Althea-Imperial Programme

Inspiring a new generation of enterprising women

2014-15

Date July 2015
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Professor Maggie Dallman, Dame Stephanie Shirley, Professor Alice Gast, Wendy Tan White, Sherry Coutu and Alexis de Raadt St James at the launch event in October 2014
1. Executive Summary

This report summarises the first year’s performance of the Althea-Imperial Programme, designed to support a new generation of women innovators and entrepreneurs.

The College justified the intervention under the Positive Action exemption, Part 11 Chapter 2 of the UK’s Equality Act 2010, backed by growing evidence that participation in innovation and entrepreneurship by female students and alumni is disproportionately low, when compared to their male counterparts.

Typically only 10% of Imperial’s alumni startup companies self-report female founders and only 16% of Imperial’s academic spinout companies have women as co-founders and CEOs. Furthermore, less than half of these receive seed funding and only one in five receive Series-A funding.

Despite this, there is compelling evidence that female-run, early stage, post accelerator enterprises are 15% more likely to be profitable than male-run businesses, even though they are 40% less likely to be funded.

The potential to unlock real value from our latent talent pool and create long-term economic and social impact is therefore significant and yet remains largely unexploited.

Philanthropic support has been critical in establishing this initiative, providing initial funding not only for the prize but to pilot the customised personal and professional development programme designed to help participants rapidly develop their project ideas and gain confidence in their entrepreneurial capacity and direction.

The College is hugely grateful to the Althea Foundation, for its instrumental support in establishing this pioneering three-year strategic initiative.

2015 Prize winners and finalists with Lead Judge Lesa Mitchell
2. Objectives and Outcomes

|-------------------|--------|---------|---------|---------|
| 10 applications   | • 63 students attended the personal and professional development programme  
|                   | • 21 submissions for the prize  
|                   | • Five finalists pitched to an independent panel of judges  
|                   | • Three prizes awarded | ✓ | ✓ | ✓ |
| Programme & Prizes raise the profile of the winners | • An innovative project to bring electricity to rural India receives a boost, Imperial College News, 8 July 2015 (368 shares via social media in two days)  
| | • Clementine Chambon, 2015 Climate Fellow, Echoing Green, June 2015  
| | • Waterproof concrete idea wins Althea-Imperial prize for female entrepreneur, Science Business, 29 April 2015  
| | • UP project runner-up at UK award, Times of India, 22 April 2015  
| | • Waterproof concrete idea wins Althea-Imperial prize for female entrepreneur, Imperial News, 22 April 2015 (with video) | ✓ | | |
| Programme & Prizes raise awareness at Imperial | • Magic Mix, Concrete wins for Hara, Imperial College Reporter, 1 May 2015 (cover story). This printed magazine is circulated across the College's 20,000 students and staff members  
| | • Althea-Imperial Programme site, has had over 7,000 unique visitors (Google Analytics)  
| | • Professor Alice Gast, President of Imperial College on BBC Radio 4’s Today programme, 17 April 2015  
| | • Closing the gender gap requires smart STEM initiatives, Financial Times, 5 November 2014  
| | • Hashtag #altheaimperial tweeted by over 100 people and a Facebook group with 60+ members | ✓ | | |
| Progress towards a patent/prototype/product | • Hara Spathi filed a patent and aims to have a prototype within a year  
| | • Kerry and Angela filed a patent and are developing their product idea in new lab space  
| | • Clementine Chambon secured seed funding and is working towards prototype field testing | ✓ | | |

1 Memorandum of Understanding, April 2014
3. Outlook

Following a highly successful launch year, the College has increased the complementary resources necessary to deliver the basic programme again for 2015-16 and 2016-17, recruiting a dedicated programme manager for this period. We now want to enhance the student experience and establish a more powerful exemplar in the UK and internationally.

Accordingly, we have identified a number of opportunities to advance the programme content and leverage supporting contributions from new corporates, donors and delivery partners:

**Where we plan to enhance future content**

- **Reach out**: upgrading communications platforms to engage more students, staff and supporters
- **Design thinking**: applying artistic ideation processes to create and refine product or service visions
- **Pitch performance**: adopting musical stage training approaches to convey a compelling business proposition
- **Mentor network**: facilitate deeper and wider pool of access to technical and commercial advice and guidance
- **Althea alumni**: adopting leadership and talent management tools to track future personal development

**How we plan to invest future contributions**

- **Improving incentives**: stimulate growth in value, volume and thematic orientation of prizes
- **Protecting ideas**: assistance to develop contemporary IP strategies with appropriate protection
- **Building examples**: support to produce early proofs, pilots, prototypes, or demonstrators
- **Specialist support**: remunerated versus voluntary coaches and other professional services
- **Making connections**: selected events and excursions to engage with users, field or sector experts
4. The Cohort

This year’s programme has attracted students from a range of disciplinary backgrounds, with many providing encouraging positive feedback on the impact the learning experience has had on their ‘entrepreneurial self-efficacy’:

**SELF AWARENESS**

“Encouraged us to believe in our idea and in our team...taught us the importance of resilience.” A.M.

“Hearing Sarah Wood...I realised that I can be a co-founder of a technical business without having a technical background myself.” I. W.

“Gave me more confidence being a woman in a mans world (with a mechanical engineering degree) especially as a self-starter.” J.B.

**SOCIAL AWARENESS**

“ With the connection I made, I joined imperial hack space...discovered robotic club...expanded my connections ... to makers that provided feedback to make a prototype.” N.U.

“More aware of...networks available to students wishing to translate their research into high-impact business ventures.” C.C.

“Just as important as...internal support, has been the network of entrepreneurs.....offering feedback and advice.” S.S.

**SELF MANAGEMENT**

“Mentoring ...was one of the most useful aspects... Speaking to an experienced entrepreneur about my idea led to fruitful conversations about potential, challenges and future vision.” L.J.

“A fantastic mentor, highly experienced in advising growing start-ups, from whom I have already learned a great deal. It is fabulous to be able to bounce ideas.” N.S.S.

“Refined my understanding of transforming an idea into a business case.” C.S.

**RELATIONSHIP MANAGEMENT**

“Learning ways of winning hearts and minds will help.” K.D.

“It has made us realise that understanding team member’s behaviour helps a lot to work more effectively.” R.B.

“Importance of networks and partnerships to the value chain and supporting growth.” H.P.

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**Disciplines**

- Natural Sciences 33%
- Business 23%
- Engineering 26%
- Medicine 18%

**Study**

- Post-graduate taught 46%
- Under-graduate 28%
- Post-graduate research 26%
5. Prize

Winner

Charikleia Spathi a PhD student of Civil & Environmental Engineering, developed a product which draws on the use of a waste material to develop a superhydrophobic powder. It is designed as a cost-effective waterproof solution for concrete buildings and critical infrastructure.

Since winning her prize Hara has gone on to file an international patent. This will allow for more flexibility when engaging with potential customers. Focus for the next three months has been placed on polishing the technical aspects of the product and exploring new ways of developing coatings based on the waste-derived super-hydrophobic powder. This was considered to be critical after taking into account feedback from potential end-users. Next steps will include establishing collaborations with identified manufacturers of currently available waterproof concrete additives in the UK.

Runners up

Kerry O’Donnelly and Angela de Manzanos, two PhD students from the Chemical Biology Centre for Doctoral Training, developed FungiAlert, a low-cost, easy to use device that allows farmers to detect the presence of fungal spores before they infect crops. Phytophthora, a soil-borne plant pathogen, is responsible for loses of $5-7 billion per crop per year.

Since winning their prize the team have secured lab space for further prototyping; have registered the company; and have carried out further market research to validate their technology in other potential markets. Shortly, when their PhDs are completed, they will both be working full time on FungiAlert, and are actively applying and looking for further funding to support the development of this technology.

Clementine Chambon, a PhD student in Chemical Engineering, is developing an affordable solution to transform agricultural waste into clean energy for off-grid households and to increase crop yields for small-holding farmers in rural India. She is working with an Indian social entrepreneur to build and deploy decentralised waste-to-energy plants that sequester carbon through a micro franchise model.

Since winning her prize Clementine has gone on to undertake a field survey in rural Uttar Pradesh, India, to meet key stakeholders and undertake energy demand analysis. She and her co-founder have recently been awarded a prestigious Climate Fellowship from Echoing Green, an organisation that invests in early-stage social entrepreneurs, providing seed funding, mentoring and leadership opportunities to assist Clementine towards her ambition of building a mini power plant in rural India.

6. Financials

Below is a simplified breakdown of expenditure in the 2014-15 academic year:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prizes (1x $15,000 and 2x $7,500)</td>
<td>$30,000</td>
<td>30%</td>
</tr>
<tr>
<td>Programme (Cohort of 63)</td>
<td>$50,000</td>
<td>&gt;50%</td>
</tr>
<tr>
<td>Programme Management (0.2 FTE staff)</td>
<td>$20,000</td>
<td>&lt;20%</td>
</tr>
<tr>
<td>Total funding from Althea Foundation</td>
<td>$100,000</td>
<td>100%</td>
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</tbody>
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