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Carroll-Loye Biological Research

Subject Influence on Repellent Performance

In relation to the choice of subjects

- Individuals differ in attractiveness, but shifts among mosquito taxa
- No *a priori* means of predicting an individual's attractiveness to a particular mosquito population
- Skin emanated volatiles influence attractiveness
- Gender, age, race, hair color, complexion, weight, skin moisture, menses (females),hairiness, and sweat.
- Only GENDER has been shown important: + and –

Sampling Frame

Local population,
Davis CA

- 70% White
- 15% Asian
- 8% Hispanic
- 2% Black

Volunteer Database
Current N=58

- 76% (44) White
- 14% (8) Asian,
- 6% (3.5) Hispanic
- 4% (2.5) Black

Volunteer database

N=58

- 75% age 20-40
- 25% ages 40 and 55
- 7 PhD, 8 MS, 18 in graduate programs, 14 others with BS/BA, 10 undergraduate
- Among those who are not students:

  1 professor, 15 professional researchers, 5 professional artists, 3 teachers, 3 office workers, 2 business owners, 2 sales people, 1 massage therapist
- Summary: relatively young, well-educated; slanted toward life science researchers and students
- Subjects show a keen and enduring interest in participating, but such interest is not likely predictive of anything atypical about the results stemming from their presence in a study.

Recruitment

In recent years our Volunteer Database has grown through people who initiate contact with Carroll-Loye Biological Research.

Those individuals learn of our studies from persons who have worked with us; we do not direct or actively encourage that process.

Each individual in the database has requested that we contact him or her in the event that test subjects are needed.

Those who will serve as untreated control subjects are limited to experienced technical personnel, who are screened with the same exclusion criteria as are other subjects, and have additional inclusion requirements.

Untreated control subjects

- **Inclusion criteria specific to the two untreated subjects**

  'To qualify for candidacy as a subject who exposes untreated skin, an individual must be regarded as competent to do so by the Principal Investigator, must have participated in at least five prior Carroll-Loye repellent efficacy trials, or have participated in at least three such trials and have at least two years of experience as a college life sciences major, or be professionally employed in vector control services.'

ICF wording re controls

- 'Two experienced subjects will also participate to record the activity of mosquitoes by exposing their own arms or legs without repellent applied. Experienced subjects are pre-qualified by the Principal Investigator, and designated before the field test begins. Unless you have been qualified in advance as an experienced subject and agreed to expose untreated skin, you will not be asked to expose untreated skin and should avoid doing so.'

- 'If you are one of the two untreated ("experienced") subjects, two technicians with aspirators will assist you in watching for and removing mosquitoes during each one-minute exposure, and in each exposure you should cover your limb with the protective fabric as soon as the first mosquito lands and attempts to bite, and keep it covered until the next exposure period, 15 minutes later.'

Disease surveillance

- Arbovirus surveillance intensive in CA
  - From resting boxes, WNV, WEE, SLE
  - 25,000 pools of 50 mosq in 2006
  - More intensive than chicken flocks
  - Cal vector ecologists suggest two-week buffer

- Should we sample during tests?
  - Could sample each LIBe, + *N*/hr per species
  - What will those data tell us?