Bicycle Riding for the Chronologically Gifted

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Osher Lifelong Learning Institute

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Course Objective

• Provide information for successfully and safely riding a bicycle

• For the purpose of...
  – enjoyment
  – exercise
  – transportation
Outline: Topics to be Covered

• Speaker’s cycling experience
• Evolution of the bicycle
• How far and fast people have pedaled
• How much bikes cost
• Suitable types of bicycles
• Unsuitable types of bicycles
• Where to buy bicycles
• Ancillary bicycle equipment
• Clothing for cycling
Outline: Topics to be Covered (cont.)

• The weather and riding
• Bicycle safety
• How cyclists communicate
• Bike maintenance
• Where to ride
• How to get started
• When riding is less than perfect bliss
• Items to take with you when riding
• Learning to ride a bike (video) [Time permitting]
The Speaker’s Cycling Experience

• Age 12—a Schwinn single speed
• Age 14—a Raleigh 3 speed (to/from school)
• Age 17—multi-speed Raleigh road bike... college transportation
• For 30 years—occasional bike riding
• Age 47—Shogun 12-speed road bike—more frequent, but casual riding
The Speaker’s Bike Experience
(cont.)

• Age 65—retired and began riding systematically
• Age 66—Burley Limbo recumbent
• Age 67—Rans V-Rex recumbent
• Age 70—Catrike Expedition trike
• Age 77—added BionX electric assist motor to the Catrike

2004 to date rode 26,000+ miles
So, let’s get started...
Evolution of the Bicycle
1790 Celerifere

Comte Mede de Sivrac of France
1817 Draisienne

Baron Karl von Drais
1839 Pedals Added

Kirkpatrick MacMillian
1866 Boneshaker

P. LALLEMENT.
VELOCIPÈDE.
Patented Nov. 20, 1866.

No. 59,915.
1872 The Penny Farthing*

James Starley

*The “Ordinary” or “High Wheeler”
1885 “Rover” Safety Bicycle

John K. Starley
Van Cleve Bicycle (1900)
Van Cleve
Bicycles = 1900.

WRIGHT CYCLE CO., MAKERS.
1127 WEST THIRD STREET.
DAYTON O.
How Far Have People Pedaled in 24 hours?

- 1890: George Mills rode 259 miles
- 2012: Maria Parker rode 469 miles
- 2015: Christoph Strasser rode 557 miles*

*For more cycling records see
How Fast Have People Pedaled?

- 1889: “Mile-a-Minute” Murphy rode one mile in 57.75 seconds (62.3 mph)
- 1973: Allan Abbot set world record 140.5 mph (see 3 min video)
- 1985: John Howard set world record 152.3 mph (see 2 min video)
- 1995: Fred Rompelberg* set world record 167.0 mph (see 5 min video)
- 2010: Barbara Buatois set women’s record at 75.5 mph (see 6 min video)

*At age 50
Age 101 and still riding
Robert Marchand

Rode 14 miles in 1 hour; Jan 4, 2017
Age: 105
How Much?
Relationship Between Price and Quality
(competitive consumer goods)
Cars: Price & Quality

Mazda MX-5 Miata
$30,000
Power: 155 bhp
0 → 60: 5.8 sec
Max speed: 130 mph

Bugatti Chiron
$3.0 million
Power: 1,479 bhp
0 → 60: 2.4 sec
Max speed: 261 mph
Ladies Watches: Price & Quality

Timex
$36.49
+6 sec/year*

*My Timex watch

Rolex
$105,350
±2 sec/day
Bicycles: Price & Quality

Roadmaster Granite Peak
$80
Steel
39 lbs.
18 speeds (gears)

Trek Madone 9.9
$12,000
Carbon fiber
15.5 lbs.
11 speeds (gears)
Where to Buy a Bicycle?
Mass Merchants

- BJ’s
- Costco
- JCPenney
- Sears
- Target
- Walmart

$
Chain Sporting Goods Stores

- Dick’s Sporting Goods
- Modell’s Sporting Goods
- Sports Authority (out of business 2016)
Outdoor Specialty Retailers

• L.L. Bean
• REI

$\$\$\$$
Specialty Bike Retailers

• The Bike Lane
• Bikes @ Vienna
• Conte’s Bike Shop
• Freshbikes Cycling
• Hybrid Pedals
• Performance
• Spokes
• Green Lizard Cycling

$$$$$$
Used Bicycles

• Specialty bike stores often have used bikes for sale

• A used bike can minimize your investment until:
  – to decide if cycling is for you
  – can be traded-in (or sold on consignment)

$$

$$$
Online Bicycle Stores

• You may save money, but...
• Who will fit you to the bike?
• You assemble the bike
• No relationship built after the sale
• Not for first-time bike buyers
• Suitable for those who know exactly what they want to buy
Suitable Types of Bicycles

- City Commuter/Urban
- Hybrid
- Cruiser
- Touring
- Folding Bicycle
- Tandem
- Adult Tricycle
- Recumbent
- Trike
- Electric Assist Bicycle (aka pedelec, e-bike)
City Commuter/Urban

- Comfort = 4
- Pavement
- Upright position
- Head & tail lights
- Fenders
- Chain guard
- Rack
- 12-30 speeds
- $130 ➔ $500 ➔ $1,900

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Hybrid

- Comfort = 4+
- Pavement & trail
- Combo road + mountain
- $160 ➔ $780 ➔ $2,500

- 12-30 speeds
- Front suspension
- Bigger tires
- Padded seat

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Cruiser

- Comfort = 5
- Upright position
- 1 to 3 speeds
- Big balloon tires
- For casual riding
- Coaster brakes
- Energy consuming
- $80 ➔ $315 ➔ $960

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Touring

- Comfort = 2+
- Drop handlebar
- Pavement
- Long distance

- Mounting points:
  - Rack & water bottles
- Lower gear range
- 12-30 speeds
- $600 ➔ $1,600 ➔ $5,500

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Folding Bicycle

- Comfort = ?
- Easy transport
- $600 ➔ $1,400 ➔ $2,400
- Harder to steal
- Not for long distance

Comfort: 1= uncomfortable ➔ 5 = very comfortable
Tandem

- Comfort = 3 to 4
- Good for riders with unequal abilities
- Greater visibility to be seen
- Difficult to transport
- Less maneuverable
- $280 ➔ $2,500 ➔ $6,900

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Warehouse Tricycle

- Comfort = 3 to 4
- For casual riding
- No balancing needed
- Difficult to transport
- Can haul cargo
- $160 ➔ $630 ➔ $1,800

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Recumbent

• Comfort = 5
• $1,300 $3,600 $8,500
• Limited production/hand made
• Steering can be “twitchy”
• Takes getting used to...

Comfort: 1= uncomfortable 5 = very comfortable
Trike

That’s for little kids... not old kids!
Trike

- Comfort = 5
- $1,000 ➔ $4,000 ➔ $12,000
- Limited production/hand made
- Difficult to be seen
- High quality components
- No balancing needed

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Electric Assist Bicycle

- Comfort = 3-5
- Hub or central crank motor
- $550 ➔ $2,900 ➔ $17,000
- Assist: 15, 20, 28 mph
- See for applicable laws
- Greater maintenance
- Range 15 to 100+ mi
- Less tiring

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Unsuitable Types of Bikes

- Road
- Road Racing
- Cyclocross
- Mountain
- BMX
Penny Farthing

Price ~$3,000

Not Recommended!
Hey!

Four wheels... must be stable
Road

- Comfort = 1
- Smooth pavement
- Skinny tires
- Drop handlebars

- Light weight
- Moderately fast
- Long distances
- Expensive

Comfort: 1 = uncomfortable ➞ 5 = very comfortable
Road Racing

- Comfort = 1
- Smooth pavement
- Skinny tires
- Drop handlebars

- Light weight
- Fast
- Even more expensive

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Cyclocross

- Comfort = 1 to 2
- On/off road
- For racing
- Close ratio gears

- Heavier
- Expensive

Comfort: 1 = uncomfortable ➔ 5 = very comfortable
Mountain

• Comfort = 2-4
• All terrain/off road
• Suspension
  – Full suspension
  – Hardtail

• Rugged
• Somewhat heavy
• Expensive

Comfort: 1= uncomfortable ➔ 5 = very comfortable
BMX

- Comfort = ?
- Off road
- Stunt riding
- Racing
- Rugged
- Not for street riding

Comfort: 1 = uncomfortable  ➞  5 = very comfortable
Ancillary Bicycle Equipment

- Helmet
- Water bottle(s) and cage(s)
- Front and rear lights
- Mirror(s)
- Cycling glasses/sunglasses
- Bicycle lock
- First aid kit
- Light weight tire pump
Ancillary Bicycle Equipment (cont.)

- Tire patch kit or spare inner tube(s)
- Bike bag or pannier
- Standing tire pump with pressure gauge (at home)
- Special chain lubricant
- Reflective tape
- Bicycle computer
Helmet

CPSC Compliant

$12 ➔ $69 ➔ $400
Replace in 3-5 years
Cycling Clothing

T-Shirt

Alert Shirt Company
Cycling Clothing (cont.)

Shorts
Shoes for Cycling

- Flat/Platform Pedal
- Cage Pedal
- Clipless Pedal
Cycling Shoes (cont.)

Overshoes
Cycling Clothing (cont.)

Sweat Pants
Cycling Clothing (cont.)

Water/wind Proof Jacket
Cycling Clothing (cont.)

Jacket
Cycling Clothing (cont.)

Gloves & Mittens
Cycling Clothing (cont.)

Hat (under helmet)
Bicycle Computers

$14 ➔ $180 ➔ $733

Apps for smartphones
Cyclemeter app for iPhone
Items I Track

- Distance traveled
- Current speed
- Average speed
- Maximum speed
- Kcal expended
- Riding time
- Current heart rate
- Average heart rate*
- Maximum heart rate

*Maximum sustained heart rate = 0.85(220-age)
Age 77 = 121 bpm
<table>
<thead>
<tr>
<th>°F</th>
<th>Clothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥60</td>
<td>Shorts &amp; T-Shirt</td>
</tr>
<tr>
<td>55-60</td>
<td>Shorts &amp; long-sleeve shirt</td>
</tr>
<tr>
<td>50-55</td>
<td>Shorts or light weight sweat pants and light jacket, light gloves</td>
</tr>
<tr>
<td>45-50</td>
<td>Sweat pants, long-sleeve shirt under rain jacket, light gloves</td>
</tr>
<tr>
<td>40-45</td>
<td>Sweat pants, long-sleeve shirt under rain jacket, thermal gloves, overshoes</td>
</tr>
<tr>
<td>30-40</td>
<td>Sweat pants with Polartec 200 pants, sweat shirt under rain jacket, cap under helmet, mittens, overshoes</td>
</tr>
</tbody>
</table>
Bicycle Safety
Is Cycling Safe?

Answer? Yes and No

2014 Fatalities and Injuries in the U.S.

<table>
<thead>
<tr>
<th>Transportation Mode</th>
<th>Deaths</th>
<th>Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicyclists</td>
<td>726</td>
<td>50,000</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>4,884</td>
<td>65,000</td>
</tr>
<tr>
<td>Motor Vehicle</td>
<td>29,989</td>
<td>1,648,000</td>
</tr>
</tbody>
</table>

“No more than 17% of fatally injured cyclists were wearing helmets”
### Most Common Sources of Bicycle Related Injuries

<table>
<thead>
<tr>
<th>Sources of Injury</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hit by car</td>
<td>29</td>
</tr>
<tr>
<td>Falling</td>
<td>17</td>
</tr>
<tr>
<td>Riding surface in poor repair</td>
<td>13</td>
</tr>
<tr>
<td>Crash/collision</td>
<td>7</td>
</tr>
<tr>
<td>Dogs</td>
<td>4</td>
</tr>
</tbody>
</table>
### Sports Injuries

<table>
<thead>
<tr>
<th>Sport</th>
<th>Children Treated in Hospital*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Football</td>
<td>215,000</td>
</tr>
<tr>
<td>Bicycling</td>
<td>200,000</td>
</tr>
<tr>
<td>Basketball</td>
<td>170,000</td>
</tr>
<tr>
<td>Baseball &amp; softball</td>
<td>110,000</td>
</tr>
<tr>
<td>Soccer</td>
<td>88,000</td>
</tr>
<tr>
<td>Skateboarding</td>
<td>66,000</td>
</tr>
<tr>
<td>Trampolines</td>
<td>65,000</td>
</tr>
<tr>
<td>Roller skating</td>
<td>47,000</td>
</tr>
<tr>
<td>Skiing</td>
<td>25,000</td>
</tr>
<tr>
<td>Ice hockey</td>
<td>20,000</td>
</tr>
<tr>
<td>Sledding</td>
<td>16,000</td>
</tr>
</tbody>
</table>

*Children ages 5-14

From Johns Hopkins Medicine study, see; see also
SAFETY TIPS FOR CYCLISTS

safewise
Bicycle Safety

- U.S. drivers are averse towards cyclists—if not hostile
- **Always** wear a helmet
- **Drivers are not watching for bicycles!**
- On roads—day and night
  - Turn on front and tail lights, preferably flashing
  - Wear light colored, high-visibility clothing
  - Affix light-reflective tape to bike, helmet & clothing
• On roads—day and night
  – Do not wear ear phones/plugs
  – Do not run red lights—obey traffic laws
  – Use hand signals
  – Frequently check rear mirror(s)
  – Be careful at intersections—watch for turning cars
• On roads—day and night
  – Look on your right for parked-car’s doors opening
  – Make eye contact with vehicle drivers
  – Ride with traffic, not against it (Va law)
  – Avoid riding on sidewalks
  – For more information see...
Don’t respond to insults
Drivers View of Bicycles at Night
Drivers View of Bicycles at Night
Potential Organ Donor

Massive Idiot
Melanoma Mike

Wot’s SPF?
Too Much Stuff... Really?
At least he’s wearing a helmet!
How Cyclist Communicate

• “On your left (or right)” — when passing [or bell]
• ”Clear”— it’s alright to cross street [Don’t you believe it!]
• “Deer!” — other animals or obstructions
• “Need help?”
• “Need tools?”
Bicycle Maintenance

• Should know how to change a flat tire
• Maintain proper tire pressure
• Apply chain lubrication
• Wash/clean bicycle
• Adjust brakes
• Adjust derailleurs
• Tighten loose items
Where to Ride

• Streets and roads
• W&OD trail: Shirlington to Purcellville, Va (paved 45 miles long)
• Bike trails in Fairfax County (500 miles)
• Mountain bike trails in No. Virginia
• Bike trails in Virginia
• Fairfax cycling trails (MapMyRide)
• VDOT walking and bicycling in Virginia
• Washington DC bike routes
W&OD
Ashburn
Virginia

Don’s Johns here

Covered benches there

Compressed air
W&OD
Leesburg
Virginia
Before Sustained Cycling

See your doctor
## A Cycling Program (getting started)

<table>
<thead>
<tr>
<th>When</th>
<th>How Far</th>
<th>How Often</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>1-3 miles</td>
<td>2-3 times/week</td>
<td>Easy does it</td>
</tr>
<tr>
<td>Week 2</td>
<td>3-8 miles</td>
<td>2-3 times/week</td>
<td>Ride somewhat faster</td>
</tr>
<tr>
<td>Week 3 or 4</td>
<td>10-15 miles</td>
<td>2-3 times/week</td>
<td>Steady cadence</td>
</tr>
<tr>
<td>Week 5 or 6</td>
<td>15-20 miles</td>
<td>2-3 times/week</td>
<td>Feel “in the groove”</td>
</tr>
<tr>
<td>Week 7 or 8</td>
<td>25+ miles</td>
<td>1-2 times/week</td>
<td>How far and fast</td>
</tr>
<tr>
<td>Every week</td>
<td>20+ miles</td>
<td>2-4 times/week</td>
<td>Established routine</td>
</tr>
</tbody>
</table>

Keep riding regularly!
When Cycling Is Less Than Sheer Bliss*

*When the dog bites, when the bee stings, when I’m feeling sad…”
“Hitting the Brick Wall”
Hills Near Leesburg, Virginia
Impact of Wind Speed

Wind resistance (yellow) and other losses (purple)
An average adult cyclist produces 75-150 watts
100 watts = 0.134 bhp
Riding in the snow—UGH!
Sooner or later you’re in the rain...
Heat and humidity
In traffic—Watch out!!!
Nevertheless, it’s lots of fun!
Items To Take With You
(in decreasing importance)

• Water
• Appropriate clothing*
• Sun screen lotion
• Light weight tire pump
• Spare inner tube(s) and/or patch kit
• Basic took kit

*Annual World Naked Bike Ride in Portland, Oregon June 24, 2017
Items To Take With You (cont.)
(in decreasing importance)

• Money in plastic bag
• First aid kit in plastic bag
• Latex gloves
• Hand sanitizer
• Plastic bags and rubber bands
Just Before You Ride...

- Check tire pressure
- Check lights and turn on
- Check chain—lube as needed
- Have your stuff with you?
Learning to Ride a Bike

• So you’ve never ridden a bike?
• “Learn how to ride a bicycle in 5 minutes”
• See also
Have A Great Time!
That’s all folks

Remember Age 105!
Thank You!

I am having fun
20 miles to go!