making research more efficient

kaitlin thaney
@kaythaney ; @digitalsci
#idcc13, amsterdam
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machines
researchers
decision makers
machines

researchers
decision makers
discovery is still sub-optimal.

*(an example in chemistry)*
still the starting point
specific DBs no better
(in this case, likely worse)
name disambiguation

103-90-2
254-465-1
4-(Acetilamino)phenol
4-13-00-01091 (Beilstein Handbook Reference)
4-Acetaminophenol
4'-Hydroxyacetanilide
4-Hydroxyanilid kyseliny octoe
Acetamide, N-(4-hydroxyphenyl)-
Acetamide, N-(p-hydroxyphenyl)-
Acetanilide, 4'-hydroxy-
APAP
N-(4-Hydroxyphenyl)acetamid
N-(4-Hydroxyphenyl)acetamide
N-(4-Hydroxy-phenyl)-acetamide
N-(4-Hydroxyphényl)acétamide
N-(4-Hydroxyphenyl)acetalilide
N-(p-hydroxyphenyl)acetamide
N-Acetyl-4-aminophenol
N-Acetyl-p-aminophenol ...

and the list goes on ...
Science is better when data is opened up
Welcome to SureChemOpen
streamline search
Link to other open chemistry resources
machines

researchers

decision makers
our definition of “data” is changing.
(or, at least, is long overdue to.)
JELLYFISH IN ARMOUR

Best before: May 9
Still pretty good: May 13
Why is this still in your fridge?: June 4

How milk containers should be
186. Pork Spread Rillettes

The word characteristically implies savory, pungent dishes of ham, etc. By extension the word is used for other savory dishes, such as pâté, salami, rillettes, etc. The following are some of them:

Rillettes consist of seasoned pork (often duck) and make it the right consistency and make it the right consistency. They are eaten cold with Dijon mustard and some onion. I have also prepared rillettes as a stew with maybe a few crocks and served as such with bread. From the French, stock, thyme, bay leaf, etc., but the simple recipe from below is not only good but simple. You can use duck, duck, rabbit, any type of game, and a whole lot of other ingredients. The crocks should be soaked in water tightly with plastic wrap and the crock meat to two-thirds fat, 3 pounds fresh pork from the chuck, butt or neck (the meat should have about one-third lean meat to two-thirds fat), 3 teaspoon salt, brown sugar, freshly ground black pepper, and 2 cups water or wine. The crock is kept in the refrigerator for 5-10 days. The crock is then opened, and the meat is rinsed with water, and then the crock is cut up and served as a spread.
ordering + processing
use data to better optimise, enable

*(behaviour, productivity, reproducibility...)*
"That's Dr. Arnold Moore. He's conducting an experiment to test the theory that most great scientific discoveries were hit on by accident."
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ACIDIC-NATIVE GEL Protocol
For Basic Proteins (pI>7.0)
USE ONLY FRESH GELS

Stock Solutions
1) 1.5M Acetate-KOH pH 4.3 (48ml 1MKOH + 17.2ml AcH + H2O up to 200ml) - Keep RT.
2) 30% Acrylamide 0.8% Methylene bis Acrylamide. Keep 4°C.
3) 0.25M Acetate-KOH pH 6.8 (48ml 1MKOH + 2.9ml AcH + H2O up to 200ml) - Keep RT.
4) 10% Ammonium Persulfate (APS). Keep 4°C less than 1 month.

Running Buffer x1

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycine</td>
<td>0.14M</td>
</tr>
<tr>
<td>Acetate-KOH pH 4.3</td>
<td>4.8ml</td>
</tr>
<tr>
<td>H2O up to</td>
<td>600ml</td>
</tr>
<tr>
<td>Adjust pH to</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Keep at RT

Sample Buffer x5

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol 50%</td>
<td>1.45ml</td>
</tr>
<tr>
<td>0.25M Acetate-KOH pH 6.8</td>
<td>0.5ml</td>
</tr>
<tr>
<td>Methyl Green</td>
<td>traces</td>
</tr>
</tbody>
</table>

Keep in aliquots of 1ml at -20°C

Separating Gel

<table>
<thead>
<tr>
<th>% Acrylamide</th>
<th>10%</th>
<th>15%</th>
<th>17%</th>
<th>Gradient 5%</th>
<th>Gradient 7%</th>
</tr>
</thead>
</table>

Protocol Steps

1. Add 200 ul Solution 2. Vortex and wait 1-2 min.

2. Invert to mix and spin for 3 min at room temperature or 4°C. You should see a white pellet now.

Start Timer: 00:03:00

Done
figshare
credit for all your research

citable, sharable, discoverable

Select type of file:

- Figure
  - Image files
- Dataset
  - Tables, statistics
- Media
  - Videos, audio
- Poster
  - Illustrations, diagrams
- Paper
  - Publication document
- Fileset
  - Group of any files

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- first name
- last name
- email
- confirm email
- password

Already have an account?

Research statistics

- 2 mil. views
- 205 shares
- 33 cites
This was the worst ordering experience of my career. The antibody was fake, causing my a 8 month loss to my research. NEVER again.
Search result for "huntingtin"

Displaying Antibodies
Also found in: Proteins Kits

Filter antibodies
Target
- All that apply
- HTT

Provider
- All that apply
- Abcam
- Abnova
- AbAffinity
[+ All options (21)]

Reacts with
- All that apply
- Human

Polyclonal Rabbit anti-HTT antibody
Anti-HTT
Atlas Antibodies
#APA026114
Sz.: 100 μl
Reacts with Human
Tested for IF, IHC
1DB-001-0000592517

Monoclonal Mouse anti-HTT antibody
Anti-Huntingtin Protein, a.a. 181-610, clone 1HU-4C8
EMD Millipore
#MAB2166
Sz.: 100 μL
Reacts with Human, Mouse, Rat, Monkey, Rabbit, Hamster
Tested for ELISA, ICC, IHC, IP, WB
1DB-001-0000849250

Monoclonal Mouse anti-HTT antibody
Anti-Huntingtin Protein, clone mEM48
EMD Millipore
#MAB5374
Sz.: 100 μL
Reacts with Human, Mouse, Rat
Tested for ICC, IHC, WB
1DB-001-0000849650

Monoclonal Mouse anti-HTT antibody
Anti-Huntingtin, a.a. 1-82

Reviews(0)
Publications(0)

Submit Review

Reviews(0)
Publications(69)

Submit Review

Reviews(0)
Publications(30)

Submit Review

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A smarter, open alternative
A QUESTION OF SAFETY

A survey of almost 2,400 scientists shows that although most believe their laboratories to be safe, about half have experienced injuries in the workplace. It also shows that junior and senior researchers have very different views of potentially hazardous practices.

1. To what extent do you agree or disagree with the following statement? “I feel that my lab is a safe place to work.”

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Neither agree nor disagree</th>
<th>Strongly disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>899</td>
<td>202</td>
<td>33</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,148</td>
<td>87</td>
</tr>
</tbody>
</table>

2. In your lab, how frequently do people conduct experiments while working alone?

<table>
<thead>
<tr>
<th>Every day</th>
<th>Several times a week</th>
<th>≥ Once a month</th>
<th>&lt; Once a month</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>30</td>
<td>15</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior researcher (1,091 respondents)</th>
<th>Senior researcher (642 respondents)</th>
</tr>
</thead>
</table>

3. In the time that you’ve been conducting research in a laboratory setting, have you ever sustained an injury of any kind?

<table>
<thead>
<tr>
<th>Total respondents</th>
<th>Yes, once</th>
<th>Yes, on more than one occasion</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,374</td>
<td>325</td>
<td>21%</td>
<td>54%</td>
</tr>
</tbody>
</table>

4. What was the nature of your injury or injuries?

<table>
<thead>
<tr>
<th>Injuries</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laceration/cut/bite requiring no stitches</td>
<td>687</td>
</tr>
<tr>
<td>Needle prick</td>
<td>281</td>
</tr>
<tr>
<td>Thermal burn</td>
<td>259</td>
</tr>
<tr>
<td>Chemical burn</td>
<td>242</td>
</tr>
<tr>
<td>Chemical inhalation</td>
<td>165</td>
</tr>
<tr>
<td>Laceration/cut/bite requiring stitches</td>
<td>118</td>
</tr>
<tr>
<td>Repetitive-motion injury</td>
<td>112</td>
</tr>
<tr>
<td>Slip/trip/fall</td>
<td>75</td>
</tr>
<tr>
<td>Injury due to lifting</td>
<td>41</td>
</tr>
<tr>
<td>Bruise/bone fracture</td>
<td>40</td>
</tr>
<tr>
<td>Radiation exposure above permissible limits</td>
<td>15</td>
</tr>
<tr>
<td>Other</td>
<td>84</td>
</tr>
</tbody>
</table>

Percentages may not add to 100% because of rounding. For top-line data, see go.nature.com/oxwuho

topline data on figshare: bit.ly/11w7MnE
Software Platform and Modules for Laboratory Safety & Compliance

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machines
researchers
decision makers
working on social problems using software
rewards, incentives
the “why”
existing system is imperfect

authority -> distributive

ability to add context
The Altmetric score for this article is 362.

A bacterium that can grow by using arsenic instead of phosphorus.

Science (New York, N.Y.)

Each colour represents a different source of attention (mainstream news, Twitter...).
administrators / funders as *influencers*

drivers of behavioral change
Symplectic is dedicated to the production of its highly innovative research information management software, Elements.

PEOPLE

Symplectic was founded in 2003 by four theoretical physicists studying for their PhD's at Imperial College. During their studies, they quickly realised that university staff and researchers were in need of simple, effective software to harmonise their internal processes.

Symplectic is now a leading developer of research information management systems and each member of the team brings their unique skills to our projects – from user-friendly interface design to database architecture.

QUALITY & STANDARDS

We have posted the current administrator and user guides for Symplectic Elements version 3.7.17. For up-to-date information please subscribe to our SUPPORT site.
Headline statistics
- Total number of people in selected groups: 1
- Total number of publications in selected groups: 1

Charts

Key

Journals (by frequency)

<table>
<thead>
<tr>
<th>Journal</th>
<th>Impact factor</th>
<th>Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 J PHYS AMATH THEOR</td>
<td>1.540</td>
<td>8</td>
</tr>
<tr>
<td>2 PHYS REV LETT</td>
<td>7.120</td>
<td>1</td>
</tr>
<tr>
<td>3 PRAMANA-J PHYS</td>
<td>0.274</td>
<td>1</td>
</tr>
</tbody>
</table>

Authors (by number of citations)

<table>
<thead>
<tr>
<th>Author</th>
<th>Total citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOOK, Daniel W</td>
<td>85</td>
</tr>
</tbody>
</table>

Top cited publications (max 200)

<table>
<thead>
<tr>
<th>Publication</th>
<th>Year</th>
<th>Total citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>On optimum Hamiltonians for state transformations</td>
<td>2006</td>
<td>19</td>
</tr>
<tr>
<td>Complex trajectories of a simple pendulum</td>
<td>2006</td>
<td>13</td>
</tr>
<tr>
<td>Complexified dynamical systems</td>
<td>2007</td>
<td>11</td>
</tr>
<tr>
<td>Unitarity, ergodicity and quantum thermodynamics</td>
<td>2007</td>
<td>8</td>
</tr>
<tr>
<td>Quantum effects in classical systems having complex energy</td>
<td>2008</td>
<td>6</td>
</tr>
<tr>
<td>Exact isospectral pairs of PT symmetric Hamiltonians</td>
<td>2008</td>
<td>6</td>
</tr>
<tr>
<td>Solvable model of quantum microcanonical states</td>
<td>2006</td>
<td>5</td>
</tr>
<tr>
<td>Complex Correspondence Principle</td>
<td>2010</td>
<td>4</td>
</tr>
<tr>
<td>Chaotic systems in complex phase space</td>
<td>2009</td>
<td>4</td>
</tr>
<tr>
<td>Conjecture on the analyticity of PT-symmetric potentials and the real...</td>
<td>2008</td>
<td>3</td>
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<tr>
<td>On optimum Hamiltonians for state transformation (vol 39, pg L167, 200...)</td>
<td>2007</td>
<td>3</td>
</tr>
<tr>
<td>Information geometry in vapour-liquid equilibrium</td>
<td>2009</td>
<td>2</td>
</tr>
<tr>
<td>Classical particle in a complex elliptic potential</td>
<td>2010</td>
<td>1</td>
</tr>
</tbody>
</table>
changing models of authority
we’re battling tradition, not just technology.
k.thaney@digital-science.com
www.digital-science.com