>th</sup> grade standards
      - i. Integrated math.
      - ii. Integrated writing.
      - iii. Integrated science.
      - iv. Global communities.
      - v. Languages.
      - vi. Humanities.
- C. Educators in the school developed common themes....e.g., “identity”
- D. Teachers create a flexible schedule for kids as they think it needs to change to meet...
- E. Learning plans for 24/7:
  - 1. Formal learning day – 9:15 to 4:15.
    - a. Start at 9:15 with Tai Chi in the cafeteria
    - b. Each child receives day schedule by continent each day – which allows teachers to be flexible.
  - 2. Continuous engagement opportunities.
  - 3. Students are divided into continents.

#### XI. In the end, what is it about?

- A. It’s about the kids... and giving them reason to hope and experiences of success.
- B. We know there are a thousand reasons why this shouldn’t work, yet it can work with process, courage and the benefit of public-private conversations *like* the one between the SDP and Microsoft.
- C. Spreading the word:
  - 1. Quarterly summits for teams you can sign up for.
- D. Key question is what is the learning environment we need so that these students will achieve.
  - 1. It’s not about technology (which might be part of the process).

#### XII. Hiring process:

- A. Identify 6 key competencies for the position.
- B. They did initial screenings and for those who made it through basic criteria screenings, involved community in first round of interviews,
- C. First round interviews were based on those competencies (with stakeholder groups each assigned a different competency and trained in behavior interviewing techniques).
  - 1. Identify 6 people to be interviews as part of “the interview loop.”
    - a. Each person focuses on one competency and interviews on that competency, based on the competency wheel.
      - i. Each of those interviews is 1 hour long (except for lunch which is 1.5 hours).

- Lunch interview is designed to see how you deal with interview over lunch which is purposely designed to pose challenges.
  - ii. Each interview is a “behavioral interview” which focuses on past behavior as indicators of success.
    - b. If anyone of the six gives a negative rating – that candidate is out.
- 2. Hire for the organization first, for the position second.
- 3. The process searches for those people who want to be better and will seek out info on their own.

### XIII. Discussion with the principal:

- A. Kids and teachers are going through “detox” .
  - 1. This is so different than all past schools, and different from their living environments, that is taking a lot of time.
  - 2. Students came in very reserved and not sure how to be here.
  - 3. Grouped them into “continents” to put them into smaller communities.
    - a. There is a real sense of “family” from chief learner to custodian – a sense of belonging... Kids come early and leave late.
  - 4. 9<sup>th</sup> grade is different for students in all schools, but this is even more different.
- B. School is “green certified” and over life of building it will save millions of dollars.
  - 1. Water catchment system – to use unfiltered water where permitted.
  - 2. Photovoltaic glass
  - 3. HVAC system – ice is created at night when energy is cheaper.
  - 4. Designed to not need an irrigation system.
  - 5. Paver-system that will allow green to grow through and aid irrigation.
  - 6. Green roof that protects it from ultraviolet rays.
- C. Secularity:
  - 1. District policy is that students must be scanned upon entering building. That scanning equipment is built into the walls.
- D. Worked to embed the school into the community – so they feel they own it, which is the best way of increasing the continuity of the school.
- E. We believe that folks do not do enough investigation to learn about the current “wheel” and where it comes from. They just reinvent the current “wheel” uncritically.
  - 1. Strong process can enable us to do more investigation about the wheels that exist and how they do and don’t work and how to adapt and invent new things.
- F. Question: What do you look for in future employees:
  - 1. Look for people who are self-critical. So in the interview process ask questions which enable them to be self-critical.
  - 2. Look for:
    - a. Attitude: I want to be better – self-critical, want to grow, comfortable in not knowing.
    - b. Aptitude/competency in area of content – smart people in their content area.
      - i. We have tried to break the mindset that separates content area faculty so we can get more integrated thinking.

G. Bertelsmann report: the impact of media and technology on learning:

1. Study showed no difference in learning X between those in media/technology rich and those not in that environment.
2. But when researchers went back a year later they found that the kids who learned in the traditional context tested much lower on the old content than those in the media and technology rich contexts.
3. One lesson is that one problem with policy is that we stop looking student learning when we test and don't look a year or two or three later to see what they have retained.

H. What can you share with those in schools that are not starting new – but that have existing staff and processes?

1. Can pilot ideas that principals from other schools want to try and cannot for some reason implement in other contexts and then export them elsewhere.
2. Microsoft talks about “reengineering” a lot.
  - a. There are two separate scenarios.
    - i. Create a new culture scenario.
    - ii. Take an old school and create a new culture there – but the SWOT etc. will be site specific.
      - The questions will remain the same, but the answers will be different.



## **PHILADELPHIA SUBURBAN SCHOOL STUDY COUNCIL GROUP A**

### ***SCHOOL LOCATION AND SMART GROWTH***

Dr. Tom Daniels,  
Professor of City Planning  
University of Pennsylvania  
January 3, 2007

- I. Started with definition of education:
  - A. We all deal with local government.
    1. Most government decisions at the local level are based on the hunt for property taxes.
    2. They are also responsible for development and the way they plan for development has huge impact on property taxes, as well as on the schools.
      - a. But they don't often consult with local schools as they work on land use development.
  - B. Definition of smart growth:
    1. Communities that are walkable and have mass transit options.
    2. Human scale buildings.
    3. Have a manageable pace.
      - a. Rapid pace can be threatening and make walking dangerous.
    4. Compact development – fair amount of density where people go to school is important.
    5. Mixed-use: residential and commercial.
      - a. Separation of uses in the 1960s, made driving a requirement.
    6. Reasonable cost of public services.
    7. The village is the model for smart growth.
  - C. Discussion:
    1. Size of school and recreation fields require
    2. PA reimbursement for high school needs 35 acres plus an acre for every 100 students.
    3. This can make smart growth a challenge.
    4. Land use experts say American's hate two things: high density and sprawl, which of course is inconsistent.
  - D. Seattle's village concepts:
    1. 10-15 units per acre.

- E. Transit oriented development grid.
  - 1. Community is designed around issues of walkability.
  - 2. Don't provide much parking around mass transit station because they want people to walk or ride bicycles to the station, with a 5 – 10 minute walk to the station. For people further out, have satellite parking lots and then bus to the station.
  - 3. Downtown Portland has also reduced the number of parking spaces to encourage people to walk, etc.
  - 4. One challenge is that as this model is successful, you get a higher ridership rate which then requires more parking.
  - 5. One response to this is to develop a network of “villages” and “transit oriented development.”
    - a. Charlotte, NC is trying to develop this way, to avoid the problems of Atlanta, with a network of villages developed around the transit hubs.
    - b. One challenge is that there is little connection between suburbs, but have to go to a central station and then go out to the other suburb.
- F. What is dumb growth?
  - 1. Heavy reliance on cars and trucks.
    - a. Moving to mass transit would help reduce the more than \$200 billion we spend importing oil.
  - 2. Separation of residential and commercial areas.
  - 3. Walking is nearly impossible (no sidewalks).
  - 4. Fiscal problems/crowded classrooms.
    - a. Loudon County, VA has grown so fast, they can't build schools fast enough and have a waiting list to get kids into the schools – they are home schooled or schooled by TV.
- G. Issue of age-restricted housing, which is very common in NJ.
  - 1. One concern is a general one of separating people by any criteria – a healthy community has intergenerational partnerships.
  - 2. Another concern is that they tend to form anti-property tax groups.
  - 3. “Active adults” ages 55-74 is the fastest growing demographic.
  - 4. Segregation tends to cut off people's understanding of each other, each losing valuable connections to the other.
  - 5. There have been some challenges (e.g., in FL) to communities that try to prohibit people below 55 from moving in.
  - 6. One concern is the mix of ages – if you have all older people, who will be the volunteer firemen, do community work, etc.
  - 7. Economically, while costs for services for older folks are higher, they bring in more revenue than they cost.
  - 8. If you are property tax driven, this may make sense. But there are other concerns that need to be addressed that this age segregation doesn't address.
- H. There is an issue of to whom to sell a school that is being closed.
  - 1. For what uses? Commercial? Residential?
- I. Difference between smart growth and dumb growth (slide with cul-de-sac at top).
  - 1. Smart growth is more efficient land use pattern for transportation, access to commercial businesses and services, and walkability.
  - 2. Through streets also make things more accessible, and require less bussing, etc.

- J. How would you fix the current pattern?
  - 1. It is difficult, because we develop barriers between commercial and residential uses.
  - 2. Also difficult because we have segregated people and put up physical barriers to that.
  - 3. Celebration Florida (Disney built) is closer to the smart use. People seem to like it – it’s clean, functional, has a community center, walkable.
- II. Roles that schools play in smart growth:
  - A. Location:
    - 1. Walkable or not to the majority of students? Or bussing?
  - B. Size:
    - 1. Large consolidated high schools?
    - 2. Smaller schools are more expensive but may be worth the trade-offs.
  - C. Location:
    - 1. Encourages new sprawl or reinforces an existing neighborhood.
  - D. School renovation versus new construction:
    - 1. 60% rule: if renovation costs 60% or more, you are better off building a new school.
    - 2. This may be true for cost, but there are community implications as well – building a new school makes you move further out, and encourages sprawl.
    - 3. Part of the issue is that if you have to replace a school, you would have to move its location which would change the character of going to school, as well as increased costs for transportation, etc.
  - E. Discussion:
    - 1. District with two high schools in need of renovation or replacement:
      - a. District decided to keep two schools on same site as existing schools, which can be a nightmare.
      - b. The costs for renovation were about 60%.
      - c. This retains the feel and flow of the community.
- III. Other School Impacts:
  - A. Improving urban schools key to urban revitalization, e.g., City of Lancaster – 75% of the students come from families below the poverty line; over 900 students are homeless, about 25% special education and 20% ELL, but only 3% Gifted and Talented.
    - 1. Lancaster underwent some “urban renewal” in the 60s and 70s that is as much a part of the current problem.
    - 2. Urban renewal knocked down block after block of buildings and they are not being replaced. The belief was that the developers would come. Were left with a wasteland that was not developed with any coherent plan.
    - 3. Revitalization requires actual work to invigorate the community – arts, commercial, residential, etc.
  - B. Elizabeth Warren, professor at Harvard, attributes much of the rise in home prices to competition to get into the top school districts.
- IV. Discussion:
  - A. What kind of critical mass does there have to be in order to do really smart growth?
    - 1. Best we know goes back to Ebenezer Howard (19<sup>th</sup> century) talked about “Garden Cities” where you had individual communities that were linked by light rails.

- a. Thought ideal size would be 30,000 where you would have critical mass, economies of scale, etc.
- B. Difference between a county structure school system (MD) and smaller town based districts (PA)?
  - 1. David Rusk, a well-known planner, argues that fewer units of local government, and the fewer school districts, the less sprawl you will have. (cf: his book *Inside Game, Outside Game*)
  - 2. Montgomery County (MD) there is one school district for the whole county. In Bucks County or Lancaster County have 13 districts in each county. Or the contrast of MD and NJ.
    - a. MD is much better planned than NJ, with much less sprawl.
    - b. Question: what is the cost per pupil difference between the two states?
    - c. When you have one school district in the county, the county tends to work more closely with the district in planning and development – cf. Loudon County, VA and Montgomery County, MD.
- C. Challenges:
  - 1. Declining enrollments.
    - a. Communities won't allow for this even when it may be necessary economically.
    - b. Politically, this is always a challenge, even when it is economically or educationally the smart thing to do.
    - c. There is a tension here:
      - 1) The cost of running neighborhood schools that you don't need in terms of student enrollment.
      - 2) The role that schools play in community development and health, and subsidizing a school you don't really need.
      - 3) Even closing schools has costs – costs of bussing kids to a different school.
        - a) Some districts pay as much as 12% of its budget for transportation.
        - b) Impact on quality of life.
    - d. Minimizing cost at one level is not always the best strategy.
      - 1) Smart growth also costs money – maintaining neighborhood schools, building mass transit, etc.
      - 2) Schools as community centers may be a way to work through this.
    - e. Some kids get bussed, even when within easy walking distance, in part because of safety concerns (e.g., there are no sidewalks).
  - 2. School closings.
  - 3. Maintaining school quality vs. private schools.
  - 4. Push for age-restricted housing.
- D. Discussion:
  - 1. In some districts there are multiple taxing authorities -- school district and borough or township taxing authority. Wouldn't it be smarter to have only one?
    - a. Probably – but there is some distrust in having the township interfere with educational issues.

2. There is a choice we have to make in the quality of life we want – sprawl with access to shopping malls, etc. vs. community and its positive environmental benefits.
    - a. One of the challenges, the average residential single family home demands more in services than it provides in local tax revenues.
      - 1) On the one hand, you have places that want slow/no growth. On the other hand, places that allow growth are often high growth.
      - 2) Residential growth demands more commercial development. If you do that without planning, you create the conditions for sprawl.
    - b. The Mt. Laurel decisions about low income housing have had some negative consequences, as there are requirements for low income housing but are kept segregated, and those at the lower end can only afford the property taxes by having multiple jobs, but this further isolates their children.
  3. Discussion of impact fees (which is illegal in NJ).
    - a. On the plus side, they are a way to get new comers to pay their “fair share.”
    - b. This can offset the need to increase property taxes.
    - c. But the idea is to create a pot of money to pay for *future* infrastructure development in response to growth.
    - d. Downside is that it increases the cost of housing and is in favor of the big developers.
- E. Maryland’s approach to smart growth.
1. 1997 legislation identified priority funding areas – existing cities and growth areas next to those cities.
    - a. Local areas applied to become a priority funding area.
    - b. Said that a county that wanted to develop land for development outside of priory area could do so, but *WITHOUT* state funding.
  2. They are given preference for state funding – housing, economic development, brown fields redevelopment, school construction or reconstruction.
  3. Preference for state rehab rather than new (suburban/rural school construction).
  4. At start there was 70/30 ratio – new to rehab of schools --- now is 10/90 new/rehab.
  5. This supports compact development and consolidation around existing communities and reduces some of the pressures for sprawl.
- F. New Jersey:
1. State level planning around the “tier system” though it is unclear how much authority that land use program has, or how much it is directing development/spending.
    - a. Identified number of tiers that are suppose to direct development.
    - b. This is not something that districts know about.
    - c. Their school construction goes through the NJ School Construction Corporation.
- G. One question is how to get people to take aesthetic and quality of life into account in the construction projects.
- H. Looking at more of a regional approach.
1. In PA, starting in the year 2000, the legislature is encouraging local governments to do “multi-municipal plans”: joint plans to coordinate development activities across municipalities.

- a. Where you put the development has impact on transit, services, schools, etc.
  - b. But it is rare that school districts are involved in this.
  - c. The plans allow townships/communities to do some revenue sharing.
    - 1) Has been done successfully in the Greater Twin Cities for the past 30 years.
  - d. In Montgomery County six municipalities had an agreement that they would do revenue sharing. When a Wall Mart went it, they had to work with the six municipalities.
  - e. There are about 100 multi-municipal plans in PA now.
- I. Growth Management in Lancaster County, PA.
- 1. Over the last 15-16 years there has been a lot of planning.
  - 2. Identified urban growth boundaries, similar to priority areas in MD.
  - 3. Do not allow the extension of sewer lines outside the identified growth area.
  - 4. Are hoping that 85% of growth (anticipating addition of 100,000 people in next 20 years) will be done in the boundaries.
    - a. Shooting for 7.5 dwelling units per acre, which is what transit experts say is necessary to support public transit.
    - b. Challenge is to create the public transit before you have the density.
  - 5. Strong zoning is a crucial part of this plan.
  - 6. Developers know that if they build inside the defined growth areas it will be easier (no NIMBY folks, etc.)
  - 7. Starting to put money into the boroughs to restrain sprawl, while accommodating growth and development.
  - 8. PA Act 4: allows a school district to freeze the assessment on preserved land. One district in Lancaster County is considering it because it will generate more tax income as preserved land than if it were developed.
- V. David Rusk quote:
- A. The more school districts and the more units of local government, the more sprawl and the greater the segregation by income and race.
  - B. Rusk argues for de-concentrating poverty (which was one of the rationale behind the Mt. Laurel decision). The challenge is how to meet the Mt. Laurel issues that don't just create a low income part of town.
    - 1. There are some places where they have been better at creating more integrated housing.
  - C. Discussion:
    - 1. Immediacy vs. long range planning.
      - a. How do we work with boards of education and communities to find some usage for a building we no longer need, so we can take it back when we need it?
      - b. Part of the issue here is how to cooperate with the local community and local government to make these decisions.
        - 1) We shouldn't own the parties so quickly.
        - 2) Including thinking about the cost of transportation, quality of life of the community.
      - c. We really do need to educate our students to be citizens who think about aesthetics, impact of that upon quality of life, and broader issues.

2. Collingswood – with declining enrollment.
  - a. 5 small elementary schools that are all community-based and no one wants to close one.
  - b. We have a committee that includes community members (including planners, architects, housewives, etc.), school board members and borough leaders to work through what to do with the buildings – including what to do with the space.
  - c. This makes it a community, not a school issue.
  
- D. The Rusk quote is probably correct (The more school districts and the more units of local government, the more sprawl and the greater the segregation by income and race) but:
  1. Districts use this segregation for competitive advantage for increasing property values.
  2. Also, this is part of the issue of increasing those who need more while not hurting those who already have more – floating all to a higher level.
    - a. The PA costing out study can help provide more equitable funding, if done well and used to that end.
  3. Question: are there any success stories – communities that have fallen onto hard times and have come back?
    - a. Part of the question is what the economic driver will be.
    - b. Look at the Bethlehem vs. Allentown differences.
      - 1) Bethlehem is a better school district, in part because they created the “Bethlehem Area School District,” which draws in the surrounding areas.
      - 2) Allentown, on the other hand, is separate district from the surrounding school districts, all of which have more resources than Allentown.



## **PHILADELPHIA SUBURBAN SCHOOL STUDY COUNCIL GROUP A**

### **Immigration to the Greater Philadelphia Region: Facts, Challenges, Opportunities**

Dr. Michael Katz, Walter H. Annenberg Professor of History and  
a fellow of the Population Studies Center, University of Pennsylvania  
Mr. Mathew Creighton, Ph.D. student in Demography and Sociology,  
University of Pennsylvania  
February 7, 2007

- I. Michael started by asking what kinds of issues immigration is raising in your schools:
  - A. Communication, language barriers... we have a diverse population coming in from our sending district and that causes some issues communicating with parents.
  - B. Cultural – having staff understand cultural differences.
  - C. In my community, everyone looks like everyone else. New families that move in (Latino and Chinese) can feel uncomfortable, both staff and student perspective. It is a growing concern and we are working on it.
    1. Because we have a small population of immigrants – they tend to come and live together in one residence until they can find a place to live.
      - a. This presents challenges to find resources to support the children.... And the resources need to follow them when they find their own place to live and move to a different school in the township.
  - D. We are highly diverse, but the mix of diversity is more wide ranging than ever before.
    1. We have highly educated immigrants and illiterate immigrants.
    2. Diversity of SES is exacerbating this.
    3. Tension in community now is between AA and Hispanic teens.
    4. We have had ESL and outreach programs for years, but we need to splinter even more and that puts even more budget strains.
    5. Latinos are major minority group in our community. All live in the borough near the University.
    6. Very solid, old AA community – with lots of cultural work in community and University. Struggling to keep kids out of gangs and keep kids in school.

- E. Diversity is growing and we have a way to go to understanding and respecting cultural differences, as well as individual differences within groups.
- F. We are multicultural – students come from 43 different countries, large majority of which come from high income families.
  - 1. We are struggling with gaining a better understanding of the growing Muslim population and their needs. Also a growing Hindu population.
    - a. They come because of proximity to Philadelphia, variety of places to worship.
- G. We are in the wealthiest category of school districts in NJ.
  - 1. 16% is Chinese, 14% Indian.
  - 2. Our history program focuses on American European history and the minority wants us to be more global.
- H. Not a very diverse community – Mayberry in the 21<sup>st</sup> Century.
  - 1. But we do have people in town who speak Mandarin.
  - 2. Have perhaps 8 AA kids in the community, but only 3 or 4 have AA parents.
- II. Flow today will be a brief set of remarks followed by discussion and more in-depth presentation of data in response to your questions.
  - A. Recent panel to discuss immigration and migration in the region as part of the mayoral and city council election.
    - 1. It turned into an argument over what to do about or with undocumented immigrants, nothing to do with what's happening with immigration and migration.
    - 2. Some assumption that the modal immigrant was an uneducated, undocumented Mexican immigrant.
    - 3. But it did reveal the level of passion about this issue – it is broad and deep among people on all sides of the issue.
    - 4. Also saw the absence of a knowledge base of what's actually happening in the region, a knowledge base that could inform policy in the region.
    - 5. Our goal has been to collect and then provide the data which can be the base of that knowledge base for discussion and policy.
  - B. Reporting on research funded by PIUR and the U of P research foundation.
    - 1. Created a database on immigration and migration.
    - 2. We are still at a fairly early stage of the work. The data is interesting and enormously complex.
    - 3. There are four goals:
      - a. Continue analysis of the data and look at patterns and share findings with public audience.
      - b. Add a qualitative component to get under the numbers.
      - c. The census bureau has a national sample of the population which will allow us to update database each year.
      - d. Want to make it a public database – much like Penn's Neighborhood Information System – so that citizens can go on line, ask questions of the data, etc.
  - C. Resources:
    - 1. MigratoinInformation.org – Migration information Source which provides resources to all.
      - a. E.g., charts of immigration to the US... shows number of legal immigration to the US.

2. Population reference bureau has a series of pamphlets called “The American People” which draws from census reports and puts it in historical context, legislation, etc.
  3. Book by Bean and Stevens *America’s Newcomers and ...*. Reviews the evidence – clearly and fairly – and is a terrific overview of the issues.
  4. *Dividing Lines*: Focuses on the history of immigration politics and how controlled by legislation.
  5. *One Nation Divisible: What America Is and What it is Becoming* puts the census data into some perspective and how it fits into context of social issues and the family....  
By Katz and Stern.
- D. Immigration is transforming metro Philadelphia.
1. Old image of city divided between AA and white folks is gone forever.
  2. Raises the question: how is immigration changing the city and the region. Who is coming? Where do they live? What do they do?
  3. Created a database that is based on the data on the consolidated metro statistical area – from Princeton to Jersey Shore to Wilmington to Chester.
    - a. For shorthand we call this “Greater Philadelphia”.
  4. Data from 1950 to 2005, based on two kinds of census data:
    - a. Aggregated data for census tracts.
    - b. Records of individual people.
      - i. Records of individual people from 1850 to the present – from U of Minnesota database.
- E. Six early findings for our thinking about how immigration is changing greater Philadelphia.
1. Greater Philadelphia is becoming more diverse.
    - a. 1970, 14 countries (including Puerto Rico) had populations of greater than 5000, and all were European.
    - b. 1970 native born 4.3 million, 2005, native born 3.8 million
    - c. By 2005 more than 31 countries had sent more that 5000, and the majority were Africa, Asia or Latin America
      - i. Other than Puerto Rico, the largest sending country is India.
      - ii. Ireland dropped off the list entirely... personal choice had a large role. Ireland a nicer place to live.
    - d. By 2005 foreign born total has doubled, while native born white is lower.
    - e. Question about how law works.
      - i. Most people come in via “Family Reunification” so that if you have family here it is easier to come.
      - ii. Employer need can also be helpful.
  2. Immigration is the largest source of population growth in this area.
    - a. Native born whites as percent of population is increasing.
    - b. Total population of Philadelphia grew by 8%.
    - c. From 2000 to 2005, all of population growth is due to immigration!
      - i. Population of native born blacks and native born whites both went down in both city and county.
      - ii. Foreign born went up in both city (up 15%) and county (up 9%).

3. Immigrants no longer cluster in cities.
  - a. This is a national phenomenon – immigrants moving to places they never were before.
  - b. Distribution/dispersing is much faster than in the past.
  - c. Immigrant suburbanization is the big story in this area.
  - d. We don't know how to explain this data, yet and may be different for different groups, but we are not sure.
  - e. Part of this is “chain” migration – when a group gets established in one place, others from that country tend to move there as well.
    - i. This would suggest those groups would increase in the areas where they are.
    - ii. E.g., Milbourne in Upper Darby is majority Indian population.
  - f. Look at Philadelphia County.
    - i. South Philadelphia – influx of Asian and Mexican population – the “Italian” market is greatly Mexican. And most of the Mexican population comes from one village or region in Mexico.
    - ii. Northeast Phila is mostly Russian immigrants.
    - iii. See great diversity at the food distribution center – from primarily Italian White to more polyglot.
    - iv. We are seeing that the groups cluster, which leads to an interesting form of segregation.
    - v. Historic pattern is that immigrants move into a city and gain some money then move to the suburbs.
      - This pattern of moving from city to suburbs does not hold for native born poor. They never seem to gain the resources to move to the suburbs.
    - vi. *But* we are more and more seeing a pattern of immigrants skipping the city, moving directly into the suburbs.
4. Greater Philadelphia has become the destination of first choice for many immigrants.
  - a. Thought people would come first to NY or NJ, then to Philadelphia. But increasingly people are coming directly here.
    - i. Location of residence 5 years prior to 2000, 69% came directly to Philadelphia County from country of origin.
    - ii. Suggests they are learning that Philadelphia is a good place to come to.
    - iii. It would be interesting to learn about the patterns of communication that underlies how they know to come here.
  - b. Not clear what the draw is here:
    - i. One draw is relatives, friends, etc.
    - ii. Affordability is also a large part of it.
    - iii. Opportunity for work or jobs.
  - c. The rapid spread to suburbs is part of the concern in some places.
5. Immigration is diverse in every way.
  - a. Diverse in origin:
    - i. Top 10 sending countries in 2005: India, Mexico, China, Korea, Vietnam, Germany, Italy, Ukraine, Philippines, Liberia.
      - If we combined countries in Africa, it would be even greater.
      - Would likely find that Germans and Italians are older populations.

- b. Diverse in English speaking and education:
  - i. 76% speak English well – self reported.
  - ii. 50% have some college.
    - 21% have less than high school education.
  - iii. 15% are in service industry jobs.
  - iv. 22% have professional occupations.
- 6. Immigrants are a crucial source of labor for the region now and in the future.
  - a. Demographically, the immigrants are younger than the native born population.
    - i. Foreign born population ages 20-30 has gone up dramatically from 1990-2000.
    - ii. Foreign born population:
      - Between 1970 and 1980 increased by 46%, 1980-1990, increased by 23%; between 1990-2000 increased by 45%.
    - iii. 2000-2005, population between age 20-30:
      - Foreign born in Philadelphia increased 17%, native born decreased 22%.
      - Foreign born in Greater Philadelphia increased 24%, native born decreased 8%.
  - b. Implication as native born population ages, it is the foreign born that will increasingly become part of the basis of economic development and growth.
- F. These six points suggest that immigration and migration pose great challenges and opportunities that we need to explore.
- G. Anger about immigration has been a historic fact. There has always been a cultural, racial discrimination towards immigrants, including fears about “racial suicide.”
- H. Yet, in spite of those tensions US has managed those tensions well over time, particularly compared to the rest of the world.
  - 1. Kept a concept of citizenship based on birth.
  - 2. Last academic year (05-06) started with immigrant riots in Paris in October, May of 06 immigrants in US unite in peaceful protest.
  - 3. A totally different dynamic – protest directed to Congress to argue for legislation to enable their full participation in American life.

### III. Brief discussion of implications:

- A. Policy directions from this?
  - 1. Move toward legalization (not making them citizens) of undocumented immigrants.
  - 2. Some kind of regulated guest worker program with wages and benefits protection.
  - 3. Shift quotas to allow more from Latin America.
  - 4. Promote economic developing in sending countries.
- B. How can we help our boards think about this population in the Philadelphia area.
  - 1. Difficult question – difficult to anticipate emerging trends.
  - 2. Immigration remains high in US and the concentrations of foreign-born will probably increase because of families here already and chain migration.
    - a. School districts should probably plan on flexibility and prepare for increasing diversity.



## PHILADELPHIA SUBURBAN STUDY COUNCIL

### *Leading the Curtis Institute of Music: A Study of Excellence in Education*

Mr. Gary Graffman,  
Concert Pianist and  
President Emeritus, Curtis Institute of Music  
March 7, 2007

- I. Mr. Graffman began with a history of the Curtis Institute.
  - A. 80 years ago, Mary Louise Curtis, connected with the Post family, was a lover of music and a founder of the Settlement School.
    1. Realized that while Settlement was excellent for most students, some students were incredibly talented and they had no place to send them other than Europe.
    2. In conjunction with Leopold Stokowski and Joseph Hoffman, the then conductor and music director of the Philadelphia Orchestra, they started a small school.
    3. Stokowski was interested in recruiting musicians for his orchestra that were trained in America.
  - B. After a few years, they decided to change it a bit:
    1. It would be totally free for everyone.
    2. There would be a maximum age, but no minimum age.
      - a. Unlike Julliard which was pre-college, Curtis would have no minimum age.
        - i. Julliard would teach younger children, but not full time.
        - ii. At Julliard, younger children had different teachers than full-time Julliard students.
      - b. Curtis would have the same teachers for all students.
  - C. Curtis is unique – others don't have everything free, don't accept young students with same teachers as older students, don't have teachers.
    1. Highly competitive – accept 5% of applicants (Harvard accepts 10%).
    2. In Curtis more than 90% stay in music – and are in the best orchestras and schools of music.
    3. In Julliard only 50% stay in music and many of them are teaching (but not in prestigious places).
    4. Another thing we do at Curtis – every pianist and organist and harpsichordist is given a Steinway grand for the duration of their tenure at Curtis.
    5. Curtis has no dorms. All students live within walking distance of Curtis.

6. All students have merit scholarships. If cannot afford room and board, Curtis will cover that too.
  - a. This is true of most students from China or former Soviet Union who typically cannot afford room and board.
7. Anyone under 16 must have a parent or guardian living with them.
  - a. In the past, the State Department would not create a problem with visa of parent of student at Curtis, but that is sometimes a problem now.
- D. Have 160-165 students – enough to have one symphony orchestra.
- E. Who plays the “principal” position is determined by seniority, not competition, because *all* students are expected to be high quality and be principal at major orchestras.
- F. Most faculty do *not* teach for a living, but are principal players in major orchestras. Many are famous traveling musicians for very high fees.
  1. Those who are full time teachers, do so not at Curtis but at Universities.
- G. Most professional musicians started between age of 3 and 5.
  1. My father gave me a violin when I was 3, and I can remember the G-d awful sounds.
  2. At age of 4, my father decided I would be better with a piano, which I took to immediately and entered Curtis at 7.
  3. Gary went to Curtis when he was 7 and studied there until he was 17. When he came, he was auditioned by Joseph Hoffman, who was then director of Curtis.
  4. Most musicians come in their middle teens, don’t accept students over 20 (save for singers and composers and conductors).
- H. Piano auditions start next week and have over 100 auditions.
  1. There is no set number of “openings,” but we do have certain needs...
    - a. E.g., to have an orchestra, we need a certain number of each instrument, so that sets a number.
    - b. But even here, we may not have enough if we don’t get applicants up to our standards.
  2. The faculty are the ones who decide who gets accepted.
    - a. The faculty listen to auditions and then ask “Does this person deserve to be at Curtis?”
    - b. There is typically a unanimous decision.
    - c. Once the faculty decide to admit a student, we ask the faculty if they are willing to take on another student and if so, which one?
      - i. Also ask student who would like to have as a teacher. If there is a match, that will be the teacher.

## II. Questions:

- A. In the application procedure, you have high success of selecting quality people. But you acknowledge you sometimes “miss.”
  1. When you hear a 14 year old violin player, we cannot always know how the person will develop, based on a 15-25 minute audition.
    - a. Audition is rigorous, both range solo and chamber (with piano).
    - b. We may find incredible technique, sound, etc. but they may not develop.
    - c. Think of any great violinist or pianist, they played very well when they were 10. You develop certain physical techniques by the time you are 10-12 years old.
    - d. We also have no idea how long it takes them to learn a new piece.

- e. Most students come from places where they are the best, and when they come to Curtis they are one of many highly talented. This is normally not a problem, but every now and then we must ask a student to leave.
2. Selection process question. When we (supts) hire new teachers, we know in 7-8 minutes whether.... How do you know? Please take me through the thought process.
  - a. We hope we have a better average than critics.
  - b. Literally, in less than 30 seconds we can tell whether there is nothing or something there. The rest of the time is spent trying to figure out in more detail what that something is.
- B. Students can apply as often as they like until age 20.
  1. We don't play "games." If they were one of the top 5 but we only have room for three, we'll tell them what we think they should do.
  2. We kind of adjust – not just have the student fit into our needs, but we also try to fit to the students' needs, problems, schedules, etc.
    - a. E.g., a student may be asked to perform with an international orchestra or orchestras and miss school.
  3. We will often help students audition for different conductors, music directors, etc.
- C. Lessons often last 2-3 hours. I come in every other week, and if students need something in-between, they come to my apartment in NYC.
- D. Who replaced you at Curtis?
  1. There was a search committee and a new board.
  2. The new board was not as steeped in the Curtis tradition or sense of uniqueness as previous boards.
  3. Gary argued that the new director should be an excellent musician, not just a good administrator and fund raiser (and new board wanted someone good at fund raising).
  4. They hired Roberto Diaz, who was principal violist in National Orchestra and then at Philadelphia and has taught at Curtis.
- E. What degrees do you confer?
  1. Younger children attend local schools – public or private.
  2. For those of college age, we have part time faculty who teach academic subjects and those students get a BA in Music when they graduate.
    - a. Students can take any course at U of P – free to them (and to Curtis).
      - i. In return, our orchestra will "read" and play works composed by students in the Penn music composition program.
  3. Pianists often go on for a graduate degree someplace – as a way to expand their career options.
  4. Very few people on our faculty have degrees beyond their conservatory degrees.
  5. To graduate you have to do a full recital.
    - a. All students must do a minimum of three recitals a year.
- F. Student demographics:
  1. Majority are Asian now, a shift which started in the 60s.
    - a. When I was 7, most of the strings were second generation eastern European Jews – as a way of getting out of the ghetto.
    - b. Now we see a similar perspective in the Chinese and Korean communities, and more than 10% are Korean and many more (over 50%) are Chinese.

- G. Talked about the “hard wiring” of technical and cognitive abilities. You talked earlier about kids having good technical ability at early age and being able to see/anticipate excellence at that age.
1. At early age so much is technique, but you need more than technique.
  2. You must learn technique at an early age, the earlier the better for without technique you will progress little.
- H. Being a musician is, basically, a collaborative activity – if you are in orchestra or in chamber group, you are playing with others (except for pianists).
- I. You and many of your colleagues teach. How do you learn to teach?
1. We don’t. Most of us (and our teachers) were not taught how to teach. Nor did we early on offer classes in pedagogy.
  2. It seems that pedagogy is more important when you are teaching novices early on. They may need to learn how to hold hands, or what exercises to start with, or how to motivate them.
    - a. Then you may need to know more about how to fit things to the student.
  3. But when you are teaching those who are already proficient at technique and excellent in skill, pedagogy does not seem so important.
- J. But then how do you make judgments on the quality of other teachers at your school?
1. Part is success of the students.
  2. Part is the opinion of the students on teacher’s ability.
  3. Part is based on the reputation of the musician – of the playing skill of the person.
- K. Teachers are very much involved with the student – helping them succeed in their professional life.
1. Very rarely do we focus on technique, rather focus on interpretation.
    - a. It can be “This is how I do it” or “This is how I practice it.”
    - b. Or, within what they are doing, this is how you might approach it.
    - c. Or, this is how so and so does it.
  2. These are people at very high levels, but they lack experience.
    - a. We introduce them to managers, conductors, etc.
    - b. We recommend them for auditions even before they graduate.
- L. Applications and questions for public schools:
1. How do we work with students who are “stars” in specific fields and who may not fit into a regular curriculum?
  2. There are some students who are “genius” in one area and have no aptitude elsewhere. Should we try to fit them into our curriculum or find one that fits them?
  3. Everyone who teaches at Curtis is at it part time, but do it because it is a passion (money is secondary).
    - a. How can we get people to teach who have a passion for what they do?

## ***Curing the Leading Cause of Death in Teens***

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- I. Introductions & concerns about teen driving: “what is in your heart?”
  - A. Supt. A: I don't know whether teens are really prepared to be behind the wheel; I know we have driver education, etc. I am surprised about how many teens don't wear seatbelts; and their lack of understanding that this could be a lethal weapon; so I am not sure that they are taking it seriously.
  - B. Supt. B: Their false perception that when they are inside a vehicle they are invulnerable, no matter how they behave.
  - C. Supt. C: When I was a principal, one of the first things I had to deal with was the death of a high school senior when he was driving home from work late at night. The cavalier attitude, such as text messaging, using telephones while driving.
  - D. Supt. D: How to help teens understand the consequences of their actions.
  - E. Supt. E: Kids driving cars are as old as they have ever been, and they have all the experiences and perspectives of their young lives. There are many sounds that parents experience as children grow up; the sweetest sound to the parent of a teen is that, at five minutes to midnight on a Friday night, you hear the car pull into your driveway and the door open and close. You know that your child, and your vehicle, is home safely.
  - F. Supt. F: I echo everything that has been said, both as a parent and educator. Personally, I have been considering many different things after retirement, and one of them is driving a school bus.
  - G. Supt. G: I don't think that teens really understand that they are mortal; it is beyond not understanding the implications of what they do – it's that they don't understand what it means at all.
  - H. Supt. H: I put this under the whole idea of at-risk behavior. As a supt. in New York, previously, I had a year with five teen deaths. I am concerned about the whole community's reaction to at risk behaviors.

- I. Supt. I: Idea of amount of preparation before people actually get a license. It almost ought to be tied in to understanding the importance of the law itself.
  - J. Supt. J: Tomorrow night is prom for my daughter. We all know proms and the risks that children take. I have talked with her, and she is a responsible, mature young woman, but it is still bothersome and I am worried.
  - K. Supt. K: In our district, we have had numerous young people killed in auto accidents over the years. I hope and pray that we can help teens learn the lessons.
  - L. Summary: The way that participants spoke about it is with emotion, as well as the intellectual aspects. Worry and concern were expressed for your children -- not only for your own biological children, but those children in your care in schools.
- II. Goals for today
- A. Is teen driving safety already a priority area and, if not, what would make it one?
  - B. What are the practical roles for schools in teen driving research?
  - C. What will be the potential obstacles and their solutions?
  - D. What resources should the researchers provide?
  - E. Who will be our important contacts?
  - F. How can schools facilitate community connections?
- III. Themes of introductory observations
- A. Example of a teen death from a car accident: “Three 18 year old boys die coming home from King of Prussia mall”
  - B. Preparation – a key theme; we are not preparing teens for driving; what we do has been found to be ineffective; we don’t know what is effective.
  - C. Community involvement – what are community norms around driving; about obeying the law? How are we encouraging the good behavior?
- IV. Dr. Winstorn outlined the Center for Injury Research and Prevention approach
- A. The Center takes a public health approach:
    - 1. Problem identification
    - 2. Problem measurement
    - 3. Identification of key determinants
    - 4. Identification of candidate interventions
    - 5. Implementation of interventions
    - 6. Evaluation
  - B. The study begins with the end users
    - 1. In this case, the researchers have been talking for two years with teens.
- V. The challenge – taking someone who is dependent and making them independent
- A. An archetypal task for adolescence
  - B. Guide non-driving teenagers, who are dependent on their parents and others for mobility, to become independent individuals who must:
    - 1. Learn to make safe driving decisions
    - 2. Manage their passengers and peers
    - 3. Avoid the hazards of the road, and
    - 4. Establish life-long safe driving orientation

- C. They must do all of this while developing new capabilities and competencies and exploring new horizons.

## VI. Young Driver Research Initiative

- A. Mission: to save lives and reduce injuries
- B. Goals:
  - 1. Change social norms around teen driving among parents, teens and community
  - 2. Develop an environment that supports safe driving through support structures and laws
  - 3. Empower parents and teens through skill building via an evidence-based, evaluated mastery program – the Young Driver Program
  - 4. Disseminate broadly
- C. How do we get there?
  - 1. Research
    - a. Basic concepts explored in research on teen development have not been applied to driving
    - b. Formative – teens, parents, families, communities and schools
    - c. Create and test interventions
    - d. Create and test assessment tools
  - 2. Translate research into Young Driver Program
  - 3. Establish research network
  - 4. Establish dissemination paths
- D. Teens
  - 1. Sample research questions
    - a. How do we engage teens?
    - b. How do we make driving a skill around responsibility and not rebellion?
    - c. How do we make teens receptive to parenting?
    - d. How do we empower teens with their peers?
    - e. What are the modifiable factors that lead to crashes among teens?
    - f. What is needed to modify these factors?
  - 2. Sample techniques
    - a. Focus groups, interviews and surveys
    - b. Studies in schools and with peer affinity groups
    - c. Test and refine interventions
- E. Schools and communities
  - 1. Sample research questions
    - a. How do we engage parents?
    - b. How do we get parents to accept their responsibility?
    - c. What do they need to be successful?
    - d. How do we change social norms?
  - 2. Sample techniques
    - a. PTA/HSA groups – observe and intervene
    - b. Parent affinity groups – observe and intervene
    - c. Social marketing
  - 3. There is pressure from parent to parent, social norms

4. The vast majority of parents do not enforce with their children the requirement of time spent in preparation
- F. Parents
1. Sample research questions
    - a. How do we engage parents?
    - b. How do we make parents effective teachers and monitors around driving?
    - c. What support do parents need or want?
    - d. What are universal issues, common but not universal issues?
  2. Sample techniques
    - a. Ethnographic studies
    - b. Parent survey
    - c. Test and refine interventions
- G. Work to date: Traffic injury prevention
- a. 1997-present: focus on child passenger safety
  - b. 2005-present: additional focus on young drivers
    - 1) Expert panel developed a compendium of safe driving among teens
    - 2) Teen-centered model
    - 3) Adult focus groups
- H. The first six months of driving: highest risk
1. This is the most critical time; it is in the first 6 months that the rate of accidents is highest
  2. At 12 months, teens are still double the adults' risk, and that rate does not decline until age 25
- I. Timeline for safety
1. "Time Zero" – is the time at which independent driving begins
  2. Prepare: model, teach, assess, set rules
  3. Coach: monitor, assess, supervise, teach, remediate
- J. Cause of fatal crashes: much more than drunk driving
1. Driver error is the highest cause. Then speeding, then drinking and driving.
- K. Why teen crash rate is high
1. Poor cognitive-perceptual skills
    - a. Physical development far surpasses the social and cognitive development
    - b. Ineffective maneuvering to avoid crash
    - c. Intentional risk-taking/peer influence
    - d. Driving under risky conditions
    - e. Driver error (including poor judgment, inattention)
    - f. Adolescent brain development (e.g., susceptibility to distractions, difficulty managing impulses)
  2. Question: regarding driving in adverse weather conditions; teens just don't know how to respond in those conditions. Does the program have recommendations?
    - a. Dr. Winston: Some kind of requirement would be beneficial, so that teens would have an opportunity to practice.
    - b. We have to be careful how we introduce the intervention; an example is skid driving practice in a controlled environment, in which practice makes students believe they can handle it in any situation.

- c. One way to look at that is through graduated learning requirements: what is missing is that adults should be supervising teens driving in the high risk environments for an extended time period; instead, once the learner permit time frame has passed, the teen is set loose.
- L. Vital roles for community, school, and family
  - 1. Set expectations and norms around safe driving
  - 2. Model safe driving behaviors
  - 3. Teach safe driving strategies and skills
  - 4. Monitor teen behavior, particularly around negative peer influence
  - 5. Establish support structures for families with particular needs
  - 6. Set and enforce laws and policies
    - a. Cartoon: why teens die – they are the worst at using the seatbelt

#### VII. Public launch of YDRI project

- A. Release report – 1/22/07
  - 1. “Driving: through the eyes of Teens”
  - 2. Major media relations outreach
- B. 1<sup>st</sup> National Teen Driver Week – advocating for this at federal level
  - 1. Third week in October 2007 (tentative)
    - a. Raising awareness
    - b. Role for schools?

#### VIII. Young Driver Program

- A. More than drivers’ education – involves families and communities
- B. Built on concept of mastery
- C. Evidence-based
- D. Developmentally appropriate
- E. Multi-pronged and integrated
- F. Feasible and acceptable
- G. Assumptions:
  - 1. Graduated Driver Licensing (GDL) as foundation
  - 2. Focus on schools
    - a. More as social network

#### IX. Pennsylvania’s Graduated Driver Licensing

- A. Legislation with three phases: learner permit, junior license, full license
- B. Learner permit
  - 1. Minimum 16 years old, physician certification, knowledge test
  - 2. 50 hours supervised driving and six months
- C. Junior license
  - 1. Road test
  - 2. Night-time restriction
- D. Full license
  - 1. 6 months and no citations or turn 18

- X. Universal YDP Intervention
  - A. Build on strong foundation (GDL)
  - B. Enhance assessments and interventions
    - 1. Issue of younger children – studies show that children under 16 are at highest risk of accidents when driving with young drivers
    - 2. Exploring and teaching what it means to be a passenger
    - 3. Teach risks and use simulations
  - C. Add pre-learner phase
    - 1. Should be a series, or “road” to independence
    - 2. Going through process of giving independence
      - a. A “contract” with teens and parents
      - b. Focus on what are appropriate responses to reward good behavior, as well as appropriate restrictions.
    - 3. Question: What is the research on the “black box” [internal recorder] concept and its effectiveness?
      - a. Dr. Winston; It is so new, there is not too much research.
      - b. Dr. Winston does believe there is a role for technology for monitoring, especially in situations when there has not been compliance.
        - 1) If parents had easy access to information from black box, what should we do with that?
        - 2) But we must be careful about the parent-teen relationship; the key is for parents to have conversations with their children about these issues.
    - 4. Question: The concept of teen resiliency – how does that play into driving?
      - a. Dr. Winston: I and my colleagues see that many of the “contracts” that exist around driving have to do with penalties. It does not set expectations for positive behaviors, so that teens can show that they are an adult, and demonstrate the resiliency to respond appropriately to pressures and mistakes.
      - b. Centerpieces of resilience for teens:
        - 1) An adult who cares about them and holds them to high expectations
        - 2) And kids live up or down to expectations
      - c. In the process of becoming independent, children make a lot of mistakes along the way.
        - a) If we use the car as a way to demonstrate responsibility, rather than rebel. If earning independence through use of car, then rewards are given in other areas of life.
    - 5. Concepts from National Institutes of Health for setting levels of public health strategies and programs: Universal, Targeted, and Indicated
      - a) With Universal driving plan, it is the expectation being set
  - D. Influences on Family unit: the teen and mentor
    - 1. Define roles for a “driving mentor”
    - 2. Determine what is appropriate for a teen at baseline: What will affect success in a driving program?
      - a. The teen’s baseline is affected by peers
    - 3. The mentor is usually parent, may be others
      - a. The parent is influenced by community norms

- b. There may be differences within a family unit between parents' approaches to a teen, so parents must work to be consistent.
- E. Community and family preparation
  - 1. We have many different entities that need to interact; they are not currently working together.
  - 2. What is the possible role of schools
    - a. A "toolkit" – for example, providing forums for parents to discuss and set common expectations.
    - b. Influence peer norms for safety
    - c. Prepare parents to teach and monitor
      - 1) For example, using technology for monitoring may replace – ineffectively – the harder work of parents' enforcing behaviors.
- F. Family unit and universal preparation
  - 1. Helping parents to establish and then act on consequences to behavior
    - a. "Discipline" means to teach, not to punish – the challenge is to help parents understand that good parenting is setting out clear expectations, teaching, and then monitoring.
    - b. Example – establishing a driving contract with a child; this is very difficult for individual parents, but it could be easier if all the parents are doing it.
  - 2. While primary focus of universal approach is teens, all groups have responsibilities and are targeted: parents and communities.
- G. Individualized driving plan (personalize the YDP)
  - 1. Targeted to address risk/protective factors
  - 2. Because learning is not linear, there will be setbacks and there is a need for individualization.
- H. Discussion:
  - 1. Supt. A: Schools are faced with so much, and we need to prioritize. Obviously, lives are a priority, but how to do this without compromising core mission of schools. And I do support the idea of moving back into earlier age groups.
  - 2. Supt. B: I do think there is a role for schools but it is in partnership with community. Multidimensional partnership, with entities such as insurance agencies, working with parents and communities and using schools as a means to bring people together.
  - 3. Dr. Winston: Reactions to the (visual) model: does it look scary or too complicated?
  - 4. Supt. C: The model does look complicated, but not when it is taken in pieces. There will be resistance to change, but it need not be accomplished all at once.
  - 5. Supt. D: A continuing challenge, which the model anticipates, is parent motivation. As parents, after a while, are tired of driving kids around, they are motivated to move children toward driving independence.
  - 6. Supt. E: The chart does not look, as a whole, like something I could take to my district. But it could be possible if it is broken into pieces, with the school taking a role in, for example, sending packets to parents in advance – such as a sophomore parent group, before the age when they are ready to begin driving. The law about early curfew is so ignored in NJ. But it is appropriate to have a group of parents together to set expectations.

7. Supt. F: We are talking about driving, but it is really about making good decisions and building independence. This could start with little people around all kinds of risk behaviors.
  8. Dr. Ginsburg: Every parent feels that they are the only one who sets expectations. But parents need a forum for being able to realize that others are doing it.
  9. Observation: Parent teacher organizations are usually moribund in high schools, but are active in middle and elementary schools.
  10. Supt G: It is true that PTOs are waning, but parents do turn out if there is an issue. Parents want to be involved. Where the waning comes is around PTO politics. When there is an issue, they come. Schools do well when they call mandatory meetings around key issues (for example, a prom meeting). We do a good job with decision-making preparation for young children, and we could do it with driving.
  11. Ms. Treston: The model is based on a public health model; it could represent a smoking prevention model from 20 years ago. The reaction would have been the same – it is too complicated. But over time, we have been able to put it in place and have an effect. So, the question is, in a school environment with competing interests, where could we begin to insert materials, conversations, and thinking.
  12. Supt. H: There could be a piece of this in the National Wellness Initiative. Schools in Bucks County have embraced a lot of that, around helping people to be mentally and physically healthy. There may be additional resources.
  13. Supt I: A model for the national wellness initiative is PANA: the Pennsylvania organization.
  14. Supt J: There is not a student now who doesn't know about the "Click it or Ticket" campaign. The police have asked schools to post and to offer service messages on a regular basis.
  15. Supt. K: There are natural fits in curriculum. And schools would have ability to bring parents together.
    - a. Example: before giving parents the ability to purchase a parking ticket at school lot, we could bring them together for a mandatory meeting.
- I. Intervention & assessment development
1. Research in 2007 and continuing through the life of the project to:
    - a. Identify and test the best interventions
    - b. Incorporate teen, family, school and community input
    - c. Evaluate and incorporate into best practice
  2. A dynamic process based on evolving technologies and changes in teen & driving culture
  3. Build broad awareness of issues and solutions
- J. YDP Research Network
1. Participant school districts: 3 categories
    - a. Vanguard school districts (starting 2008)
      - 1) Model schools for the nation
      - 2) Develop and test potential strategies for Young Driver Program
      - 3) Implement YDP as a baseline on which to build enhancements (starting 2010)
    - b. Intervention school districts (starting 2010)
      - 1) Implement YDP

- c. Control school districts (starting 2010)
    - 1) Continue usual practice around young drivers
    - 2) Conduct YDP assessments only
  - 2. Discussion: the study will be evidence-based
    - a. Dr. Winston: Our concern is that whatever set of interventions are presented to schools, teens and parents, they are effective.
      - 1) So, the next 2-3 years is focused on developing the series of toolkits.
      - 2) What is feasible to ask of schools in Vanguard stage?
    - b. Supt. A: A concern about control groups when it comes to health and safety. Could it be benchmarked against state averages, etc.
- K. Differentiating among 3 types of participation
- 1. Dr. Ginsburg: clarification of the terms for school participation
    - a. Intervention schools would get “state of the art” interventions .
    - b. Vanguard schools would get “state of art,” plus; it is focused on helping teens and parents to be most receptive to interventions.
    - c. Meeting parents at the appropriate point at which they feel anxiety about their child’s stage of development.
    - d. A key component is helping parents to realize that they do have power to affect their child’s behavior.
  - 2. Ms. Treston: The researchers are currently at the developmental phase of project; one issue we are struggling with are control groups. There are possible areas for compromise, such as participation in other studies/interventions.
    - a. The hope is that there will be other inputs into communities such as media campaigns.
    - b. Once things become standard interventions, the expectation is that all participants would use it.
    - c. Dr. O’Toole: Provided an example of a phased approach to the use of control schools
      - 1) In the Annenberg Distributed Learning project, the program is implemented in stages, and schools that applied but were not selected then were provided with a higher opportunity for participation in future.
  - 3. The project will research best practices in other states and nationally.
    - a. Supt. B: In Vermont, school-provided driver education is mandatory, but data does not show improvement in safety.
  - 4. Legislative action and policy in relation to education and prevention: establishing different social norms which empower or support parents and teens.
    - a. An example regarding community response to issues is in Upper Saint Clair, PA. The community set a norm in response to a school death by outlawing any teen driving at all to school events. District-wide, busing is provided. The community accepts the higher cost in order to provide this safety policy.
  - 5. Dr. Treston: it is a comprehensive and multifaceted program, and part of it is influencing legislation, policy and public awareness.
    - a. But in an effectiveness trial, you do go in with a pretty strong sense of what will work. But it is possible that certain things we try will not have an impact.
  - 6. Supt. B: with cognitive development research and what we know, I agree that the risk/reward threshold is there, in a way that education can impact change.

7. Supt. C: I do believe that, given the opportunity for significant discussion and consideration, teens can be impacted. But I am concerned about the schools embracing responsibility for more issues.

XI. There are implications for linking the Young Driver Research to the work of Dr. Ruben Gur, Director, Penn's Brain Behavior Center, on cognitive brain research.