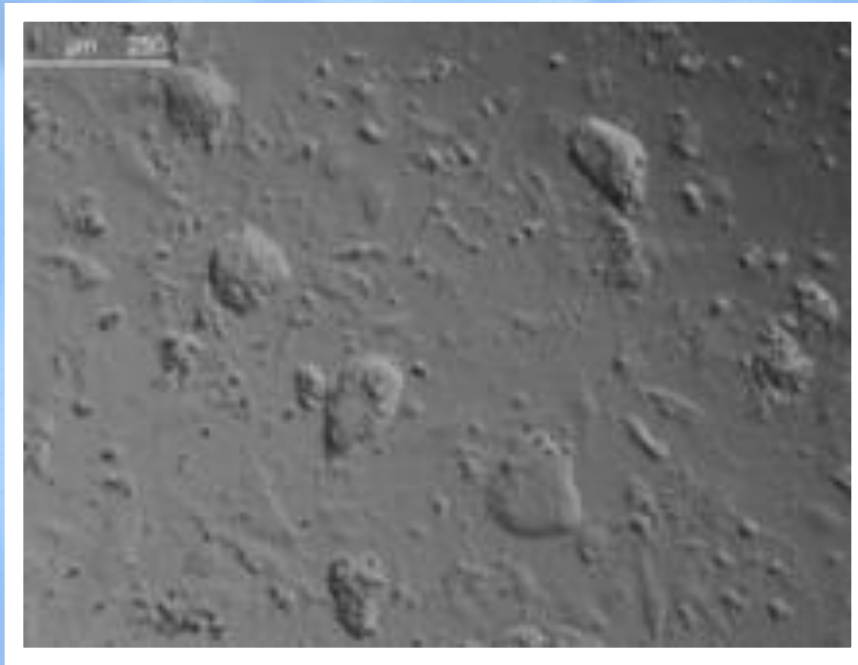


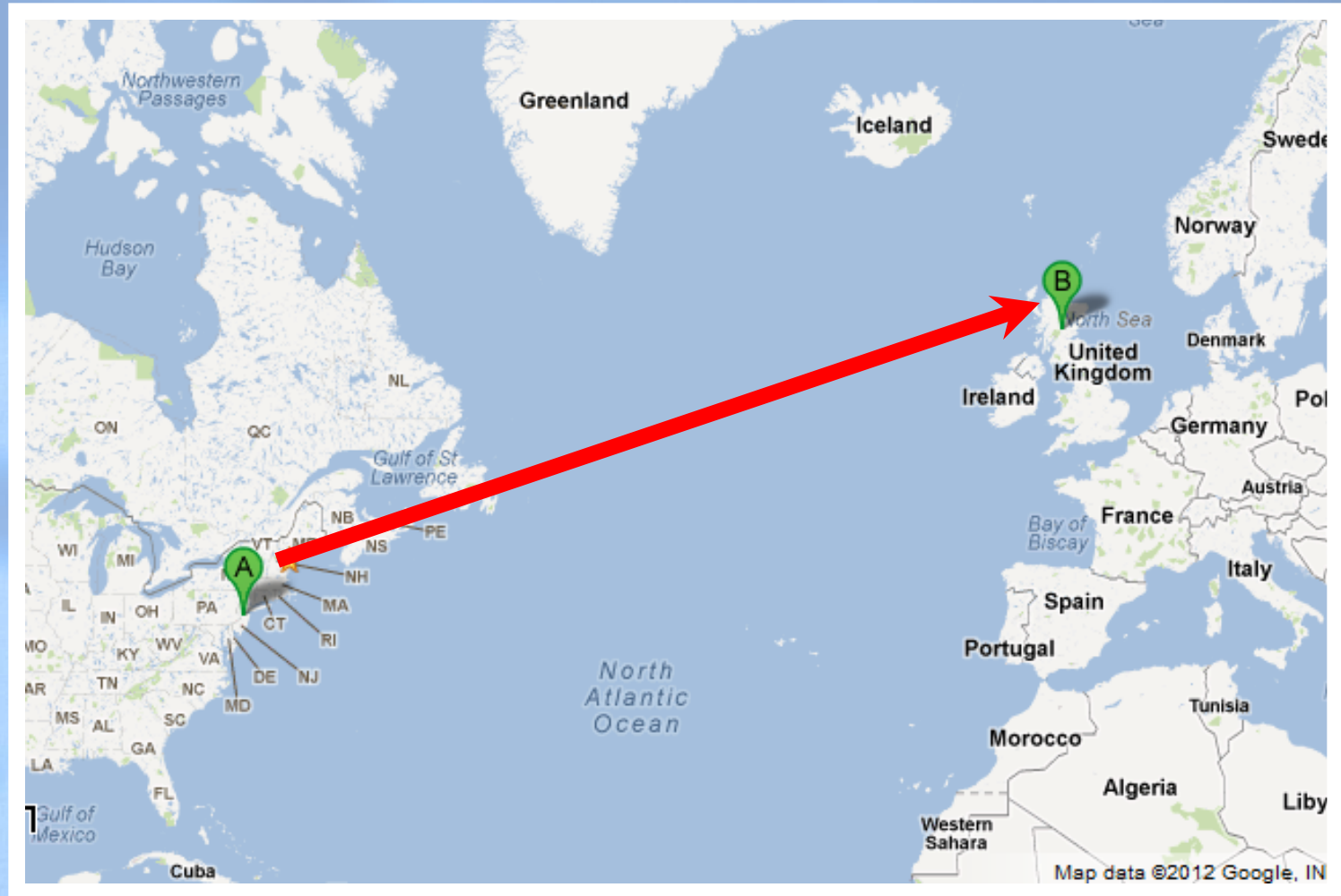


one day in the lab at princeton...



ES cells were maintained in serum-free culture without feeder cells. ES cells were plated onto gelatin-coated plates in N2B medium and were passaged every 2–4 days. Dissociated cells were harvested in N2B medium, pelleted, resuspended in N2B and replated directly.

**how far did one
graduate
student have to
go to reproduce
one
experiment?**



from new jersey, usa to scotland. total cost for two months of work, travel and reagents: \$10,000 to learn one experiment.

**64% of published studies
are not reproducible**

traditional scientific article:

Position the metaphase spindle at 3 o'clock and hold it with holding pipette. Apply piezo pulses to penetrate the zona pellucida. Touch the metaphase plate with the enucleation pipette. Aspirate the spindle and withdraw the pipette.

- **what does it say?**
- **is it ideal for research use or teaching?**

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Mouse, Zebrafish and Chick

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Sample Drift Correction Following 4D Confocal Time-lapse Imaging

Adam Parslow¹, Albert Cardona², Robert J. Bryson-Richardson¹

¹School of Biological Sciences, Monash University, ²Janelia Farm Research Campus, Howard Hughes Medical Institute

- In Vivo Electrophysiology** Published 4/11/2014
- Sample Drift Correction Following 4D Confocal Time-lapse Imaging** Published 4/11/2014
- A Rapid and Specific Microplate Assay for the Determination of Intra- and Extracellular Ascorbate in Cultured Cells** Published 4/11/2014
- Activating Microtubules and Spindle Pole Bodies** Published 4/11/2014
- The ChroP Complex Combines Chromatin and Proteasome** Published 4/11/2014
- Determination of Spontaneous Locomotor Activity in *Drosophila melanogaster*** Published 4/11/2014
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A Rapid and Specific Microplate Assay for the Determination of Intra- and Extracellular Ascorbate in Cultured Cells

Dariusz J. R. Lane¹, Allison Lawen²

¹Molecular Pharmacology and Pathology Program, Department of Pathology & Bosch Institute, University of Sydney, ²Department of Biochemistry and Molecular Biology, School of Biomedical Sciences, Monash University

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Determination of the Spontaneous Locomotor Activity in *Drosophila melanogaster*

Jared K. Woods¹, Suzanne Kowalski¹, Blanka Rogina¹

¹Genetics and Developmental Biology, School of Medicine, University of Connecticut Health Center

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 Wendy Chao¹, Aaron Kolski-Andreaco²

¹Department of Ophthalmology, Massachusetts Eye and Ear, ²JoVE Content Production

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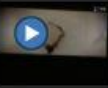




Chick

ECM Protein Nanofibers and Nanostructures Engineered Using Surface-initiated Assembly
 John M. Szymanski¹, Quentin Jallerat¹, Adam W. Feinberg^{1,2}

¹Department of Biomedical Engineering, Carnegie Mellon University, ²Department of Materials Science and Engineering, Carnegie Mellon University

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Emilye Hiriart¹, Patrick van Vliet², Ralf J. Dirschinger², Sylvia M. Evans², Michel Puceat¹

¹INSERM UMR-910, Aix-Marseille University, ²Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California, San Diego

* These authors contributed equally

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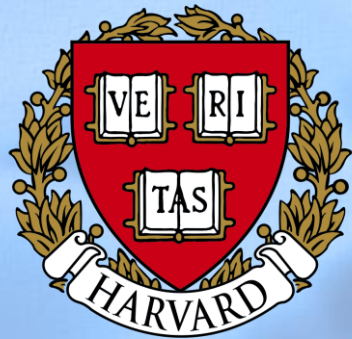
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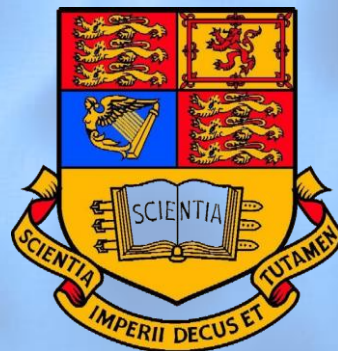


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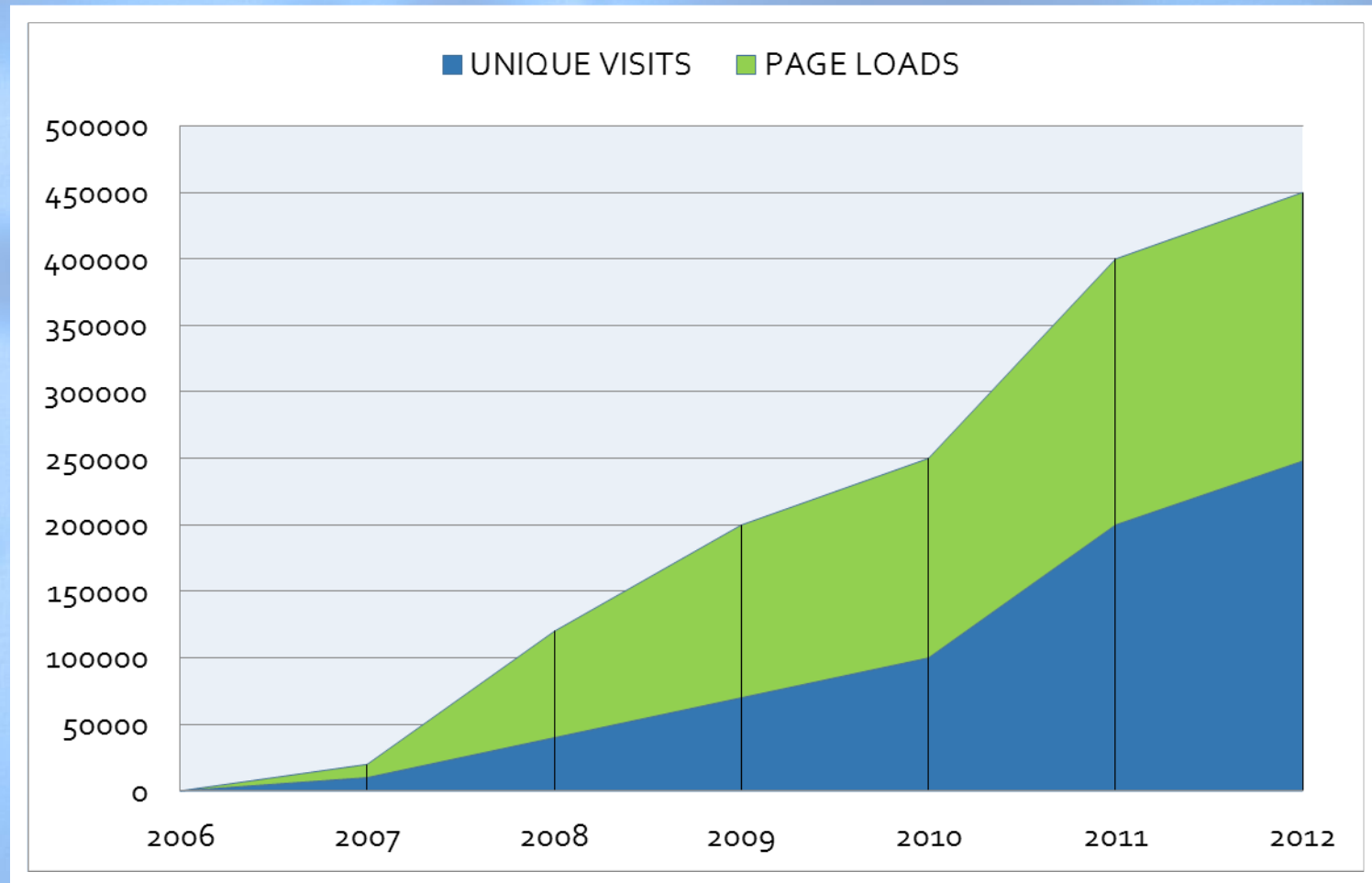


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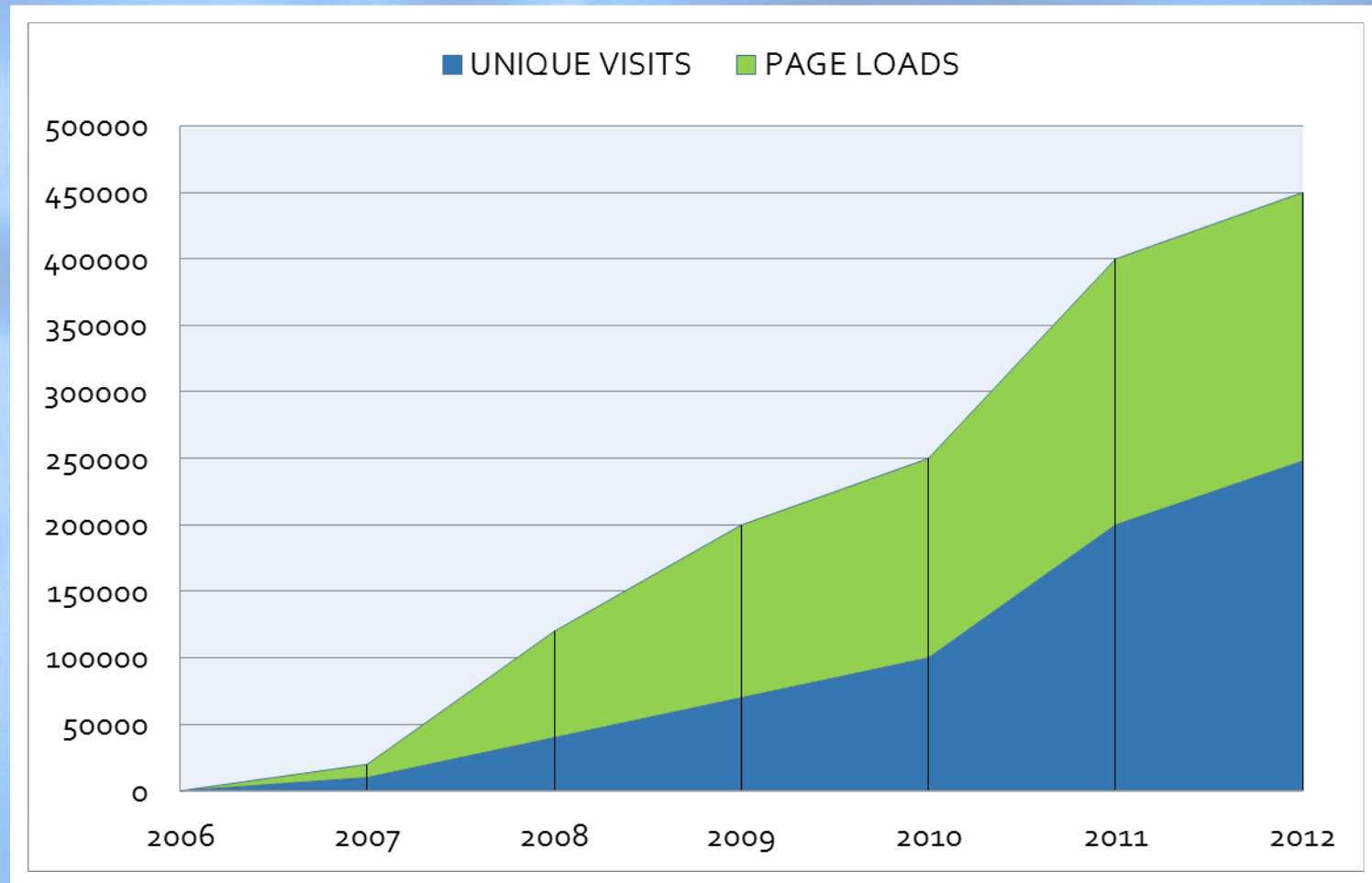
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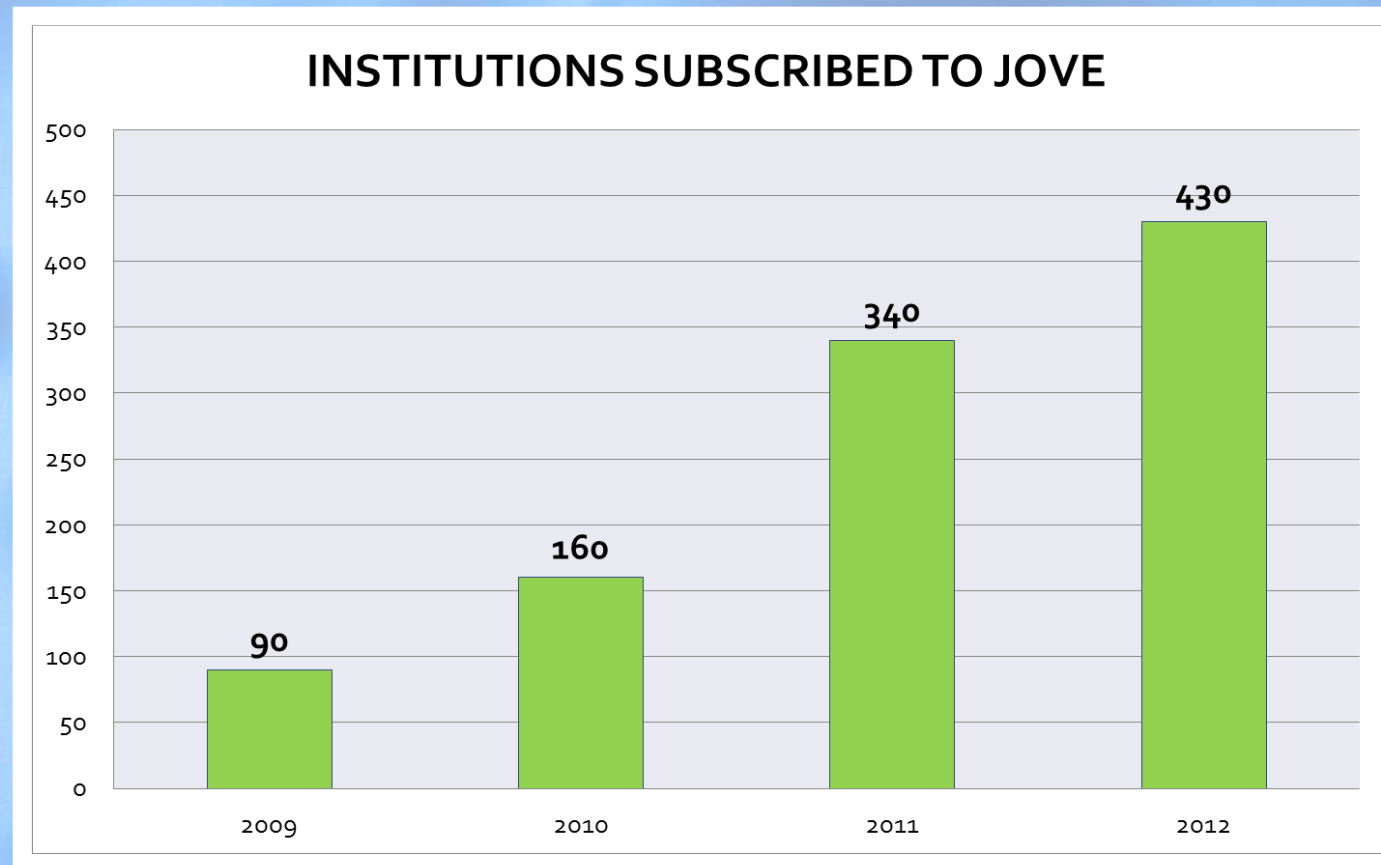
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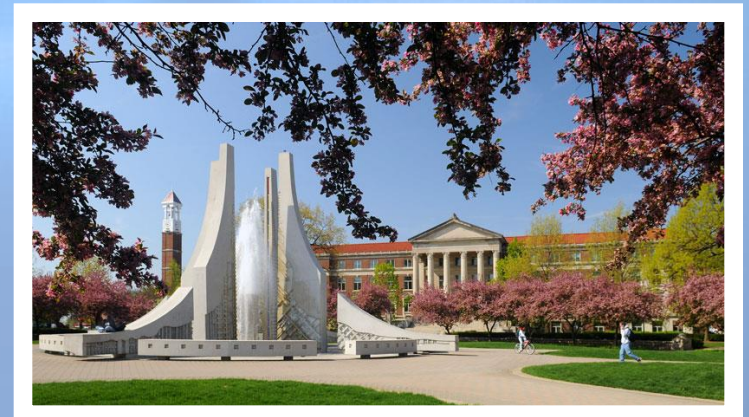
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CASE STUDY

- Purdue University
- West Lafayette, Indiana, USA
- Established May 6, 1869
- 40,000 students
- 8,100 postgraduates
- 5 Science Departments
- 100+ Research Laboratories
- JoVE subscriber since 2010



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CASE STUDY

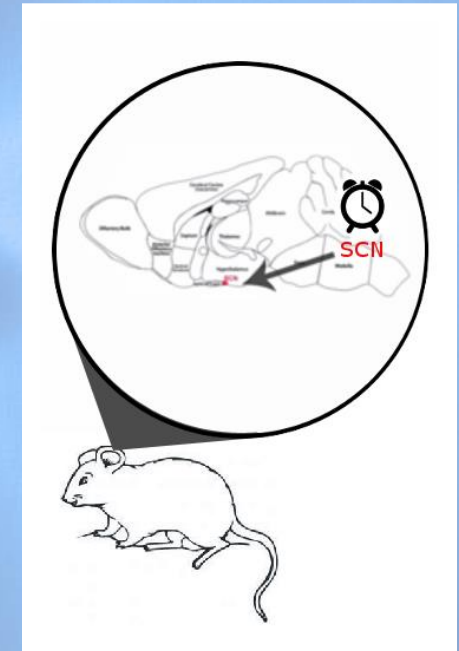
- Dr. Theresa Casey, Assistant Professor in the Department of Animal Sciences at Purdue University
- Ph.D. from University of Vermont
- Practicing researcher for 20 years
- 19 published papers in peer
- Research interests: mammary development and lactation



CASE STUDY

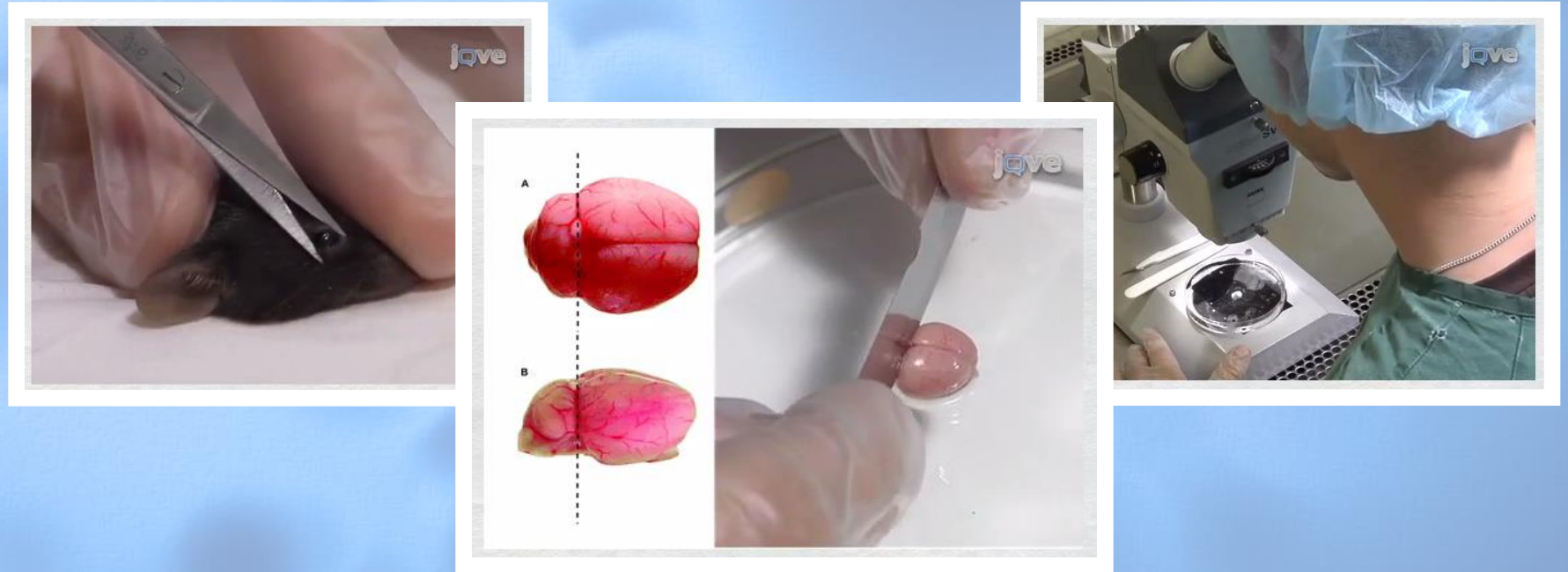
Dr. Casey's problem: "how do we isolate the suprachiasmatic nuclei through surgery?"

- Dr. Casey discovered that activity of circadian clock genes changed during the transition from pregnancy to lactation in other tissues.
- Circadian clock is governed by the suprachiasmatic nucleus (scn) in the hypothalamus area of the brain.
- Need to learn to dissect the scn brain area using surgery.



CASE STUDY

Dr. Casey's solution: utilize a JoVE video article as a productivity tool



slice preparation, organotypic tissue culturing and luciferase recording of clock gene activity in the suprachiasmatic nucleus. savelyev et al, 2011, JoVE (Karolinska Institute)

CASE STUDY

The results: using JoVE saves researchers and universities both money and time.

For researchers:

- Dr. Casey spent two weeks to learn the experiment. Without JoVE it would have taken her two months.
- Saved six weeks of work time and \$15,000 in research funds (\$7,700 reagents, \$1,100 travel and \$6,200 salary)

For universities:

- If only 10% of the 100+ laboratories at purdue could benefit from a subscription to JoVE, savings of \$150,000 or more could be realized.
- roi = a minimum of 500%

CASE STUDY

“I’ve been doing research for 20 years, and having JoVE makes things so much easier. You can educate yourself on research other scientists are doing around you and get familiarized on a technique before you try it.”

- Dr. Theresa Casey

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“EXCELLENT”

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