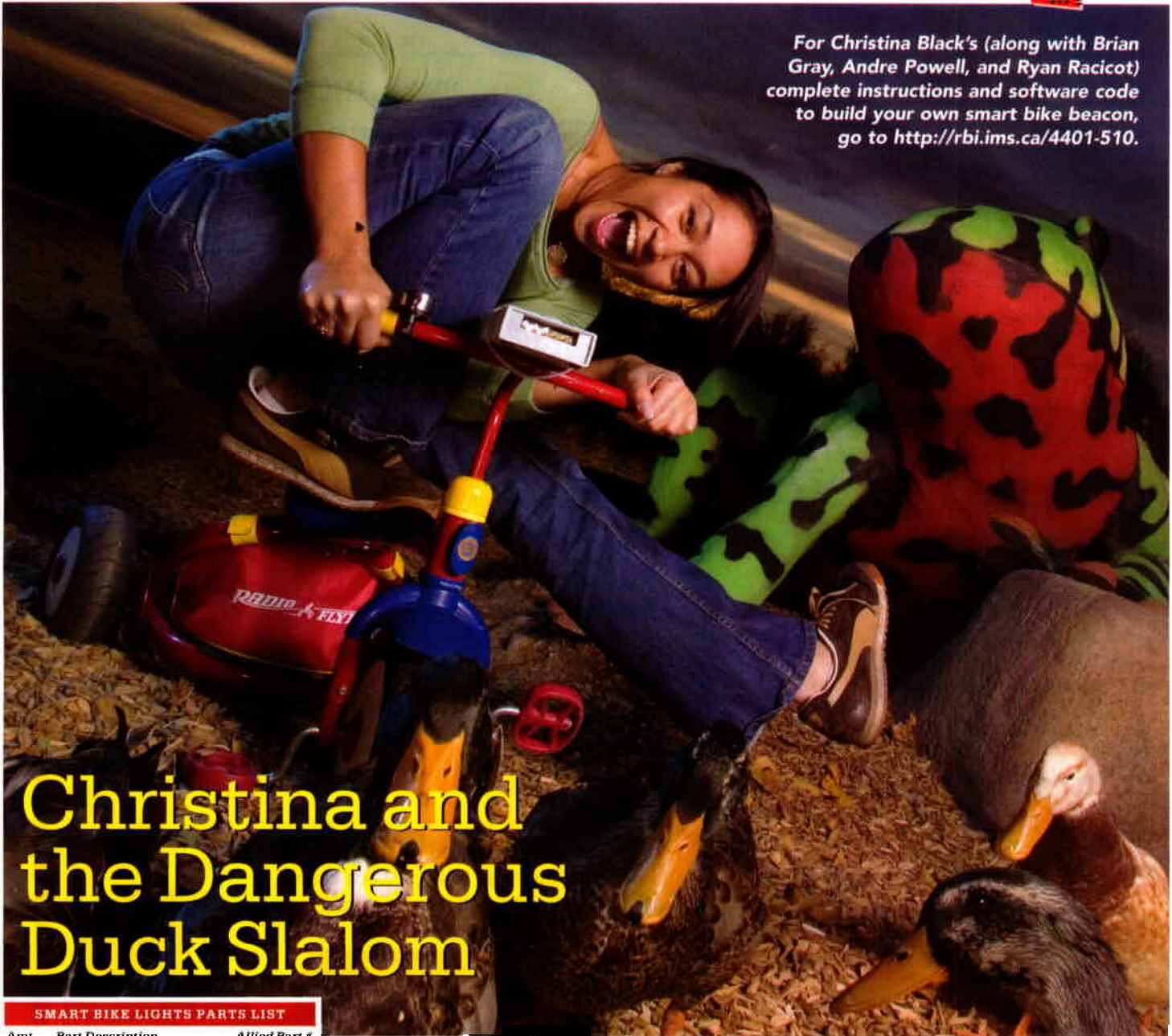


For Christina Black's (along with Brian Gray, Andre Powell, and Ryan Racicot) complete instructions and software code to build your own smart bike beacon, go to <http://rbi.ims.ca/4401-510>.



# Christina and the Dangerous Duck Slalom

## SMART BIKE LIGHTS PARTS LIST

Qty	Part Description	Allied Part #
1	Battery	772-0R10
2	Miniature speakers	623-2144
1	Photoconductive cell	981-0015
1	Instrument case	806-5050
1	LED array	761-0019
1	Voltage regulator	263-0135
1	25V transistor	263-0319
1	Miniature sensor	642-2257
1	LED array wire	749-3330
1	Switch	878-2175

**Additional parts required:** PIC 16F84A and PIC 16F88 microcontroller; mini DCM pulse motor, generator, 60 tooth gear.

To light the way home after a late night cramming at the library, Christina and friends designed this smart bike light. Using two microcontrollers and powered by a battery pack that mounts to the bike's down tube, the device monitors both the bicycle speed (via Hall Effect magnet) and amount of daylight (via photoconductive cell). When dwindling light is detected during operation, the unit sounds an on-tone and exposes and turns on an array of white LEDs. A four-line LCD display indicates both status and speed.

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