

# Biotechnology

## Training Program

University of Virginia

# PROGRAM HANDBOOK

**Revised July 2018**

*BTP is open to all UVa doctoral students enrolled in basic science degree programs, including students whose mentor may not currently be affiliated with the training program.*

## APPLICATION TO BTP

- **Application:** Doctoral students enrolled in basic science degree programs in the School of Medicine, Graduate School of Arts and Sciences, and School of Engineering, and Applied Science are eligible to apply to the Biotechnology Training Program for the annual early May deadline. Each application must include:
  - BTP application form
  - BIMS training grant nomination form
  - Recommendation/nomination letters (3 total, one from mentor/advisor)
  - Current, unofficial copy of undergraduate transcripts

## TRAINEE QUICK GUIDE

BTP Quick Guide of Trainee Benefits and Requirements	During appointment	Post appointment
Financial support		
Stipend (at NIH pre-doc rate)	Y	
Tuition	Y	
Health insurance	Y	
Conference travel	Y	
Externship expenses	Y	X <sup>1</sup>
Minor mentor	Y	Y
Attend journal club/RIP	Y	Y
Attend BTP seminars	Y	Y
Attend and present poster at BTP Symposium	Y	Y
Prepare and submit BTP annual progress report	Y	Y
Schedule annual meeting with BTP director	Y	Y
Complete externship	Y	X <sup>1</sup>

<sup>1</sup> Trainees are required to complete company externship training during the two year period of appointment

## TRAINEE REQUIREMENTS

- **Minor Mentor:** Within the first 2 months of appointment, each trainee must select a ‘Minor Mentor’ to serve on the dissertation committee. Trainees meet individually with the Minor Mentor four to six months after each dissertation committee meeting. If you are in the School of Engineering choose a Minor Mentor in the School of Medicine or College of Arts and Sciences, and vice versa. Such cross-disciplinary supervision greatly enhances the training experience and can open entirely novel avenues of scientific discovery and innovation. Discuss this decision with your Major Mentor, and make sure that all parties are in agreement. Your Minor Mentor does not need to be listed BTP mentor.
- **myIDP:** Also within 2 months of appointment, please register and begin working through all exercises at [myIDP](#) for completion by the end of your first year. Feel free to share results with Gordon Laurie at your annual individual meeting. [myIDP](#) is an initiative of the National Academy of Sciences. Additional professional development programming is provided throughout the academic year and coordinated with offerings from the Office of Graduate and Postdoctoral Affairs.
- BIMS students only: in conjunction with **myIDP**, complete [the Annual Performance Evaluation and Goals](#) by October 31 of each year.

- **Curriculum:** See required courses below. Please take courses **for credit** and meet **attendance/participation** requirements. You must also successfully complete degree/program course requirements.

### ‘Essentials of Translational Science’ (CELL 8401)

- |  |                                      |
|--|--------------------------------------|
| ○ Research integrity/reproducibility (COS) | ○ Commercialization/Entrepreneurship |
| ○ Patents                                  | ○ Scientist as an Entrepreneur       |
| ○ Drug Pricing                             | ○ Ethics                             |
| ○ Intellectual Property                    | ○ Regulatory Authority of FDA        |
| ○ FDA History                              | ○ Translational Science on Grounds   |

‘Research Ethics’ (BIMS 7100). Research Ethics retraining is required every four years.

‘Basics of Study Design and Practical Statistics’ (BIMS 8380) -- not required if BIMS 8382 has been successfully completed.

‘Effective Science Writing for Grants and Fellowships’ (CELL 8450) in the Fall of your second year. Submit your written proposal to an external funding agency (partial list): [NIH F31](#), [NSF GRFP](#), [AHA](#). Agencies with emphasis on diversity: [Ford Foundation](#), [UNCF/Merck](#).

By participating in [BTP Journal Clubs](#), you complete ‘Biotechnology Research Seminar’ (BIMS 8191/8192). All trainees are required to attend, even after cycling off of BTP funding.

The required 2 - 3 month BTP company externship is credited as ‘Biotechnology Industrial Externship’ (BIMS 8193/8194)

- **BTP Seminars:** We expect all trainees to attend BTP Seminars, and to actively participate in speaker lunches.

TRAINEE REQUIREMENTS cont.

- **Leadership Role:** Each trainee leads one BTP event and may be asked by Gordon Laurie to help out with other BTP events. Each event is logistically supported by BTP Administrator Phillis Hynes, such that events should *not* interfere with courses and research. Leadership roles include:
  - Co-Chair of BTP Symposium Planning Committee Co-Chair (leads Committee with faculty co-chair)
  - Editor of BTP Newsletter
  - Coordinator of BTP Day of Caring event (community service)
  - Chair and Co-Chair of BTP Seminar Committee
  - Coordinator of BTP Industrial Panel Q&A
- **BTP Symposia:** We expect all BTP trainees to attend and present a poster at BTP Symposia. BTP Symposia are held every other year and are open to the public. BTP trainees and faculty constitute the BTP Symposium planning committee. One BTP speaker was later awarded a Nobel Prize.
- **Annual Progress Reports:** We request that each trainee complete an Annual Progress report <http://faculty.virginia.edu/biotech/Forms.html> by late April. Second year support is dependent on on-time submission. Progress reports are also requested of trainees who have cycled off BTP funding
- **Complete your dissertation proposal and/or comprehensive exam departmental requirements in a timely manner,** meet at least once a year with your thesis committee, and complete your dissertation. We have high expectations for the quality of research. Your dissertation should constitute an original and significant contribution to the field at a level acceptable for publication in a peer reviewed scientific journal of high quality. The publication record of trainees is a critical component of the NIH renewal process. Trainees should have at least one first author article published in a peer reviewed journal prior to degree completion.
- On-time submission of all forms and requested information as well as participation in BTP events and activities is required to maintain eligibility for second year funding and conference travel support, and supplemental funding support for externship expenses.

## STIPEND, TUITION AND HEALTH INSURANCE

- During each 12-month period of appointment, BTP trainees are provided with an NIH pre-doctoral stipend, tuition for 3 semesters (typically Summer, Fall, and Spring for July 1 appointments), and health/dental insurance support (for a maximum of 2 years). Second year support is dependent on on-time submission of the first year progress report and demonstration of adequate progress.
- **After 2 years of BTP support, trainees remain full BTP members and are expected to continue participating in all BTP events.** Stipend, health insurance and tuition costs are assumed by the major mentor. An alternative and highly recommended strategy is to obtain independent fellowship from NIH, NSF or other Foundations.

## TRAVEL

- Presenting posters and talks at scientific meetings is a key component of BTP training. BTP provides a maximum of \$300 meeting travel support per student per year **while on the training grant** (first two years). You must be a presenter and have submitted the previous year's Progress Report on time). Reimbursement is per University reimbursement policy. Please contact Gordon Laurie in advance for prior approval.

## BTP EXTERNSHIP

BTP trainees should initiate plans for a 2 - 3 month (8 – 12 week) company externship *within the first six months* of appointment. Securing an externship that matches research interests requires months of preparation. Externships *must* begin prior to the end date of the year 2 appointment.

### PROCESS: PHASE 1

- Register online at <http://myidp.sciencecareers.org>
- Complete the Skills, Interests, and Values assessments of the online IDP and review the Working in Career Exploration component. Information obtained can suggest externship option
- Review companies that have hosted BTP trainees at [http://faculty.virginia.edu/biotech/Externship\\_Opportunities.html](http://faculty.virginia.edu/biotech/Externship_Opportunities.html)
- Discuss with your primary mentor. Do you have the skills and experience necessary? Will this experience enhance your dissertation work? Are there career benefits?
- Narrow the number of options to at least 3, but no more than 6 sites.
- Send this edited list to Gordon Laurie for approval. All externships must be pre-approved and it is better to obtain approval prior to contacting the company.

### PROCESS: PHASE 2

- Initiate contact with each. Communication should be persistent, timely and professional but not aggressive.
- Draft your letter of introduction, proofread it, self-edit, and then ask your mentor or other faculty member to edit as needed.
- Recommended items to include in your letter of introduction:
  - Basic research interests and current dissertation project
  - Specific scientific/career goal reason(s) for interest in company.
  - Goals for externship experience (refer to self-assessment outcomes form IDP exercise)
  - Required period of externship (8-12 weeks, but can be longer)
  - BTP stipend and health insurance coverage can will continue through the externship experience if completed within your two year appointment, and support is not provided by the company. (i.e., no cost to the company) [If the externship experience is near or at the end of the 2nd year appointment, stipend, etc. may not continue to the end of the externship].

### **PROCESS: PHASE 2 cont.**

- Once a company expresses interest, communicate options and decisions regularly with your mentor (specifically, do not agree to specific dates without seeking prior approval from your mentor/PI).
- Ask the company about their NDA (nondisclosure agreement) or CDA (confidential disclosure agreement), and offer to provide them with [UVA's student CDA](#). UVA needs to sign off on either for your legal protection. Companies may wish to slightly modify the UVA CDA, or vice versa. This is common. Contact Phillis Hynes with any further questions.
- Necessary forms to complete: (1) [UVA Graduate Student Confidentiality Agreement](#) (2) [Externship Funding Request form](#)

### **INTERNATIONAL SITES**

- Register your plans with the International Studies Office who track studies abroad. You will be required to adhere to the Travel Abroad Warning Policy <https://educationabroad.virginia.edu/health-safety-abroad>, although graduate students have some flexibility.
- Review the policy regarding UVA's expectation for insurance coverage and contact Aetna to be sure your student policy meets the requirements stated on that page. <https://educationabroad.virginia.edu/insurance>

### **EVALUATION OF EXPERIENCE**

- Trainees are required to complete the Externship Evaluation Survey for Trainees online. <http://www.surveymoz.com/s3/1742575/BTP-Trainee-Externship-Evaluation>
- Site supervisors are asked to complete the Externship Evaluation Survey for Site Supervisors online. <http://www.surveymoz.com/s3/1742633/UVA-Biotech-Externship-Evaluation>
- Trainees are expected to summarize the externship experience on their annual progress report and give a brief oral presentation (5 min) during the Fall 'New Students' Lunch'.

### **EXTERNSHIP SUPPORT**

- **STIPEND:** Companies may wish to put you on salary. If this is the case, per NIH policy your BTP stipend is suspended regardless of amount. If no company support is provided, the BTP stipend continues uninterrupted. No double payment is allowed. Trainees should make every effort to complete the externship requirement before the end of the BTP appointment.

### **TRAVEL, HOUSING, & OTHER:**

- There are funds available for reimbursement of travel, housing, and miscellaneous expenses. Travel must be economy class and the least expensive, logical option (i.e., flying to Boston is less expensive than mileage for driving your personal car, but reimbursement for car rental once in Boston would exceed the cost of mileage for your personal car, so taking your car would be allowable).
- Housing may be provided by the company, either as executive or other space owned or leased by the company or through an allowance or similar payment made directly to you (such payments are considered stipend compensation)



**TRAVEL, HOUSING, & OTHER cont.:**

by NIH and will require suspension of BTP stipend). **Housing is typically reimbursed and cannot be paid up front by the University.** You are strongly encouraged to seek housing costs that are within the locale per diem.

- Miscellaneous expenses include, but are not limited to, baggage fees, cab fare, airport parking).
- Externship expenses vary significantly depending on the locality. You should complete the BTP Externship Internal Funding Request form <http://faculty.virginia.edu/biotech/Forms.html> as soon as the company has agreed to host you. All sources of support must be disclosed to make distribution of BTP funds fair among you and your BTP colleagues. Support is allocated based on the status of the externship (company supported or not), amount of mentor support, travel limitations (i.e., airfare is the only feasible option for international experiences – and is typically a considerable expense), and cost of living for the locality, among other variables.
- Please take pictures of your externship when allowed (i.e. outside and environ shots) to include in the BTP newsletter and for presentation to BTP trainees upon return.
- You are **required** to complete your externship within the first two years of entering the BTP (exceptions **must** be approved by the BTP Director, Gordon Laurie, in advance).

**OTHER CONSIDERATIONS:**

- Certification of liability insurance can be secured if requested by the company as a condition of the experience/placement.
- Employment contracts (rare) must be reviewed by UVa -- send to Phillis Hynes prior to signing and submitting. [UVa Graduate Student Confidentiality Agreement](#) is preferred.
- International students **must** check requirements regarding Externships <http://issp.virginia.edu/frequently-asked-questions>

## COMMITTEES & BOARDS

- I. The **BTP Executive Committee** (<http://faculty.virginia.edu/biotech/Executive.html>) consists of the BTP Director and selected BTP faculty appointed by the BTP Director.
  - **Function:** to serve as the BTP admissions committee and to review the scholastic and research performance of BTP trainees in May of each year. The Executive Committee also reviews and accepts or denies faculty who wish to join the BTP. Interested faculty should send their NIH biosketch with funding information and a statement of interest to Gordon Laurie. Federal research funding is a prerequisite for joining the BTP. New junior faculty may be accepted without federal funding by alignment with a more senior mentor.
  
- II. The **Board of Corporate Advisors** ([http://faculty.virginia.edu/biotech/Corporate\\_Advis.html](http://faculty.virginia.edu/biotech/Corporate_Advis.html)) consists of selected corporate and academic leaders of the Biotechnology community. The Board is appointed by the Executive Committee.
  - **Function:** to offer advice on externships and make connections where possible. To offer career advice.
  
- III. An individual **Thesis Proposal and Research Committee** will be formed when the student has chosen a dissertation advisor. The dissertation advisor or 'Major Mentor' becomes the committee chair. The committee is optimally composed of at least two other BTP faculty members and includes the trainee's Minor Mentor. Additional University faculty members may be included. The committee meets at least once a year to direct a trainee's academic and research program throughout their graduate career. This committee gives advice and consent for entry into the writing phase of the dissertation.
  - **Function:** to evaluate and guide trainees in the formulation of a research problem and conduct of research.
  
- IV. An individual **Dissertation Defense Committee** will be composed of the Proposal and Research Committee plus as many as two additional members. Optimally, at least three committee members should be faculty members associated with the BTP. The University requires that the thesis examining committee, with advisory professor as chair, consist of no fewer than four members of the BIMS\* faculty, one of whom must be from another department and serves as a representative of the Graduate Committee. (BIMS faculty are those faculty who are tenured or tenure-track).
  - **Function:** to provide the final evaluation of the student's dissertation work, including oral and written performance.

\*Note: Graduate school requirements

BIMS: <http://records.ureg.virginia.edu/content.php?catoid=44&navoid=3184>

SEAS: <http://records.ureg.virginia.edu/content.php?catoid=44&navoid=3076>

GSAS: <http://graduate.as.virginia.edu/thesis-submission-and-graduation>

## PHD MENTORSHIP REQUIREMENTS

- In order to serve as a mentor on the Biotechnology Training Program, faculty must hold a primary appointment as a tenure track or tenured academic investigator in basic science in the School of Medicine (or have a secondary appointment in a basic science department) or be appointed to the Graduate School of Arts and Sciences (GSAS) or to the Graduate Faculty of the School of Engineering and Applied Science.
- Federally funded faculty with tenure or tenure track appointments and membership in BIMS, GSAS or GFSE are encouraged to request membership as a BTP mentor. Please send your NIH biosketch, funding information and reason of interest to Gordon Laurie [gwl6s@virginia.edu](mailto:gwl6s@virginia.edu) (Students in non-BTP mentor labs are welcome to apply to the BTP appointment. If accepted, their supervisor becomes a BTP mentor. New mentors not yet federally funded will be linked with a more senior mentor).

