Manual pipetting of 384-well-plates made easy

Do you work with 384-well-plates and strive for more efficient manual pipetting methods? Your worries are over. The new Eppendorf Research® plus and Eppendorf Xplorer® plus 16- and 24-channel pipettes and pipette tips epT.I.P.S.® 384/ep Dualfilter T.I.P.S.® 384 make working with 384-well-plates convenient, ergonomic and safe. Feel the magic of filling a 384-well-plate within a minute.

384. Ready. Set. Pipette!

> No more mistakes or tedious work due to inconvenient alternate well pipetting with 8- and 12-channel pipettes.
> Set up or validate an automated process manually, and have a back-up system in case automation fails.
> Increase your throughput and change from 96- to 384-well-plates. There’s no reason to hesitate anymore!

www.eppendorf.com/ready-set-pipette
YOUR TURN THIS YEAR?

Apply for the Science & SciLifeLab Prize for Young Scientists — an annual prize awarded to early-career scientists. The prize is presented in four categories: Cell and Molecular Biology; Ecology and Environment; Molecular Medicine; and Genomics, Proteomics and Systems Biology.

The winners will have their essays published by Science, win up to USD 30,000, and be invited to a week in Sweden to attend the award ceremony. Get ready for a life-changing moment in your scientific career.

TIME TO APPLY
SCIENCEPRIZE.SCILIFELAB.SE
2018 Winner
Johannes Kohl, Ph.D.
For research on neural mechanisms underlying parental care

Now It’s Your Turn!

Eppendorf & Science Prize for Neurobiology
The annual Eppendorf & Science Prize for Neurobiology is an annual international prize which honors young scientists for their outstanding contributions to neurobiological research based on methods of molecular and cell biology. The winner and finalists are selected by a committee of independent scientists, chaired by Science’s Senior Editor, Dr. Peter Stern. If you are 35 years of age or younger and doing great research, now is the time to apply for this prize.

As the Grand Prize Winner, you could be next to receive
> Prize money of US$25,000
> Publication of your work in Science
> Full support to attend the Prize Ceremony held in conjunction with the Annual Meeting of the Society for Neuroscience in the USA
> 10-year AAAS membership and online subscription to Science
> Complimentary products worth US$1,000 from Eppendorf
> An invitation to visit Eppendorf in Hamburg, Germany

It’s easy to apply! Write a 1,000-word essay and tell the world about your work. Learn more at:

www.eppendorf.com/prize
2018 年获奖者
Johannes Kohl, Ph.D.
在亲代抚育神经机制方面
做出了杰出的贡献

下一位获奖者就是你！

Eppendorf & Science 神经生物学奖
一年一度的 Eppendorf & Science 神经生物学奖是一项国际奖项，授予用分子与细胞生物学方法在神经生物学领域取得非凡成果的青年科学家。冠军及入围候选人是由《Science》杂志高级编辑 Peter Stern 博士领衔的独立科学家组成的委员会评选出。年龄不超过 35 岁的该研究领域科学家可以申请参选。

您可能就是下一位获奖者并获得：
> 25,000 美元奖金
> 获奖论文发表在《Science》杂志上
> 得以全额资助参与美国神经科学协会年会和颁奖仪式
> 10 年 AAAS 会员和《Science》电子期刊
> 赠送价值 1,000 美元的 Eppendorf 产品
> 获邀参观 Eppendorf 位于德国汉堡的总部

申请非常容易，无需提名推荐程序！只需将您的研究成果浓缩成 1,000 字并上传即可。

要了解更多信息，请登陆：
www.eppendorf.com/prize
Now It’s Your Turn!

Eppendorf & Science Prize for Neurobiology
Eppendorf & Science 神経生物学賞は、分子生物学や細胞生物学に基づく神経生物学の研究において、卓越して貢献した若手科学者に毎年贈られる国際賞です。最終選出者ならびに受賞者は、Science 誌の編集主任 Dr. Peter Stern をはじめとする科学者の第三者委員会によって選出されます。年齢が35歳以下で、素晴らしい研究に従事されている方は、今こそこの賞に挑戦してみてください。

受賞者には下記内容の賞が授与されます：
> 賞金：25,000 US ドル
> Science 誌に研究内容を掲載
> 米神経科学会年次総会に伴って開催される授与式への参加を全面サポート
> 10年間の AAAS 会員資格および Science 誌オンライン購読権
> 1,000 US ドル相当のエッペンドルフ製品を提供
> ドイツ・ハンブルクのエッペンドルフ本社にご招待

応募は簡単です！あなたの研究について 1,000 語の小論文を書いてください。

詳しくはこちら：www.eppendorf.com/prize
ACCELERATING REGENERATIVE MEDICINE

We’re applying our photographic film innovations to help advance new treatments in the revolutionary field of regenerative medicine. Over the last 80-plus years, we’ve developed advanced technology that controls complex chemical reactions in photographic film that’s a mere 20 microns*1 thick. And today, that technology is being applied to research and the world’s first clinical trial*2 of medical treatments that use high-quality iPS cells. And in the future, we’ll strive to help those suffering from a range of medical conditions, such as those of the eyes, nerves, heart and more. Of course, the challenges are endless, but so are the possibilities. Which is why we’ll never stop accelerating regenerative medicine to help build a stronger, healthier future for all.

*1 Thickness of layers excluding the base.
*2 Fujifilm’s iPS cells are being utilized in the world’s first clinical trial using iPS cells conducted in the UK by the Australian company Cynata.

FUJIFILM and Fujifilm Value from Innovation are trademarks of FUJIFILM Corporation.
©2019 FUJIFILM Corporation. All rights reserved.
NEVER STOP

IMPROVING THE FUTURE

When you’re a company that has spent 85 years striving to move the world forward, you never stop. After achieving growth in global markets while competing with industry rivals at the height of photographic film’s relevance, never stop. After turning the threat of the digital revolution into opportunity despite the drastic decline in photographic film demand, never stop. And moving forward, we’ll never stop contributing to society by developing products and services with a wide range of advanced technologies. Making smartphone displays react responsively to human touch. Pushing the boundaries of cinematography with 4K and 8K lenses. Transforming commercial printing with leading-edge inkjet technologies. Creating intelligent workplaces with AI-powered solutions. Advancing regenerative medicine to meet unmet medical needs. And developing high-quality 3D imaging systems designed to enable doctors to quickly diagnose conditions. Because when it comes to creating value from innovation, you can rest assured we’ll never stop improving the future, so that together, we can make the world a better place.
Plant Phenomics
An Open Access Journal

Science Partner Journal Plant Phenomics is distributed by the American Association for the Advancement of Science (AAAS) in collaboration with Nanjing Agricultural University (NAU). Plant Phenomics will publish novel research that advances both in field and indoor plant phenotyping, with focus on data acquisition systems, data management, data interpretation into structural or functional traits, integration into process based or machine learning based models, and connects phenomics to applications and other research domains.

The Science Partner Journals (SPJ) program was established by the American Association for the Advancement of Science (AAAS), the nonprofit publisher of the Science family of journals. The SPJ program features high-quality, online-only, open-access publications produced in collaboration with international research institutions, foundations, funders, and societies. Through these collaborations, AAAS expands its efforts to communicate science broadly and for the benefit of all people by providing top-tier international research organizations with the technology, visibility, and publishing expertise that AAAS is uniquely positioned to offer as the world’s largest general science membership society.

Submit your research to Plant Phenomics today!
Learn more: spj.sciencemag.org/plantphenomics

ARTICLE PROCESSING CHARGES WAIVED UNTIL 2021
Flow-Chemistry Platform
The fReactor from Asynt is an affordable device created to bring the many advantages of flow chemistry to your laboratory through easy-to-use, flexible, and intuitive design. The platform consists of five modules that combine to give a reaction zone delivering a good residence time distribution. These interconnected modules are located on a metal heat-transfer baseplate that sits on a conventional laboratory hotplate stirrer. Integrating the efficiency of pipe-flow processing with the advanced mixing of a continuous stirred-tank reactor, fReactor provides chemists with a versatile “plug-and-play” setup allowing a wide range of continuous-flow processing, with little expertise required.

Asynt
For info: +44-(0)-1638-781709
www.freactor.com

X-Ray Microscopes
The ZEISS Xradia 610 and 620 Versa X-ray microscopes excel at delivering fast, nondestructive imaging of intact samples without sacrificing resolution and contrast, over the full range of power and kV. The two biggest challenges in X-ray computed tomography are maintaining resolution on large sample sizes at long working distances, while simultaneously maximizing resolution and X-ray flux for greater throughput. Both instruments address these challenges, providing a high-power X-ray source for significantly higher X-ray flux. This leads to faster tomography scans and up to twofold-higher throughput—without compromising spatial resolution. ZEISS X-ray microscopes are designed to be upgradeable and extendable with future innovations and developments, to protect our customers’ investment.

ZEISS
For info: +49-7364-20-0
www.zeiss.com

Ultrasonic Online Viscometer
Testa Analytical Solutions introduces a highly sensitive, online differential viscometer that can be used as part of a triple detector gel permeation chromatography/size-exclusion chromatography (GPC/SEC) system to determine the size and conformation of all types of synthetic polymers, biopolymers, proteins, and peptides. The detector incorporates technological innovations that dramatically reduce the noise level and increase sensitivity by more than an order of magnitude as compared to any viscometer currently available. This significant advance allows usage at much lower flow rates than before. Consequently, detection of lower molecular weights and at lower concentration is now routinely possible. Semi-micro GPC/SEC chromatography applications will benefit from this new detector.

Testa Analytical Solutions
For info: +49-30-864-24076
www.testa-analytical.com/datasheets/viscometer/viscometer.pdf

Freeze Dryers
LyoConstellation from SP Scientific is a freeze-drying system with powerful refrigeration, delivering expanded equipment capability and a large process space. It can address early-stage development under aseptic and controlled conditions, behaving in the same manner once it is ready for scale-up and commercialization. The LyoConstellation series—including the 510, 520, and 530, and offering shelf capacities from 9.8 ft³ (1 m³) to 33 ft³ (3 m³)—are all equipped as standard to provide high capacity, broad equipment capability, and expand design space. Configurable with the latest technologies, including SMART cycle optimization technology, ControlLyco ice nucleation technology, and LyoFlux TDLAS (tunable diode laser absorption spectroscopy) for vapor mass flow measurement and inference of critical data such as batch product temperature and batch Kv (vial heat transfer coefficient). LyoConstellation brings you an unmatched array of process analytical data.

SP Scientific
For info: 845-255-5000
www.spscientific.com/lyoconstellationfreeze dryer

Experimental Cell Lines
AMS Biotechnology (AMSBO) experimental cell lines give you the power to screen antibodies and ligands against your target, enhancing your search for new CAR T therapies. A therapeutic chimeric antigen receptor (CAR) is a transmembrane protein designed with an extracellular domain based on an antibody single-chain variable fragment (scFv) and intracellular signaling domains derived from the T-cell receptor gamma chain, along with other costimulatory receptors. The scFv provides a specific binding domain that recognizes target proteins on cancer cells. A patient’s own T cells are isolated and activated, then transfected with a gene expressing the CAR. This reprograms the T cells to identify and attack tumor cells expressing the target protein, creating personalized immune cells created to specifically target the patient’s cancer. Stable CHO recombinant cell lines are available from AMSBO for constitutively expressing full-length human CD123, PSMA, and ICOSL.

AMS Biotechnology
For info: 617-945-5033
www.amsbio.com

CRISPR Screening Service
Horizon has extended its CRISPR Screening Service to include ex vivo T lymphocytes. The extension meets the requirements of immunology-based research in drug discovery, enabling new gene targets to be identified in biologically and potentially therapeutically relevant settings. CRISPR screens in primary T lymphocytes have proved challenging, owing to complex issues around the introduction of the screening components and Cas9 in particular. Horizon has adapted its established CRISPRk (knockout) platform to address these issues and to deliver a robust screening platform in human T lymphocytes, which will enable investigation of complex biological processes and novel targets. Horizon has added CRISPRk screens in ex vivo T lymphocytes to its established CRISPR screening formats—CRISPRk, CRISPRi (interference), and CRISPRa (activation)—in cancer cell lines.

Horizon
For info: 844-655-7800
www.horizondiscovery.com

Electronically submit your new product description or product literature information! Go to www.sciencemag.org/about/new-products-section for more information.

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and governmental organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by Science or AAAS of any products or materials mentioned is not implied. Additional information may be obtained from the manufacturer or supplier.
Make Your Research Hit the Target

Science Translational Medicine publishes peer-reviewed, cutting-edge biomedical research in the fields of cardiology, cancer, immunotherapy, infectious diseases and vaccines, bioengineering and devices, neurology and neurodegenerative diseases, obesity, diabetes and metabolic disorders, drug discovery, genomic medicine, imaging, stem cell therapy and regenerative medicine.

Submit your research today
Learn more at: ScienceTranslationalMedicine.org
# 2019 AAAS Student E-poster Competition Winners

The 2019 AAAS Student E-poster Competition took place at the AAAS Annual Meeting in Washington, DC on February 16-17. The competition recognizes the individual efforts of students who are actively working toward an undergraduate, graduate or doctoral-level degree. The winners’ presentations displayed originality and understanding that set them apart from their peers. Eligible students can apply to present at the 2020 E-poster Competition in Seattle, WA starting in July 2019.

## BRIAN AND BEHAVIOR

**WINNER** Gladys A. Shaw  
Virginia Commonwealth University  
Predatory Stress Increases Ethanol Consumption in Male C57bl/6j Mice

**HONORABLE MENTION** Justin Buck  
University of Maryland, College Park  
Mapping the Mouse Brain: An Investigation of Dopamine Circuitry

## CELLULAR AND MOLECULAR BIOLOGY

**WINNER** Erin Choi  
The University of Texas at Austin  
Developing Model Substrates to Characterize Substrate Selection by the 26s Proteasome

**HONORABLE MENTION** Sanaz Momben Abolfath  
The Catholic University of America  
Cyclodextrin-Based Anthrax Toxin Channel Inhibitors

## DEVELOPMENTAL BIOLOGY, PHYSIOLOGY AND IMMUNOLOGY

**WINNER** Katherine Blackmore  
George Washington University  
A Forebrain-Hypothalamic Circuit Mediates Hepatic Steatosis

**HONORABLE MENTION** Meilin Zhu  
Arizona State University  
Stress and Sleep Hormone Detection in Eccrine Sweat

## EDUCATION

**WINNER** Aeowynn J. Coakley  
San Jose State University  
Rubric Development: Characterizing Introductory Physics for Life Sciences Curricula

## ENVIRONMENT AND ECOLOGY

**WINNER** Jacy L. Hyde  
University of Florida  
Transmission Lines are an Under-Acknowledged Threat to the Brazilian Amazon

**HONORABLE MENTION** Mandar Bokare  
University of Maryland, Baltimore County  
Air-Water and Sediment-Water Transfer of PCBs in an Urban River

## MEDICINE AND PUBLIC HEALTH

**WINNER** Luis M. Cantu  
University of California, Irvine  
How are Antibiotic Resistant Genes Distributed Among Bacteria Species?

**HONORABLE MENTION** Ada Vernet Crua  
Northeastern University  
Green Synthesis of Metallic Synergetic Nanostructures for Biomedical Applications

## PHYSICAL SCIENCES

**WINNER** Khayra Alabrash  
Morgan State University  
The Synthesis of Organorhenium Complexes as Breast Cancer Drugs

**HONORABLE MENTION** Rachael Knoblauch  
University of Maryland Baltimore County  
Heavy Carbon Nanodots: A Potential Light-Activated Antimicrobial

## SCIENCE AND SOCIETY

**WINNER** Victor L. Rodriguez  
University of Central Florida  
Planting the Seed of Community Resilience: Federal, State, and Private Strategies

**HONORABLE MENTION** Kate Bredbenner  
Rockefeller University  
How Scientists Should Summarize Their Research: An Analysis of Research Summaries

## SOCIAL SCIENCES

**WINNER** Emily Santora  
Arizona State University  
Social and Cultural Ideas of Endometriosis in Low and Middle-Income Countries

**HONORABLE MENTION** Luis Alexis Rodriguez-Cruz  
University of Vermont  
The Psychological Distance of Climate Change Adaptation for Puerto Rican Farmers

## TECHNOLOGY, ENGINEERING AND MATH

**WINNER** Jennifer G. DiStefano  
Northwestern University  
Utilizing 2D Materials in Core-Shell Nanocomposites

**HONORABLE MENTION** Tehreem A. Raza  
Cal Poly Pomona  
Constitutive Model of PLG 10-90 for Anterior Cruciate Ligament Reconstruction