

Neuroscience of Love



Upcoming Events

THE
DANA
FOUNDATION

non-profit organization that aims to bring awareness to the importance of brain research and brain disorder stigmatization

Brain Awareness Week: travel to local high school and middle schools to teach about neuroscience and brain health

- March 12th - 16th (spring break)
- Islip Middle School 5th graders -- Monday, March 12th
- Patchogue-Medford High School -- Thursday, March 15th
- More schools to come!

Undergraduate Biology Scholarships

Michel Colbert Endowed Scholarship

- Undergraduate in biological sciences with clear plans for bachelor's degree
- Unanticipated financial challenges that interfere with degree completion
- **Deadline March 21, 2018**

Edward J. Mardovich '81 Memorial Scholarship

- Junior or Senior status Biology majors
- **Deadline March 21, 2018**

URECA Summer Program

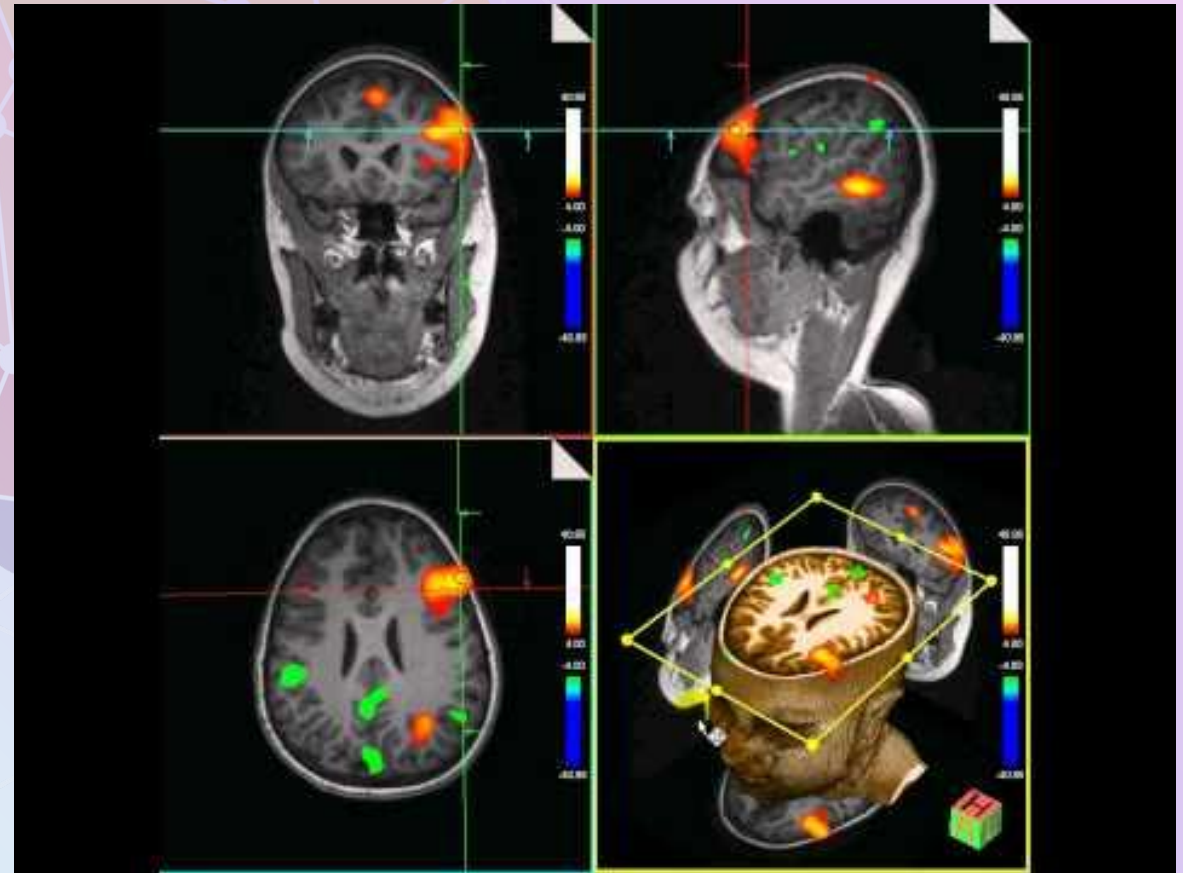
Full-time faculty-mentored research or creative activity for ten weeks, after which you may prepare abstracts of work and present work at the URECA Celebration the following Spring.

- Open to all current Stony Brook undergraduates except those graduating in May 2018.
- Applications should be submitted with an intended sponsor/mentor and project
- Program from May 29 - August 3, 2018
- **Deadline March 9, 2018**

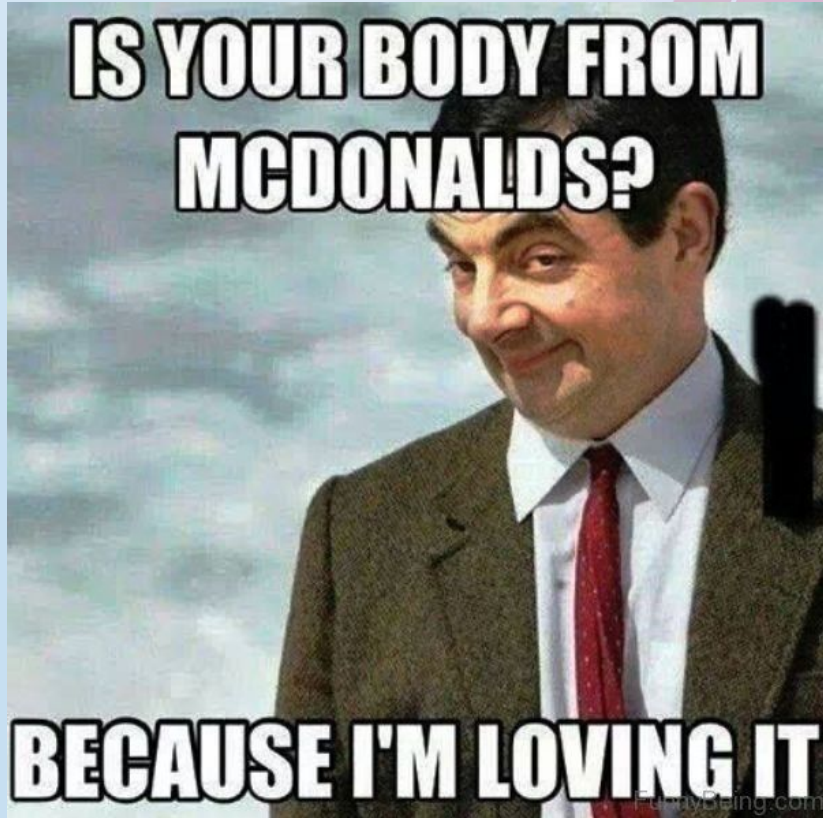
How can we research love?

Functional Magnetic Resonance Imaging (fMRI)

- Measures blood flow
- The more an area is used, the more oxygen and glucose is required, thus greater blood flow



Stages of Love: Lust



Involves reward pathways in the brain

- *Dopamine* and *Norepinephrine*
 - Makes people feel energetic, euphoric, decreased appetite and insomnia
 - Norepinephrine plays a role in fight or flight response (alertness)
- *Serotonin*
 - Reduction in serotonin levels -- may be involved with appetite and mood

Stages of Love: Attraction

The type of neurotransmitter that is more expressive in your nervous system can influence your personality



Stages of love: Attachment

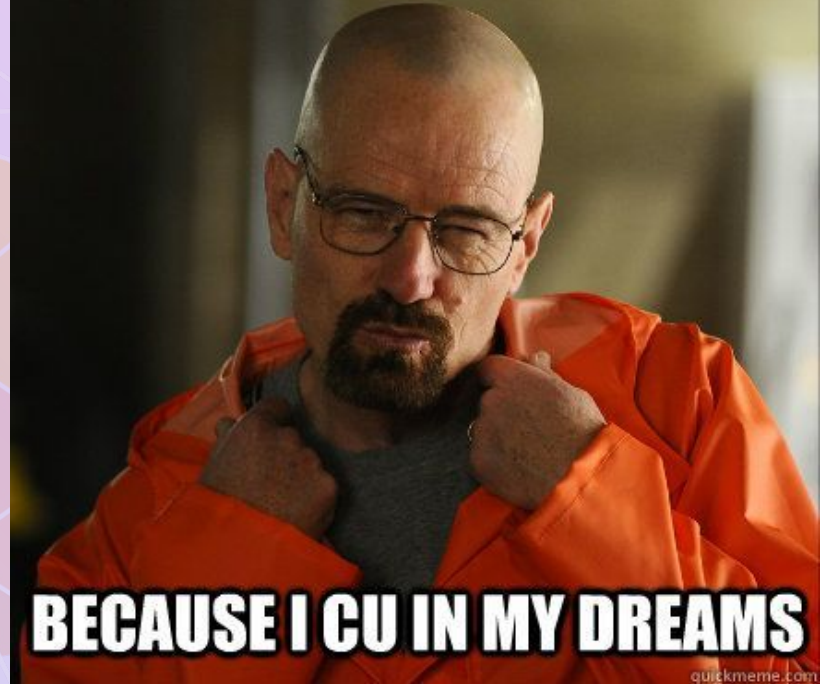
Oxytocin

- Hormone that plays a role in nursing, mother-infant attachment and pregnancy
- Deepens feelings of attachment, provokes feelings of contentment, calmness and security

Vasopressin

- Linked to long-term relationship, monogamy and attachment development

ARE YOU COPPER?



BECAUSE I CU IN MY DREAMS

quickmeme.com

Lucy L. Brown, Ph.D. & Helen Fisher, Ph.D.

Leading researchers in the field exploring the neuroscientific basis behind love

- Reward pathway
- Passionate love scales
- Rejection and heartbreak
- Gender and sexual orientation
- Love over time
- Love around the world



Does love expire?

Group 1: Long-term marriage

Group 2: Recently fallen in love

Participants viewed facial images of:

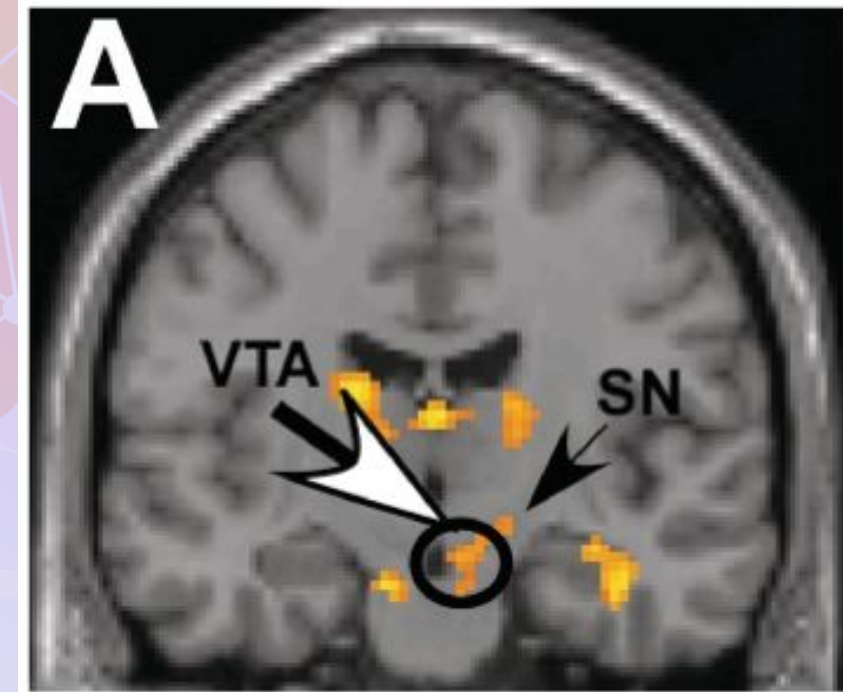
- Partner
- Close friend
- Highly familiar acquaintance
- Low familiar person



Does love expire?

Similar brain activity in regions involved with reward, motivation and wanting in both types of couples

Ventral Tegmental Area (VTA) had greater activation in long term couple groups that had high romantic love and closeness ratings



Does love expire?

Self Expansion Model (Aron & Aron)

- Increasing who you are, taking on another's perspective, including your romantic partner in yourself
 - Fisher and Brown: The more a person includes another in their sense of self, the greater the VTA activity
- Contributes to the rush of excitement when first falling in love
 - How can we keep it going?





Does love expire?

Group 1: Challenging conditions

- Ankles and wrists tied together
- Crawl on mat across a room, over a barrier, balancing a pillow
- Less than 1 minute to complete task

Group 2: Mundane conditions

- Rolling a ball between partners

everyone's falling in love and I'm just like



A meme featuring a close-up of a man with glasses (Moss) from the TV show 'The Office'. He has a skeptical, questioning expression on his face. The background is a blurred office setting with another person in a light blue shirt visible in the background.

LOVE IS IN THE AIR?

FALSE.

**NITROGEN, OXYGEN, ARGON AND
CARBON DIOXIDE ARE IN THE AIR**

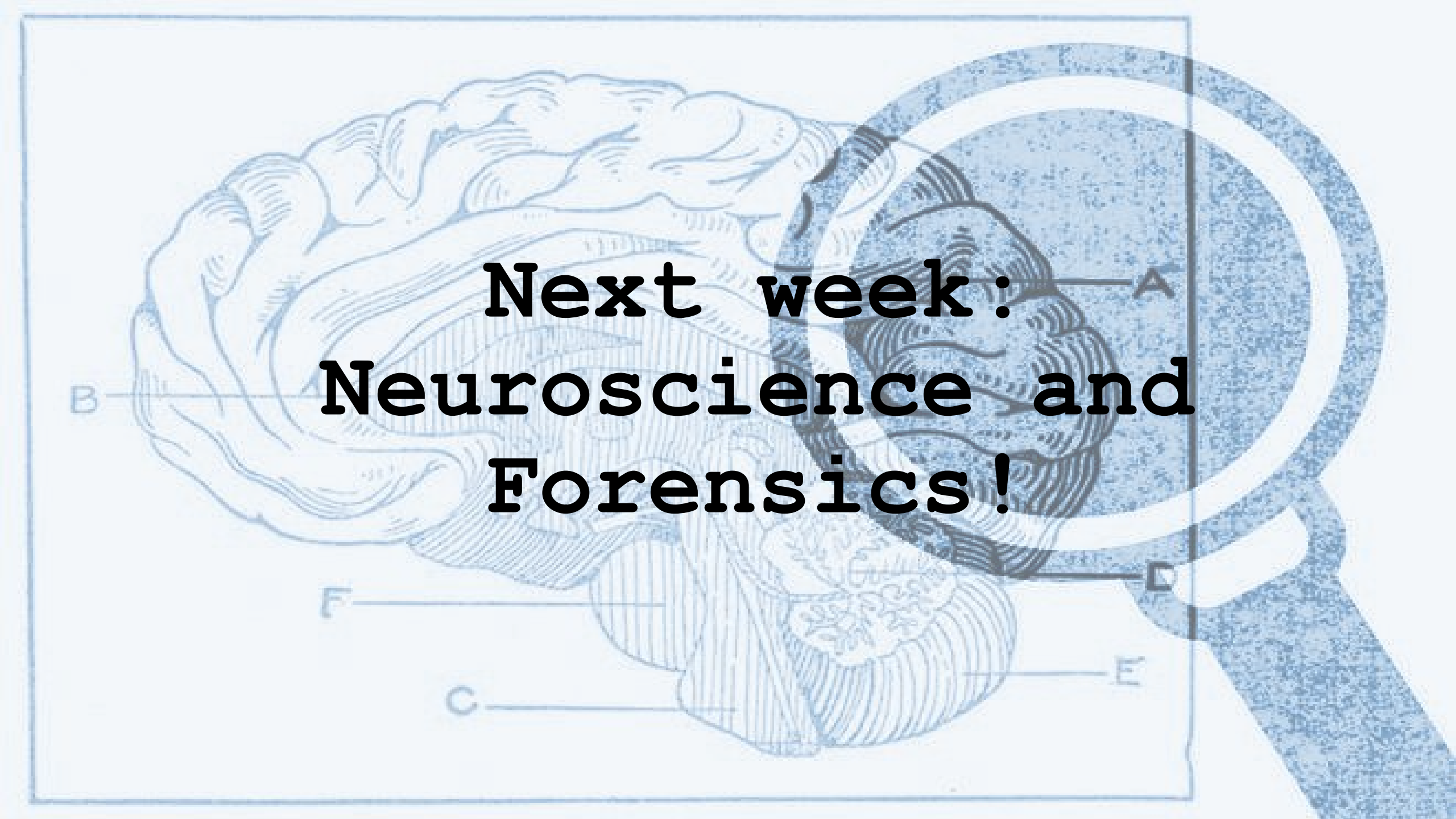
Long Island State Veterans Home



Adult day health care and short-term rehabilitation for 250,000 veterans residing in Long Island

Volunteer opportunities

- Assist residents through activities and recreation throughout the day
 - Bingo, card games
 - Music & pet therapy
 - Sensory stimulation and movie screenings

An anatomical drawing of a human brain in profile, facing right. A magnifying glass is positioned over the posterior part of the brain, specifically the occipital lobe. The magnifying glass's lens is focused on a specific area, and the handle extends towards the bottom right. The drawing is rendered in a light blue, sketch-like style. Several letters (A, B, C, E, F) are placed around the brain with lines pointing to specific anatomical features. The text 'Next week: Neuroscience and Forensics!' is overlaid in the center of the image in a bold, black, serif font.

**Next week:
Neuroscience and
Forensics!**