jove
JOURNAL OF VISUALIZED EXPERIMENTS

The First Scientific Video Journal

Indispensable for Research and Education in Biology and Medicine

New: 2015 Impact Factor 1.325

JOVE实验视频期刊数据库

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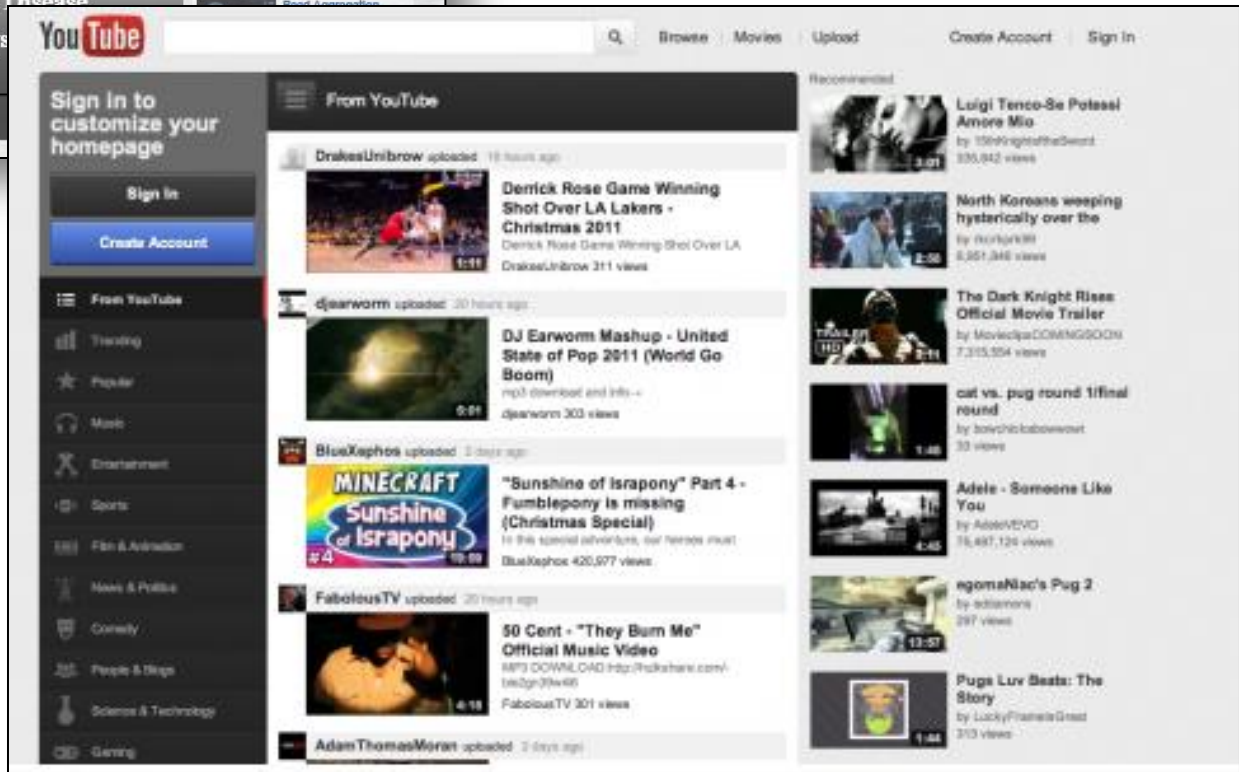
JOVE: Youtube in Science?

MORE THAN THAT

JOVE：科学界的Youtube?

不止如此



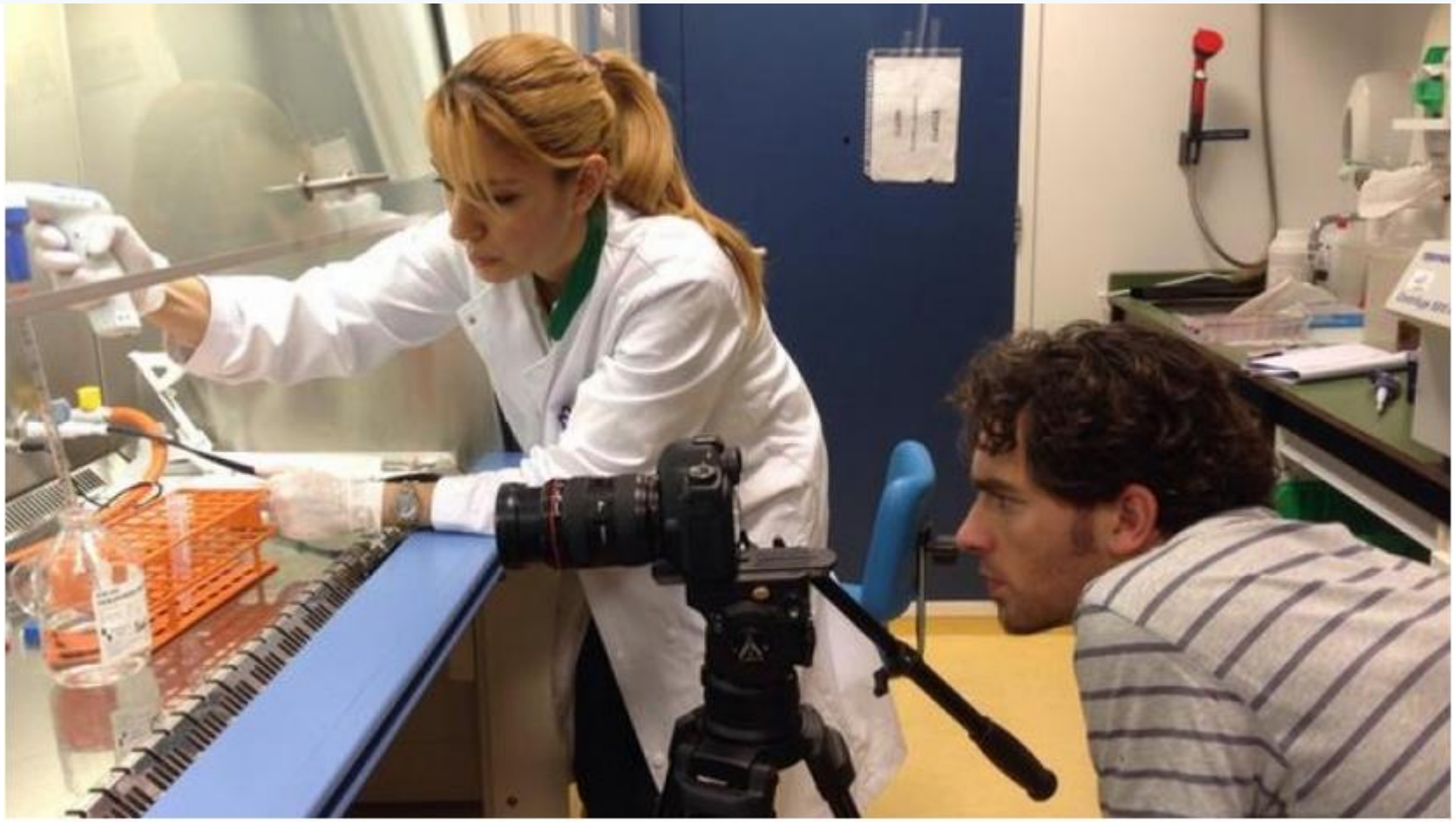
Science, Tech & Environment

This new scientific journal is kind of like YouTube, but without the cats

PRI's The World

November 14, 2014 · 9:00 AM EST

Reporter Cristina Quinn *(follow)*



The "Journal of Visualized Experiments," or JOVE, is used to ensure that experiments are able to be reproduced by other scientists.

Credit: Henri Versteeg of Eienthoven Laboratory


1 of 8
Watch this video now
Force Measurement During Contraction to Assess Muscle Function in Zebrafish Larvae
Darcée D. Sloboda[1], Dennis R. Claflin[1,2], James J. Dowling[3], Susan V. Brooks[1,4]
[1]Department of Biomedical Engineering, University of Michigan, [2]Department of Surgery, Section of Plastic Surgery, University of Michigan, [3]Departments of Pediatrics and Neurology, University of Michigan, [4]Department of Molecular and Integrative Physiology, University of Michigan


3 of 8
Watch this video now
Ratiometric Biosensors that Measure Mitochondrial Redox State and ATP in Living Yeast Cells
Jason D. Vevea*[1], Dana M. Alessi Wolken*[1], Theresa C. Swayne[2], Adam B. White[2], Liza A. Pon[1]
[1]Department of Pathology and Cell Biology, Columbia University, [2]Herbert Irving Comprehensive Cancer Center, Columbia University
authors contributed equally

YouTube


7 of 8
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Bead Aggregation Assays for the Characterization of Putative Cell Adhesion Molecules
Michelle R. Emond[1], James D. Jontes[1]
[1]Department of Neuroscience, Ohio State University


6 of 8
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Concentric Gel System to Study the Biophysical Role of Matrix Microenvironment on 3D Cell Migration
Nicholas Agung Kurniawan[1], Parthiv Kant Chaudhuri[2], Chwee Teck Lim[2,3]
[1]Systems Biophysics Department, FOM Institute AMOLF, [2]Mechanobiology Institute, National University of Singapore, [3]Department of Biomedical Engineering, National University of Singapore

jove
JOURNAL OF VISUALIZED EXPERIMENTS
The First Scientific
Video Journal

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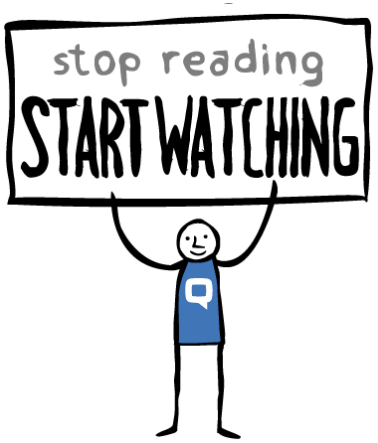

- JOVE（实验视频期刊）简介
- JOVE 各学科专辑内容
- JOVE 数据库平台操作及使用
- JOVE 投稿流程

The Publisher

出版社简介

JOVE出版社总部位于美国马萨诸塞州剑桥市，是生命科学领域出版视频最多的出版社，集**学术出版**与**视频制作**为一体，紧邻哈佛大学、麻省理工学院、塔夫斯大学、波士顿大学等多所知名学府。

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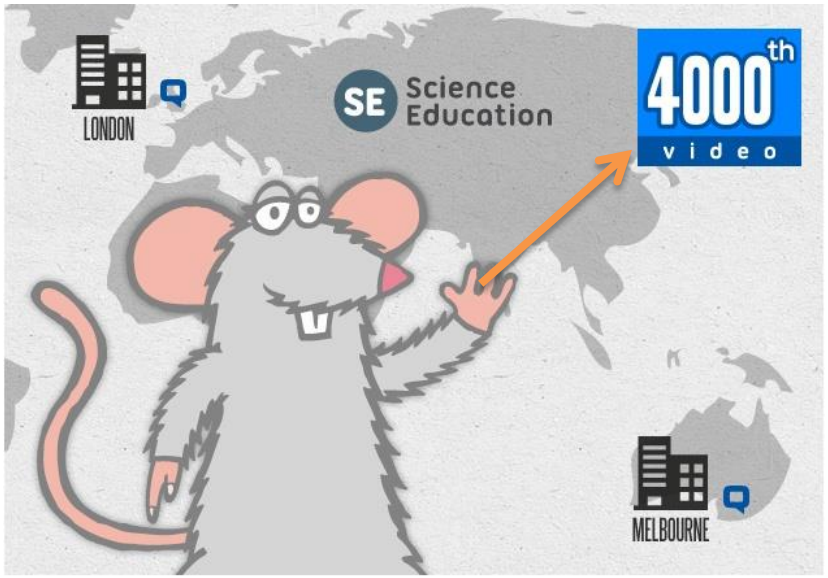
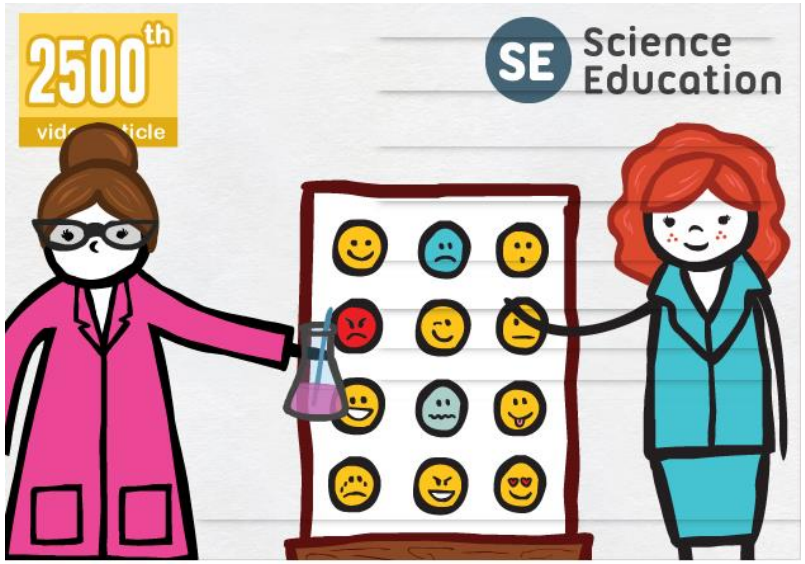
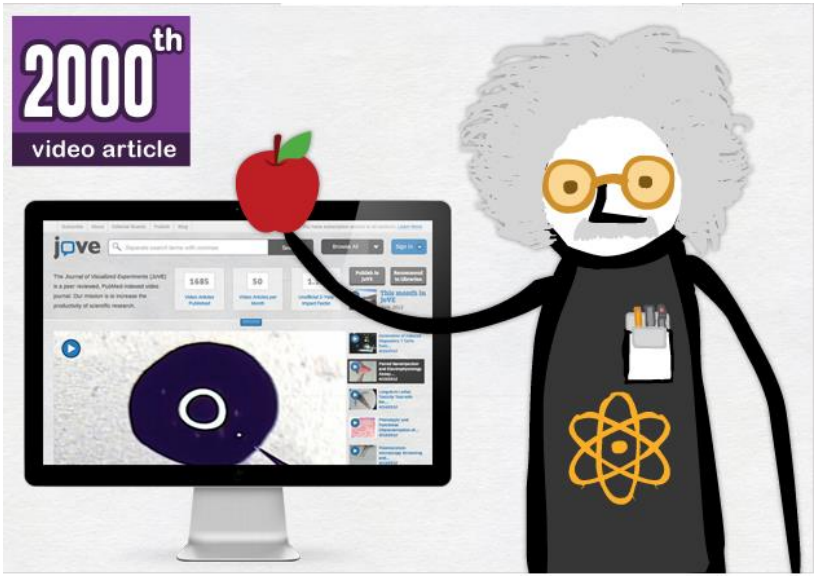
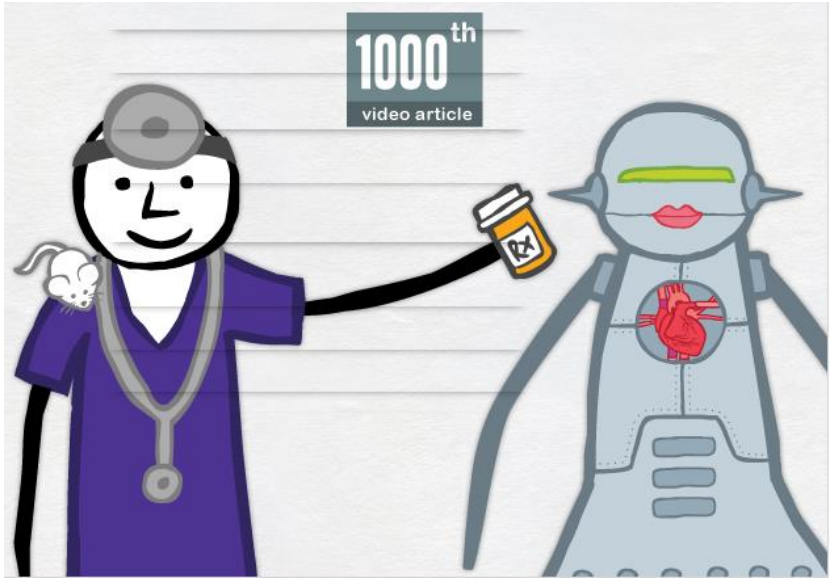
JOVE（Journals of Visualized Experiments)创刊于2006年，致力于以视频方式展现生物学、医学、化学、物理等学科的研究过程和成果。JOVE的每一个视频及每一篇文章均经过严格的评审程序，评审流程包括内部评审(Internal Review)、同行评审(Peer Review)、兽医评审(Veterinary Review)三个方面。









JOVE—生动的形式｜严肃的内容｜高质量视频

The Journal： JOVE 实验视频期刊

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- 每月出版一期，每期50-70个视频，每日更新。

Abstract

Send to:

文摘

J Vis Exp. 2015 Feb 6;(96). doi: 10.3791/52434.

Use of the Open Field Maze to Measure Locomotor and Anxiety-like Behavior in Mice.

Seibenhener ML[1], Wooten MC[2].

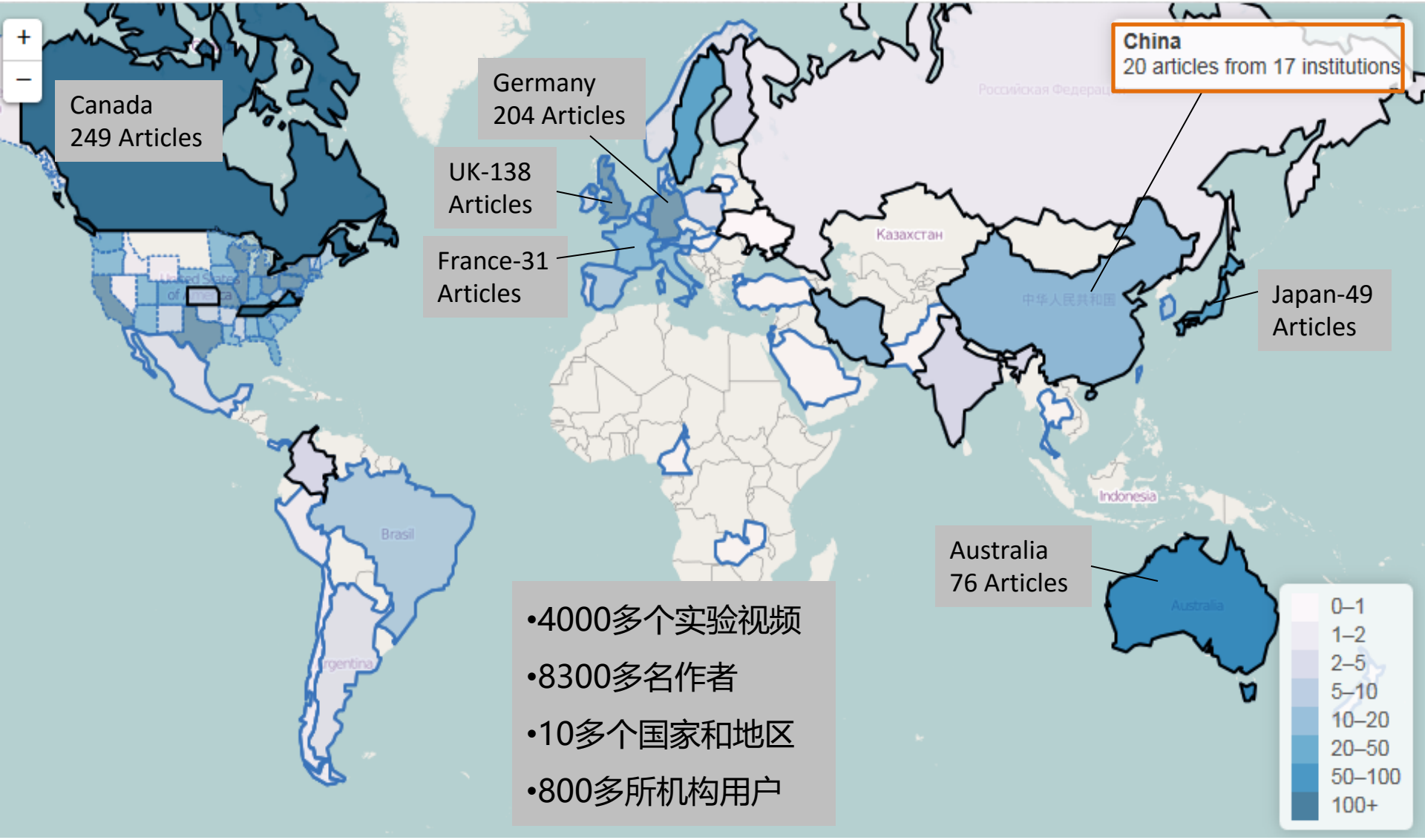
Author information

Abstract

Animal models have proven to be invaluable to researchers trying to answer questions regarding the mechanisms of behavior. The Open Field Maze is one of the most commonly used platforms to measure behaviors in animal models. It is a fast and relatively easy test that provides a variety of behavioral information ranging from general ambulatory ability to data regarding the emotionality of the subject animal. As it relates to rodent models, the procedure allows the study of different strains of mice or rats both laboratory bred and wild-captured. The technique also readily lends itself to the investigation of different pharmacological compounds for anxiolytic or anxiogenic effects. Here, a protocol for use of the open field maze to describe mouse behaviors is detailed and a simple analysis of general locomotor ability and anxiety-related emotional behaviors between two strains of C57BL/6 mice is performed. Briefly, using the described protocol we show Wild Type mice exhibited significantly less anxiety related behaviors than did age-matched Knock Out mice while both strains exhibited similar ambulatory ability.

PMID: 25742564 [PubMed - in process]

JOVE Contributing Institutions 发表文章的机构



Journal of Visualized Experiments

HARVARD UNIVERSITY

Stanford University

Berkeley UNIVERSITY OF CALIFORNIA

NIH National Institutes of Health
Turning Discovery Into Health

Yale University

JOVE实验视频来自于哈佛大学（Harvard）、麻省理工学院（MIT）、斯坦福大学（Stanford）、耶鲁大学（Yale）、加利福尼亚大学伯克利分校（UC Berkeley）、哥伦比亚大学（Columbia）等世界著名高校及学术研究机构的实验室。

上述这些机构的学者同时也在利用JOVE进行科研工作。

2014-2015年，越来越多的大型医药企业成为JOVE的用户

Bristol-Meyers Squibb

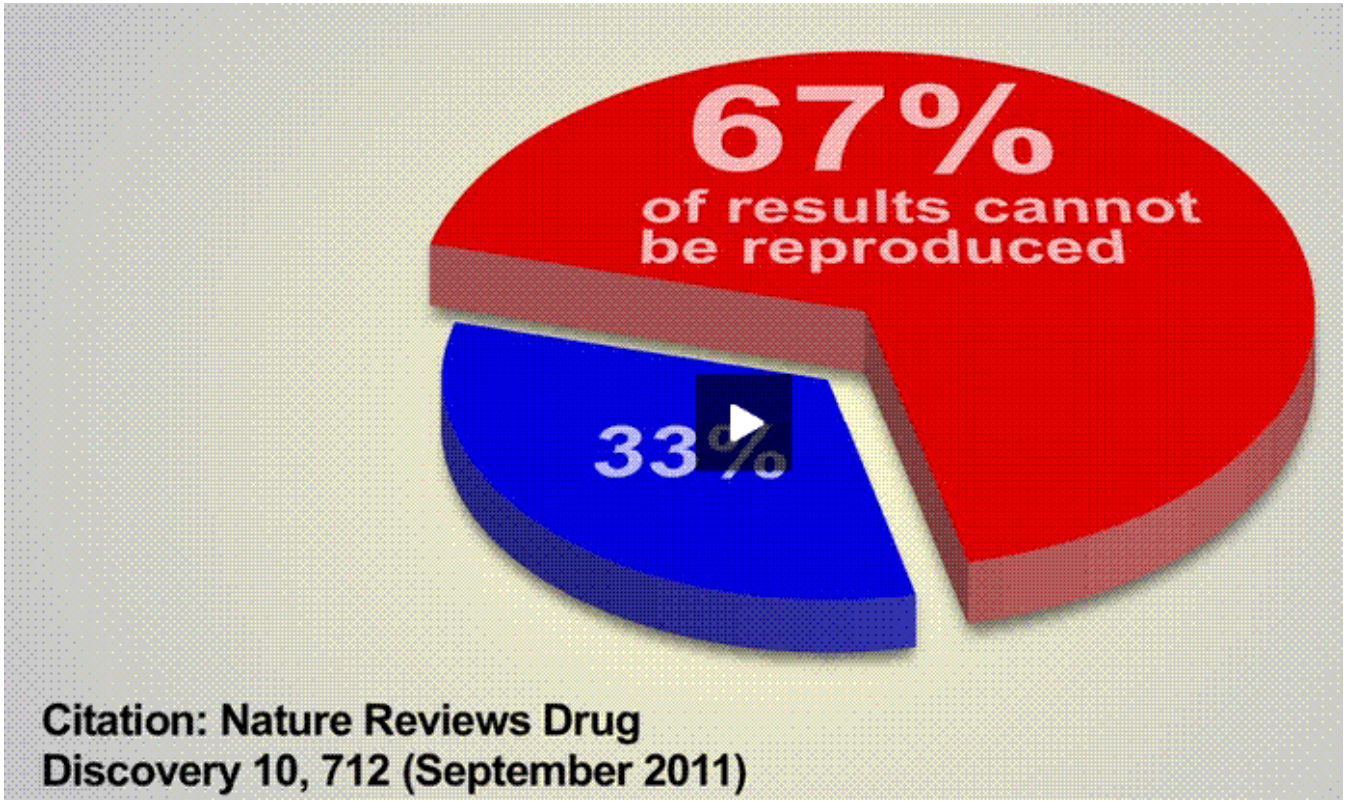
Eli Lilly

Bayer

Biogen

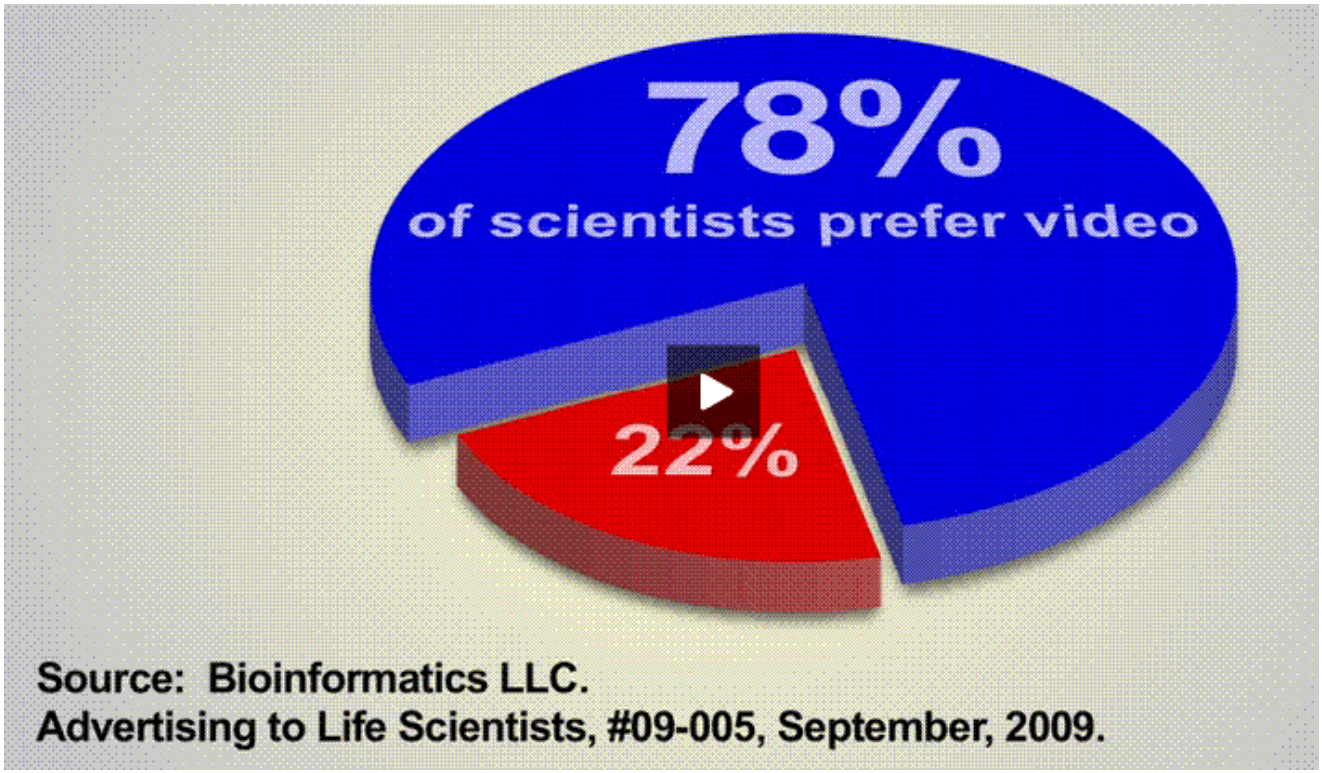
JOVE provides solutions to problems in scientific research

科研难题一：科学实验复制困难



67%的实验无法被复制!

科研难题二：学习新实验技术耗费大量时间及精力



78%的科学家更偏爱实验视频

JOVE Co-founder—Dr. Moshe Pritsker

PRINCETON ALUMNI WEEKLY

ALUMNI PROFILE

PAW Home > Alumni Profile > Moshe Pritsker *05

Moshe Pritsker *05

Co-founder of video science journal

By Maya Rock '02
Published on March 22, 2012

Résumé: CEO, editor-in-chief, and co-founder of JoVE, the Journal of Visualized Experiments. Postdoctoral research at Harvard Medical School and Massachusetts General Hospital. Doctorate in molecular biology from Princeton.

CROSSING THE OCEAN FOR SCIENCE When Moshe Pritsker *05 was a

Academic File

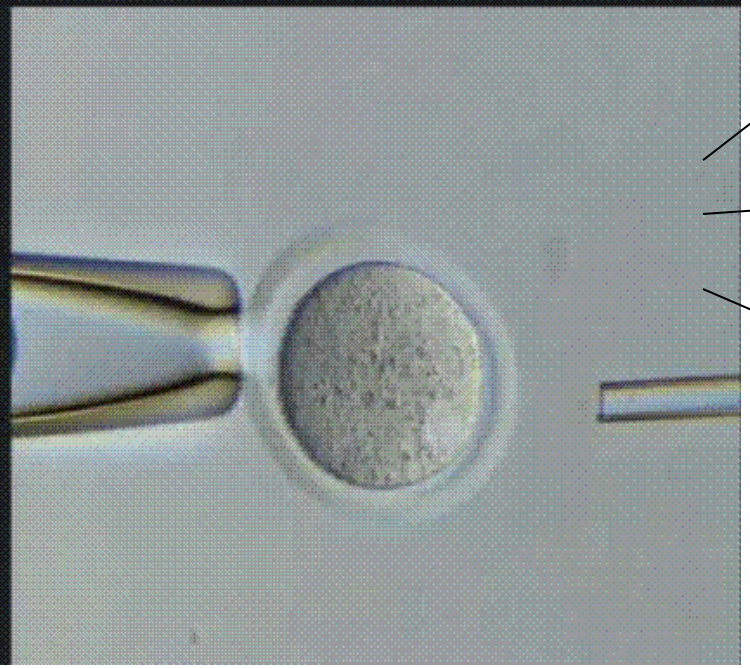
•Postdoctoral: Harvard Medical School, Massachusetts General Hospital;

•Doctoral: Princeton University, Molecular Biology

在Princeton博士研究期间，为学习一项无法通过阅读文本理解的关于胚胎干细胞的新技术，Dr.Pritsker居然被教授特地送到英国爱丁堡去进行现场学习。这份经历引发了他对科学研究低复制性这一现状的思考。

为何科学实验的复制如此困难？

为何即使是很有经验的科学家，也需要花费大量时间和精力来学习一项新的实验技术？

Text article	Real life
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.	

直观

生动

所有细节

语言障碍

In this case, that picture could save billions of dollars.

A picture is worth a thousand words

JOVE的出现致力于解决以上两大问题


April 2015: This Month in JoVE - Studying...
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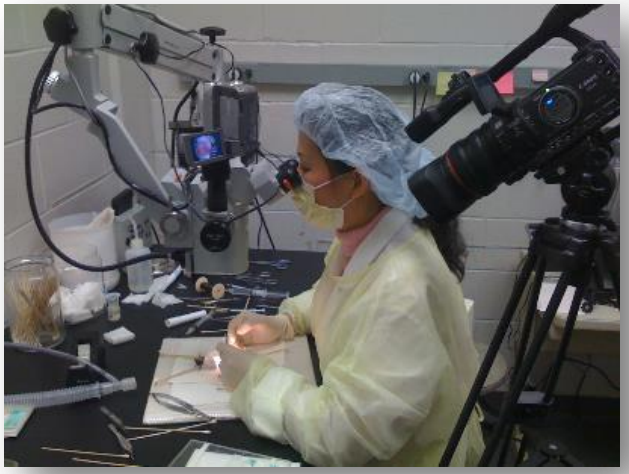
Videographer Network JOVE全球摄影师团队



摄影师网络覆盖：世界20多个国家和地区

亚洲：日本（东京），韩国（首尔），新加坡，中国台湾（台北）

Editorial Boards

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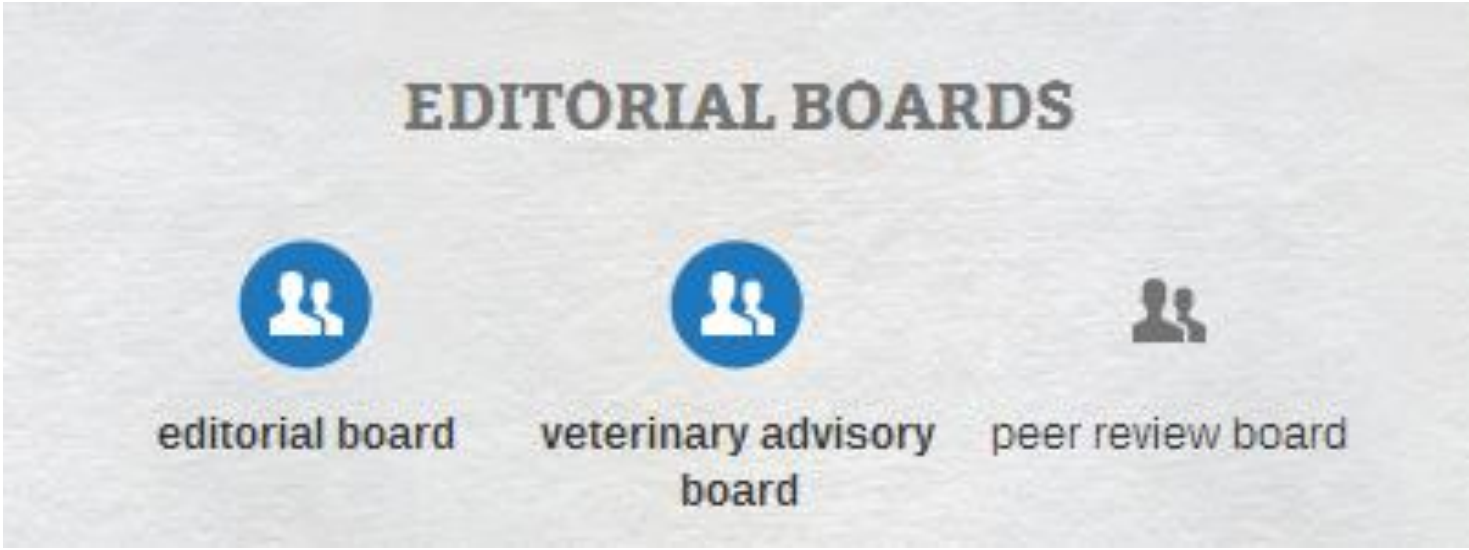

EDITORIAL BOARD

The members of JoVE's Editorial Board are drawn from the ranks of world renowned professors, scientists, physicians and key opinion leaders. Board members are selected for their proven experience and knowledge of the latest in either experimental scientific or cutting-edge medical practice. We share a common vision at JoVE, to accelerate the progress of biological, medical, chemical and physical research by transparency and technical excellence at the bench and clinic through the dissemination of techniques via scholarly video and text. The Editorial Board members act as the journal's advisors for the content, scope and editorial vision.

JoVE Biology

VETERINARY ADVISORY BOARD AND VETERINARY REVIEWERS

Our Veterinary Advisory Board members are selected from key opinion leaders within the research veterinary community and have a special interest in animal welfare, safety, handling and care. The Veterinary Reviewers review all JoVE articles requiring live animal work to ensure that proper welfare and sterility standards are observed.

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JoVE's Peer Review Board consists of scientists and clinicians who have a proven track record of technical expertise and contributions. Peer Review Board members are responsible for editorial decisions on individual manuscripts.

案例一：密歇根州立大学(MSU)通过利用JOVE节省了大额经费

Dr. Carrie Northcott

密歇根州立大学　药理学与毒理学学院

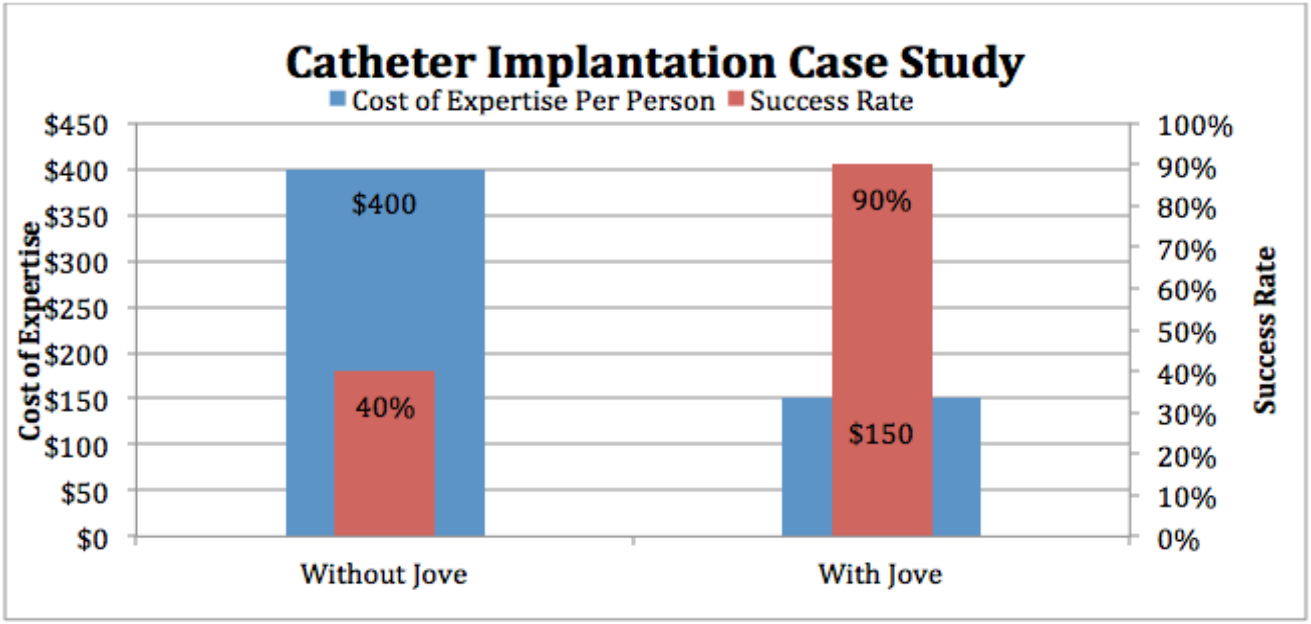
主要研究领域：心脏病学，药理学，生理学

“外科手术技术的传统教学方式是当面教学，直到JOVE的出现。JOVE将这些实验制作成视频，并让它们可以被分享。”

– Dr. Carrie Northcott

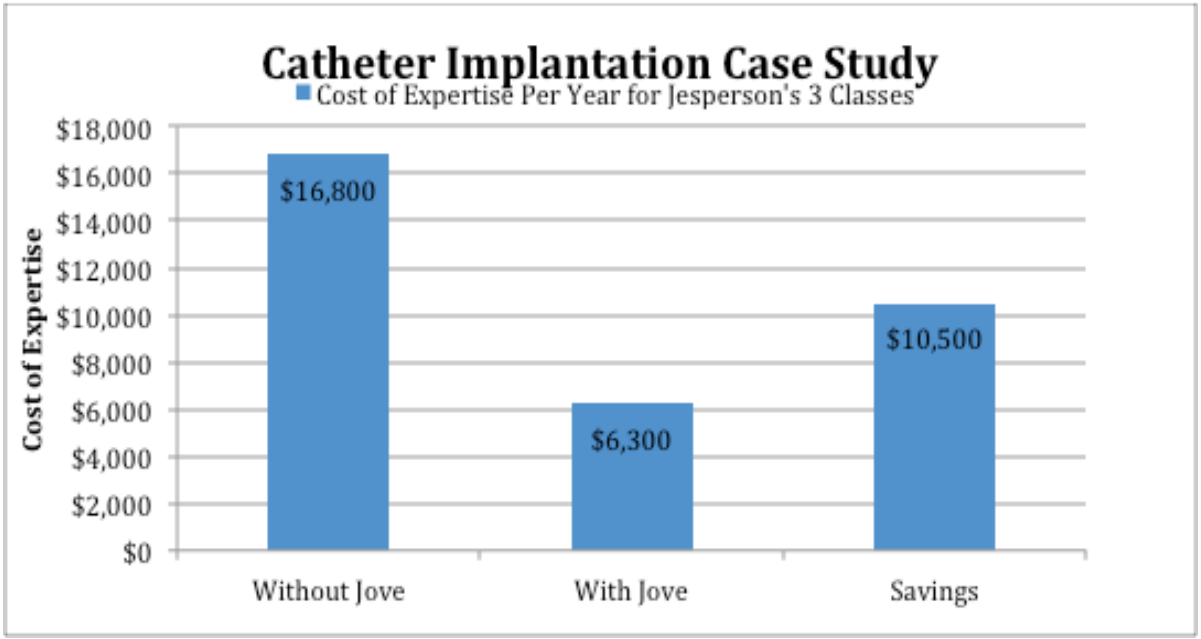
案例一：密歇根州立大学(MSU)通过利用JOVE节省了大额经费

Carrie Northcott博士所在的实验室共有9名研究员，每年都有学生加入或离开。在这种情况下，保持科研团队的竞争力需要耗费大量的时间和经费。每次实验所需的实验耗材和动物成本高达$50。假如没有视频的帮助，实验成功率往往低于40%，这意味着每个研究人员都需要尝试至少8次，才能够成功在20-30分钟内完成**导管植入术**的操作。



案例一：密歇根州立大学(MSU)通过利用JOVE节省了大额经费

从节约经费方面，假设每个实验成本大约为$50。实验室中每个研究员原本都需要尝试8次才能成功，而现在使用JOVE教学后，仅1次就成功，这样就为每个实验节省了$350。Northcott博士的实验室每年可以节省约$3,150。Jespersen在MSU每年带10-14个新学生，这意味着每年能够节省约$10,500。



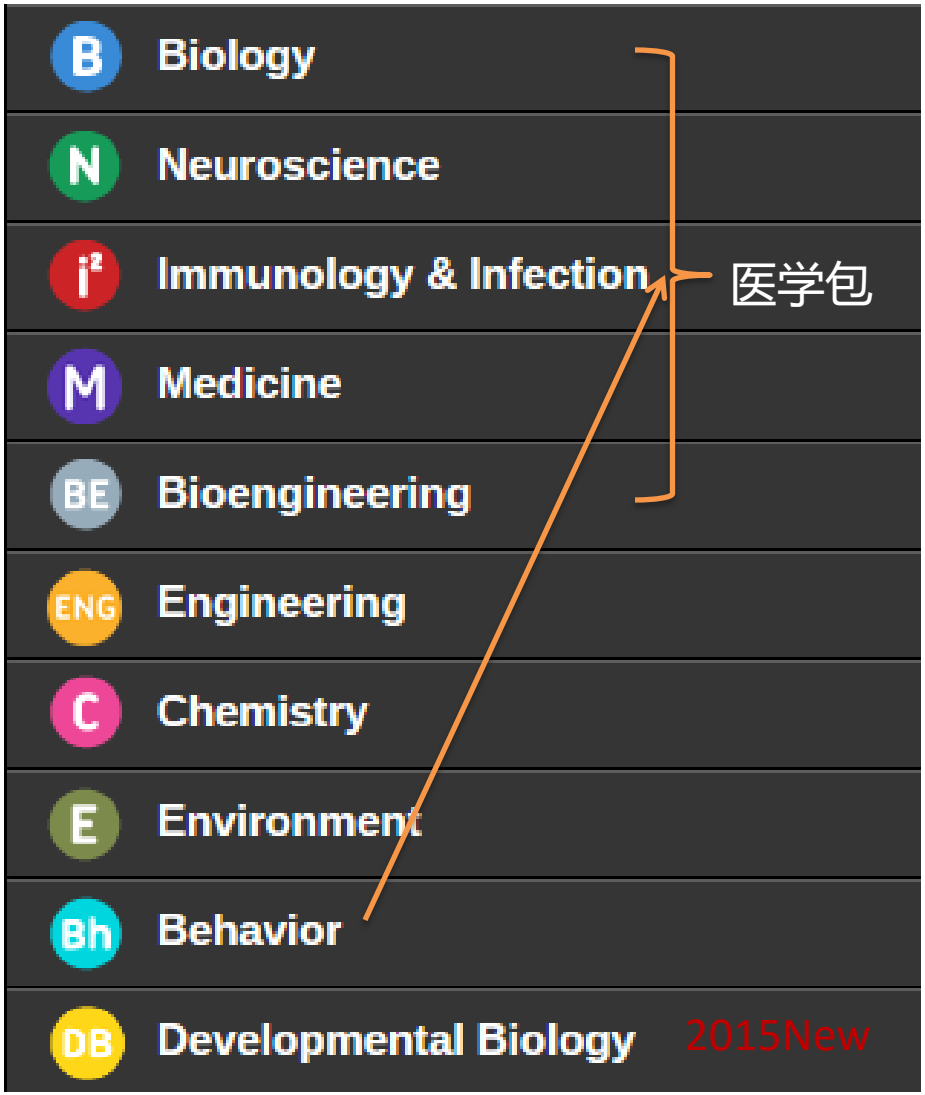
Comments on JOVE from Scientists in China

中山大学生命科学学院，唐恬教授

“JoVE 是世界上唯一一本提供实验指南视频的杂志。该杂志涉及到生物、化学、物理、医学等自然学科的多个领域，所发表方法均为世界前沿。就本人从事的生命科学研究而言，其中涉及到许多实验技术，仅靠阅读实验指南无法完全掌握。JoVE提供的视频对我们理解实验方法的难点和要点有很大帮助。

此外，本人也曾在《果蝇转基因技术及其应用》课程教学中用JoVE的视频作为教学材料，学生反映很好。”

JOVE Sections 10个学科专辑 + 1个教育专辑



生物
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免疫与传染
医学
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化学
环境学
行为学
发育生物学

Science Education

基础实验技术
细胞与分子生物学基本方法
生物学精要I：酵母，果蝇，线虫
生物学精要II: 鼠，斑马鱼，鸡
神经科学精要
发育生物学精要
行为科学精要

1 JoVE Biology 生物

细胞学、分子生物学及有机体生物学，视频内容包含标准技术的新应用以及创新型研究方法，涉及物理生物学、细胞生物化学、遗传学、发育学、生理学、系统生物学、真核模型系统及原核模型系统等方面的技术。

- Cell signaling pathways and cell communication细胞信号通路与细胞通讯
- Bioinformatics生物信息学
- Gene sequencing基因序列分析
- Cellular and molecular imaging细胞与分子成像
- Cellular and genetic therapeutics细胞与基因治疗
- In vivo and in vitro models of disease体内与体外疾病模型

Protein interactions and kinetics蛋白质相互作用与动力学

Metabolism新陈代谢

- Models of aging老化模型

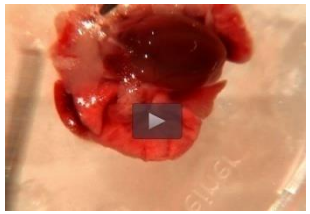
Mitochondrial Function Evaluation from Mitoplast to Live Animal

丝状体及活动物的线粒体功能评估

Organizers:

Wang Wang, M.D., Ph.D., Assistant Professor, Mitochondria and Metabolism Center, University of Washington

Kira M. Henderson, Ph.D., Deputy Director of Journal Development, JoVE



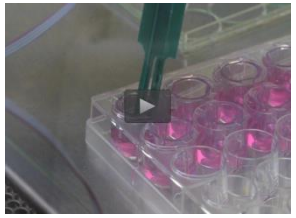
Methods to Decipher Intestinal Permeability in Animal Models

动物模型的肠道通透性破译方法

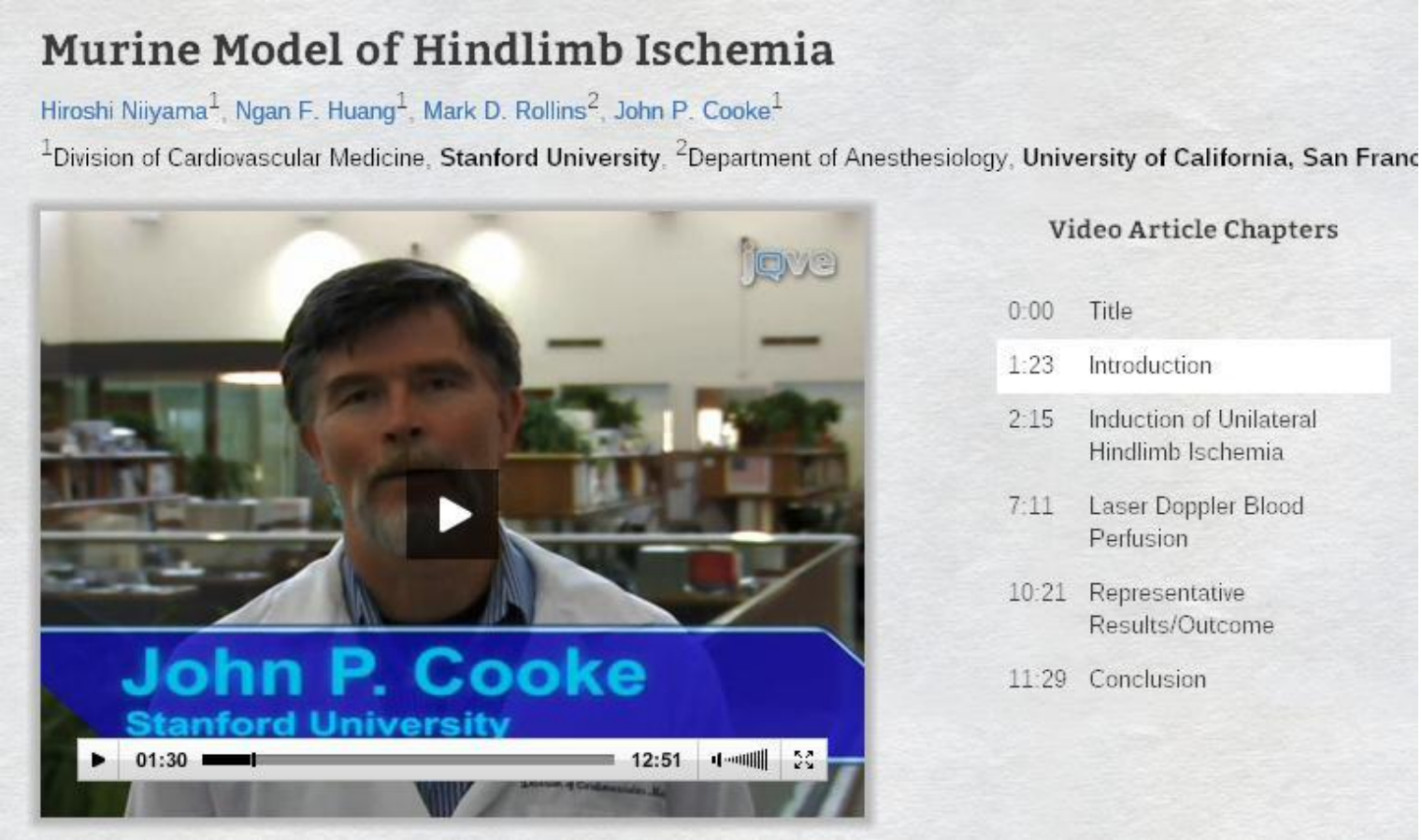
Organizers:

Sridhar Mani, M.D., Professor, Department of Medicine (Oncology) and Genetics, Albert Einstein College of Medicine

Kira M. Henderson, Ph.D., Deputy Director of Journal Development, JoVE



JoVE Biology 生物



JOVE生物专辑中访问量最高、被引次数最高的实验视频

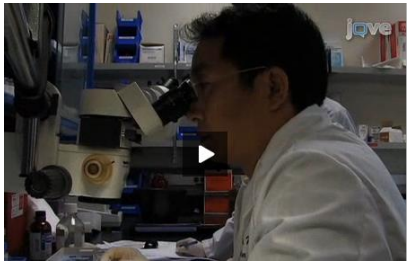
来自斯坦福大学心血管医学部：下肢缺血小鼠模型

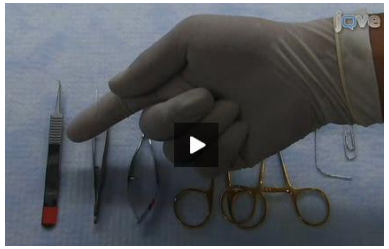
实验视频的内容结构

1. Abstract

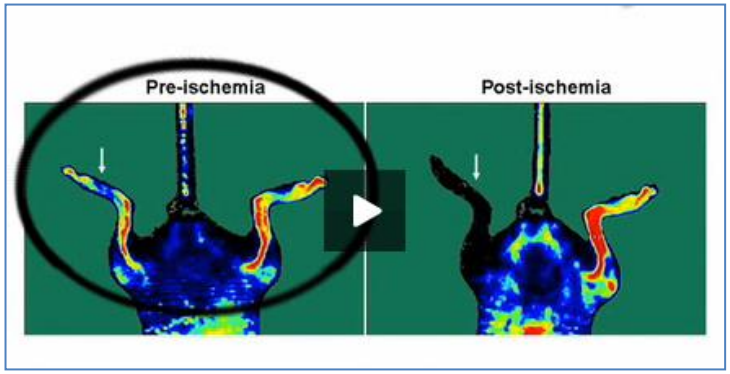
2. Introduction

3. Experimental Procedure





4. Discussion of Results



JoVE Developmental Biology NEW! 发育生物学

该专辑发表发育生物学领域的研究方法，包括分子、细胞、组织、器官和整个机体水平的体内体外生物发育的研究方法。所涉及的研究领域包括：

- Gametogenesis and fertilization 配子发生与受精
- Embryogenesis 胚胎发生
- Morphogenesis and organogenesis 形态发生和器官发生
- Stem cell biology and nuclear reprogramming 干细胞生物学和核重编程
- Regeneration and repair 再生与修复
- Mechanisms of differentiation 分化机制
- Genetic and epigenetic control of development 发展遗传控制及后生控制
- Evolutionary developmental biology进化发育生物学
- Aging and senescence老化与衰老

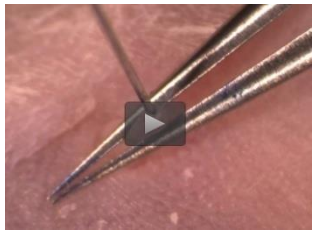
连结基础研究与临床应用，涉及医疗程序、案例研究及临床试验方法。主要研究疾病的预测、预防及治疗方法，为医生和科研工作者提供参考和教学资源。

- Internal medicine内科
- Clinical trials临床试验
- Animal models of disease动物疾病模型
- Surgical subspecialties (cardiothoracic, neuro, orthopaedic, oral and maxillofacial, transplant)外科分科（心胸，神经，骨科，口腔颌面部，移植）
- Clinical teaching resources临床教学资源
- Human physiology人体生理学
- Oncology肿瘤科
- In vivo imaging techniques (ultrasound, CT, PET, MRI)体内成像技术（超声，CT, PET, MRI）

Murine Models for Cancer Research

癌症研究小鼠模型

Organizers:
Shioko Kimura, Ph.D., Head, Endocrinology Section, Center for Cancer Research, National Cancer Institue



Animal Models to Elucidate Pathways Involved in Response to Cardiac Injury

阐明心脏创伤途径参与的动物模型

Organizers:
Reza Ardehali, M.D., Ph.D., Assistant Professor, Eli & Edythe Broad Center of Regenerative Medicine & Stem Cell Research, UCLA
Kira M. Henderson, Ph.D., Deputy Director of Journal Development, JoVE

Breast cancer protocol reaches UK newspaper giant, the Daily Mail

Posted on October 8, 2013 by Phil Meagher

— Dr. Silva Krause, one of the researchers behind this method.

Intraductal Injection for Localized Drug Delivery to the Mouse Mammary Gland

小鼠乳腺局部给药的导管内注射

JoVE Immunology and Infection 免疫与传染

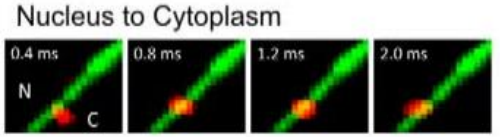
包含各个领域以改善全球健康为目的各类科学研究，视频内容涉及分子与生物体病原体生物反应技术的评估、治疗剂及其疗效等。所涉及的研究领域包括：

- Microbiology微生物学
- Immunology免疫学
- Allergic diseases过敏性疾病
- Immune cell development and autoimmune diseases免疫细胞发育与自身免疫疾病
- Pathogenic bacteria, fungi, parasites, viruses, and infectious prions致病菌、真菌、寄生虫、病毒和感染朊病毒
- In vitro and in vivo modeling of pathogenesis体内与体外病理模型
- Carrier organisms生物载体
- Global health studies全球健康研究
- Epidemiological techniques流行病学技术

Single Molecule Imaging Techniques that Reveal Host-Pathogen Interactions

揭示宿主 - 病原体相互作用的单分子成像技术

Organizers:
Daniele Provenzano, Ph.D., Associate Professor,
Department of Biomedical Sciences & Department of Biological Sciences, University of Texas Brownsville



Methods for Pathogen Quantification 病原定量方法

Organizers:
Christopher Logue, Ph.D., Adjunct Professor
Virology- Universidad San Francisco de Quito,
Virology Training Lead- NADP Training, Public Health England

JoVE Neuroscience 神经科学

神经科学专辑是一个跨学科专辑，主要研究大脑与神经系统的结构、功能，以及生理学与病理学研究。涉及中枢与周围神经系统分子和细胞层面的研究方法，同时也涉及神经疾病和神经障碍的潜在治疗平台及手术技术等。

- Cellular and molecular neurobiology细胞与分子神经生物学
- Systems neuroscience系统神经科学
- Development and neural plasticity发育与神经可塑性
- Neurobiology of disease疾病神经生物学
- Electrophysiology电生理学
- Neurogenesis and neural stem cells神经形成与神经干细胞Neurosurgery and neuroimaging神经外科与神经影像学
- SCI models脊髓损伤模型
- Neurotransmitters and neuronal cell signaling神经递质与神经细胞信号

RNAi-mediated Double Gene Knockdown and Gustatory Perception Measurement in Honey Bees (*Apis mellifera*)

蜜蜂RNAi介导的双基因敲除和味觉感知测量

On understanding the genetics of food-related behaviors: a double gene-knockdown technique demonstrated on honey bees. *"This is the first study presenting and comparing different strategies for double knocking-down genes. We believe our double knockdown approach will be more recognized and shared in the field when it is published in [the] video journal, JoVE. We hope it can be applied in other insect species and used in other labs." — Dr. Ying Wang of Arizona State University*

JoVE生物工程专辑将自然科学与生命科学结合起来，将自然科学研究方法与工具运用到生命科学领域的研究当中，以促进疾病的评估、诊断、临床治疗新技术的发现。

- Tissue engineering组织工程学
- Biosensors生物传感器
- Bio-imaging techniques and equipment生物成像技术与设备
- Cell topography细胞形貌
- Therapeutic materials治疗材料
- High throughput analysis高通量分析
- Microfluidics微流控
- Synthetic substrates and materials for bio-applications生物应用合成底物与材料
- Robotic therapeutics机器治疗

Multimodal Pre-Clinical Imaging

多模式临床前成像

Organizers:
W. Matthew Leevy, Assistant Professor, Department of Chemistry and Biochemistry, University of Notre Dame
Val Buntrock, Ph.D., Journal Development Editor, JoVE

Surgical Technique for the Implantation of Tissue Engineered Vascular Grafts and Subsequent In Vivo Monitoring

组织工程人造血管植入手术技术及随后的体内监测

Department of Physiology & Bio-Physics, State University of New York Buffalo School of Medicine, Department of Pediatrics, State University of New York Buffalo School of Medicine, Department of Chemical and Biological Engineering, State University of New York Buffalo School of Engineering

JoVE Behavior 行为学

包含探索人类和动物行为的观察和实验技术，包含遗传因素分析、内部与外部刺激的生理反应，以及相应的大脑反射区域分析。

- Cognitive neuroscience认知神经科学
- Cognition (attention, reasoning, decision making)认知（注意、推理、决策）
- Virtual reality and perception虚拟现实与感知
- Sexual and motivational behaviors性与激励行为Social awareness and interactions社会意识和相互作用；Learning and memory学习与记忆
- Sleep and circadian rhythms睡眠与昼夜节律
- Linguistics语言学
- Addiction成瘾
- Emotion情绪
- Control of movement行动控制
- Consciousness意识

University of Cambridge剑桥大学发表的关于肥胖相关饮食行为治疗的创新方法

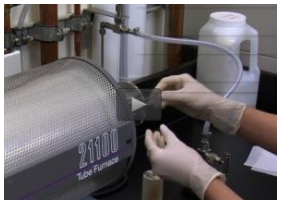
涵盖工程和应用物理研究中广泛应用的实验技术，致力于解答广泛的科学问题。技术和方法主要来自于机械工程师、电气工程师和化学工程师、物理学家、材料学家等。

- Device fabrication设备制造
- Electronic systems电子系统
- Optics and photonics 光学和光子学
- Applied mechanics 应用力学
- Materials science 材料科学
- Advanced manufacturing 高级制造

Photonic sensors

光子传感器

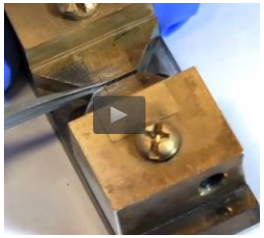
Organizers:
Al Meldrum, Ph.D., Professor, Departement of Physics, University of Alberta



Micro/Nanoscale Thermal Characterization

微/纳米热特性

Organizers:
Xinwei Wang, Ph.D., Professor, Department of Mechanical Engineering, Iowa State University
Val Buntrock, Ph.D., Journal Development Editor, JoVE



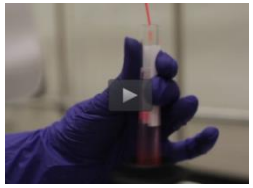
广泛涉及分子间的相互作用以及结构生成的基础及应用性研究，核心研究领域包括分析化学、有机化学、有机金属、无机化学、生物无机化学和生物化学，还包括小分子材料的设计、准备以及应用。

- Structural characterization结构表征
- Electronic spectroscopy电子能谱
- Nuclear and electronic characterization核与电子特性(NMR, EPR, etc)
- Electrochemistry电化学
- Molecular kinetics分子动力学
- Mass spectrometry质谱
- Synthesis and purification合成与纯化
- Column chromatography柱层析技术
- Synthetic biology合成生物学
- Structural biology结构生物学

Stimuli-Responsive Polymer Materials

刺激响应性聚合物材料

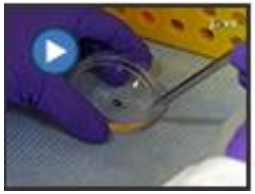
Organizers:
Michael A. Nash, Ph.D., Group Leader, Chair for Applied Physics and Center for Nanoscience, Ludwig-Maximilians-Universitaet Munich
Val Buntrock, Ph.D., Journal Development Editor, JoVE



Preparing Adherent Cells for X-ray Fluorescence Imaging by Chemical Fixation

化学固定准备贴壁细胞的X射线荧光成像

X-ray Science Division, Advanced Photon Source, Argonne National Laboratory,
Department of Physics and Astronomy, Northwestern University



环境专辑主要研究环境问题的解决方法，以寻求更好地了解地球生态系统。尤其关注社会对于环境影响的评估方法、自然资源保护、可持续环保型地球环境创建等领域的实验技术和方法，以及可持续燃料能源的开发。

- Alternative energy sources可替代能源
- Biofuels生物燃料
- Green chemistry绿色化学
- Environmental engineering环境工程；Ecology生态
- Marine biology海洋生物学
- Oceanography海洋学
- Soil and agricultural sciences土壤与农业科学
- Ecotoxicology and ecological health生态毒理学与生态健康
- Forestry and botany林业与植物学
- Atmospheric and geosciences大气与地球科学

科学教育

SE科学教育专辑专门为教学设计，旨在通过简单易懂的视频展现实验基础教学。目前共有7个子集，全部有**中文配音**以及人工翻译，方便学生学习以及课堂教学。

- General Laboratory Techniques基础实验技术
- Basic Methods in Cellular and Molecular Biology细胞与分子生物学基本方法
- Essentials of Biology1: Yeast, Drosophila and C.Elegans
  生物学精要I: 酵母，果蝇，线虫
- Essentials of Biology 2: Mouse, Zebrafish, and Chick
  生物学精要II: 鼠，斑马鱼，鸡
- Essentials of Neuroscience神经科学精要
- Essentials of Developmental Biology发育生物学精要
- Essentials of Behavioral Science行为科学精要

光学显微镜的介绍

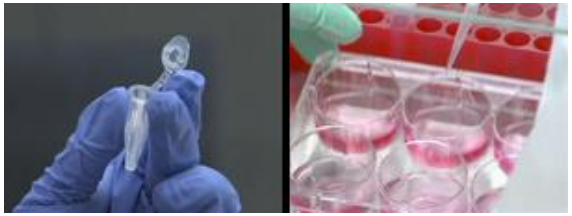
SE科学教育专辑（中文）

1. 常用的实验室技术

该精选系列展示了如何使用在许多实验中都至关重要的一些标准实验室仪器，以及如何进行实验室基本操作。每个视频都配套有额外的视频资源，帮助您观看这些技术的实际应用和其他的辅助技能。

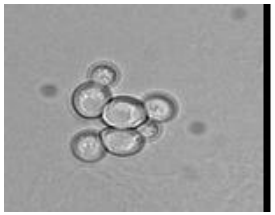
2. 细胞分子生物学中的基本方法

该科学教育视频系列演示了如何操作普遍应用于细胞分子生物学的基本技术。为加强您对这些方法的理解，每个视频配套有额外的视频资源来讲述这些技术的实际应用和其他的辅助技能。



3. 模式生物I:酵母，果蝇和秀丽线虫

该独特的科学教育视频系列覆盖了在生命科学研究中常用到的三种模式生物：啤酒酵母（面包酵母），黑腹果蝇（果蝇）和秀丽隐杆线虫（圆形线虫）。除了讨论这些生物在目前和历史上有过的重大发现，该系列还包含了关于如何在实验室中培养和繁殖他们所需的概念和方法。

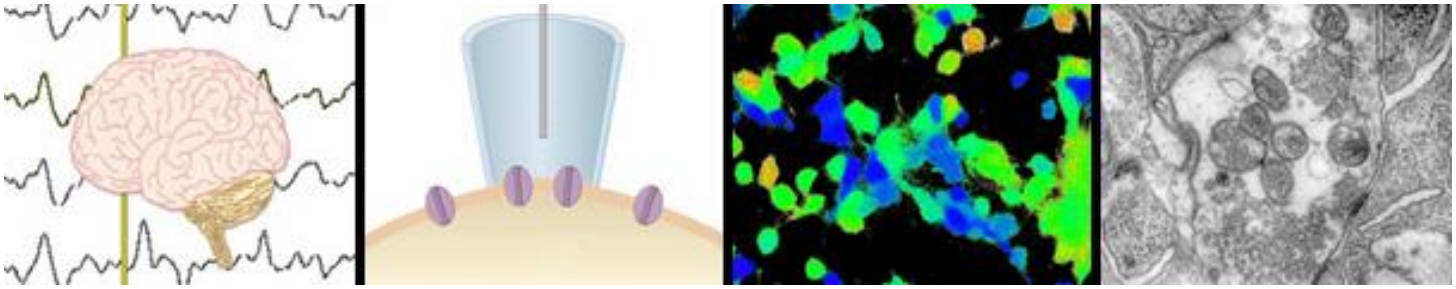


4. 模式生物II:小鼠，斑马鱼和鸡

JoVE科学教育系列的第四部分覆盖了在生命科学研究中常用到三种脊椎动物：小家鼠（实验室小鼠），家鸡（鸡）和印度斑马鱼（斑马鱼）。除了讨论这些生物在目前和历史上有过的重大发现，该系列还包含了关于如何在实验室中培养他们的方法，并回顾了关于他们发育中的重要概念。

5. 神经科学的基本知识

JoVE科学教育系列的第五部分介绍了神经科学领域。这些视频给出了一个从专业水平上对神经科学的初步认识，探讨了神经生理学，神经解剖学，细胞及分子神经科学，行为神经科学，和发育神经科学这五个主要的研究方向。除了介绍来自这些分支领域的科学家们提出的核心问题外，该系列还描述了当今最聪明的研究人员在得到有关神经系统功能的激动人心的发现时使用到的一些重要方法。



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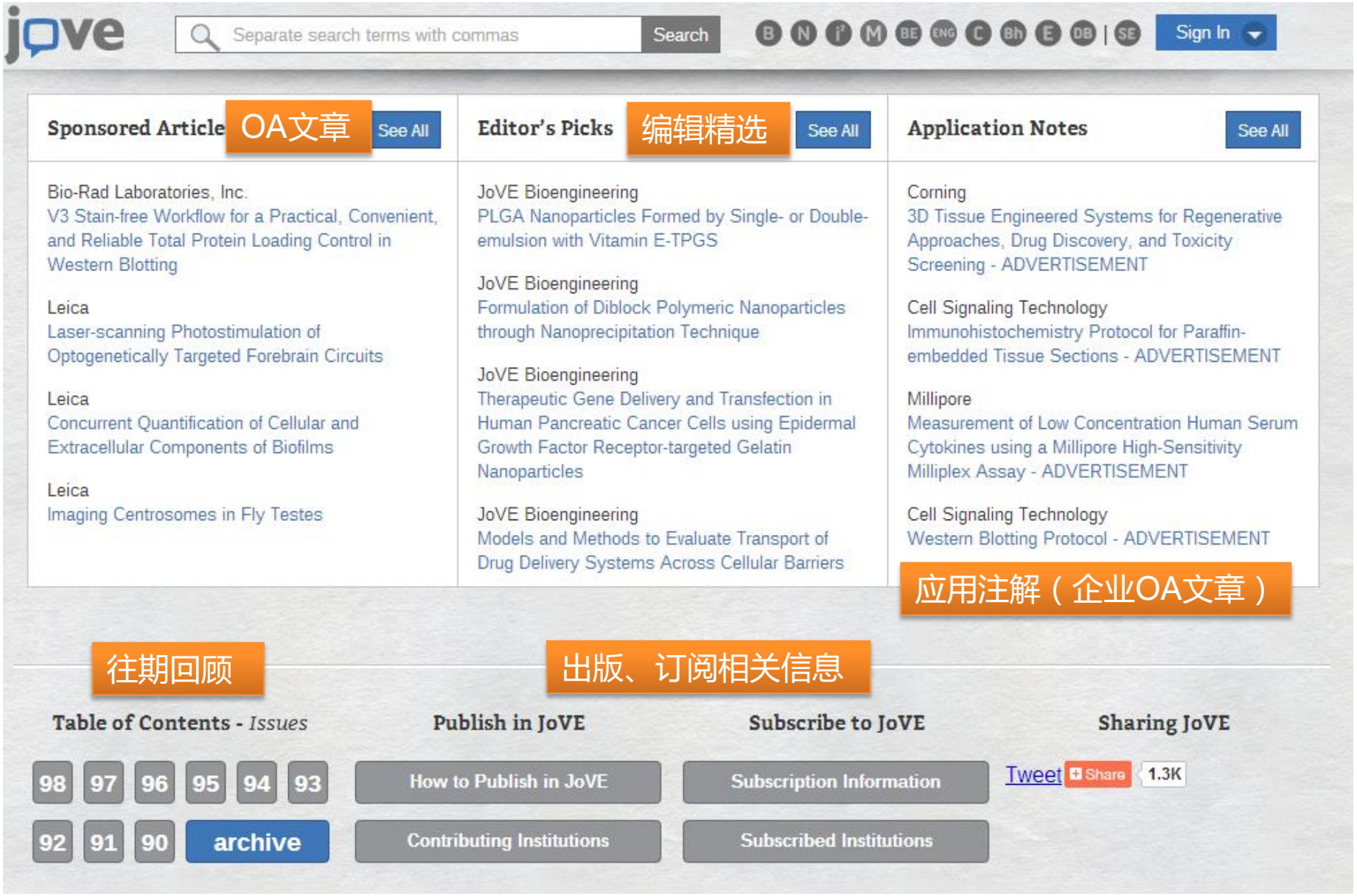
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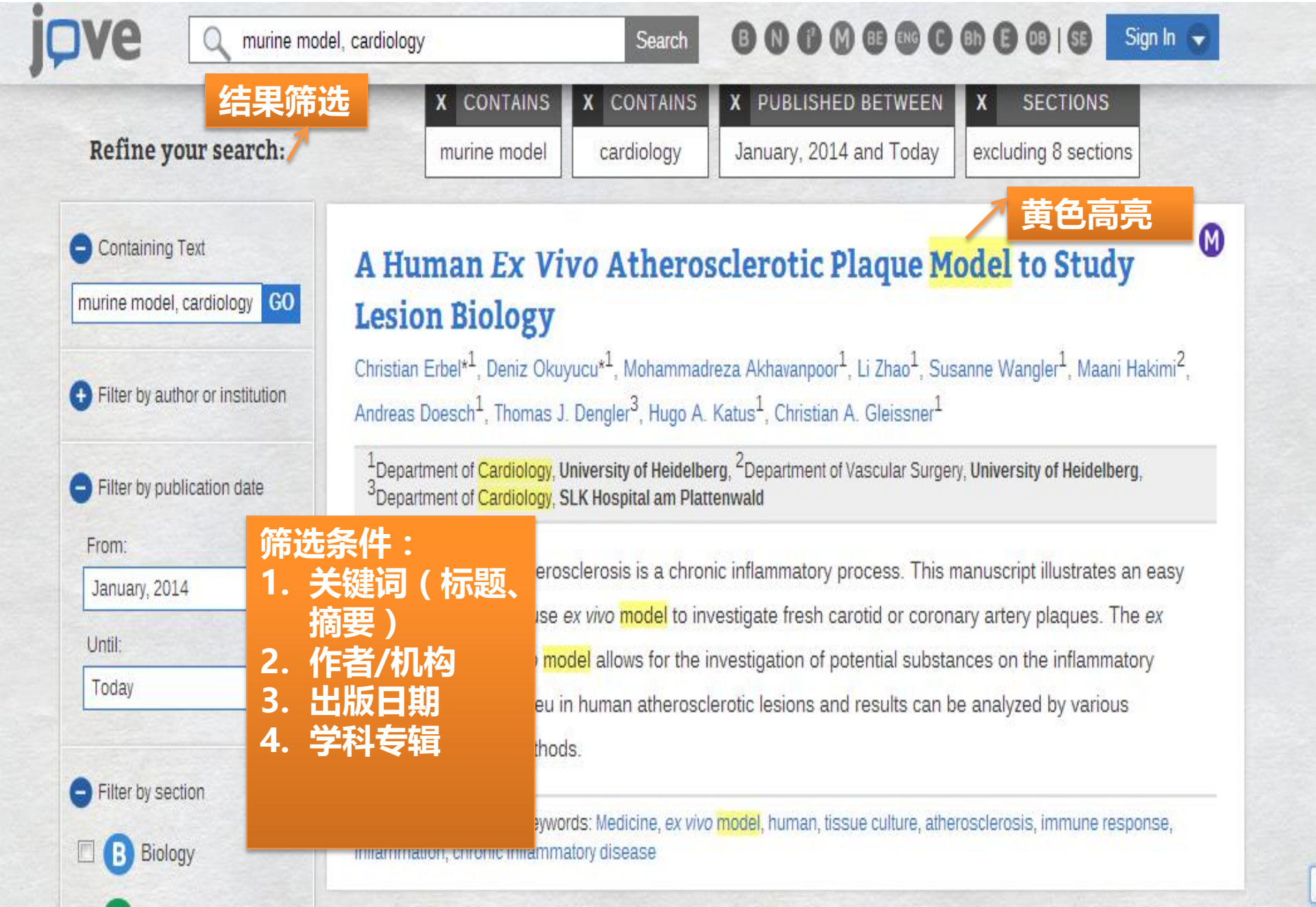
1.全库检索

检索条件：Murine Model, Cardiology



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JoVE Biology welcomes all general biology research methodologies. Content in this section canvases all fields of cell, molecular, and organismal biology, ranging from new applications of standard techniques to novel approaches aimed at understanding the functions of life and living organisms. This diverse section includes, but is not limited to, techniques in physical biology, cellular biochemistry, genetics, physiology, systems biology and a combination of eukaryotic and prokaryotic model systems.

视频列表

Synchronization of *Caulobacter Crescentus* for Investigation of the Bacterial Cell Cycle

Jared M. Schrader[1], Lucy Shapiro[1]

[1]Department of Developmental Biology, **Stanford University School of Medicine**

Synchronization of bacterial cells is essential for studies of the bacterial cell cycle and development. *Caulobacter crescentus* is synchronizable through density centrifugation allowing a rapid and powerful tool for studies of the bacterial cell cycle. Here we provide a detailed protocol for the synchronization of *Caulobacter* cells.

Published **April 8, 2015**. Keywords: Cellular Biology, cell cycle, cell biology, systems biology, synchronization, *Caulobacter*, asymmetric cell division

Preparation, Imaging, and Quantification of Bacterial Surface Motility Assays

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Murine Model of Hindlimb Ischemia

Hiroshi Niiyama[1], Ngan F. Huang[1], Mark D. Rollins[2], John P. Cooke[1]

[1]Division of Cardiovascular Medicine, Stanford University, [2]Department of Anesthesiology, University of California, San Francisco

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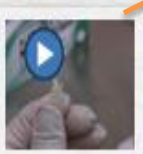
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Assessing Endothelial Vasodilator Function with the Endo-PAT 2000
Academy of Sciences of the United States of America

Circulation

Journal of the American College of Cardiology

American Journal of Physiology. Heart and Circulatory Physiology

Arteriosclerosis, Thrombosis, and Vascular Biology

Atherosclerosis

Arteriosclerosis, Thrombosis, and Vascular Biology

Journal of Hypertension

Embryonic Stem Cell-Derived Endothelial Cells for Treatment of Hindlimb Ischemia

Ngan F. Huang[1], Hiroshi Niiyama[1], Abhijit De[2], Sanjiv S. Gambhir[2], John P. Cooke[1]

[1]Division of Cardiovascular Medicine, **Stanford University**, [2]Department of Radiology, **Stanford University**

The surgical procedure for delivery of embryonic stem cell-derived endothelial cells to the ischemic hindlimb is demonstrated, with non-invasive tracking by bioluminescence imaging.

Published **January 23, 2009**. Keywords: Medicine, hindlimb ischemia, peripheral arterial disease, embryonic stem cell, cell transplantation, bioluminescence imaging, non-invasive tracking, mouse model

Other articles by John P. Cooke on PubMed

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The American Journal of Geriatric Cardiology. Oct, 2000 | Pubmed ID: 11416575

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The PRICE-1 conference was designed to identify near term priorities for funding cardiovascular research in the elderly. Twenty topics were identified with either break throughs in fundamental mechanisms of aging with cardiovascular systems or with critical importaance to cardiovascular carve of the elderly. (c) 2000 by CVRR, Inc.

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The American Journal of Cardiology. Feb, 2002 | Pubmed ID: 11835911

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JAMA. 2002 Mar 20;287(11):1420-6.

Relationship between insulin resistance and an endogenous nitric oxide synthase inhibitor.

Stühlinger MC[1], Abbasi F, Chu JW, Lamendola C, McLaughlin TL, Cooke JP, Reaven GM, Tsao PS.

Author information

Abstract

CONTEXT: Increased levels of asymmetric dimethylarginine (ADMA) are associated with endothelial dysfunction and increased risk of cardiovascular disease. Several cardiovascular risk factors are associated with reduced sensitivity to insulin, but elevated ADMA concentrations have not been fully linked to the metabolic syndrome.

OBJECTIVE: To evaluate the relationship between insulin sensitivity and plasma ADMA concentrations, and to determine whether a pharmacological treatment that increases insulin sensitivity would also modulate ADMA concentrations.

DESIGN, SETTING, AND SUBJECTS: Cross-sectional study, containing a nonrandomized controlled trial component, of 64 healthy volunteers without diabetes (42 women, 22 men; 48 with normal blood pressure and 16 with hypertension), which was conducted at a university medical center between October 2000 and July 2001.

INTERVENTION: Rosiglitazone (4 mg/d for 4 weeks and then 4 mg twice daily for 8 weeks), an insulin-sensitizing agent, was given to 7 insulin-resistant subjects with hypertension. These subjects were studied before and after 12-week treatment.

MAIN OUTCOME MEASURES: Insulin sensitivity measured by the insulin suppression test, and fasting plasma levels of low-density lipoprotein cholesterol, triglycerides, high-density lipoprotein cholesterol, glucose, insulin, and ADMA concentrations.

RESULTS: Plasma ADMA concentrations were positively correlated with impairment of insulin-mediated glucose disposal in nondiabetic, normotensive subjects ($r = 0.73$; $P<.001$). Consistent with the metabolic syndrome, ADMA levels were also positively correlated with fasting triglyceride levels ($r = 0.52$; $P<.001$) but not with low-density lipoprotein cholesterol levels ($r = 0.19$; $P = .20$). Plasma ADMA concentrations increased in insulin-resistant subjects independent of hypertension. Pharmacological treatment improved insulin sensitivity and reduced mean (SD) plasma ADMA concentrations from 1.50 (0.30) to 1.05 (0.33) micromol/L ($P = .001$).

提供在线文章中参考文献的Pubmed链接

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Materials

提供实验材料清单

Name	Type	Company	Catalog Number	Comments
Surgical Tools	Tool	Fine Science Tools		
Constix Cotton Swabs	Tool	Contec	SC-4	
Betadine (Povidone-iodine)	Reagent	PDI		
70% alcohol	Reagent	Kendall		
Phosphate Buffered Saline	Reagent	Invitrogen		
7-0 silk suture	Tool	Genzyme		
5-0 vicryl suture	Tool	Ethicon Inc.		
Electric shaver	Tool	GE Healthcare		
Cautery	Tool	Baxter Internationl Inc.		
Laser Doppler and PeriScan PIM 3 System	Equipment	Perimed		

Comments

43 Comments

Is there really "8–10 months old" mice，in your discussion section ? Or it should be 8–10 weeks old? Thank you.

Posted By: Anonymous | *April 16, 2009, 4:58 AM* REPLY

Dear Chris, As indicated in the discussion, we prefer using old mice (8-10 months old) to mimic the population of patients who tend to suffer from peripheral arterial disease (>60 years). Young mice (<8 weeks old) have a faster recovery rate than old mice (8-10 months old) and more easily recover without any therapeutic intervention. Therefore, the fast recovery rate of young mice may interfere with studies to assess the therapeutic effect of new treatments. Thank you for your inquiry. Sincerely, Ngan Huang, PhD

Posted By: Anonymous | *April 16, 2009, 6:34 PM* REPLY

We do observed the fast recovery rate of young mice. Thank you for your answer, it help us a lot. Thank you again!

Posted By: Anonymous | *April 17, 2009, 3:24 AM* REPLY

Dear Sir or Madam,
I study in University of Thessaly (Greece), department of Biochemistry & Biotechnology. I have to make a presentation about hindlimb Ischemia and your video above would help me a lot. So, I would like to know if there is any possibility to obtain this video. Thank you in advance for your time.
Yours faithfully,
Dimitriou Tilemachos

Posted By: Anonymous | *May 31, 2009, 9:55 AM* REPLY

Dear Dimitriou Tilemachos,
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Video Article

Murine Model of Hindlimb Ischemia

Hiroshi Niiyama[1], Ngan F. Huang[1], Mark D. Rollins[2], John P. Cooke[1]

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Correspondence to: John P. Cooke at john.cooke@stanford.edu

URL: http://www.jove.com/video/1035
DOI: doi:10.3791/1035

Keywords: Medicine, Issue 23, hindlimb ischemia, peripheral arterial disease, vascular disease, regenerative medicine, perfusion, mouse model

Date Published: 1/21/2009

Citation: Niiyama, H., Huang, N.F., Rollins, M.D., Cooke, J.P. Murine Model of Hindlimb Ischemia. *J. Vis. Exp.* (23), e1035, doi:10.3791/1035 (2009).

Abstract

In the United States, peripheral arterial disease (PAD) affects about 10 million individuals, and is also prevalent worldwide. Medical therapies for symptomatic relief are limited. Surgical or endovascular interventions are useful for some individuals, but long-term results are often disappointing. As a result, there is a need for developing new therapies to treat PAD. The murine hindlimb ischemia preparation is a model of PAD, and is useful for testing new therapies. When compared to other models of tissue ischemia such as coronary or cerebral artery ligation, femoral artery ligation provides for a simpler model of ischemic tissue. Other advantages of this model are the ease of access to the femoral artery and low mortality rate.

In this video, we demonstrate the methodology for the murine model of unilateral hindimb ischemia. The specific materials and procedures for creating and evaluating the model will be described, including the assessment of limb perfusion by laser Doppler imaging. This protocol can also be utilized for the transplantation and non-invasive tracking of cells, which is demonstrated by Huang *et al.*[1].

Video Link

The video component of this article can be found at http://www.jove.com/video/1035/

Protocol

1. Induction of Unilateral Hindlimb Ischemia

1. The surgical tools needed for this operation include: fine pointed forceps, pointed forceps, spring scissors, surgical scissors, needle holder, and retractor. We make our own retractor using a paperclip because it is smaller than commercially available retractors. Sterilize these tools prior to surgery by an autoclave or a hot-bead sterilizer. A cautery tool and sterile fine pointed cotton swabs will also be needed for this surgery. It is recommended that the tools be re-sterilized at the tips as needed during the procedure.
2. When the tools are ready, place the mouse into the anesthesia induction chamber containing 1–3% isoflurane in 100% oxygen at a flow rate of 1L/min.
3. Leave the mouse in the induction chamber until it is unresponsive to external stimuli. Then remove the animal from the induction chamber. It is recommended to flush the anesthetic from the box prior to opening the lid, to decrease operator exposure to isoflurane.
4. Then place the animal in the supine position onto the pre-operating table and connect it to a continuous flow of isoflurane. Using an electric shaver, remove the hair from the hindlimb. Apply hair removal cream to thoroughly remove hair.
5. Place the mouse in the supine position over a draped heated pad on the operating table, and connect it to a continuous flow of isoflurane. Extend and secure the hindlimb with a piece of tape. Once the hindlimb is secure, wipe the skin with three alternating betadine and alcohol scrubs. For the remainder of the surgical procedure, use a dissection microscope at 10X or 20X magnification to obtain an enlarged view of the hindlimb region.

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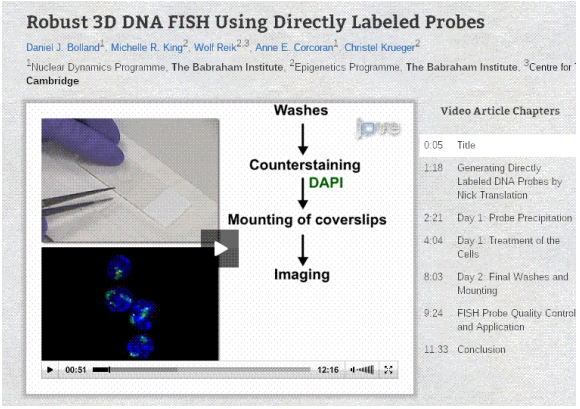

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Benjamin Werth， benjamin.werth@jove.com

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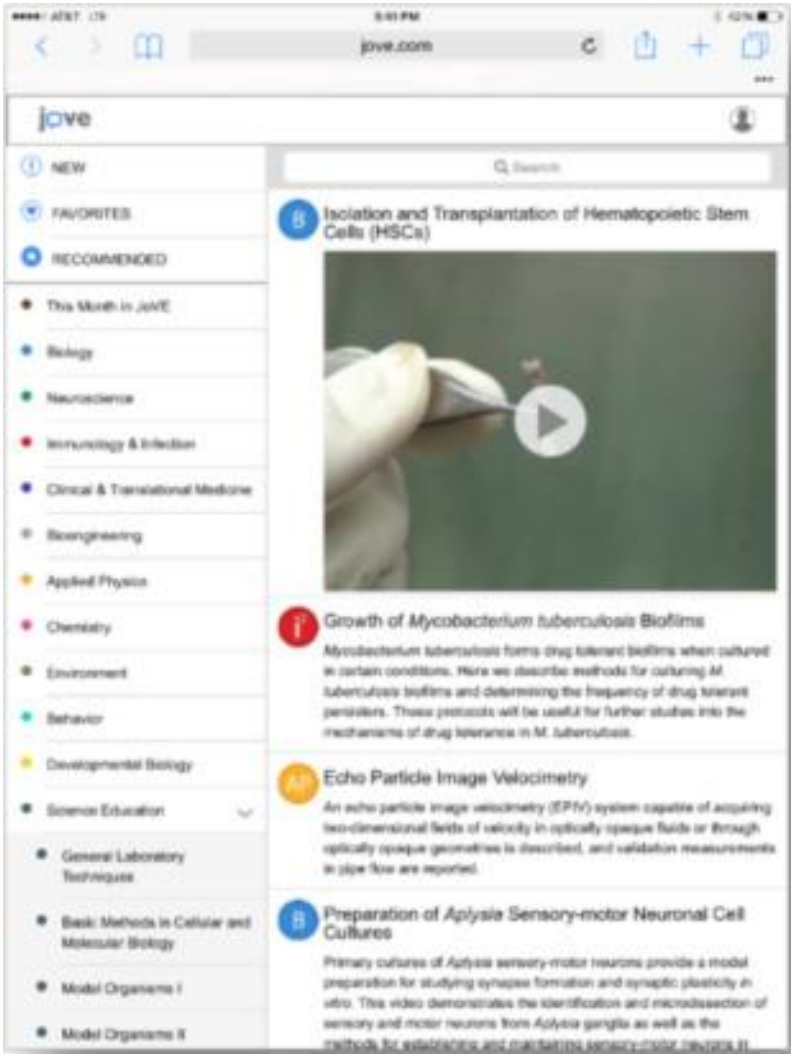

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