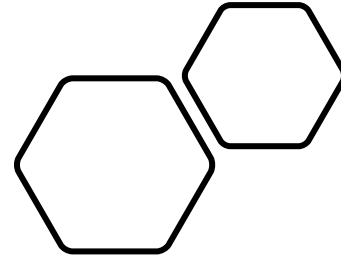
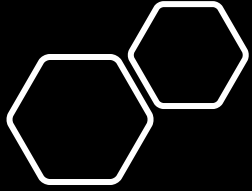


# Human Factors in the Study of Automatic Software Repair



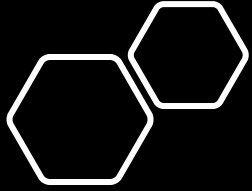
**Emily Winter [1]**, David Bowes [1], Steve Counsell [2], Tracy Hall [1], Saemundur Haraldsson [3], Vesna Nowack [4] and John Woodward [4]

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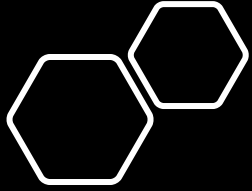
# Why human factors?

- Software engineering – socio-technical activity
- Steve Easterbrook et al. (2008): *'We need to investigate not just the tools and processes [software engineers] use, but also the social and cognitive processes surrounding them. This requires the study of human activities'*



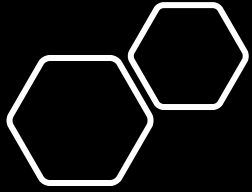
Future  
directions 1:  
Beyond  
usability

- Usability does not necessarily equate to usefulness
- Other important themes, e.g. software developers' job satisfaction



## Future directions 2: Longitudinal studies

- Shift from fixed point in time studies to longitudinal studies
- E.g. studies before a tool's introduction; in the early stages of its use; and after it has been used for some time
- Allows for greater interaction between researchers and industry



# Future directions 3: Diversity of research methods

- Shift from surveys and controlled experiments to a wider range of methods
- Ethnographic research- how tools are used in situ
- Focus groups – considering social norms and conventions
- Design thinking techniques