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Dual:

IRG: CVP

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1. TITLE OF PROJECT (Do not exceed 81 characters, including spaces)

Reverse Correlation Mapping in Face Patches

2. RESPONSE TO SPECIFIC REQUEST FOR APPLICATIONS OR PROGRAM ANNOUNCEMENT OR SOLICITATION NO YES
(If "Yes," state number and title)

Number:

Title:

3. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR

New Investigator No Yes

3a. NAME (Last, first, middle)

Livingstone, Margaret S.

3b. DEGREE(S)

PhD

3h. eRA Commons User Name

3c. POSITION TITLE

Professor

3d. MAILING ADDRESS (Street, city, state, zip code)

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3f. MAJOR SUBDIVISION

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4. HUMAN SUBJECTS RESEARCH

 No Yes

4b. Human Subjects Assurance No.

5. VERTEBRATE ANIMALS No Yes

4c. Clinical Trial

 No Yes

4d. NIH-defined Phase III

Clinical Trial No Yes

5a. If "Yes," IACUC approval Date

12/17/2004

5b. Animal welfare assurance no.

A3431-01

4a. Research Exempt

If "Yes," Exemption No.

f. Vertebrate Animals

Species and numbers of animals: 5 rhesus macaque monkeys purchased the first year for fMRI and single-unit recording.

Rationale for appropriateness and numbers:

We use primates because we are studying face recognition, which is an aspect of visual perception that is well developed only in primates. We plan to record from 2 monkeys simultaneously. The other monkeys will be used for fMRI recording for 1 or more years, and then they will be switched to single-unit recording.

Procedures to ensure minimum discomfort and distress:

All surgical procedures are done under full surgical anesthesia (1.5 to 2% isoflurane). The animals are not paralyzed, so if the anesthesia becomes too light the animal will withdraw to painful stimuli. We monitor withdrawal reflexes, ECG, and expired CO₂ throughout the surgery, to insure adequate ventilation and anesthesia. The animal is given prophylactic antibiotics for 10 days postoperatively, and is given postoperative analgesics for 2 days postoperatively (Torbutrol, 0.25mg/kg, q12 hours). All surgical procedures are done under aseptic conditions under surgical anesthesia. Inhalation anesthetic (1.5 to 2% isoflurane in oxygen) is used for the duration of the procedure. The monkey is monitored until full recovery of consciousness, and given prophylactic antibiotics (2.5 mg/kg Baytril, bid), 10 days postoperatively and analgesics for 1 to 2 days postoperatively (Torbutrol, 0.25mg/kg, q12 hours).

The monkeys are initially reluctant to be restrained in a primate chair, but we gradually accustom them to the restraint by giving copious fruit and peanut rewards while they are in the chair. For the recording we restrain the monkey for up to 5 hours, but only if the monkey is willing. We need the monkey to fix his gaze on a small spot on a TV monitor; if the monkey is uncomfortable he will not do this. We always stop the experiment when the monkey stops fixating more than 50% of the time, and this usually happens after 2-4 hours.

The monkeys are water deprived in order to motivate them to perform the fixation task. The animals are given ad lib water on Saturdays, and 40cc/kg water on Sundays. Mondays through Fridays the monkeys obtain water or juice during the recording session. We monitor the amount of fluid they take, and supplemental fluid is given if the intake is not at least 40cc/kg/day. The animals are weighed weekly to be