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Science and Technology Venture Capital Fellowship Curriculum

The Science and Technology Venture Capital Fellowship (STVCF) has been set up to facilitate the development of a strong talent pipeline that can enable increased deployment of risk capital into high-potential, scalable, life science and deep tech ventures in the UK. It is geared towards VCs and related investment professionals directly investing into science and engineering-based portfolio companies as well as asset managers allocating capital to such S&T VC funds. The programme is part of a broader set of efforts by the UK government to support the development of a strong science and technology Venture Capital ecosystem in the UK.

Fellowship Structure:

The Fellowship is structured in two parts, followed by post fellowship alumni engagement, as described below.

PART 1: Foundational Content (Modules 1-4): will comprise several distinct elements of instruction and learning.

a. All four modules will have academic instruction from one or more finance professors paired with guest lectures from leading industry experts. Topics include:
    i. *Raising and Structuring Life Science / Deep Tech Venture Capital Funds*, including an understanding of how the capital intensity of investments and longer time horizons to exit will impact fund size, structure, and the economics for partners and employees – with implications for how to measure performance as well as how to attract and retain diverse, high-quality talent.
    ii. *Portfolio Management*, including an understanding how the smaller number of deep pocketed S&T investors, particularly in the UK, makes estimating follow-on funding requirements more critical and makes funds more vulnerable to market cycles. This has implications for how investors may choose to syndicate investments as well as how they prepare to support their ventures in market downturns.
    iii. *Sourcing, Diligence and Investing in S&T based startups*, including understanding salient differences in screening IP-heavy ventures with substantial technical risk that operate in highly regulated markets. Participants will learn the incentives of university actors, including academics and university tech transfer offices. Doing so will be critical to building a strong pipeline of S&T investment opportunities and successful deal execution that sets up an academic spinout for ultimate success.
    iv. *Scaling and exiting S&T ventures* including an understanding of value inflection points in S&T ventures, important considerations in scaling to the US and other foreign markets as well as an understanding of different exit modes.

b. Individualised support, individual Mentoring and Coaching to support leadership development:
    i. Academic instruction on soft skills and leadership development
    ii. Individual mentoring and up to six 1:1 coaching sessions will allow fellows reflect on their strengths and areas for development, as well as build leadership skills.
    iii. Regular office hours and check-ins from programme managers to ensure each Fellow receives the support they need for successful completion of the Fellowship

c. Panels and Networking (including track-specific panels on Life Science and Deep Tech): Separate track-specific roundtable discussions around Life Science or Physical Sciences Deep Tech will deepen content and enable specialisation. Networking built around such roundtables will enable participants to meet startup founders, other investors, and key ecosystem players from across the UK that will enable strengthening relationships around a specific interest in Life Science or Physical Sciences Deep Tech.

d. Deep Tech Observatory: Each Module will focus on commercially relevant insights on key emerging technologies, provided through a combination of presentations from leading academics and practitioners. Areas covered will be (i) Future of Information Technology in Module 1 (ii) Technologies supporting transition to Net Zero (such as Solar, Batteries, Nuclear and Hydrogen) in Module 2 (iii) Drug, Development, Synthetic Biology and Medtech in Module 3 and (iv) Aerospace and Defence-related technologies in Module 4.

PART 2: S&T Visits Outside London and Project work for experiential learning

a. This module will enable fellows to extend their understanding of the material in Modules 1-4 through a group project in one of two different areas:
    i. Diligence on a real investment opportunity that enables deep engagement within a particular emerging technology by understanding technical, market, regulatory and financing needs. The goal is to write an investment memo that provides a recommendation of why it should (or should not) be funded
    ii. Developing a pitch to LPs around a S&T VC fund including modelling returns, discussing unique and distinguishing elements.
b. In addition, this Module will involve visits to technology hubs outside of London to help fellows extend their knowledge and networks in priority sectors for the UK, as well as develop critical perspectives on frictions facing the funding and scale-up of such technologies. In 2024-25, the priority sectors as part of the S&T visits will be Engineering Biology, Quantum and AI.

POST-FELLOWSHIP: Alumni Engagement

An alumni networking platform will support peer-to-peer learning and engagement beyond the duration of the Fellowship. Among other things, this will allow for mutual support, troubleshooting and networking, which would continue to grow as the Fellowship evolves and adds new members from subsequent cohorts. Regular in person networking opportunities will also be offered to the alumni as part of programming conducted by RA Eng and Imperial, which will give continued exposure to key stakeholders and cutting edge of the developing startup landscape.

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Module 1: Raising and Structuring Life Science / Deep Tech Venture Capital Funds

Activity	Learning Objectives
Lecture and Case Study Discussion to introduce conceptual insights in Module	(i) Modelling to understand how capital intensity and step-ups across rounds impact fund returns. Given this, where do specialized S&T venture funds sit in terms of the risk-reward frontier compared to more traditional VC? (ii) From the perspective of pension funds how does one assess the value of allocating capital to specialised S&T VC funds compared to other funds in the broader VC asset class? (iii) What implications does longer time to liquidity have on partner economics as well as the ability to attract and retain high-quality talent?
Lectures from practising experts working in UK ecosystem	(i) Legal, tax considerations of different fund structures (VCT / Balance Sheet fund / GP-LP Structure) and implications for hiring and talent development (ii) Incentive structures for funds tied to universities, (iii) Pension fund perspective on Mansion House compact, what they are looking for and how best to achieve it
Lunchtime Panel	Topic: Standing out from the crowd when pitching for your S&T VC fund (chance to learn and ask questions with experts in the ecosystem)
Evening Panel: Life Science Track	Topic: Raising a Life Science VC Fund and Managing LP relations - advice from experts. Followed by networking with Life Science ecosystem players
Evening Panel: Deep Tech Track	Topic: Raising a Deep Tech VC Fund and managing LP - advice from experts Followed by networking with Deep Tech ecosystem players
Developing soft skills	Building a diverse and inclusive team
"Life Science /Deep Tech Observatory"	Understand commercially relevant frontier for technologies that key to UK growth agenda. In Module 1 we will focus on Future Information Technology

Note 1: In addition to the in-person programming described above, all fellows will have access to mentoring and up to six 1:1 coaching sessions, outlining goals for the year-long fellowship (including leadership development) and working towards these.

Note 2: The fellowship will provide corporate finance training --if needed-- to ensure all fellows can effectively lead financial statements, conduct a VC-based valuation and work with capitalization tables. This will be made available through a combination of online content and the opportunity to schedule office hours with experienced professors from Imperial's finance department between the Modules.

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Module 2: Portfolio Management in Life Science / Deep Tech VC Funds

Activity	Learning Objectives
Lecture and Case Study Discussion to introduce conceptual insights in Module	(i) Understand diversification-ownership trade-off and how interaction with startup's capital needs and VC fund size impacts target number of investments, allocation for first cheque vs. dry powder for follow-on and syndication strategies (ii) How does interaction of technical and market risk impact follow-on investment decisions? (iii) Syndication strategies, particularly for smaller funds
Lectures from practising experts working in UK ecosystem	(i) Modelling initial investment vs. follow-on - interaction with fund size and portfolio company characteristics (ii) Working effectively with Corporate Venture Capital investors (iii) Managing difficult issues in syndication (asymmetric incentives in sideways outcomes)
Lunchtime Panel	Topic: Investing across market cycles and technology hype cycles
Evening Panel: Life Science Track	Topic: Portfolio Management in Life Science VC - advice from experts. Followed by networking with Life Science ecosystem players
Evening Panel: Deep Tech Track	Topic: Portfolio Management in Deep Tech VC - advice from experts. Followed by networking with Deep Tech ecosystem players
Developing soft skills	Stakeholder management (with syndicate partners, entrepreneurs and LPs)
"Life Science /Deep Tech Observatory"	Understand commercially relevant frontier for technologies that key to UK growth agenda. In Module 2 we will focus on technologies at frontier for Net Zero transition (Nuclear including fusion, solar and batteries, Hydrogen)

Note 1: In addition to the in-person programming described above, all fellows will have access to mentoring and up to six 1:1 coaching sessions, outlining goals for the year-long fellowship (including leadership development) and working towards these.

Note 2: The fellowship will provide corporate finance training --if needed-- to ensure all fellows can effectively lead financial statements, conduct a VC-based valuation and work with capitalization tables. This will be made available through a combination of online content and the opportunity to schedule office hours with experienced professors from Imperial's finance department between the Modules.

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Module 3: Sourcing, Diligence and Investing in S&T based startups

Activity	Learning Objectives
Lecture and Case Study Discussion to introduce conceptual insights in Module	(i) Key differences in screening IP-heavy ventures with substantial technical risk that operate in highly regulated markets. Different models for sourcing, diligence and investing in S&T based startups (ii) Understand the incentives of university actors, including academics and university tech transfer offices. (iii) Valuation benchmarks, and necessary conditions for successful deal execution that sets up an academic spinout for ultimate success
Lectures from practising experts working in UK ecosystem	(i) Modelling, doing diligence, valuation and writing investment memo for IP rich firms (ii) Dealing with 'messy cap tables'; what is the appropriate role for technical founders in university spinouts? (iii) IP-strategies for life science and deep tech startups whose large firm customers are also their competitors. Company structure and IP strategies of Platform Technologies
Lunchtime Panel	Topic: Productive approaches to engaging with university TTO and other pipelines of deal flow
Evening Panel: Life Science Track	Topic: How to develop S&T pipelines to maximize generation of high impact Life Science ventures; what is the role of technical founders. Followed by networking with Life Science ecosystem players
Evening Panel: Deep Tech Track	Topic: How to develop S&T pipelines to maximize generation of high impact Deep Tech ventures; what is the role of technical founders Followed by networking with Deep Tech ecosystem players
Developing soft skills	Negotiation best practice
"Life Science /Deep Tech Observatory"	Understand commercially relevant frontier for technologies that key to UK growth agenda. In Module 3 we will focus on Drug development, Synthetic Biology and frontiers of Medtech

Note 1: In addition to the in-person programming described above, all fellows will have access to mentoring and up to six 1:1 coaching sessions, outlining goals for the year-long fellowship (including leadership development) and working towards these.

Note 2: The fellowship will provide corporate finance training --if needed-- to ensure all fellows can effectively lead financial statements, conduct a VC-based valuation and work with capitalization tables. This will be made available through a combination of online content and the opportunity to schedule office hours with experienced professors from Imperial's finance department between the Modules.

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Module 4: Scaling and Existing Life Science and Deep Tech Ventures

Activity	Learning Objectives
Lecture and Case Study Discussion to introduce conceptual insights in Module	i. Understanding of value inflection points in S&T ventures (how far to go before considering exits) ii. Role of corporate partners, regulators and investors in the US / external markets and how to set up for success iii. Exits and Secondaries
Lectures from practising experts working in UK ecosystem	i. Exits – Acquisitions, IPOs and key issues to consider when dealing with IP-rich S&T ventures. ii. Regulatory considerations for Life Science and Deep Tech Ventures expanding abroad (including issues around National Security)
Lunchtime Panel	Topic: Scaling and Going public in the UK
Evening Panel: Life Science Track	Topic: CEO Perspective on what VCs can do to support scaling of Life Science Ventures. Followed by networking with Life Science ecosystem players
Evening Panel: Deep Tech Track	Topic: CEO Perspective on what VCs can do to support scaling of Deep Tech Ventures. Followed by networking with Deep Tech ecosystem players
Developing soft skills	Difficult conversations (CEO transitions)
"Life Science /Deep Tech Observatory"	Understand commercially relevant frontier for technologies that key to UK growth agenda. In Module 4 we will focus on Defence-related technologies

Note 1: In addition to the in-person programming described above, all fellows will have access to mentoring and up to six 1:1 coaching sessions, outlining goals for the year-long fellowship (including leadership development) and working towards these.

Note 2: The fellowship will provide corporate finance training --if needed-- to ensure all fellows can effectively lead financial statements, conduct a VC-based valuation and work with capitalization tables. This will be made available through a combination of online content and the opportunity to schedule office hours with experienced professors from Imperial's finance department between the Modules.

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Module 5-7: S&T visits outside London and project work for Experiential Learning [Locations TBC]

Activity	Learning Objectives
Project Work as part of experiential learning	i. Due diligence of a specific investment opportunity with opportunity to gain in-depth knowledge on (and feedback from friendly VC) on a new technology, diligence process and writing a strong investment memo OR ii. Opportunity to develop a pitch for a new S&T VC fund, including modelling returns and pitch this to friendly LPs Additional goal to develop strong ties between individuals working together on similar interests during the Fellowship
Site visit to organisation in S&T ecosystem	Get to know key players in the S&T ecosystem and part of broader objective to build a strong LS and DT investing community in UK
Lunchtime Panel	Topic: Innovator/ Startup perspective on LS/DT funding in the hub
Evening Panel	Topic: Investor perspective on LS/DT funding in the hub

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Scheduling template for Modules 1-4
(London-based sessions spanning 3 working days)

<table>
<tr><th></th><th>Day 1 (Monday)</th><th>Day 2 (Tuesday)</th><th>Day 3 (Wednesday)</th></tr>
<tr><td>8-8:30</td><td rowspan="3">Travel</td><td>Breakfast</td><td>Breakfast</td></tr>
<tr><td>8:30-9</td><td rowspan="4">Guest lectures from practising experts working in UK ecosystem</td><td rowspan="2">LS/DT Observatory (Commercially relevant insights on key technology trajectories)</td></tr>
<tr><td>9-9:30</td></tr>
<tr><td>9:30-10</td><td rowspan="2">Space to schedule 1:1 meetings with mentors / coaches</td></tr>
<tr><td>10-10:30</td><td rowspan="2">Module wrap and planning for next Session</td></tr>
<tr><td>10:30-11</td></tr>
<tr><td>11-11:30</td><td rowspan="2">Study-Group discussion over lunch</td><td rowspan="3">Lunchtime panel</td><td rowspan="3">Lunch and Cohort Networking</td></tr>
<tr><td>11:30-12</td></tr>
<tr><td>12-12:30</td></tr>
<tr><td>12:30-1</td><td rowspan="2">Module Overview</td><td rowspan="3">Facilitated discussion summarising learnings</td><td rowspan="4">Space to schedule 1:1 meetings with mentors / coaches / follow-ups from networking sessions</td></tr>
<tr><td>1-1:30</td></tr>
<tr><td>1:30-2</td><td rowspan="4">Lecture and Case Study Discussion to introduce conceptual insights in Module</td></tr>
<tr><td>2-2:30</td><td rowspan="2">Leadership skill development session</td></tr>
<tr><td>2:30-3</td></tr>
<tr><td>3-3:30</td><td rowspan="3">Travel</td></tr>
<tr><td>3:30-4</td><td rowspan="2">Travel to RAEng (or S&T destination in London)</td><td rowspan="2">Travel to RAEng (or S&T destination in London)</td></tr>
<tr><td>4-4:30</td></tr>
<tr><td>4:30-5</td><td rowspan="3">Track Specific Panel and Networking (DT)</td><td rowspan="3">Track Specific Panel and Networking (LS)</td></tr>
<tr><td>5-5:30</td><td rowspan="2">Travel to RAEng (or S&T destination in London)</td></tr>
<tr><td>5:30-6</td></tr>
<tr><td>6-6:30</td><td rowspan="3">Travel</td></tr>
<tr><td>6:30-7</td><td rowspan="3">Track Specific Panel and Networking (DT)</td><td rowspan="3">Track Specific Panel and Networking (LS)</td></tr>
<tr><td>7-7:30</td></tr>
<tr><td>7:30-8</td></tr>
<tr><td>8-8:30</td><td></td><td></td><td></td></tr>
</table>

Notes:

Activities part of core curriculum

Optional activities scheduled by participants at time noted or any other mutually convenient time

Schedule does not include remedial content / office hours that is available for fellows between Modules

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Scheduling template for Modules 5-7
(outside-London sessions spanning 2 working days)

<table>
<tr><th></th><th>Day 1 (Monday)</th><th>Day 2 (Tuesday)</th></tr>
<tr><td>8-8:30
8:30-9
9-9:30
9:30-10
10-10:30
10:30-11
11-11:30
11:30-12</td><td rowspan="2">Travel to RAEng Hub Destination</td><td>Experiential learning-related project work - conducted in groups of three that will span Modules 5-7</td></tr>
<tr><td>Moderated discussion on what can be done to engage specific local ecosystem more effectively</td></tr>
<tr><td>12-12:30
12:30-1
1-1:30</td><td>Lunchtime panel</td><td>Lunch / Recap of Visit, next steps</td></tr>
<tr><td>1:30-2
2-2:30
2:30-3
3-3:30
3:30-4
4-4:30</td><td>Site visit to representative company/ Catalput Centre or similar organisation</td><td>Space to schedule 1:1 meetings for follow-ups from networking sessions</td></tr>
<tr><td>4:30-5
5-5:30</td><td>Travel / Break</td><td rowspan="2">Travel back</td></tr>
<tr><td>5:30-6
6-6:30
6:30-7
7-7:30
7:30-8
8-8:30</td><td>Panel discussion with local experts focused on key commercialisation frictions faced by technologies coming out of region, followed by track-specific networking</td></tr>
</table>

Activities part of core curriculum

Optional activities scheduled by participants at time noted or any other mutually convenient time

Schedule does not include remedial content / office hours that is available for fellows between Modules