

The background image shows a woman in a light blue shirt standing in a room with large windows, looking out. In the foreground, a white smart speaker with a mesh grille is visible on a surface.

# The Implications of IoT on Victims/Survivors of Gender-Based Domestic Violence & Abuse

Dr Leonie Tanczer / @leotanczt

A blurred background image showing a woman in a light blue shirt standing near a window, and a white smart speaker in the foreground on a white surface.

# Gender and IoT (#GloT)

# #Strike





[https://www.reddit.com/r/pics/comments/73mz5p/the\\_home\\_library\\_of\\_a\\_retired\\_johns\\_hopkins/](https://www.reddit.com/r/pics/comments/73mz5p/the_home_library_of_a_retired_johns_hopkins/)

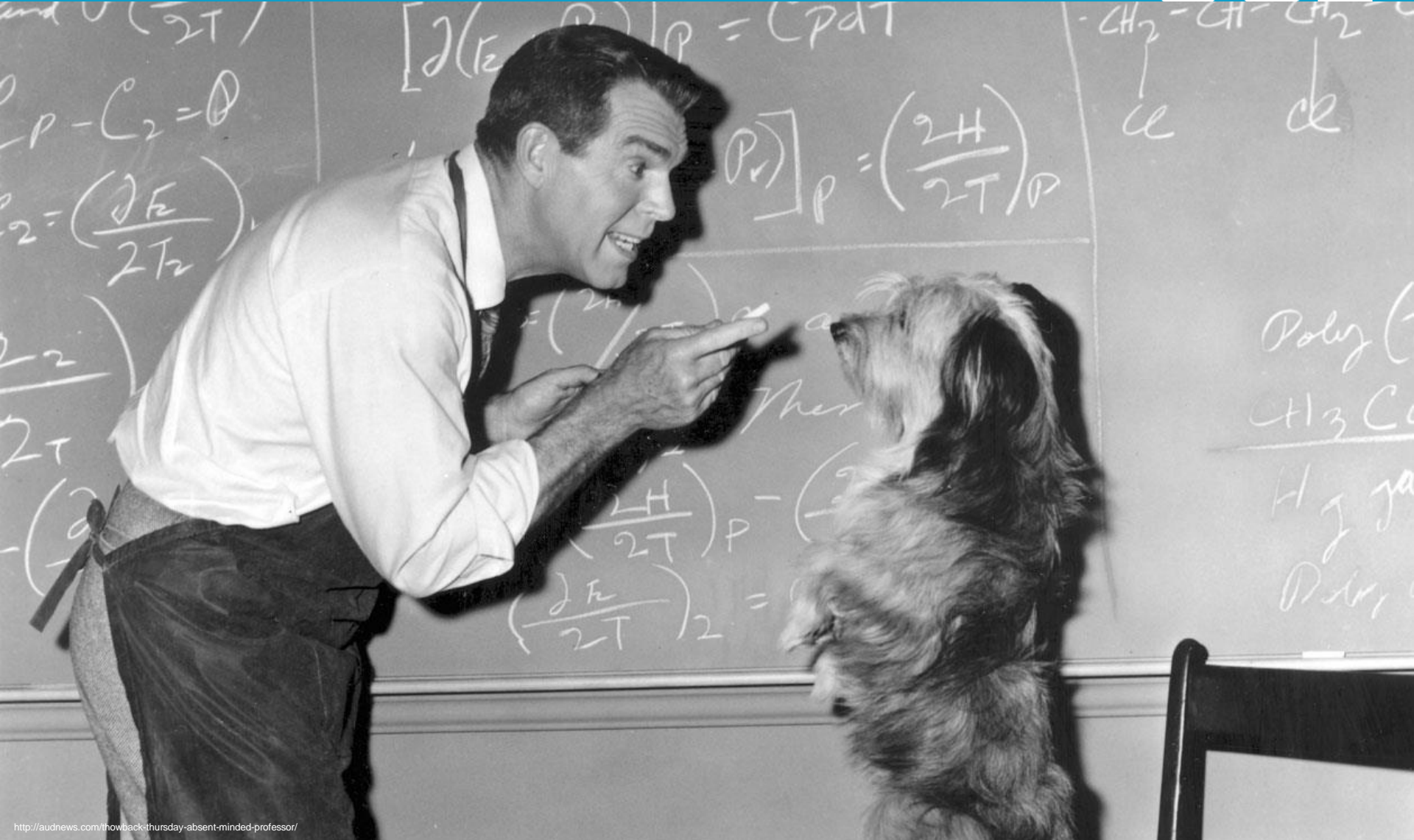


**Read**

**Write**

**Think**

[https://www.reddit.com/r/pics/comments/73mz5p/the\\_home\\_library\\_of\\_a\\_retired\\_johns\\_hopkins/](https://www.reddit.com/r/pics/comments/73mz5p/the_home_library_of_a_retired_johns_hopkins/)



<http://audnews.com/thowback-thursday-absent-minded-professor/>





# Absent-minded

# Chaotic

# Slow

(And that our PowerPoint Presentations suck!)

<http://audnews.com/thowback-thursday-absent-minded-professor/>





[https://indianajones.fandom.com/wiki/Archaeology\\_101?file=Indy\\_lecturer.jpg](https://indianajones.fandom.com/wiki/Archaeology_101?file=Indy_lecturer.jpg)



**White**

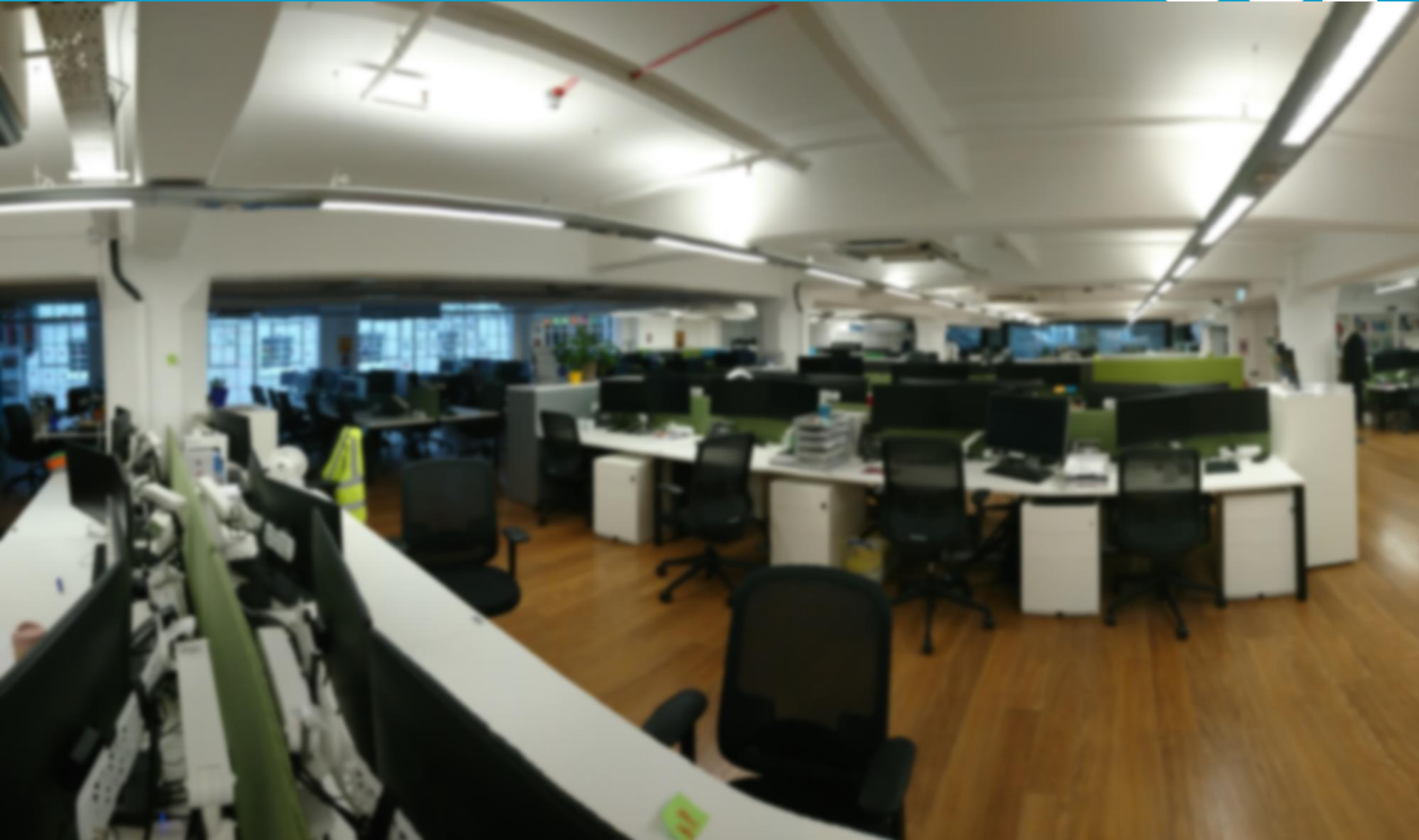
[https://indianajones.fandom.com/wiki/Archaeology\\_101?file=Indy\\_lecturer.jpg](https://indianajones.fandom.com/wiki/Archaeology_101?file=Indy_lecturer.jpg)



Male

[https://indianajones.fandom.com/wiki/Archaeology\\_101?file=Indy\\_lecturer.jpg](https://indianajones.fandom.com/wiki/Archaeology_101?file=Indy_lecturer.jpg)





**Teaching/supervision**

**Research/publications**

**Income generation/funding**

**Policy engagement**

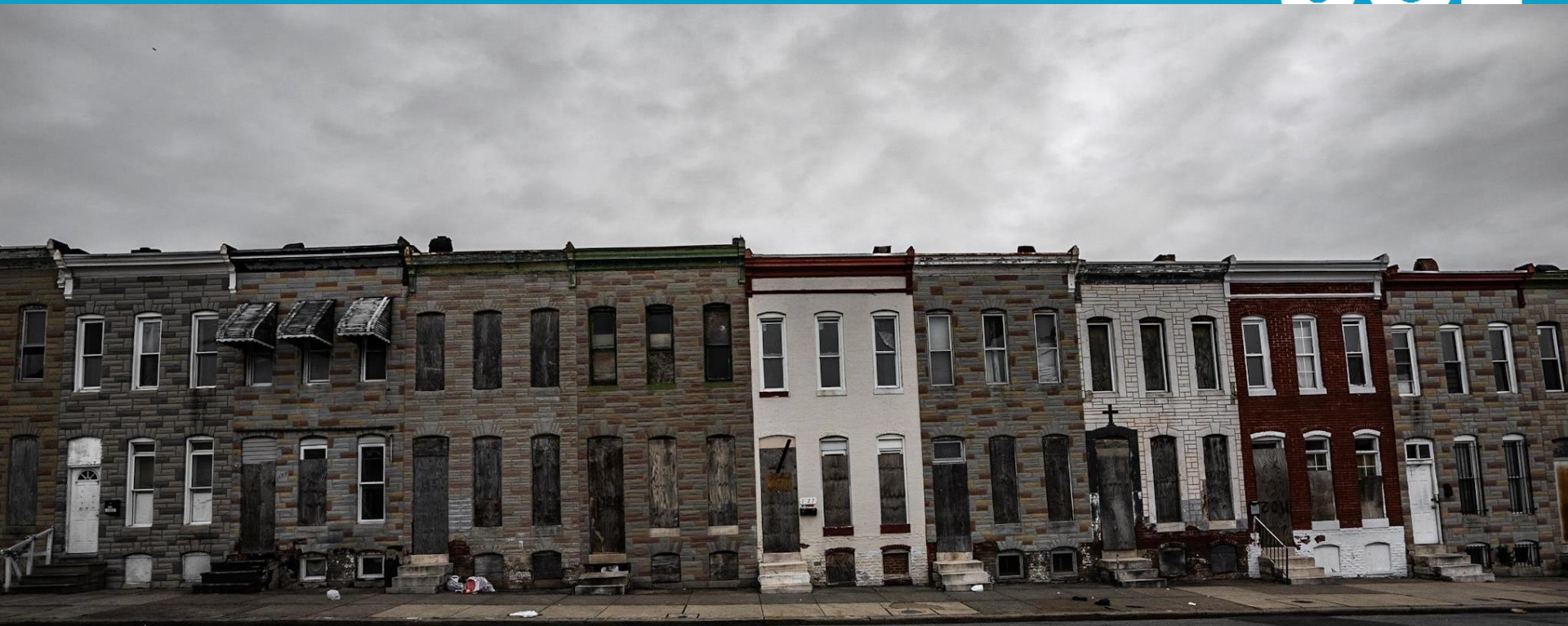
**Media/public engagement**

**Academic leadership**

**Executive Education**

**Consultancy**

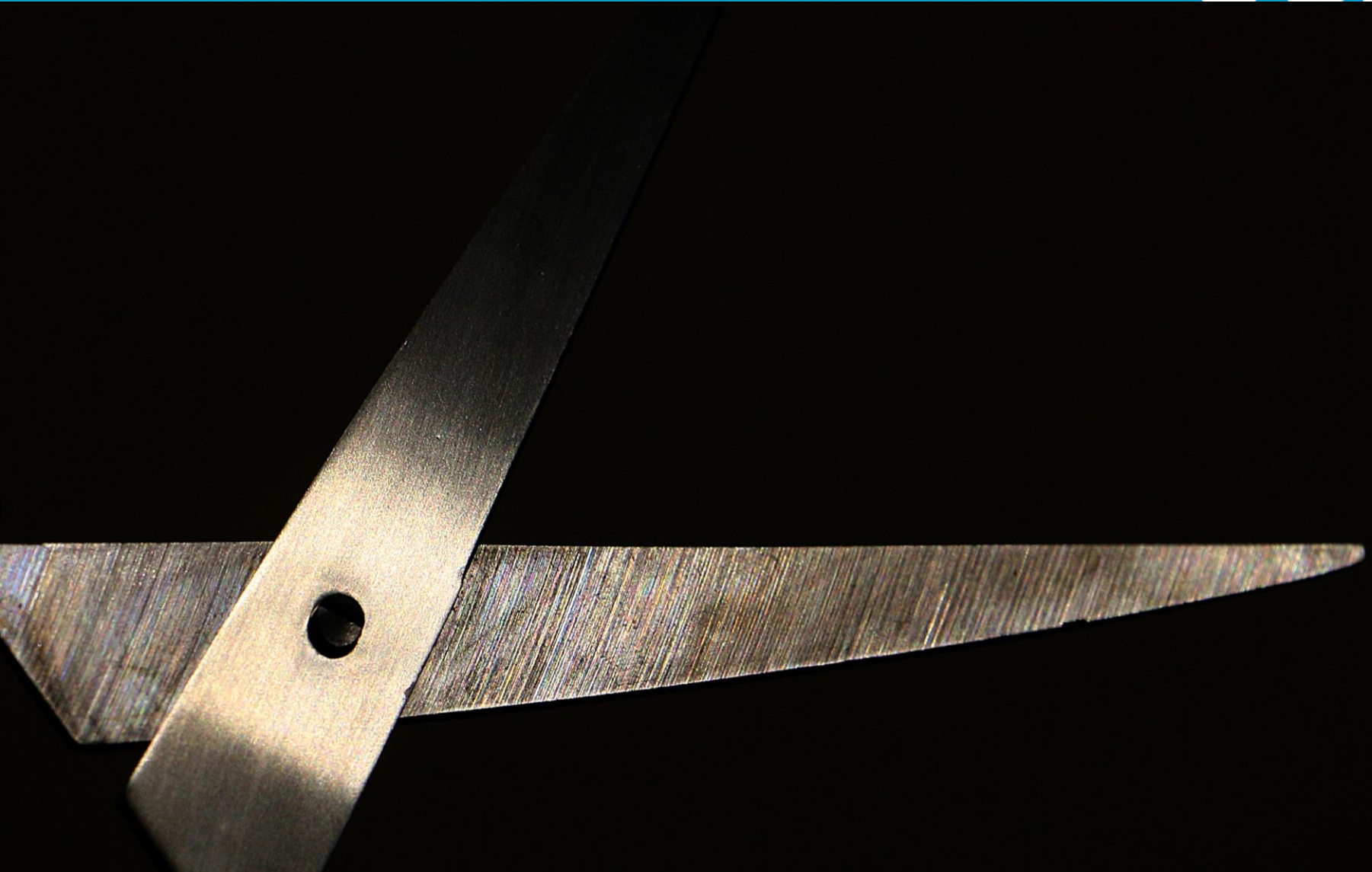
**Administration/line manag.**



# How Academia Resembles a Drug Gang (Alfonso, 2013)

[https://www.reddit.com/r/UrbanHell/comments/aru3rb/empty\\_streets\\_of\\_baltimore\\_00/](https://www.reddit.com/r/UrbanHell/comments/aru3rb/empty_streets_of_baltimore_00/)





**“if we work the hours stated in our contracts it will be unlikely that we will be able to fulfil our roles and they will therefore potentially cut our pay”**



<https://flic.kr/p/HhK1tS>

# #Why?



<https://www.ucl.ac.uk/ucu/news/2018/mar/strike-uss-phase-one-ends-and-thank-you-supporters>



## Pensions

Staff will lose on average  
£240,000 in retirement under  
proposed changes

## Pay Cut

Staff have had 20% pay cut  
since 2009 in real terms

## Pay Inequality

15% Gender Pay Gap at UCL  
13% Ethnicity Pay Gap at UCL

## Casualization/Precarity

1/3 of UK academics on casual  
contracts

46% of UCL teaching staff on  
insecure contracts

BME staff are 10% more likely to  
be on a temporary contract

# #UCUStrike



You





# 25<sup>th</sup> of November

**International Day For The Elimination Of  
Violence Against Women**



- ~ 35% of women worldwide have **experienced either physical and/or sexual violence** at some point in their lives
- ~ 137 women across the world are **intentionally killed** by a member of their own family every day
- ~ 1 in 10 women in the European Union report having **experienced cyber-harassment** since the age of 15

**STOP  
VIOLENCE  
AGAINST  
WOMEN**

<https://www.unwomen.org/en/what-we-do/ending-violence-against-women/facts-and-figures>

# IoT Security Foundation CONFERENCE

*The Longest Running Dedicated IoT Security Conference*

Headline Sponsors



**TUESDAY 26TH NOVEMBER - LONDON**

**Secure Your Place**

## 2019 Conference Highlights



# IoT Security Foundation CONFERENCE

*The Longest Running Dedicated IoT Security Conference*

## What has this got to do with...?

 **THINGZ** **SYSTEMS**

**TUESDAY 26TH NOVEMBER - LONDON**

**Secure Your Place**

## 2019 Conference Highlights

# Predefined ideas



<https://flic.kr/p/22DwRYU>

# Perpetrator/criminal

## Abuse

# Technologies

<https://flic.kr/p/22DwRYU>





**97% of Australian case workers said  
stated that perpetrators were  
using technology to stalk victims  
(SmartSafe, 2014)**



**January – August 2018: 920 recorded survivors from technology-facilitated abuse (Refuge, 2018)**

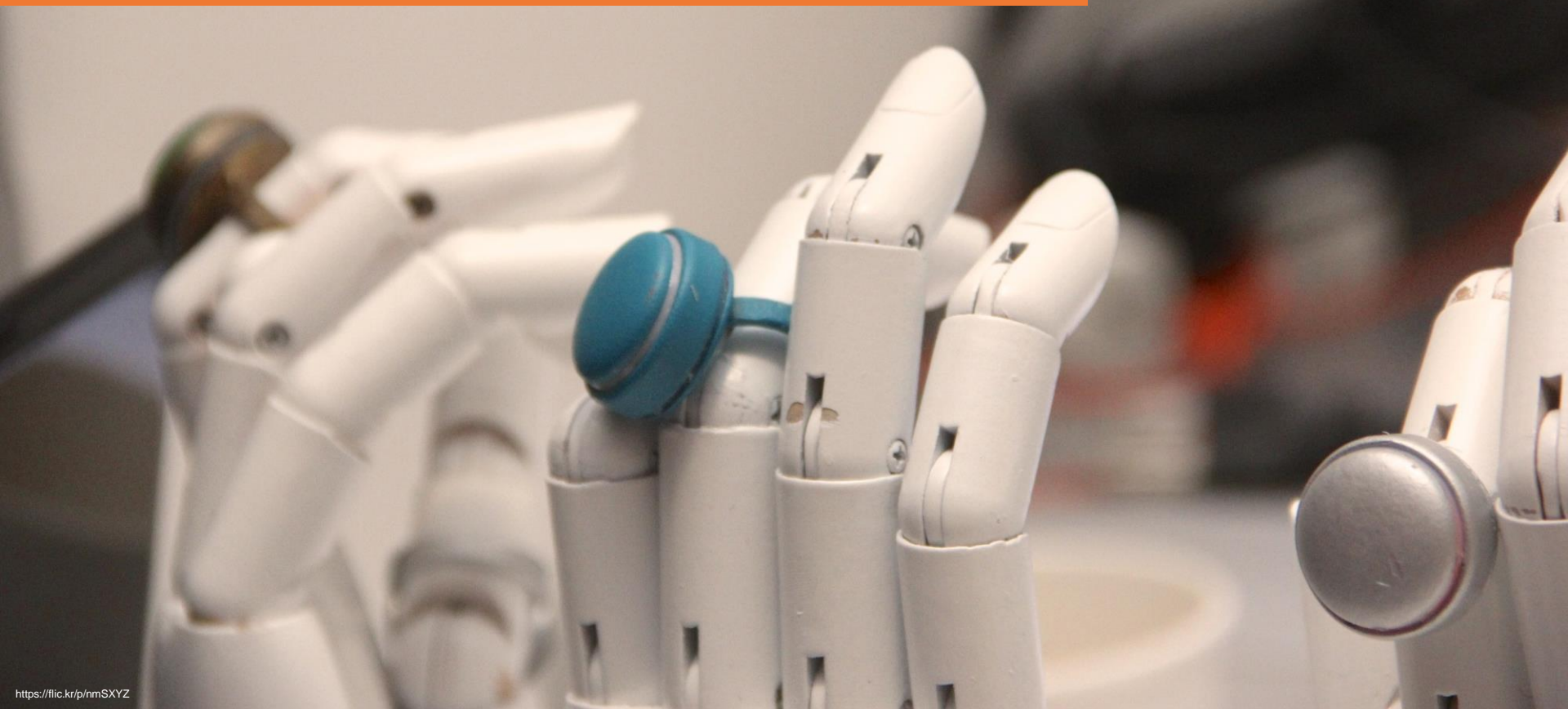




**85% of respondents received online  
abuse from a partner or ex-partner  
(Women's Aid, 2018)**



# Tech Abuse Research



<https://tlic.kr/p/nmSXYZ>

**Online harassment**

**Cyber stalking**

**Spyware**

**Image-based abuse**

<https://flic.kr/p/nmSXYZ>



# Communality



<https://flic.kr/p/4A7T3B>





Misuse/repurposing

“Conventional” technologies

Women and BAME

“Active” commitment

<https://flic.kr/p/4A7T3B>



# Technology is changing

<https://flic.kr/p/qMKb6b>

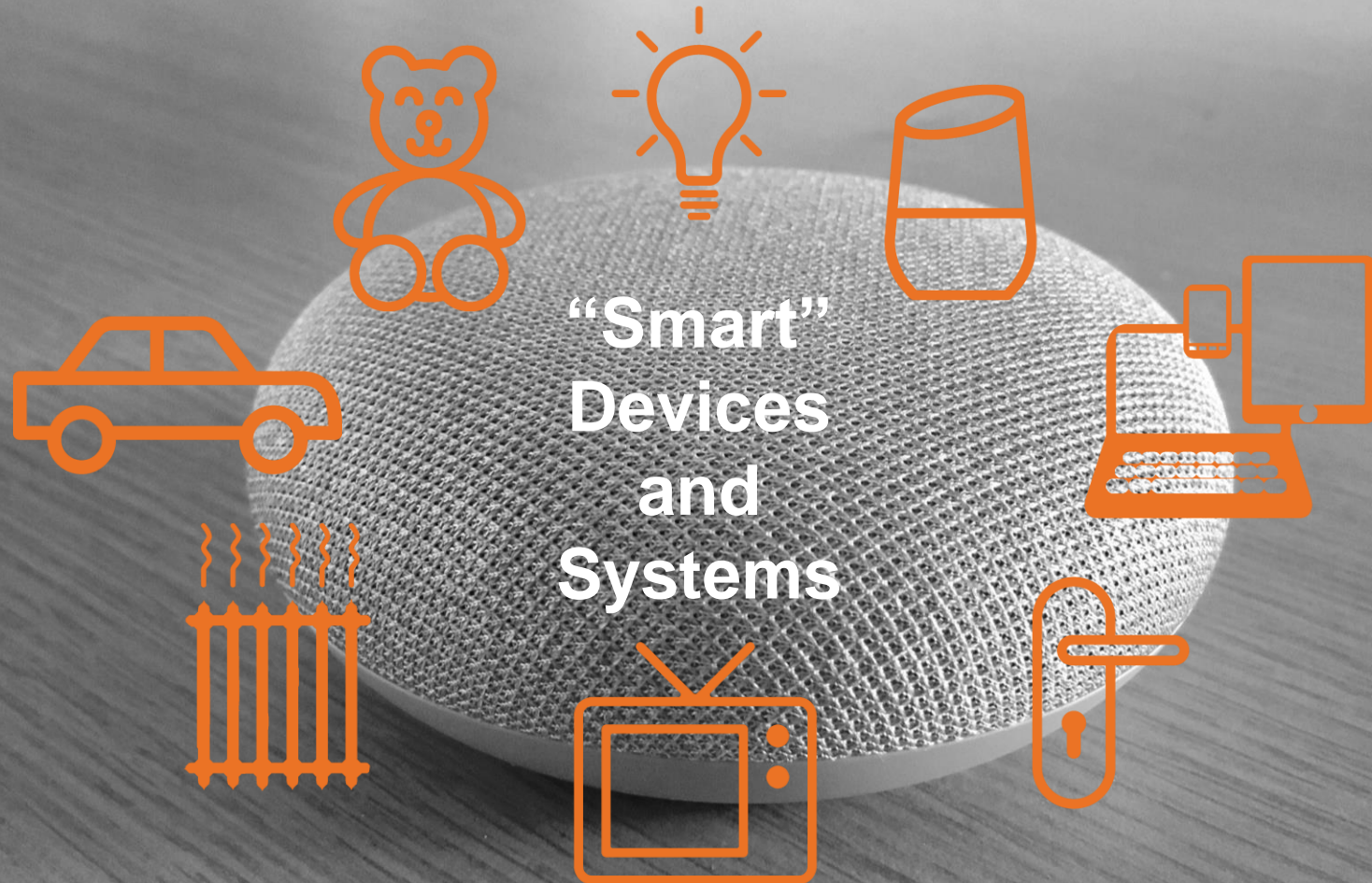


# Internet of Things



<https://flic.kr/p/23hFtgz>





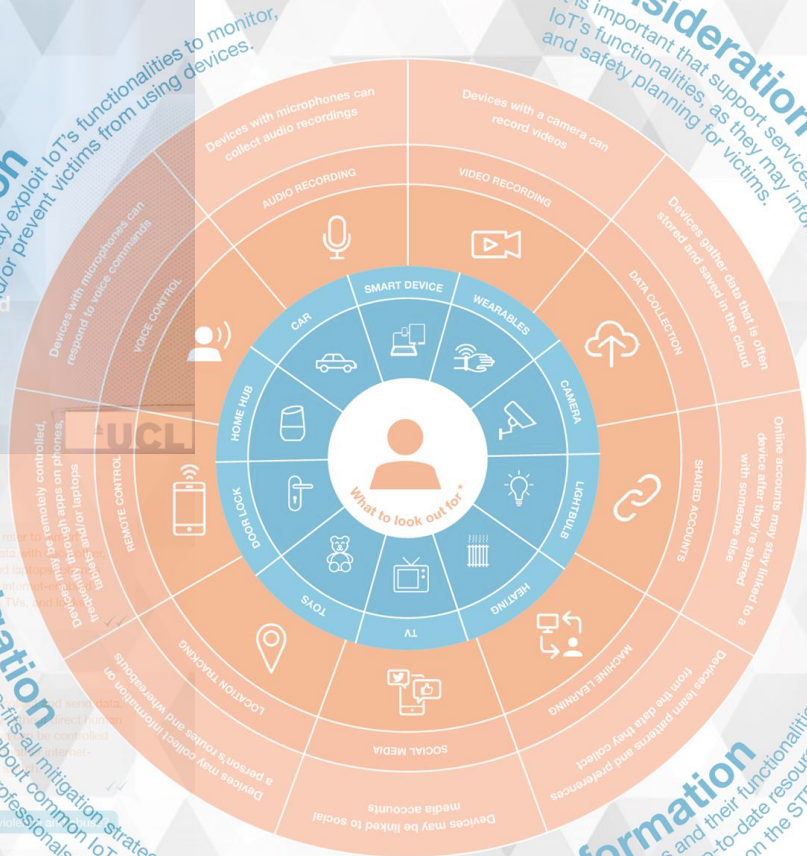
<https://flic.kr/p/23hFtgz>

- Voice control
- Audio recording
- Video recording
- Data collection
- Shared accounts
- Location tracking
- Remote control
- Social media
- Machine learning

## TECH ABUSE

**Implication**  
Perpetrators may exploit IoT's functionalities to monitor, control and/or prevent victims from using devices.

**Consideration**  
It is important that support services are aware of IoT's functionalities, as they may inform assessments and safety planning for victims.



**Information**  
As IoT devices and their functionalities are constantly evolving, further up-to-date resources and information on the topic are provided on the STEAPP website.

**Mitigation**  
There is no one-size-fits-all mitigation strategy when IoT abuse occurs. Knowing about common IoT functionalities can help support professionals such as the police.

**About this Guide**  
What is the Internet of Things?  
The Internet of Things (IoT) refers to the network of objects that are connected to the internet. These objects can be anything from a simple light bulb to a complex machine. IoT devices are 'smart' because they can collect and exchange data with other devices. This data can be used to improve efficiency, reduce costs, and enhance safety. However, IoT devices can also be used for malicious purposes. For example, a hacker could remotely control a car or a house. This guide aims to help support professionals understand IoT devices and their potential for abuse. It provides information on how IoT devices work, how they can be abused, and how to mitigate the risk of IoT abuse.

How could IoT affect victims of domestic violence? IoT devices are 'smart' because they can collect and exchange data with other devices. This data can be used to improve efficiency, reduce costs, and enhance safety. However, IoT devices can also be used for malicious purposes. For example, a hacker could remotely control a car or a house. This guide aims to help support professionals understand IoT devices and their potential for abuse. It provides information on how IoT devices work, how they can be abused, and how to mitigate the risk of IoT abuse.

Who is this guide for?

This guide is for frontline support services and support workers who provide support to victims of domestic violence.

What is this guide about?

It is about tech abuse which involves the use of technology. It hopes to:  
- help people talk about abuse that's done using 'smart', internet-connected devices (also known as the Internet of Things, or IoT).  
- explain common ways in which IoT devices work, how abuse of this kind is suspected.

How should I use this guide?

Read this guide to become familiar with IoT. It provides supplementary information for support workers and support specialists, including the police.

**About the authors**  
The guide has been developed by a socio-technical research team at University College London. The team's 'Gender and Internet of Things' study was funded by the UCL Social Science Plus scheme. Research collaborators included the London WAVE Consortium, Privacy International, and the PETRAS IoT Research Hub.





Risks

Uncertainty

Opportunities

<https://flic.kr/p/7fuciA>





# “Smart” Abuse?

<https://flic.kr/p/PMYmab>

A MAN HAS CREATED A MACHINE. NOW THE MACHINE WANTS TO CREATE A MAN . . .

# Demon Seed <sup>AA</sup>



MGM presents a HERB JAFFE PRODUCTION JULIE CHRISTIE in "DEMON SEED" co-starring FRITZ WEAVER


Produced by HERB JAFFE Directed by DONALD CAMMELL Screenplay by ROBERT JAFFE, ROGER O. HIRSON

Musical Score Composed and Conducted by JERRY FIELDING Filmed in PANAVISION® and METROCOLOR®



MGM

READ THE CORGI PAPERBACK

Distributed by CINEMA INTERNATIONAL CORPORATION 





### 7 Audio recording

Could facilitate remote monitoring and stalking.

### 8 Voice control

May enable perpetrators to contact the victim as well as trace and review a person's history of commands and purchases.

### 9 Router

Connects all smart home devices to the Internet.

## Tech Abuse – Smart, Internet-connected devices present new risks for victims of domestic violence & abuse

### 1 Wearable devices

Could allow perpetrators to track and monitor movements and other behavioural patterns drawing on GPS signals and other collected data.

### 2 Phones

Could provide perpetrator an access point to control various IoT devices.

### 3 Laptops and tablets

Accounts between devices are linked and could allow perpetrators to change and review IoT devices' settings via an Internet browser.

### 4 Remote control of heating, lighting and blinds

Could be used to coerce and intimidate victims by switching systems on or off from afar.

### 5 Security cameras and TVs

Could facilitate remote monitoring and online stalking; video recording could facilitate image-based abuse (such as revenge porn).

### 6 Smart security

Could provide access to doors through voice activation, apps, or electronic key codes.

**Disguised**

**Enhanced  
functionalities**

**Expanding and  
exacerbating reach**



<https://flic.kr/p/9y3sDJ>



# Underestimation

# Overestimation



<https://flic.kr/p/9y3sDJ>



# Lack of data



File error: data may have been lost.

OK

<https://rnc.kz/p/99KFH6>

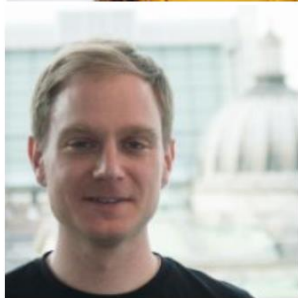


# #GloT Team

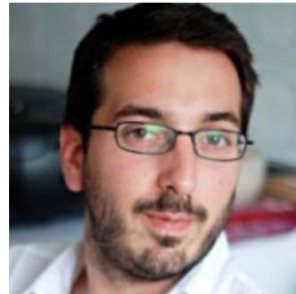
Leonie  
Tanczer



Simon  
Parkin



George  
Danezis



Trupti  
Patel



Isabel  
Lopez



Julia  
Slupska



**London  
VAWG  
Consortium**



**PRIVACY  
INTERNATIONAL**

# Action Research



Department for  
Digital, Culture,  
Media & Sport



National Cyber  
Security Centre  
a part of GCHQ



Home Office

<https://flic.kr/p/7mkGh9>







**Gender**



**Abuse**



**Change**

# Role & Impact



# Risk Trajectories



**Workshops**

**Trainings**

**Interviews**

**Tech Analysis**

**CryptoParty**



# Insights

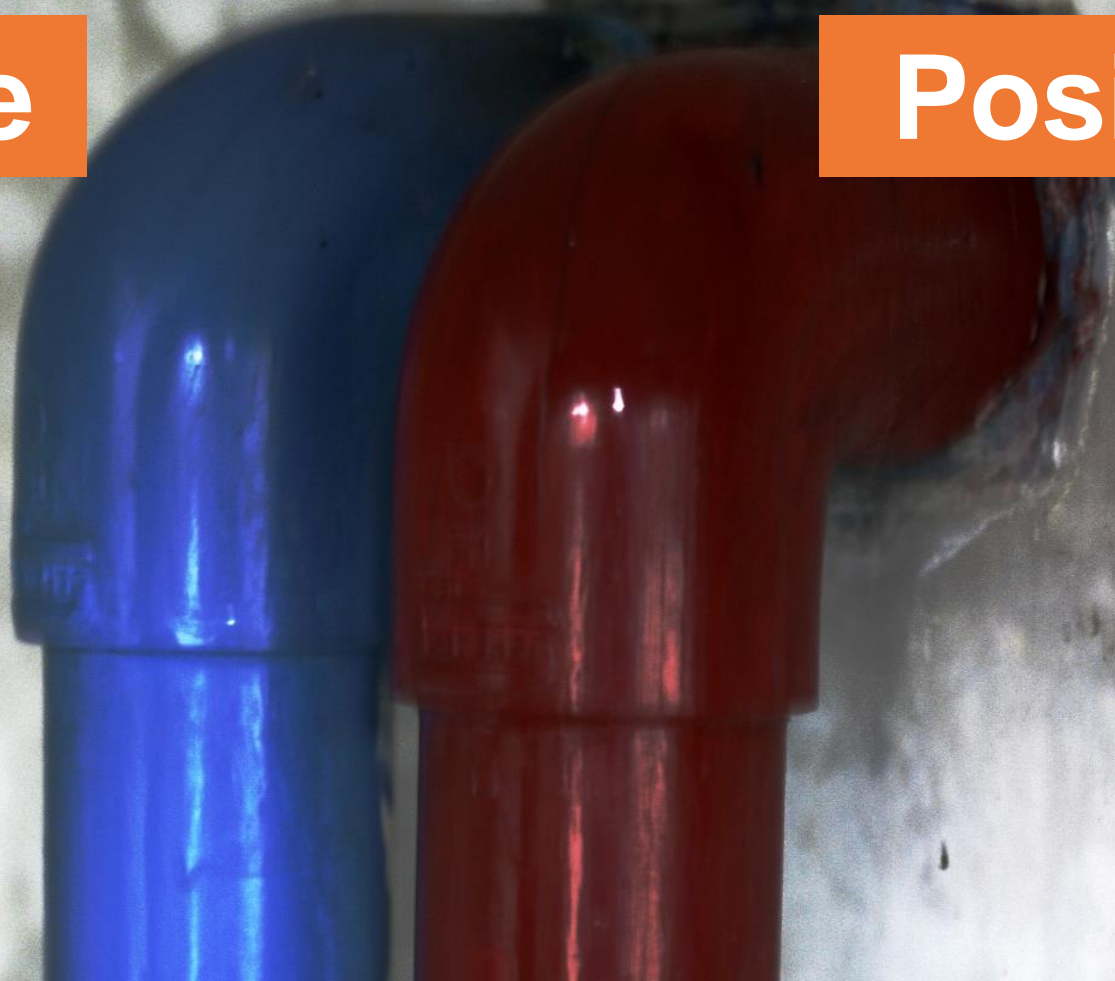


<https://file.kr/p/Y2DyxQ>



**Negative**

**Positive**





# Pointers for industry

<https://flic.kr/p/qtyGZ1>



# Prompts and notifications

## Logs

## IPV threat model

## Customer-facing staff guidance

## Data collection

<https://flic.kr/p/qtyGZ1>



# Vulnerable Groups

<https://flic.kr/p/5vzmHr>



# Technology Will Solve It All!



<https://flic.kr/p/65ujuq>

# Sorry, I Didn't Catch That



<https://flic.kr/p/PZGjep>



# Responsibility

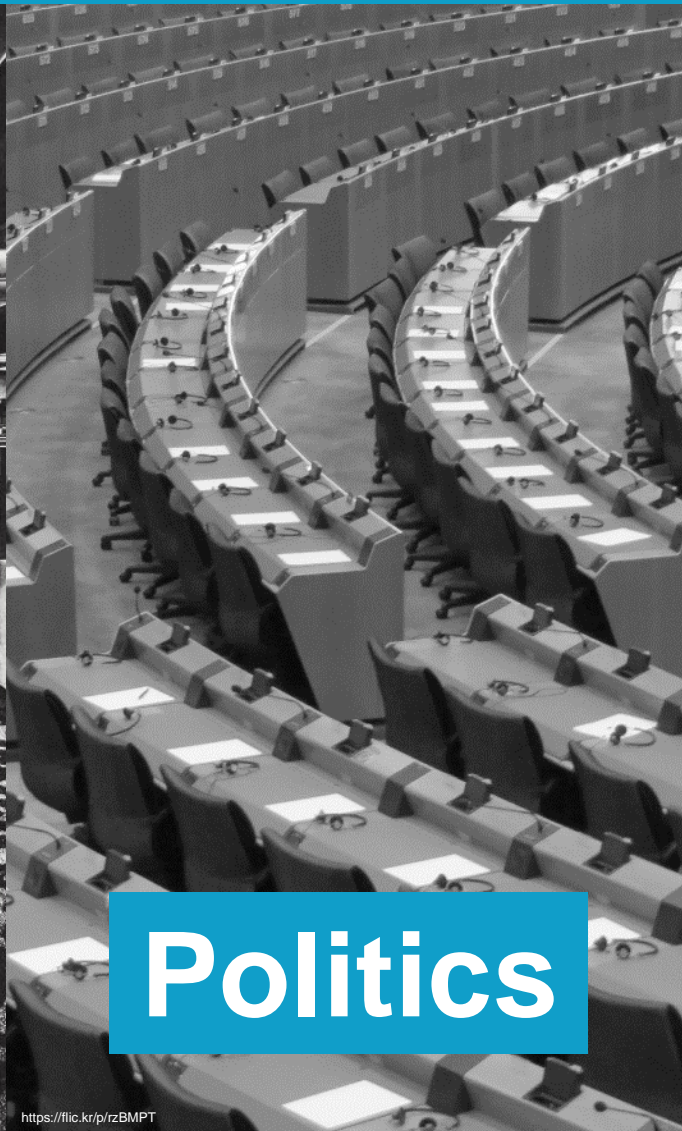


<https://flic.kr/p/dSg6P1>





**Industry**



**Politics**



**Society**





**Start the journey.**

<https://flic.kr/p/BMWqNU>



**Don't be silent.**

<https://fic.kr/p/BMWqNU>



A blurred background image showing a woman in a light blue shirt standing in front of a large window. In the foreground, a white, cylindrical smart speaker is visible on a surface.

# Thank you.

Dr Leonie Tanczer / @leotanczt

#GloT

# @theloTteam // @PortMyData

LONDON'S GLOBAL UNIVERSITY



New device?  
Looks nice.



But what's going  
to happen to  
your data?

What is your right to data portability?



European law may help  
you to switch devices without  
losing all your data.

According to Article 20 of  
the General Data Protection  
Regulation (GDPR) companies  
have to send the data you  
put into your device back  
to you on request.

This should enable you to send it to another company  
to put it on to your new device or ask the producer of  
your old device to send the data to the producer of  
your new device directly.

**Sarah Turner, July Galindo Quintero, Jessica Lis, and Simon Turner**





# But what about men?!

Courtesy to: <https://twitter.com/Wurzelmann/status/1188440432067395585>

# Well...

Domestic abuse in England and Wales: Year ending March 2018

- In the UK, women are around **twice as likely** to experience domestic abuse than men.
- The majority of **victims** of domestic homicides were **female** (73%, or 293).
- The vast majority of **defendants** in domestic abuse-related prosecutions were **men** (92%).
- Four in five female victims of domestic homicide were **killed by a partner or ex-partner** (239, 82%); of which the majority of the suspects were **male** (238).

<https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/bulletins/domesticabuseinenglandandwales/yearendingmarch2018>