Evaluation of Automated Systems for Assessing Physical Activity

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Project Aims

- Develop, field test, and refine an automated monitoring system based on a complementary metal oxide semiconductor (CMOS) image acquisition sensor that addresses the weaknesses of existing systems
- Assess reliability and validity of the sensor
- Provide documentation of hardware and software, to be placed in the public domain

Reliability and Validity

Concurrent validity:

Association between automated system counts and observer counts from concurrent videotapes

Reliability:

a) Inter-observer and intra-observer reliability

b) Inter-instrument reliability

Data Collection Plan

- Varying conditions
  - Time of day
  - Season
  - Weather
- Varying locations
  - Indoor stairwell
  - Paved track
  - Natural surface trail

Major Variables

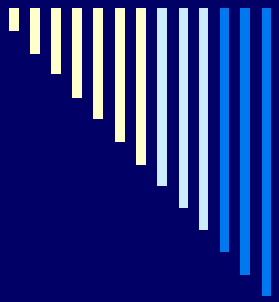
- User – a subject for whom at least one passage past the monitored space is recorded during a given measurement period
- User count
- User passage count (per user count)
- User passage volume

Progress to Date

- Human subjects approval obtained
- Electronic components acquired
- Counters constructed
- Mounting hardware installed at trails
- Software written

Progress to Date

- Counter pre-tested in the field
- Troubleshooting hardware
- Software revisions -- ongoing
- Data collection to begin
  - expected February 2004



Questions?