WHY SHOULD EVERYONE SUPPORT TRANSPARENCY OF THE SCIENTIFIC LITERATURE EFFORTS?

QUESTIONS:

NATE HERZOG

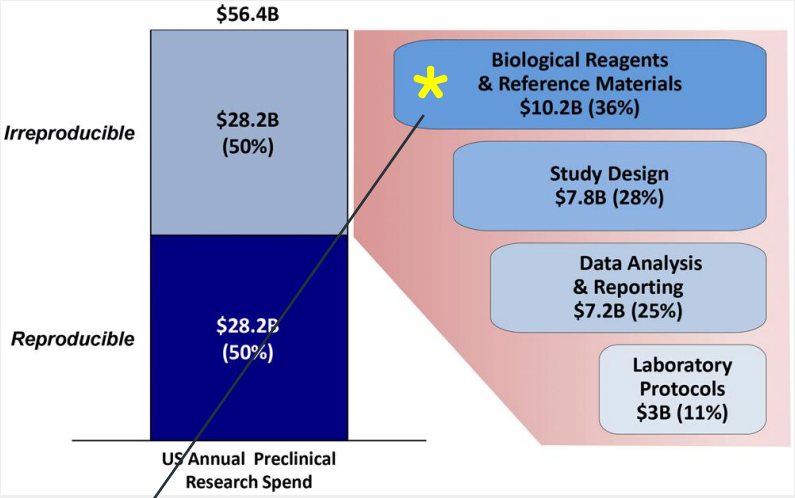
NSHERZOG@UVM.EDU

ANITA BANDROWSKI

ANITA@SCICRUNCH.COM

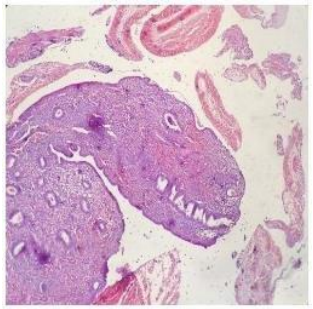
REPRODUCIBILITY CRISIS

- Lost of money waste due to irreproducibility of science
- This causes delays drug development, increases demands on resources and drives up research costs.
- Factors to improve reproducibility are known
  - Research reagents
  - Investigator bias (Landis 2012 Criteria)



HOW DO WE SOLVE THE RESOURCE PROBLEM?

https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1002165
https://blogs.scientificamerican.com/observations/to-fix-the-reproducibility-crisis-rethink-how-we-do-experiments/
https://www.ahajournals.org/doi/full/10.1161/STROKEAHA.108.515957



Index of RRIDs

Statements about RRIDs

RRID

Unified web portal for authors
Web services for journals & tools

Literature mining pipelines

Google Scholar

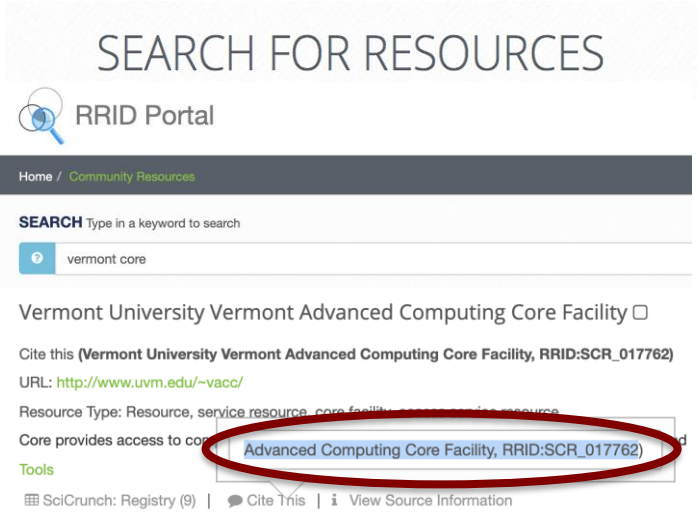
SciBot

PubMed Central

Resource Watch AI

RRID AUTHOR'S WORKFLOW

https://scicrunch.org/resources



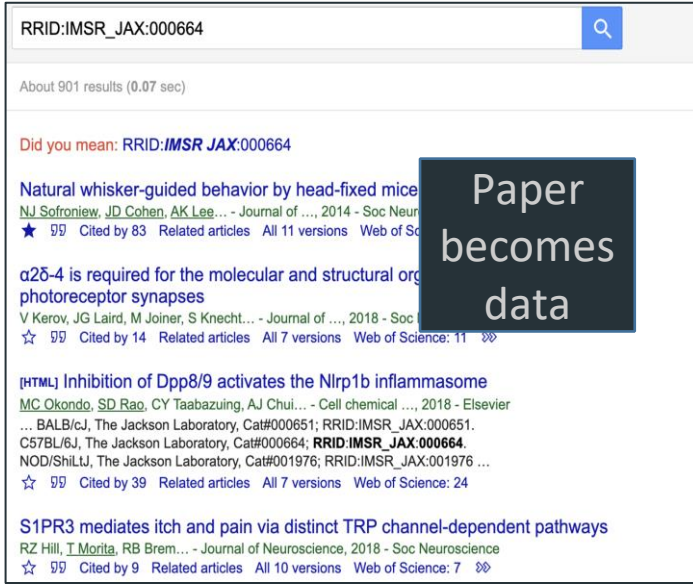
RRID portal includes:
Antibodies 2.5M
Organisms 600K (~25 centers)
Cell lines 120K
Plasmids (Addgene)
Stats tools,Core fac. etc 20K

>500 Journals direct author to RRID portal

Author searches for a resource

Author copies "Cite This" text into manuscript

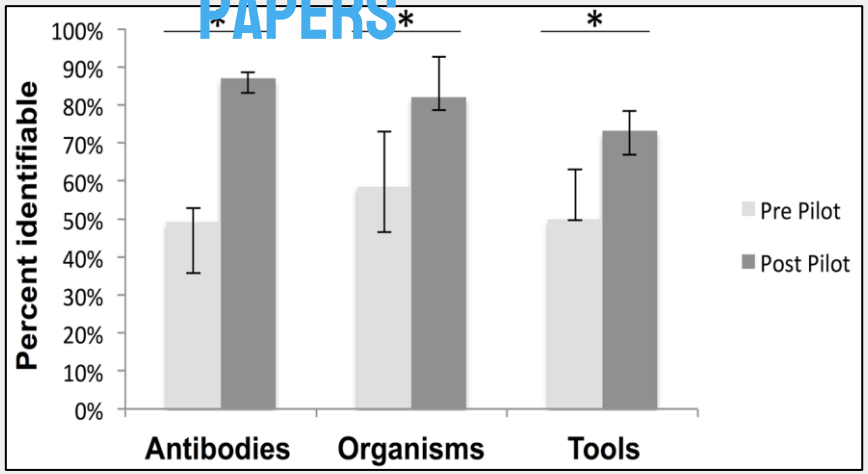
Paper is published



Paper becomes data

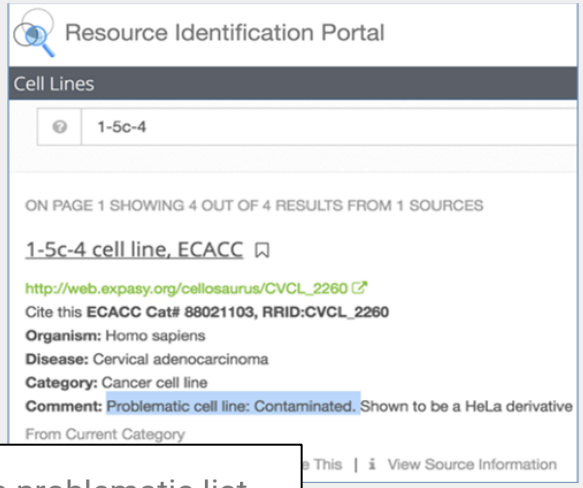
SciScore

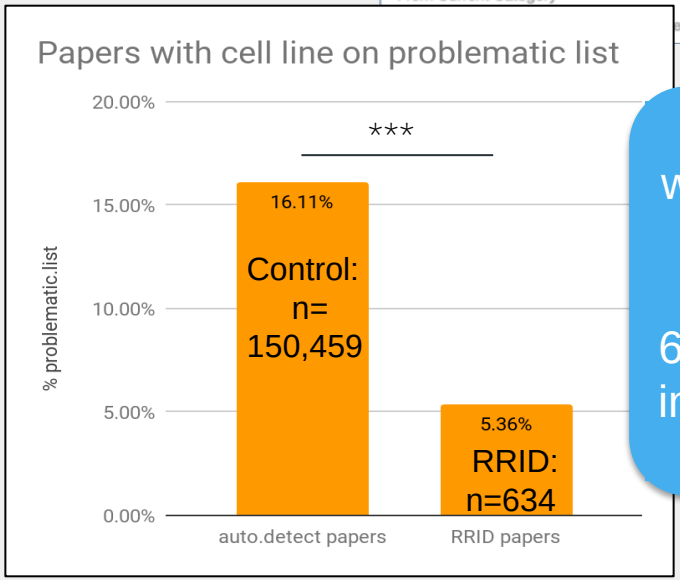
USING IDENTIFIERS FOR RESOURCES MAKES BETTER (REPRODUCIBLE) PAPERS



Bandrowski et al, 2015a,b,c,d

RRID = 40% increase in reagent findability





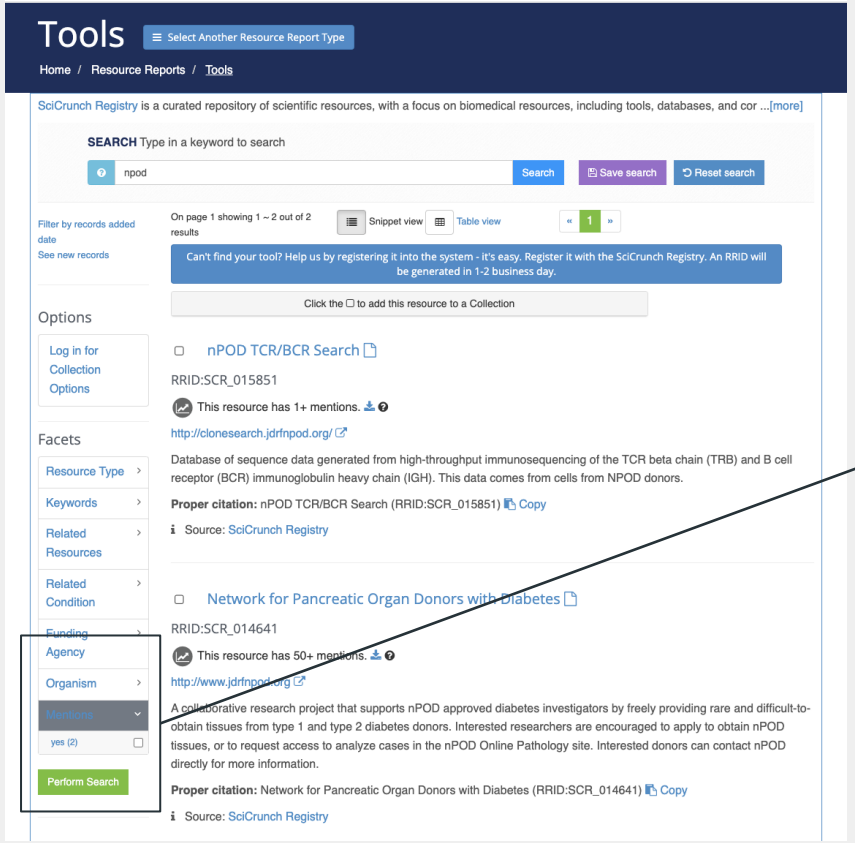
Babic et al, eLife, 2019

Authors see warning about cell lines = 66% decrease in naughty cell lines

Resource Identification Initiative

SciScore

RRIDS ARE A LIST OF REAGENTS & RESOURCES



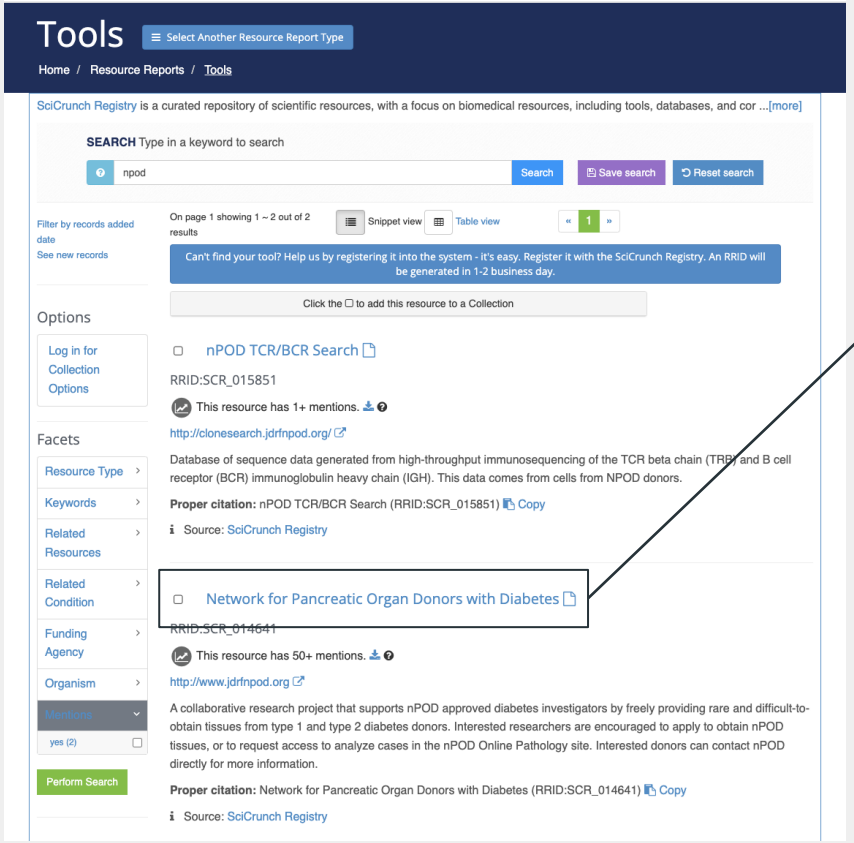
Search “npod”

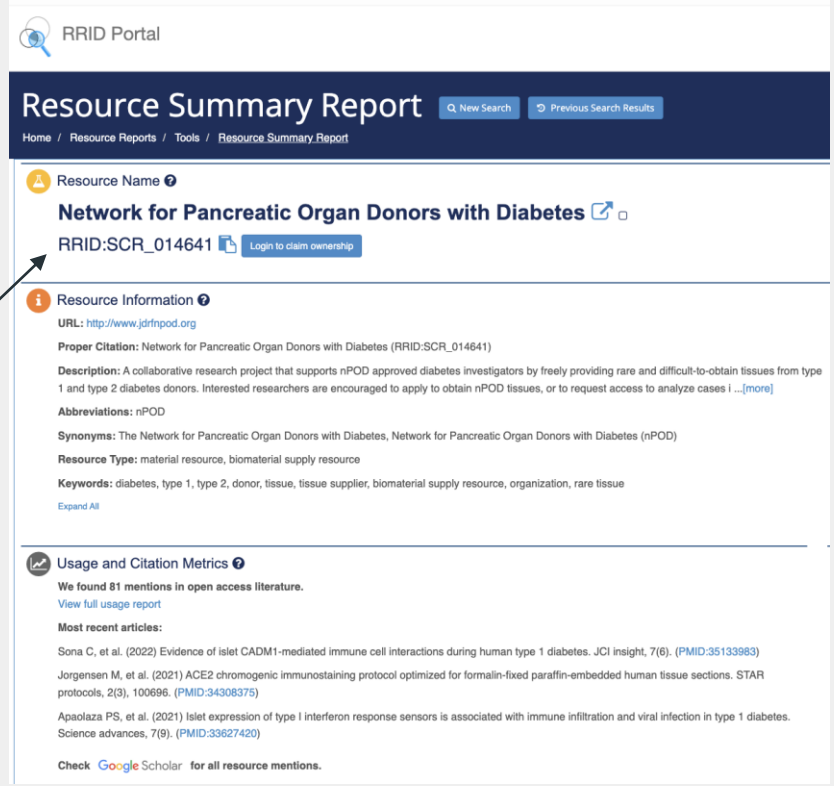
Facets (like filter)

Mentions? - in literature!

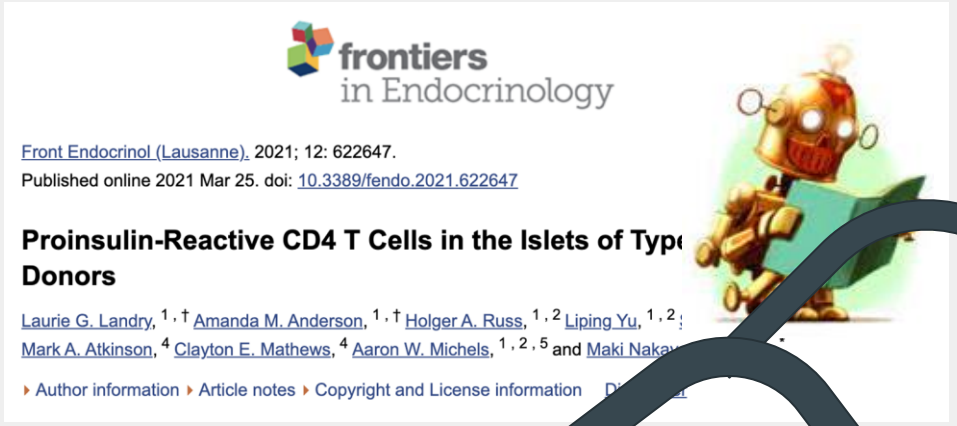
* Core facilities

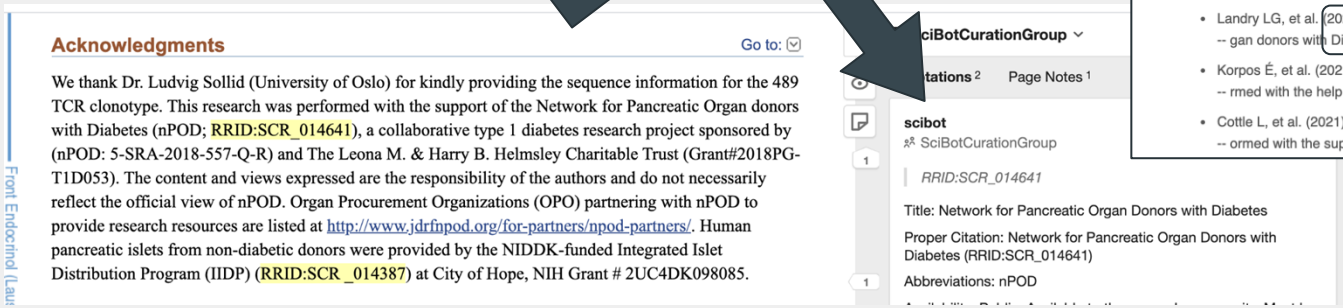
RRIDS ARE A LIST OF REAGENTS & RESOURCES

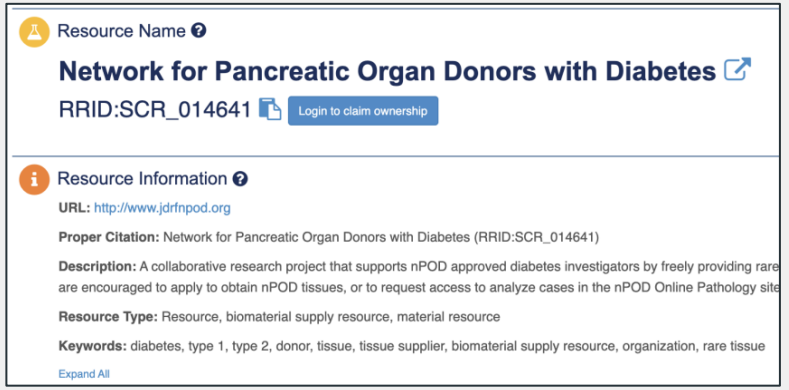


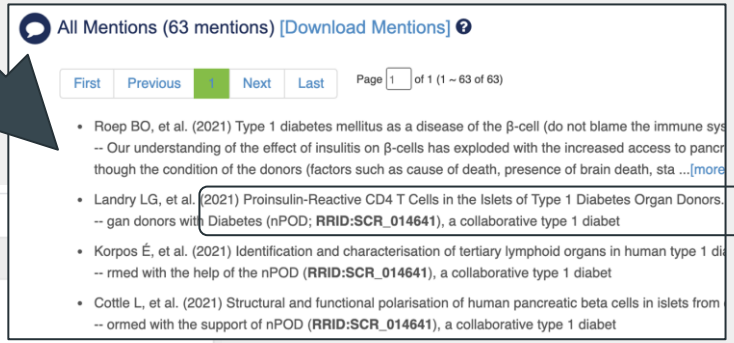


HOW ARE RRIDS DETECTED?









RRIDs are read by SciBot, verified by curators and papers are listed on the RRID resolver page and shared with **CrossRef**

“Our users do not cite us in a consistent format, it is a real chore to figure out who cited us over the last year” - Core Facility Resource Owner

CORE FACILITIES (SERVICES)

CORE FACILITIES (SERVICES)

ABRF Research • Technology Communication • Education

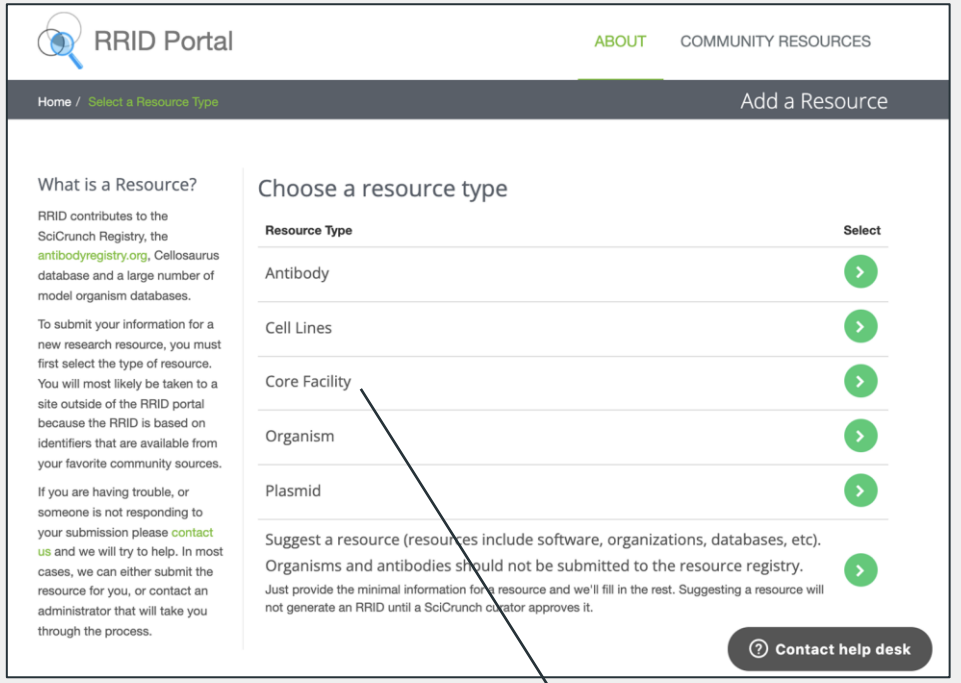
CORE MARKETPLACE

1. List Your Facility

2. Keep Your Listing Updated

3. Join the ABRF CoreMarketplace

Email: nsherzog@uvm.edu



coremarketplace.org

CORE FACILITIES (SERVICES)

CORE MARKETPLACE

Biomedical Imaging Group (Microscopy (Electron, F

Facility Details

- About This Facility
- Services and Equipment
- Publications
- Associations
- Metadata

Services offered:

Analysis Workstations
Bioimage Informatics
Confocal Microscopy
Data Analysis
Data Pr
Image
Light-sl
Live Ce

Facility Equipment

Zeiss Axio Plan Histology Microscope
Zeiss Axio Observer D1 Motorized Widefield
Zeiss Axio Observer Z1 for Multi-Well Acquisi
Nikon TE2000 with Yokogawa CSU-10 Spinnir
Zeiss Axiovert 200M FRET Microscope
LaVision BioTec LightSheet UltraMicroscope
Zeiss LSM 900 with Airyscan 2
TIRF EpiFluorescence Structured Light Micros
Virus Epifluorescence Structured Light Micro

Biomedical Imaging Group (Microscopy (Electron, Fluorescence, Optical))

Facility Details

- About This Facility
- Services and Equipment
- Publications
- Associations
- Metadata

University of Massachusetts Medical School
BioTech II, Suite 114
373 Plantation Street
Worcester, MA 01605
United States
http://big.umassmed.edu

Quicklinks:

https://coremarketplace.org/RRID:SCR_021201

Facility LIMS Page

https://trello.com/pmmmicroscopes

Primary Contact:

Caterina Strambio-De-Castillia
Last Updated: 11/17/2021

Facility RRID

RRID:SCR_021201
CITE THIS
Biomedical Imaging Group, RRID:SCR_021201

Facility Details

The Biomedical Imaging Group is an interdisciplinary team of engineers and scientists, re
as microscopy, data management, lasers, optoelectronics, applied mathematics, image a
imaging approaches for cell biology.

CORE FACILITIES (SERVICES)

HOW CAN WE GET MORE MENTIONS?

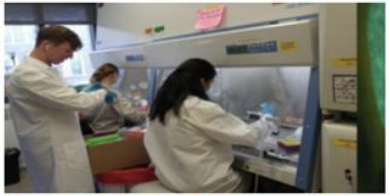
Shared Instrumentation Network

RESEARCH AND INNOVATION OFFICE

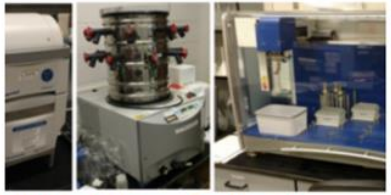
Core Facilities

Filter by Department / Unit

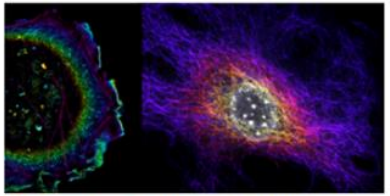
- [ ] Biochemistry
- [ ] BioFrontiers Institute
- [ ] Chemistry
- [ ] College of Engineering and Applied Science
- [ ] CU Green Labs
- [ ] Department of Integrative Physiology (IPHY)
- [ ] Department of Mechanical Engineering
- [ ] Department of Psychology and Neuroscience
- [ ] Ecology and Evolutionary Biology (EBIO)
- [ ] Geological Sciences
- [ ] JILA
- [ ] Molecular, Cellular & Developmental Biology (MCDB)
- [ ] Renewable and Sustainable Energy Institute (RASEI)
- [ ] Wilderness Place



Biochemistry Cell Culture Facility (RRID:SCR_018988)



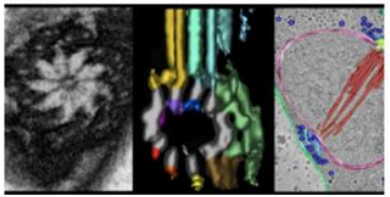
BioCore: Shared Equipment Program (RRID:SCR_019302)



BioFrontiers Advanced Light Microscopy Core (RRID: SCR_018302)

BioFrontiers Sequencing Facility (RRID:SCR_019308)

BioKEM - BioChemistry Krios Electron Microscopy Facility (RRID:SCR_019057)



Boulder Electron Microscopy Services Core Facility (RRID:SCR_001432)

CAN YOU HELP USERS CITE YOU?

protocols.io

Immunofluorescence staining protocol for co-staining of fetuin-A and GFAP in older human autopsy tissue via Tyramide Signal Amplification

PLOS One

Miriam Heinen[1]

[1]RWTH Aachen University

1 Works for me dx.doi.org/1

Miriam Heinen

ABSTRACT

This staining was performed to
sections (1 µm thickness) of for
by a polyclonal rabbit-anti-huma
a polyclonal goat-anti-rabbit Ale
11070, RRID:AB_2534114, dilution 1:300).Fetuin-A was detected by using a monoclonal IgG2a mouse-anti-human antibody (clone MAHS-1, dilution 1.0 µg/mL), raised against purified human fetuin-A in our laboratories. Antibody binding was detected by tyramide signal amplification using a secondary biotinylated polyclonal goat-anti-mouse antibody (Dako Cat# E0433, RRID:AB_2687905, dilution 1:300) and a Tyramide Signal Amplification Kit (Life Technologies, Carlsbad, USA, T-20933). To minimize lipofuscin autofluorescence, sections were counterstained with Sudan Black (Sigma-Aldrich, Munich, Germany, 199664, dilution 0.3% in 70% ethanol, 5 minutes). Nuclei were stained with DAPI (Sigma-Aldrich, Munich, Germany D9542, dilution 0.25 µg/ml, 5 minutes). Sections were mounted with Immumount (Thermo Scientific, Waltham, USA, 9990402) and stored at 8°C in the dark.

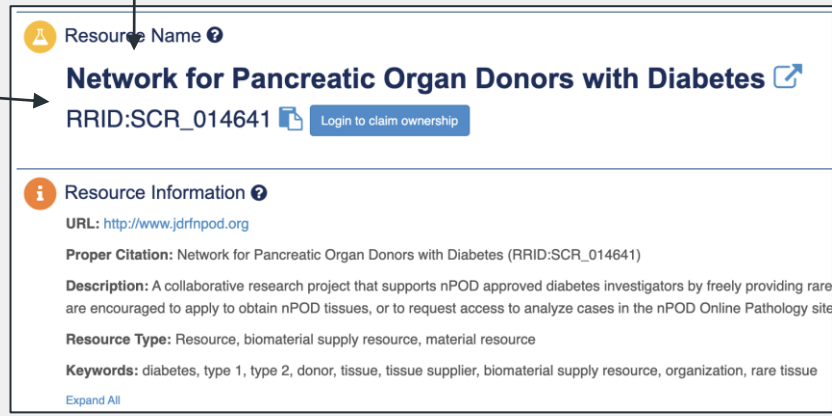
EXTERNAL LINK

https://doi.org/10.1371/journal.pone.0206597

...This protocol used the services of the Network for Pancreatic Organ Donors with Diabetes (RRID:SCR_014641)...

Dear Sally,
Blah blah blah
Sincerely,

Using our core facility? Please cite Network for Pancreatic Organ Donors with Diabetes (RRID:SCR_014641) in your manuscript.



CAN YOU HELP USERS CITE YOU?

there are 101 cores (out of 444 total where we share data with Core Marketplace) that have been cited,

We reached out to 20 cores. We found out that nearly all of the respondents are doing at least 2 of the following things:

Here are prompts that we gave that we knew core leaders were doing:

- RRID is included in the email signature - 8 respondents are doing this
- RRID is included on the core website, somewhere obvious - 6 respondents
- Sending out an email periodically to your users with your core RRID - 3 respondents

Here are some other ways that core facility heads are pushing their users to cite their RRIDs:

- *"I basically have the RRID listed across all the equipment calendars on my iLab page"*
- *"For booking the microscopes we use PPMS from Stratocore and I have just added it to the heading of the facility, which is displayed on all PPMS AIF pages."*
- *"Post signs referencing the RRID within the SRL"*
- *"Post the RRID on a screensaver on the instruments"*
- *"Mention acknowledging the SRL via the RRID during new user trainings"*
- *"The RRID is included at the bottom of the result report sent to the users."*
- *"Anytime Methods write up are requested by users, we include an acknowledgement sentence which include the RRID."*
- *"When reviewing/editing manuscripts as an author, I always add my “core laboratory” acknowledgement section that includes the lab RRID."*

CORE MARKETPLACE

coremarketplace.org

The CoreMarketplace:

What it is, and how it increases your core's visibility in the research environment

Nate Herzog

Project Lead

nsherzog@uvm.edu

CoreMarketplace Purpose:

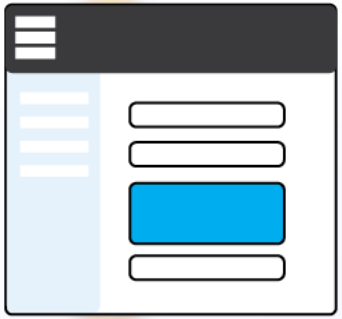
1. *Increase visibility (citability) of cores*
2. *Improve the reproducibility of research*

CORE MARKETPLACE

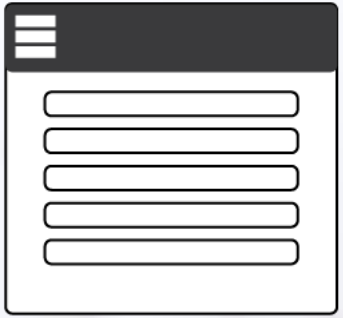
coremarketplace.org

FUNCTIONS

Fully Searchable



Core Listing (homepage)



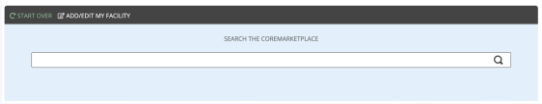
Postings

CORE MARKETPLACE

coremarketplace.org

MY CORE ISN'T AVAILABLE

Everything (and more) that wants to find your core listing



Research/ Researchers

SciCrunch

Research/Science Websites

Google

The Internet

API

Your Institutions

PubMed

Publications

CORE MARKETPLACE

coremarketplace.org

NUMBERS

222	937	12	15765	177
Institutions Represented	Active Facility Listings	Countries Represented	Searches In Last 7 Days	PMC Articles Citing Facility RRIDS

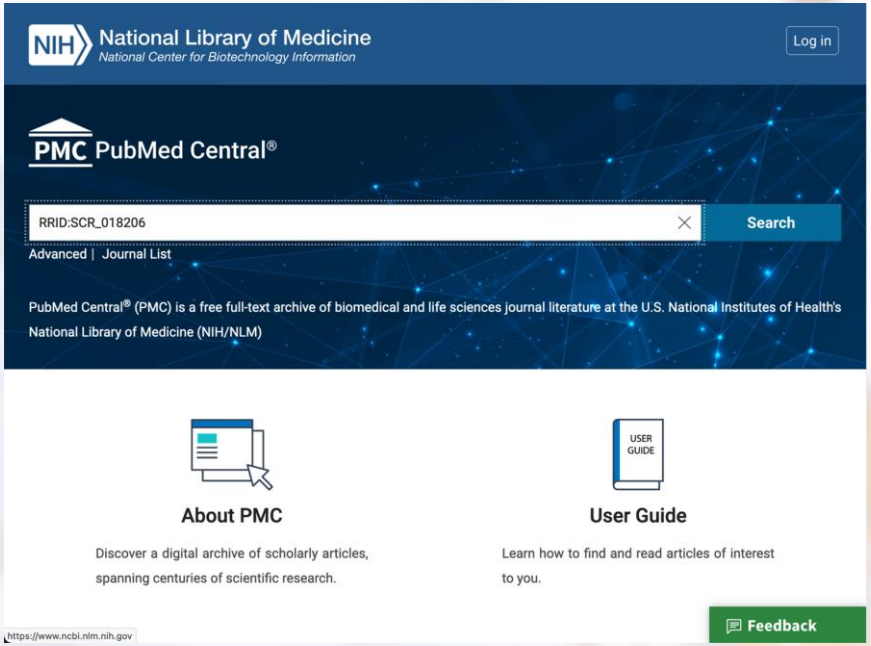
1. List Your Facility (get an RRID)
2. Keep Your Listing Up To Date (first impression)

CM is free to use. Free to list. We don't share contact information with 3rd parties.

CORE MARKETPLACE

coremarketplace.org

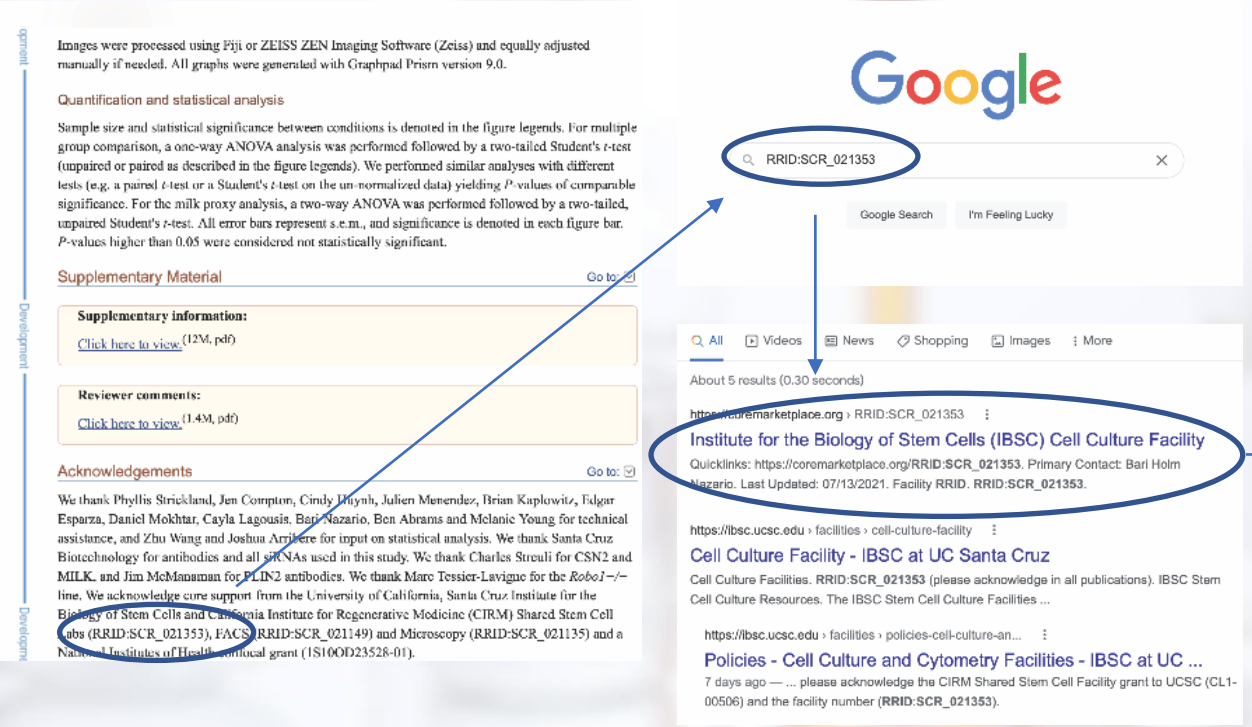
Research Resource Identifiers (RRID)



CORE MARKETPLACE

coremarketplace.org

Research Resource Identifiers (RRID)



Images were processed using Fiji or ZEISS ZEN Imaging Software (Zeiss) and equally adjusted manually if needed. All graphs were generated with Graphpad Prism version 9.0.

Quantification and statistical analysis

Sample size and statistical significance between conditions is denoted in the figure legends. For multiple group comparison, a one-way ANOVA analysis was performed followed by a two-tailed Student's *t*-test (unpaired or paired as described in the figure legends). We performed similar analyses with different tests (e.g. a paired *t*-test or a Student's *t*-test on the un-normalized data) yielding *P*-values of comparable significance. For the milk proxy analysis, a two-way ANOVA was performed followed by a two-tailed, unpaired Student's *t*-test. All error bars represent s.e.m., and significance is denoted in each figure bar. *P*-values higher than 0.05 were considered not statistically significant.

Supplementary Material

Go to:

Supplementary information:

Click here to view. (12M, pdf)

Reviewer comments:

Click here to view. (1.4M, pdf)

Acknowledgements

Go to:

We thank Phyllis Strickland, Jen Compton, Cindy Huynh, Julien Menendez, Brian Kaplowitz, Edgar Esparza, Daniel Mokhtar, Cayla Lagousis, Bari Nazario, Ben Abrams and Melanie Young for technical assistance, and Zhu Wang and Joshua Arribere for input on statistical analysis. We thank Santa Cruz Biotechnology for antibodies and all siRNAs used in this study. We thank Charles Streuli for CSN2 and MILK, and Jim McManaman for PLIN2 antibodies. We thank Marc Tessier-Lavigne for the *Robo1*−/− line. We acknowledge core support from the University of California, Santa Cruz Institute for the Biology of Stem Cells and California Institute for Regenerative Medicine (CIRM) Shared Stem Cell Labs (RRID:SCR_021353), FACS (RRID:SCR_021149) and Microscopy (RRID:SCR_021135) and a National Institutes of Health core grant (1S10OD23528-01).

Google

RRID:SCR_021353

Google Search I'm Feeling Lucky

All Videos News Shopping Images More

About 5 results (0.30 seconds)

https://coremarketplace.org › RRID:SCR_021353

Institute for the Biology of Stem Cells (IBSC) Cell Culture Facility

Quicklinks: https://coremarketplace.org/RRID:SCR_021353. Primary Contact: Bari Holm Nazario. Last Updated: 07/13/2021. Facility RRID. RRID:SCR_021353.

https://ibsc.ucsc.edu › facilities › cell-culture-facility

Cell Culture Facility - IBSC at UC Santa Cruz

Cell Culture Facilities. RRID:SCR_021353 (please acknowledge in all publications). IBSC Stem Cell Culture Resources. The IBSC Stem Cell Culture Facilities ...

https://ibsc.ucsc.edu › facilities › policies-cell-culture-an...

Policies - Cell Culture and Cytometry Facilities - IBSC at UC ...

7 days ago — ... please acknowledge the CIRM Shared Stem Cell Facility grant to UCSC (CL1-00506) and the facility number (RRID:SCR_021353).

START OVER ADD/EDIT MY FACILITY

All Facilities >> University of California, Santa Cruz >> Institute for the Biology of Stem Cells (IBSC) Cell Culture Facility (Cell Biology)

Institute for the Biology of Stem Cells (IBSC) Cell Culture Facility (Cell Biology)

Facility Details
About This Facility
Services and Equipment
Publications
Associations
Metadata

University of California, Santa Cruz
1156 High Street
Sinsheimer Labs
Santa Cruz, CA 95064
United States
(831) 459-3980
https://ibsc.ucsc.edu/facilities/cell-culture-facility

Quicklinks:
https://coremarketplace.org/RRID:SCR_021353

Primary Contact:
Bari Holm Nazario
Last Updated: 07/13/2021

Facility RRID
RRID:SCR_021353
CITE THIS

Facility Details

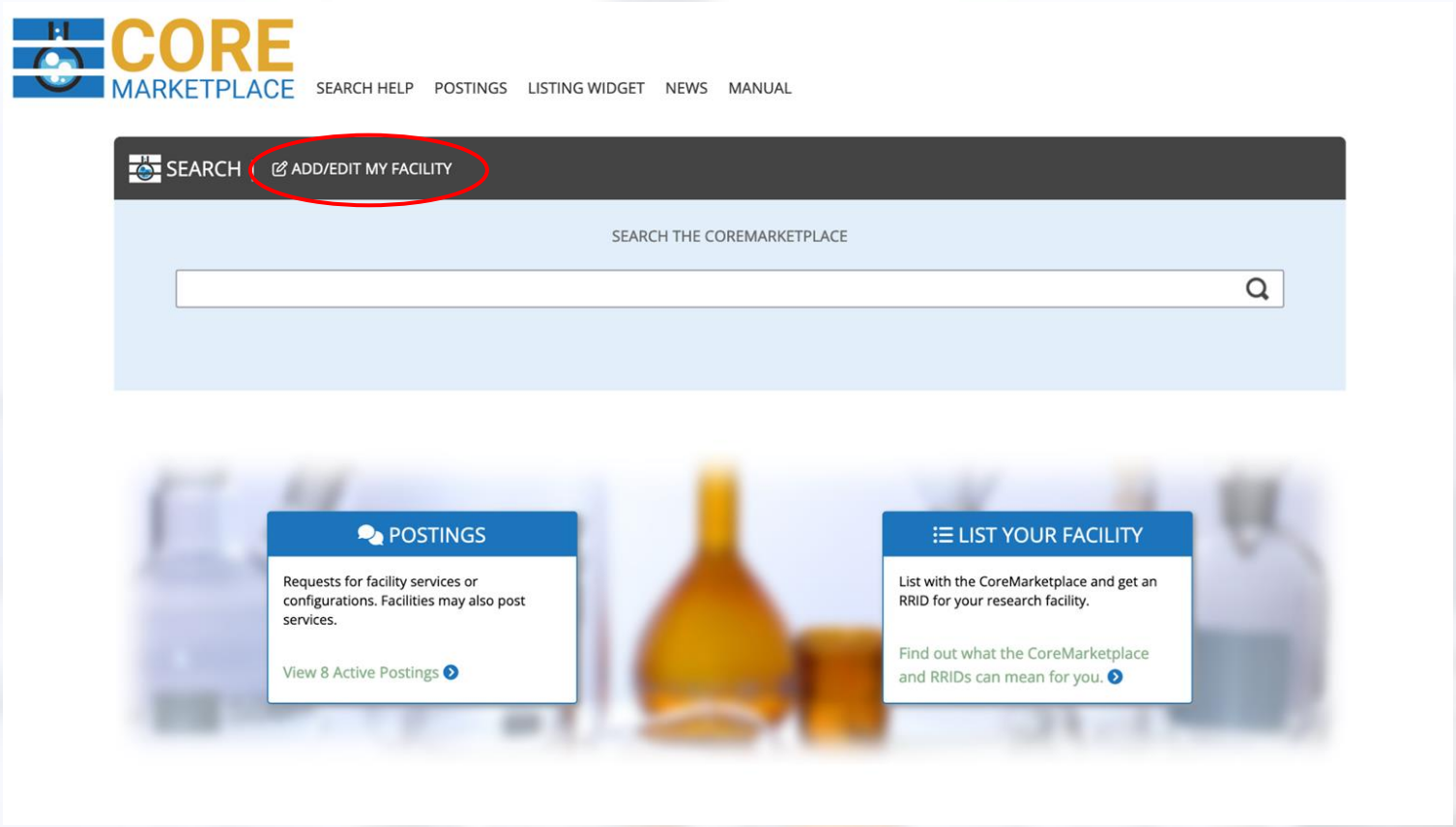
Provides recharge space for all UCSC PIs to use for research projects requiring sterile cell culture resources. Includes B facility technical support.

Facility Policies

CORE MARKETPLACE

coremarketplace.org

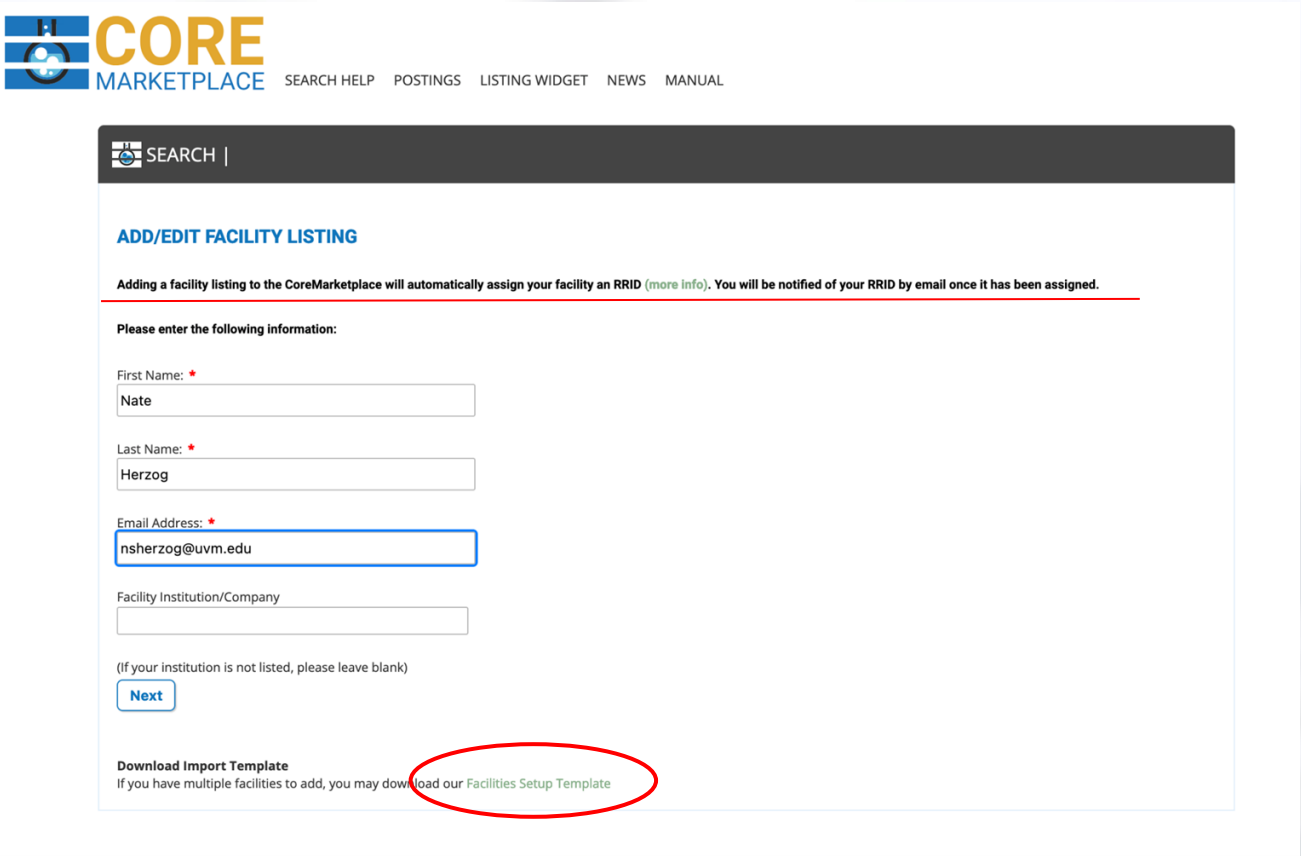
DEMO (Sort of)



CORE MARKETPLACE

coremarketplace.org

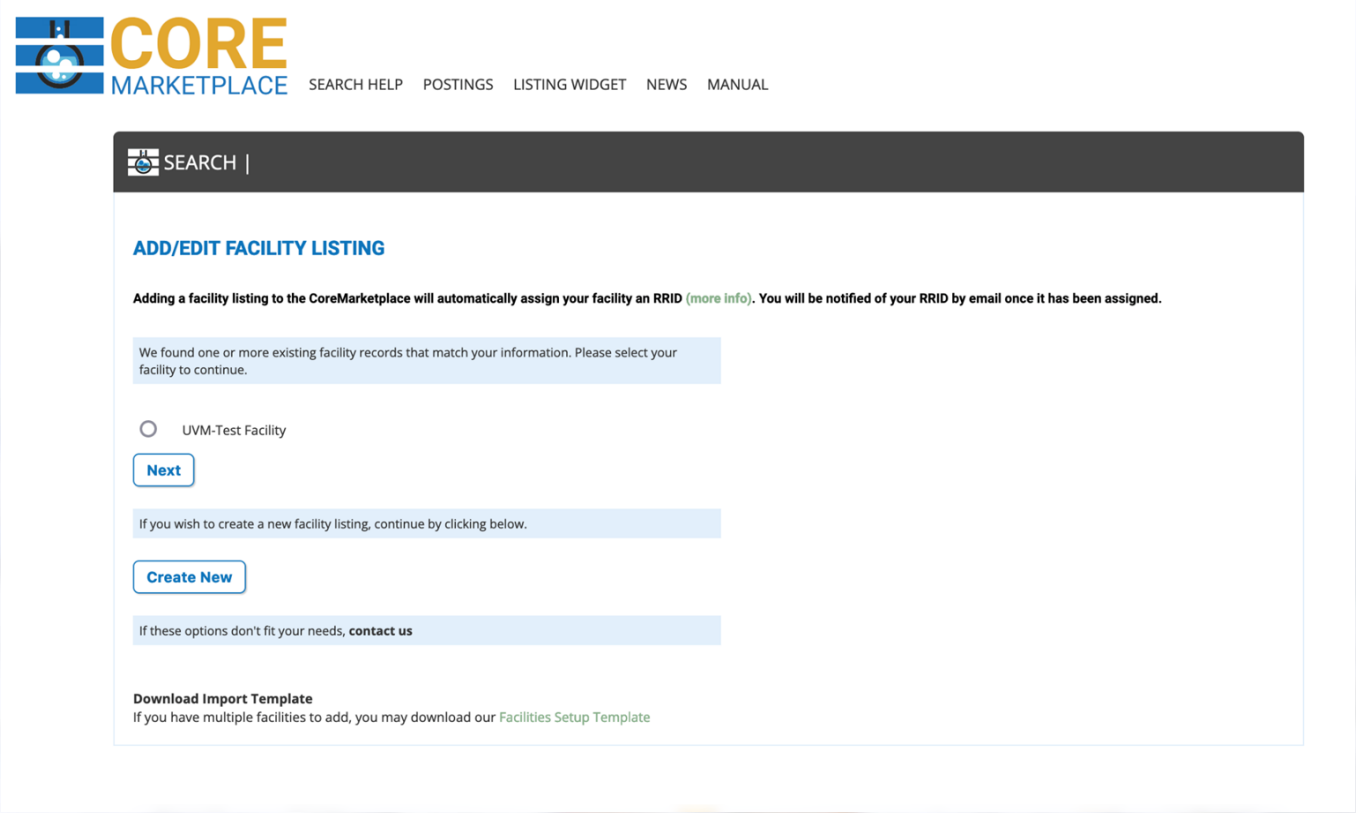
DEMO (Sort of)



CORE MARKETPLACE

coremarketplace.org

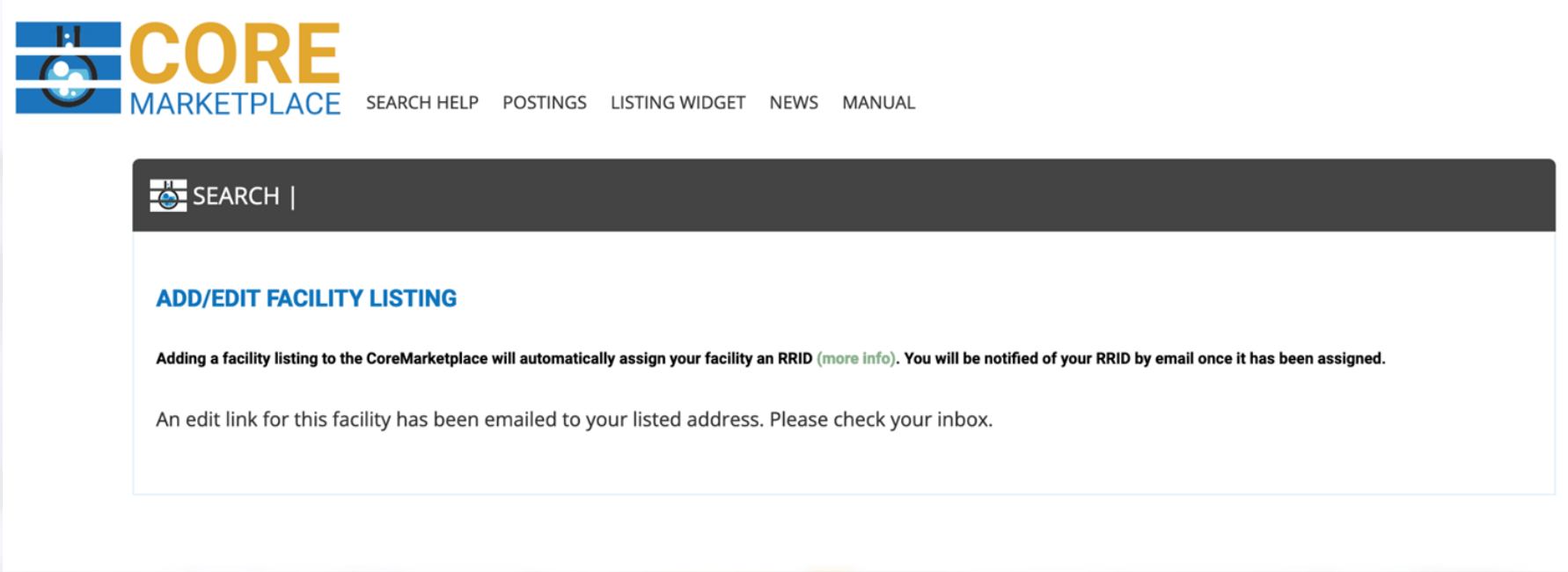
DEMO (Sort of)



CORE MARKETPLACE

coremarketplace.org

DEMO (Sort of)



DEMO (Sort of)

Edit Core Facility

Please use the link below to edit your facility listing. If you encounter difficulties please contact coremarketplace@uvm.edu

Facility: UVM-Test Facility

Last Updated: 04/25/2022

Edit Link: https://coremarketplace.org/?e=RmFjaWxpdHlJRD04NzMmdD0xNjU5NDU0MzY5JkF1dGhDb2RlPTkyNzkwZjliNTg0ZDQ2Y2UxOGI2NDk0MTkxYmNhZTI5

This link was created on 08/02/2022. It will expire in 48 hours.

The CoreMarketplace

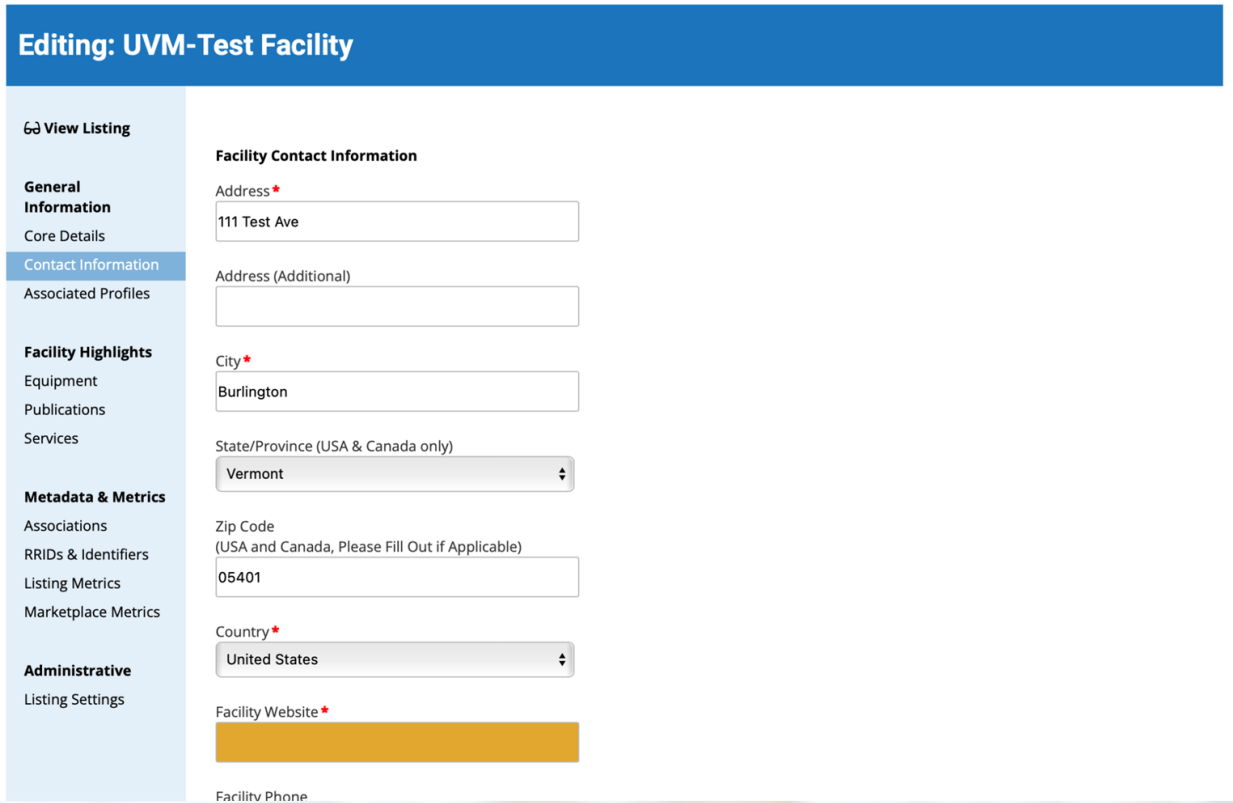
@ coremarketplace@uvm.edu

https://coremarketplace.org

CORE MARKETPLACE

coremarketplace.org

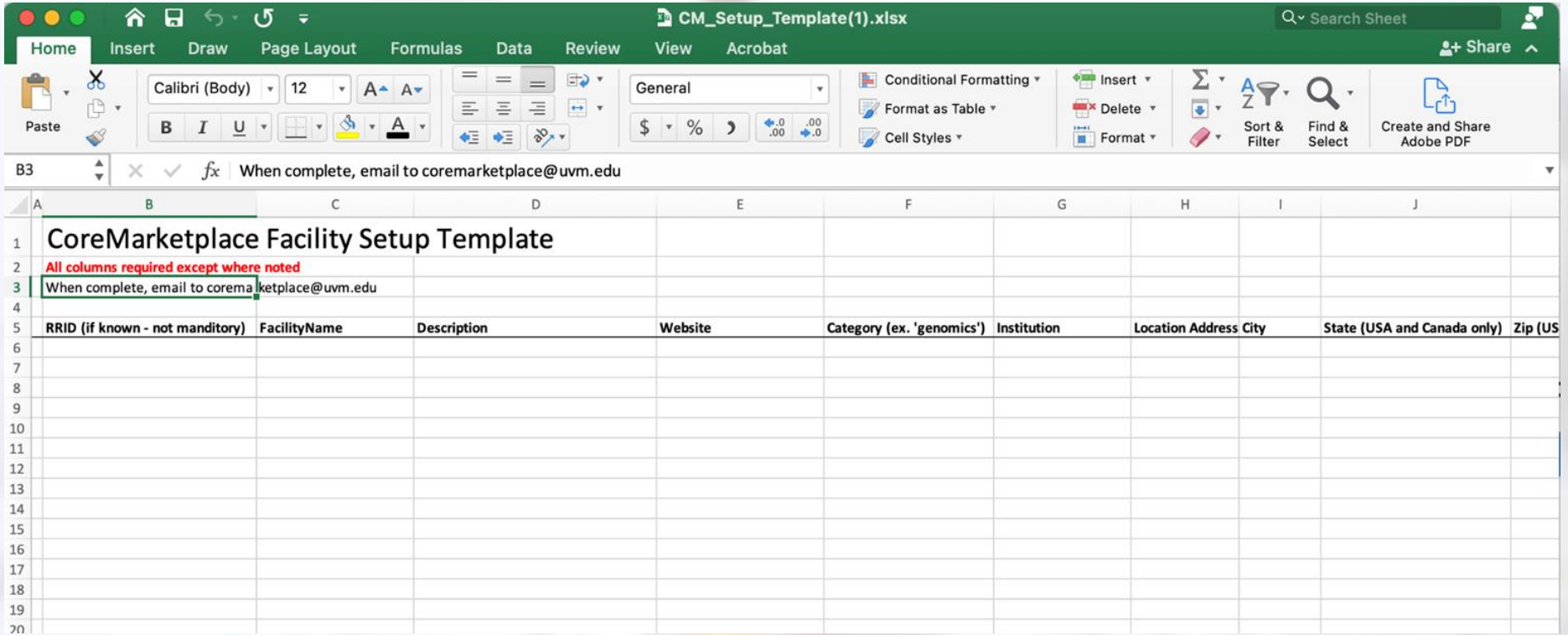
DEMO (Sort of)



CORE MARKETPLACE

coremarketplace.org

DEMO (Sort of)



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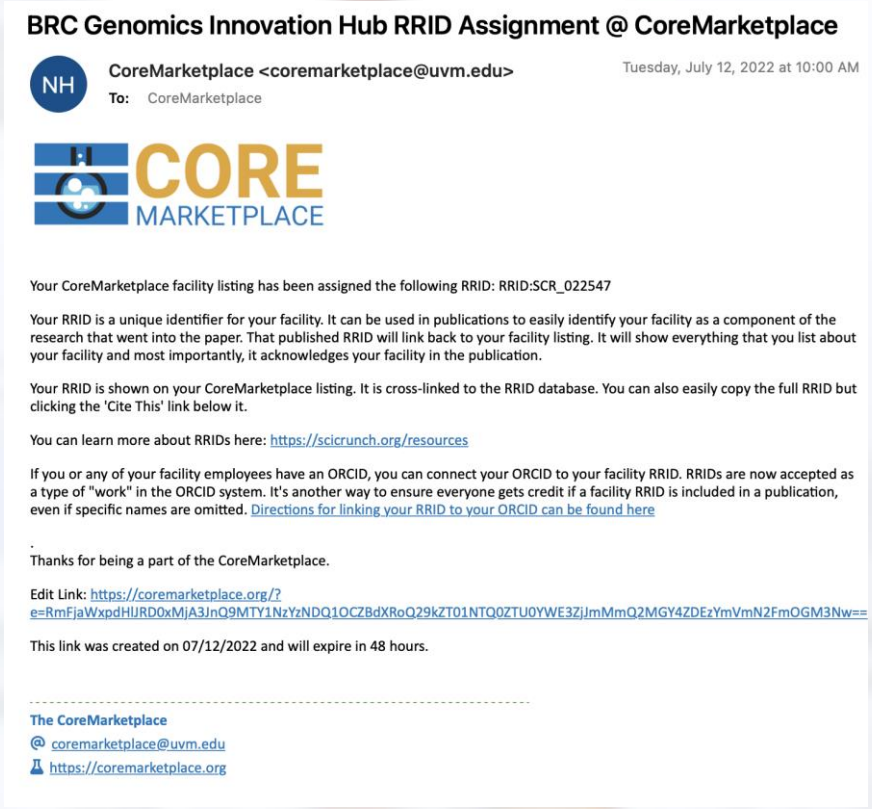
DEMO (Sort of)



BRC Genomics Innovation Hub RRID Assignment @ CoreMarketplace

NH

CoreMarketplace <coremarketplace@uvm.edu>

To: CoreMarketplace

Tuesday, July 12, 2022 at 10:00 AM

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If you or any of your facility employees have an ORCID, you can connect your ORCID to your facility RRID. RRIDs are now accepted as a type of "work" in the ORCID system. It's another way to ensure everyone gets credit if a facility RRID is included in a publication, even if specific names are omitted. Directions for linking your RRID to your ORCID can be found here

.
Thanks for being a part of the CoreMarketplace.

Edit Link: https://coremarketplace.org/?e=RmFjaWxpdHlJRD0xMjA3JnQ9MTY1NzYzNDQ1OCZBdXRoQ29kZT01NTQ0ZTU0YWE3ZjJmMmQ2MGY4ZDEzYmVmN2FmOGM3Nw==

This link was created on 07/12/2022 and will expire in 48 hours.

The CoreMarketplace

coremarketplace@uvm.edu

https://coremarketplace.org

CORE MARKETPLACE

coremarketplace.org

Thank you

Nate Herzog
Project Lead
nsherzog@uvm.edu

THANKS TO ALL OF THE CORES, REPOSITORIES, AUTHORS AND EDITORS WHO WORK EVERYDAY TO MAKE SCIENCE MORE REPRODUCIBLE BY USING RRIDS

eLIFE About Careers Labs

July 2016

eLife joins the Resource Identification Initiative

Thursday, July 7, 2016 - 09:05

To promote reproducibility in scientific resear
Research Resource Identifiers, encouraging a
description of the research resources within t

Resources used in experimental work are often ir
barrier to replicating the results. That is why we h
Initiative (#RII), a community-led project that orig
aims to improve reproducibility in biomedical and
and unique Research Resource Identifiers (RRID
resources.

RRIDs must be machine-readable, free to genera
publishers and journals.

ENDOCRINE SOCIETY

Aug 2016

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Antibody Table

It is the policy of *Endocrinology* to require authors using antibodies for immunohistochemistry, immunocytochemistry, western blots, immunoblots, immunoneutralization, or related methodology, to submit an Antibody table. This table should be numbered to indicate its position in the sequence of tables in the article (e.g. Table 1). In the Methods section, describe appropriate positive or negative controls, antibody validation, lot number, and provide references. Beginning in September 2016, authors should also ascertain whether the antibody has a Research Resource Identifier (RRID) by consulting the Antibody Registry and include this information, if available, in the Methods section and/or the Antibody table of the sion. If there is not an RRID, authors are required to register the antibody and later than the revision stage of submission. For more information, see the

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Oct 2016

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Methods format (Structured, Transparent, Accessible Reporting) will be introduced th
journals. The format reflects the changing needs of the scientific community for incre
improved rigor and repr

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The Methods and Resc
There is no length limit.
Methods and Resource

- CONTACT FOR RE
- EXPERIMENTAL M
- METHOD DETAILS
- QUANTIFICATION
- DATA AND SOFTW
  - Software
  - Data Resources
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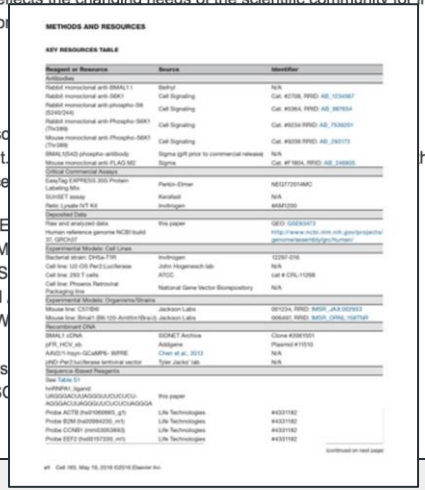
Table Format


METHODS AND RESOURCES

KEY RESOURCES TABLE

JNeurosci
THE JOURNAL OF NEUROSCIENCE

An Official Journal of SFN SOCIETY for NEUROSCIENCE

RRIDS

JNeurosci encourages use of Research Resource Identifiers (RRIDs) through the Resource Identification Initiative, a project
used in the course of scientific research. The project helps address concerns of reproducibility by providing unique searchat
RRIDs can be used to link readers to external resources and enable search engines to return all papers in which a particula

To find an RRID: visit https://scicrunch.org/resources and enter your search term(s).

- Antibodies: searching for the catalog number usually narrows the search to only a few relevant results.
- Cell Lines: searching for the catalog number of an established cell line is usually best, searching for common cell lines su
  of results.
- Organisms: you can include PubMed IDs (PMIDs) in your search or filter your search results by PMID, species, phenotyp
- Software tools: usually the name of the tool (MATLAB or ImageJ) or the institution where it is housed will bring back relev

Search help is available at: rii-help@scicrunch.org.

Once you have located an RRID, insert "RRID:" plus the identifier in the appropriate location in the manuscript. For example

- Antibodies: "Sections were stained with a rabbit polyclonal antibody against ERK1 (Abgent Cat# AP7251E, RRID: AB_21
- Cell Lines: "Subjects include the following cell line: CLS Cat# 300384/p699_HeLa_S3, RRID:CVCL_0058."
- Genetically modified organisms: "Subjects in this study were Fgf9Eks/Fgf9+ mice (RRID: MGI_3840442)..."
- Software tools: "...terminals were mapped with a computer-assisted mapping program (Neurolucida, v 10; MicroBrightFie

If you cannot find an RRID for a model organism or antibody that you used, you can submit the reagent so that it can be giv
Identification Portal (instructions at https://scicrunch.org/resources/about/guidelines#organism (new organism)http://antibod
on that site.

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To improve the reproducibility of published research articles, authors are urged to provide additio
studies. These details include: identifiers for the reagents and tools used in the study, step-by-ste
in time, addition of this information is strongly encouraged, but not required.

Research Resource Identifiers (RRIDs)

To uniquely identify critical biological reagents and software tools reported in the Materials an
AACR asks its authors to include unique searchable Research Resource Identifiers (RRIDs),
Initiative. In addition to uniquely identifying each reagent and tool, these RRIDs can be used t