Use of a 3D printing project to develop and expedite student experience of public outreach / engagement to enhance societal trust in pharmacology

SJ Tucker
School of Medicine, Medical Sciences & Nutrition, University of Aberdeen

Background context

- The University of Aberdeen pharmacology curriculum was compared to the BPS core curriculum
- This helped identify limitations in student opportunities to develop skills in communicating science to the public
- Clearly such skills are required to:
  - develop public understanding of the role pharmacologists play
  - enhance public trust in pharmacology and drug discovery/development
  - raise awareness of the discipline and delineate it from pharmacy

Aim

- To develop an engaging final year project to enhance understanding of the challenges of public engagement
- To enhance student public engagement skills
- To create a bank of public engagement resources to enthuse the next generation of pharmacologists

The project

- Small groups research a known drug target
- Research focused on:
  - 3D molecular structure
  - drugs that influence the target
  - mechanisms of action
  - structure activity relationships centred around PK and PD
- Having chosen and researched a target students must:
  - prepare structural data for 3D printing
  - 3D print molecular target
  - complete a variety of individual and group assessments
- Assessments:
  1. Public information sheet about target and its importance
  2. Public information video about how the target can be pharmacologically manipulated
  3. Scientifically pitched new synthetic drug design

Evaluation

- Enjoyed combination of group and individual exercises, and the variety of assessments
- "fun and informative"
- "made me think about how to approach explaining complex concepts to the public"
- "unique and enjoyable experience"

Outcomes

- Development of 3D understanding, drug design and molecular modelling
- Variety of assessments involving different media assesses variety of skills
- Combination of group and individual tasks
- Focus on public engagement and produces materials for Outreach
- Videos, leaflets and models used for engagement at:
  - University open days
  - Nursery, School and College visits
  - Public open day visits