Engaging students in a Research Internship scheme and its impact on the graduate outcomes of BME Interns

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• Benefits of paid research internships
• Development of Scheme at Kingston University
• Evaluation
Benefits of Research Internships

- Stretches more able students
- Improves laboratory and research skills
- Preparation for final year research projects and PG study
- Students as Partners
- Builds student confidence
- Develops key skills - communication etc

Benefits of Internship scheme

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- Students as Partners
- Builds student confidence
- Develops key skills - communication etc.
- Embraces Research Informed Teaching
- Stretches more able students

(Seymour et al., 2004, 2007; Lopatto 2004, Russell et al. 2007, John and Creighton, 2011)
Benefits of Internship schemes

• Increases the likelihood of minority students pursuing postgraduate study in STEM.
  
  *(Pender et al. 2010)*

• Under-represented students rated their learning gains higher in many areas than the comparison group of Caucasian/Asian American students
  
  *(Lopatto 2007)*
Development of KUL Internship Scheme.
Scheme 2011-2013

- List of project descriptions distributed to all level 5 students.
- Application by CV and covering letter
- Selection mainly based on grades
- Interns paid £150 per week for 8-week project
Why don’t more students apply?

• Grade requirement – deterrent?
• Are projects attractive?
• Don’t know about scheme?
• Lack of confidence?
• Research not as popular in some disciplines?
• Poor pay?
• Length of project?
Maximising impact of Internships Scheme 2013 onwards

- In 2014 surveyed final year students about knowledge and experience of scheme

- 157 respondents roughly 30 for each of five schools
Likert scale responses to reasons for not applying for an internship

- Pay too low
- Internship too long
- Time to apply

**Reasons for not applying**

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Likert scale responses to reasons for not applying for an internship

- **White**
  - Grades not good enough
  - Not enough info
  - No projects of interest

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The chart illustrates the reasons for not applying to the BME program, as indicated by the confidence in grades. The reasons are: time to apply, too long, low salary, no interest, not enough info, confidence in grades. The graph shows a significant difference in the perception of not enough info between BME (n=72) and white (n=45) students, with p < 0.05.
Summer Undergraduate Research Internships 2014
Enhancing impact of Internship Scheme

- Wider range of projects - involve more staff
- Use previous blogs to illustrate nature of projects
- Offer more internships
- Better marketing - use of KUTalent
- Earlier promotion
- Encourage great involvement from some schools

- Each project interviews up to 6 students and provide feedback-
KUL STEM Faculty Research Internship Scheme

- **Nov**: List distributed to level 5 students
- **Jan**: Staff submit project descriptions
- **Feb**: Application by cv and covering letter
- **March**: Projects selected based on number and quality of applications
- **April**: Shortlisted candidates interviewed
- **June & July**: Students do internship and keep a weekly blog

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Success rates of applicants

% success of intern applicants

- BME 2014
- BME 2015
- White 2014
- White 2015
SEC internship scheme

Year:
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017

Projects:
- 2011: 10
- 2012: 40
- 2013: 60
- 2014: 80
- 2015: 100
- 2016: 120
- 2017: 140

Applications:
- 2011: 50
- 2012: 150
- 2013: 100
- 2014: 160
- 2015: 120
- 2016: 180
- 2017: 140

Interns:
- 2011: 20
- 2012: 50
- 2013: 30
- 2014: 40
- 2015: 60
- 2016: 90
- 2017: 70

Legend:
- Blue: projects
- Red: applications
- Green: interns
Award outcomes (as of 2016) of Summer interns from 2013 and 2014

Percentage distribution by degree class:

- **BME (n=26)**
- **White (n=21)**

Degree class breakdown:
- **1**: Complete degree
- **2(i)**: Degree incomplete
- **2(ii)**: Degree withdrawn
Proportion of good degrees for interns and unsuccessful applicants graduating 2015

- **Applied for internship**
  - All students: 72.06%
  - White: 90.91%
  - BME: 68.42%

- **Did the internship**
  - All students: 96.55%
  - White: 100.00%
  - BME: 93.75%

Significance levels:
- ****: p < 0.01
- n.s.: not significant
- *: p < 0.05
Intern Evaluation 2015

Online questionnaire used to ask interns to rate the scale of their learning gain in a number of areas, e.g.

Knowing what you want to do after graduating eg career path
Ability to interpret results or information
Scientific writing
Planning experiments
Ability to read and understand primary literature
Project management skills
Time management skill etc.
Learning gains of Research Interns 2014/15

Mean

<table>
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<td>Self confidence</td>
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White (n = 6) BME (n = 17)
Destination of Leavers HE data for interns (n= 31)

- **BME**: 
  - Work/study: 88.2%
  - Unemployed: 11.8%

- **White**:
  - Work/study: 87.5%
  - Unemployed: 12.5%
Conclusions

• Success rate of BME applicants improved through changes to advertising and application process.

• Significant association between doing an internship and obtaining good degrees for BME students, \((N=72) p = .04^*\) but no such association for white students, \((N=22) p = .286\).

• BME students appear to identify greater learning gains, but again small numbers involved
References


