

BOĞAZIÇI ÜNİVERSİTESİ
ATAMA YÜKSELTME ÖZGEÇMİŞ FORMU
(*CV TEMPLATE FOR BOĞAZIÇI*
UNIVERSITY ACADEMIC
APPOINTMENTS AND
PROMOTIONS)

1. KİŞİSEL BİLGİLER

Adı Soyadı (*Name – Surname*): Steven Footitt
Doğum Tarihi (*Date of Birth*) : _____
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Telefon (*Phone*) : 0212-3596880

2. EĞİTİM (EDUCATION)

	Başlangıç Tarihi (Ay/Yıl) (<i>Start Date- Month/Year</i>)	Mezuniyet Tarihi (Ay/Yıl) (<i>Graduation Date - Month/Year</i>)	Üniversite (<i>University</i>)	Bölüm/Program (<i>Department/Program</i>)
Doktora (<i>PhD</i>)	Aug/1986	May/1993	Louisiana State University	Dept. of plant Pathology and Crop Physiology
Yüksek Lisans (<i>MSc/MA</i>)				
Lisans (<i>BSc/BA</i>)	Oct /1982	July/ 1985	Nort East London Polytechnic	Dept. of Applied Biology

3. AKADEMİK UNVANLAR VE KADROLAR (ACADEMIC TITLES AND POSITIONS)

Boğaziçi Üniversitesi'nde ilk atanma tarihi (<i>Date of initial appointment at Boğaziçi University</i>)	02-09-2019
Boğaziçi Üniversitesi'nde ilk atandığı kadro (<i>First academic position at Boğaziçi University</i>)	<i>Assistant Professor</i>
Boğaziçi Üniversitesi'nde Dr. Öğretim Üyeliğine ilk atanma tarihi (<i>Date of appointment as Assistant Professor at Boğaziçi University</i>)	02-09-2019
Üniversitelerarası Kurul Doçentlik ünvan tarihi (<i>Date of Associate Professorship granted by the Turkish Inter-University Board</i>)	
Boğaziçi Üniversitesi'nde Doçentlik kadrosuna atanma tarihi (<i>Date of promotion to Associate Professorship at Boğaziçi University</i>)	

4. BÜ DİŞINDAKİ İŞ DENEYİMİ (AKADEMİ DİŞINDAKİLER DE DAHİL)(*WORK EXPERIENCE OUTSIDE BU, INCLUDING NON-ACADEMIC POSITIONS*)^a

	İşveren (<i>Name of employer</i>)	Görevin adı (<i>Job title</i>)	Görev alma tarihleri (<i>Employment dates</i>)
1.	Qualsurv Ltd	Data cleanser	Dec 2017 – July 2018
2.	University of Warwick	Research Fellow	Oct 2016 - July 2017
3.	University of Warwick	Visiting Researcher	July 2015 – Sept. 2016
4.	University of Warwick	Researcher co-investigator	Aug 2011 – July 2015
5.	University of Warwick	Research Fellow	2007 - 2011

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6.	Rothamsted Research	Postdoctoral research scientist	2000 - 2007
7.	Rothamsted Research	Laboratory manager	2003 - 2007
8.	University of Edinburgh	Postdoctoral research scientist	1999 - 2000
9.	Swedish university of Agricultural Sciences	Postdoctoral research Fellow	1996 - 1998
10.	University of Essex	Postdoctoral research scientist	1994 - 1996
11.	Heriot-Watt University	Postdoctoral research scientist	1993
12.	Louisiana State University	Graduate Research Assistant	1986 - 1992
13.	Rotational Mouldings Ltd	Machine operator	1985-1986
14.	Royal Botanic Gardens	Assistant Science officer	1983 - 1984
15.	Rotational Mouldings Ltd	Machine operator	1981 - 1982

5. ARAŞTIRMA KONULARI (RESEARCH TOPICS/AREAS)

1.	Seed dormancy
2.	Seed germination
3.	Climate adaptation in seeds

^a Tablolara gerektiği kadar satır ilave edebilirsiniz. (You can add as many rows as necessary to the tables).

6. ARAŞTIRMA PROJELERİ (RESEARCH PROJECTS)

	Fonlayan kuruluş (Funding institution)	Proje başlığı (Project title)	Projedeki görev/sorumluluk (örn. yürütücü, araştırmacı vb.) (Position/responsibility in the project, e.g. principal investigator, researcher, etc.)	Tarihleri (Dates)
1.	TUBITAK	Identifying climate adapted genes regulating secondary dormancy in seeds using <i>Arabidopsis thaliana</i> ecotypes adapted to cool and warm climates	Principal investigator	15/11/2021-14/11/2024
2.	BAP	Identifying quantitative trait loci containing genes regulating temperature sensitive induction of seed dormancy in a unique <i>Arabidopsis</i> mapping population	Principal investigator	01/10/2021 -30/9/2023
3.	BBSRC	Regulation of seed dormancy and its link to flowering time in the annual life cycle of plants.	Researcher co-investigator	2011 - 2014

7. YAYIN SAYILARI (NUMBER OF PUBLICATIONS)

Uluslararası hakemli dergilerde yayımlanan makaleler (Publications in refereed		Adayın kendi doktora tezinden kaynaklanan yayınlar (Publications based on the applicant's PhD dissertation)	Adayın kendi doktora tezi kapsamı dışındaki yayınları (Publications independent of the applicant's PhD dissertation)	Adayın yönettiği lisansüstü tezlerden kaynaklanan yayınları (Publications based on graduate theses supervised by the applicant)
	Index			

<i>international journals)</i>	SCI-E/SSCI/AHCI	4	29	4
	ESCI			
	Scopus			
	Diğer endeksler (<i>Other indexes</i>)			
Kitaplar (<i>Books</i>)		Uluslararası (<i>International publishers</i>)		0
		Ulusal (<i>National publishers</i>)		0
Kitap bölümleri (<i>Book chapters</i>)		Uluslararası (<i>International publishers</i>)		4
		Ulusal (<i>National publishers</i>)		0
Kitap editörlükleri (<i>Edited books</i>)		Uluslararası (<i>International publishers</i>)		0
		Ulusal (<i>National publishers</i>)		0

- 8. ATIFLAR (CITATIONS)** Web of Science ve Google Scholar atıf sonuçlarını bu tabloda sununuz.
(*Please present Web of Science and Google Scholar citation statistics*).

	Web of Science	Google Scholar
h-endeksi/ <i>h-index</i>	22	25
Kendine atıflar hariç atıf sayısı (<i>Number of citations, excluding self-citations</i>)	1760	
Toplam atıf sayısı (<i>Total number of citations</i>)	1871	2759

9. PATENTLER (PATENTS)

	Patent/buluş sahip(ler)i (<i>Owner(s) of the patent/invention</i>)	Patent/buluş başlığı (<i>Title of invention/patent</i>)	Patent numarası (<i>Patent number</i>)	Patent başvuru tarihi (<i>Patent filing/application date</i>)	Yayın yılı (<i>Publication Year</i>)	Patent Ofisi (<i>Patent Office</i>)
1.	0					
2.	0					
3.	0					

10. YÖNETİLEN TEZ SAYILARI (NUMBER OF THESES SUPERVISED)^b

	Yüksek Lisans (<i>MA/MSc</i>)	Doktora (<i>PhD</i>)	Kurum (<i>Institution</i>)
Tamamlanmış (<i>Completed</i>)	1	1	University of Warwick
Devam eden (<i>Ongoing</i>)	2		Bogazici university

11. ÖDÜLLER (AWARDS)^c

Ödülün adı (Award title)	Ödülü veren kuruluş (Awarding institution)	Ödül yılı (Award year)
Prentiss E. Schilling Outstanding Dissertation Award	College of Agriculture, Louisiana State University	1994
Egerton Honor Award for Outstanding Graduate Research	Department of Plant Pathology and Crop Physiology, Louisiana State University	1992

12. YAYIN LİSTESİ (LIST OF PUBLICATIONS)^dA. ULUSLARARASI HAKEMLİ DERGİLERDE YAYIMLANAN MAKALELER^e (PUBLICATIONS IN REFEREED INTERNATIONAL JOURNALS)

All publications listed below are included in Science Citation Index Expanded.

- Batlla, D., Malavert, C., Farnocchia, R.B.F., Footitt, S., Benech-Arnold, R.L. and Finch-Savage, W.E., 2022. A quantitative analysis of temperature-dependent seasonal dormancy cycling in buried *Arabidopsis thaliana* seeds can predict seedling emergence in a global warming scenario. *Journal of Experimental Botany*. 73: 2454-2468 <https://doi.org/10.1093/jxb/erac038>
- Footitt, S., Hambidge, A.J., and Finch-Savage W.E. (2021) Changes in phenological events in response to a global warming scenario reveal greater adaptability of winter annual compared to summer annual *Arabidopsis* ecotypes. *Annals of Botany*, 127: 111-122 <https://doi.org/10.1093/aob/mcaa141>
- Footitt, S., Walley, P.G., Lynn, J.R., Hambidge, A.J., Penfield S. and Finch-Savage W.E. (2019) Trait analysis reveals DOG1 determines initial depth of seed dormancy, but not changes during dormancy cycling that result in seedling emergence timing. *New Phytologist*, 225: 2035-2047 <https://doi.org/10.1111/nph.16081>
- Footitt, S., Clewes, R., Feeney, M., Finch-Savage, W.E., Frigerio, L. (2019) Aquaporins influence *Arabidopsis* seed dormancy and germination in response to stress. *Plant Cell & Environment*, 42: 2325-2339 <https://doi.org/10.1111/pce.13561>
- Footitt, S., Awan, S., and Finch-Savage, W.E. (2018). An improved method for the rapid isolation of RNA from *Arabidopsis* and seeds of other species high in polyphenols and polysaccharides. *Seed Science Research*, 28: 360-364 doi:10.1017/S0960258518000296
- Awan, S., Footitt, S., and Finch-Savage, W.E. (2018). Interaction of maternal environment and allelic differences in seed vigour regulating genes determines seed performance in *Brassica oleracea*. *Plant Journal* 94: 1098-1108 <https://doi.org/10.1111/tpj.13922>
- Footitt, S., Huang, Z., Ölçer-Footitt, H., Clay, H., Finch-Savage, W.E. (2018). The impact of global warming on germination and seedling emergence in *Alliaria petiolata* a woodland species with dormancy loss dependent on low temperature. *Plant Biology*, 20:682-690 doi:10.1111/plb.12720
- Huang, Z., Footitt, S., Tang, A. and Finch-Savage, W.E. (2018) Predicted global warming scenarios impact on the mother plant to alter seed dormancy and germination behaviour in *Arabidopsis*. *Plant Cell and Environment* 41:187–197. <https://doi.org/10.1111/pce.13082>
- Footitt, S., Ölçer-Footitt, H., Hambidge, A. J., Finch-Savage, W. E. (2017). A laboratory simulation of *Arabidopsis* seed dormancy cycling provides new insight into its regulation by clock genes and the dormancy-related genes DOG1, MFT, CIPK23, and PHYA. *Plant, Cell & Environment*, 40: 1474-1486 doi: 10.1111/pce.12940
- Finch-Savage, W. E., Footitt, S. (2017) Seed dormancy cycling and the regulation of dormancy mechanisms to time germination in variable field environments. *Journal of Experimental Botany*, 68: 843-856.
- Fazio, E., Gualandi, G., Palleschi, S., Footitt, S., Silvestroni, L. (2017) Optically functionalized biomorphism of bean seeds. *Journal of Luminescence*, 182: 189-195.

12. Waterworth, W.M., **Footitt, S.**, Bray, C.M., Finch-Savage, W.E., West, C.E. (2016) The DNA damage checkpoint kinase ATM regulates germination and maintains genome stability in seeds. *Proceedings of the National Academy of Sciences (USA)*, 113: 9647-9652.
13. **Footitt, S.**, Palleschi, S., Fazio, E., Palomba, R., Finch-Savage, W.E., Silvestroni, L. (2016) Ultra-weak photon emission from the seed coat in response to temperature and humidity. A potential mechanism for environmental signal transduction in the soil seed bank. *Photochemistry and Photobiology*, 92: 678-687.
14. **Footitt, S.**, Muller, K., Kermodé A.R., Finch-Savage W.E. (2015) Seed dormancy cycling in Arabidopsis: chromatin remodelling and regulation of DOG1 in response to seasonal environmental signals. *Plant Journal*, 81: 413-425.
15. Huang, Z., Ölçer-Footitt, H., **Footitt, S.**, Finch-Savage, W.E. (2015) Seed dormancy is a dynamic state: variable responses to pre- and post-shedding environmental signals in seeds of contrasting *Arabidopsis* ecotypes. *Seed Science Research*, 25:159 – 169.
16. **Footitt, S.**, Clay, H.A., Dent, K., Finch-Savage, W.E. (2014) Environment sensing in spring-dispersed seeds of a winter annual Arabidopsis influences the regulation of dormancy to align germination potential with seasonal changes. *New Phytologist*, 202: 929-939.
17. Huang, Z., **Footitt, S.**, Finch-Savage, W.E. (2014) The effect of temperature on reproduction in the summer and winter annual Arabidopsis thaliana ecotypes Bur and Cvi. *Annals of Botany*, 113: 921-929.
18. **Footitt, S.**, Huang, Z., Clay, H., Finch-Savage, W.E (2013) Temperature, light and nitrate sensing coordinate Arabidopsis seed dormancy cycling, resulting in winter and summer annual phenotypes. *Plant Journal*, 74: 1003-1015.
19. Finch-Savage, W.E., **Footitt, S.** (2012) **Opinion:** To germinate or not to germinate: a question of dormancy relief not germination stimulation. *Seed Science Research*, 22: 243-248.
20. **Footitt, S.**, Douterelo-Soler, I., Clay, H., Finch-Savage, W. E., (2011) Dormancy cycling in Arabidopsis seeds is controlled by seasonally distinct hormone-signaling pathways. *Proceedings of the National Academy of Sciences (USA)*, 108: 20236 – 20241.
21. Holman, T.J., Jones, P.D., Russell, L., Medhurst, A., Tomas, S.U., Talloji, P., Marquez, J., Schmuths, H., Tung, S.A., Taylor, I., **Footitt, S.**, Bachmair, A., Theodoulou, F.L., Holdsworth, M.J. (2008) The N-end rule pathway promotes seed germination and establishment through removal of ABA sensitivity in Arabidopsis. *Proceedings of the National Academy of Sciences of the (USA)*, 106: 4549-4554.
22. Carrera, E., Holman, T., Medhurst, A., Deitrich, D., **Footitt, S.**, A., Theodoulou, F., Holdsworth, M. (2008) Seed after-ripening is a discrete developmental pathway associated with specific gene networks in Arabidopsis. *Plant Journal*, 53: **214-224**.
23. **Footitt, S.**, Deitrich, D., Fait, A., Fernie, A.R., Holdsworth, M. J., Baker, A., Theodoulou, F.L. (2007) The COMATOSE ATP-binding cassette transporter is required for full fertility in Arabidopsis. *Plant Physiology*, 144: 1467-1480.
24. **Footitt, S.**, Cornah, J.E., Pracharoenwattana, I., Bryce, J.H., Smith, S.M. (2007) The Arabidopsis 3-ketoacyl-CoA thiolase-2 (kat2-1) mutant exhibits increased flowering but reduced reproductive success *Journal of Experimental Botany*, 58: 2959-2968.
25. Carrera, E., Holman, T., Medhurst, A., Peer, W., Schmuths, H., **Footitt, S.** Baker, A., Theodoulou, F., Holdsworth, M. (2007) The ABC transporter COMATOSE regulates the seed transcriptome late in phase II of germination. *Plant Physiology*, **143: 1669-1679**.
26. **Footitt, S.**, Marquez, J., Schmuths, H., Baker, A., Theodoulou, F. L., Holdsworth, M. (2006) Analysis of the role of COMATOSE and peroxisomal beta-oxidation in the determination of germination potential in Arabidopsis. *Journal of Experimental Botany*, **57: 2805-2814**.
27. Theodoulou, F. L., Job, K., Slocombe, S.P., **Footitt, S.**, Holdsworth, M., Baker, A., Larson, T. R., Graham, I. A. (2005) Jasmonic acid levels are reduced in COMATOSE ATP-binding cassette transporter mutants. Implications for transport of jasmonate precursors into peroxisomes. *Plant Physiology*, **137: 835-840**.
28. **Footitt, S.**, Ingouff, M., Clapham, D., von Arnold, S. (2003) Expression of the viviparous 1 (Pavp1) and p34 (cdc2) protein kinase (cdc2Pa) genes during somatic

- embryogenesis in Norway spruce (*Picea abies* [L.] Karst). *Journal of Experimental Botany*, **54**: 1711-1719.
29. **Footitt, S.**, Slocombe, S. P., Larner, V., Kurup, S., Wu, Y. S., Larson, T., Graham, I., Baker, A., Holdsworth, M. (2002) Control of germination and lipid mobilization by COMATOSE, the Arabidopsis homologue of human ALDP. *EMBO Journal*, **21**: 2912-2922.
 30. **Footitt, S.**, Cohn, M. A. (2001) **Review:** Developmental arrest: from sea urchins to seeds. *Seed Science Research*, **11**: 3-16.
 31. **Footitt, S.**, Cohn, M. A. (1995) Seed Dormancy in Red Rice (*Oryza-Sativa*). IX. Embryo Fructose-2, 6-Bisphosphate During Dormancy Breaking and Subsequent Germination. *Plant Physiology*, **107**: 1365-1370.
 32. **Footitt, S.**, Vargas, D., Cohn, M. A. (1995) Seed Dormancy in Red Rice. X. a C-13-Nmr Study of the Metabolism of Dormancy-Breaking Chemicals. *Physiologia Plantarum*, **94**: 667-671.
 33. **Footitt, S.**, Cohn, M. A. (1992) Seed Dormancy in Red Rice. VIII. Embryo Acidification during Dormancy-Breaking and Subsequent Germination. *Plant Physiology*, **100**: 1196-1202.

B. ULUSLARARASI KİTAPLAR, KİTAP BÖLÜMLERİ VE KİTAP
EDİTÖRLÜKLERİ (*BOOKS, BOOK CHAPTERS, AND EDITORSHIPS*
FOR INTERNATIONAL PUBLISHERS)

1. **Footitt, S.** & Finch-Savage, WE. (2017). Dormancy and the control of germination. In. *Plant Physiology and Function, The Plant Sciences*. Editor: S. Clemens. Springer
https://doi.org/10.1007/978-1-4614-7611-5_7-1
2. Finch-Savage, WE. & **Footitt, S.** (2015). Regulation of Seed Dormancy Cycling in Seasonal Field Environments. In. *Advances in Plant Dormancy*. Editor: J. V. Anderson, Springer, doi: 10.1007/978-3-319-14451-1_2
3. **Footitt, S.** & Finch-Savage, WE. (2011). Production of Seed Samples for the Effective Molecular Analysis of Dormancy Cycling in Arabidopsis ' in Seed Dormancy. *Methods in Molecular Biology*, 65 - 79, Editors: Allison R. Kermode, Springer
4. **Footitt, S.**, Holdsworth, M. (2006). Dormancy breaking. In. *The Encyclopedia of Seeds: Science, Technology, and Uses*. M. Black, J. D. Bewley, & P. Halmer eds. CAB International, Wallingford (contribution combined with that of other contributors).

C. ULUSAL HAKEMLİ DERGİLERDE YAYIMLANAN MAKALELER
(PUBLICATIONS IN REFEREED NATIONAL JOURNALS)

D. ULUSAL KİTAPLAR, KİTAP BÖLÜMLERİ VE KİTAP EDITÖRLÜKLERİ
(BOOKS, BOOK CHAPTERS, AND EDITORSHIPS FOR NATIONAL PUBLISHERS)

13. YÖNETİLEN TEZLERİN LİSTESİ (LIST OF THESES SUPERVISED)

- **Ziyue Huang M. Sc. (2008)** The germination response of *Meconopsis cambrica* seeds to temperature, stratification, Gibberellic acid and nitrate. University of Warwick
- **Ziyue Huang Ph. D. (2013)** Characterisation of dormancy cycling responses to environmental signals in contrasting *Arabidopsis thaliana* ecotypes. University of Warwick

^b Bu tablolara sadece yönetilen tez sayıları yazınız. Tezlerin tam listesi 13. kısımda verilmelidir (Please note in the tables only the number of theses supervised. The full list of theses supervised is to be provided in section 13).

^c Lütfen BÜVAK ve TÜBİTAK yayın teşviklerini bu kategoride listelemeyiniz (Please do not list the publication incentive awards granted by BUVAK and TUBITAK in this category).

^d En güncel yayından en eski yayına doğru sıralayınız (Please list the publications in reverse chronological order.)

^e Lütfen dergilerin **endeks bilgilerini** de not ediniz. (Please also indicate **the index information** of the journals).

14. SON ÜÇ YILDAKİ KONFERANS SUNULARI (CONFERENCE PRESENTATIONS IN THE LAST THREE YEARS)

Invited speaker: International Dumlupınar Science and Mathematics Congress 5-7th September 2022

Invited speaker: 16th Aykut Kence Evolution Conference, Academic, and General Sessions, Middle East Technical University (2022)

Invited speaker: 7th Turkish Seed Congress, Iğdir University (2021)

15. İDARİ GÖREVLERİ (ADMINISTRATIVE POSITIONS)

	Kurum (<i>Institution</i>)	Fakülte/Bölüm Adı (<i>Faculty/Department</i>)	Görev (<i>Administrative position</i>)	Tarihler (<i>Dates</i>)
1.	BU	MBG	Jury member M. Sc. Selection	June 2020 June 2022
2.	BU	MBG	Jury member Ph. D. Selection	January 2020 June 2020 February 2021 June 2022
3.	BU	MBG	Member of selection panel for faculty recruitment	February, 2021
4.	BU	MBG	Double major student advisor (MBG/CHEM and MBG/PHYS)	2020/21academic year
5.	BU	MBG	Prep school student advisor	2020/21academic year
6.	BU	MBG	1st year student advisor	2021/22academic year
7.	BU	MBG	2nd year student advisor	2022/23academic year

16. SON BEŞ YILDA VERİLEN LİSANS VE LİSANSÜSTÜ DERSLER

(UNDERGRADUATE AND GRADUATE COURSES TAUGHT IN THE LAST 5 YEARS)

Dersin verildiği kurum (<i>Institution</i>)	Dersin kodu (<i>Course code</i>)	Dersin adı (<i>Course title</i>)	Yılı ve dönemi (<i>Year and semester</i>)	Fakülte/YO/Enst. yüzdeler sırası (<i>Faculty/School/Institute Percentile Rank</i>)
BU	BIO 111	Prelude to Molecular Biology (contributing lecturer)	2019 Fall	
BU	BIO 201.01	Evolution and Biodiversity	2019 Fall	0.32
BU	BIO 407.02	Seminar II, Dormancy and Environmental Sensing in Seeds	2019 Fall	
BU	BIO 501	Advanced Molecular Biology (contributing lecturer)	2019 Fall	
BU	BIO 152.02	Introduction to Modern Biology	2020 Spring	6.64
	BIO 322	Research Topics in Molecular Biology (contributing lecturer)	2020 Spring	
BU	BIO 407.01	Role of Phytohormones in Seed Germination	2020 Spring	
BU	BIO 111	Prelude to Molecular Biology (contributing lecturer)	2020 Fall	
BU	BIO 201.01	Evolution and Biodiversity	2020 Fall	10.29
BU	BIO 407.03	Seminar II, Seed Dormancy in a Changing Environment	2020 Fall	
BU	BIO 152.02	Introduction to Molecular Biology	2021 Spring	5.13
BU	BIO 322	Research Topics in Molecular Biology (contributing lecturer)	2021 Spring	
BU	BIO 48K	Plant growth and development	2021 Spring	
BU	BIO 111	Prelude to Molecular Biology (contributing lecturer)	2021 Fall	
BU	BIO 201.01	Evolution and Biodiversity	2021 Fall	31.62
BU	BIO 48K	Plant growth and development	2021 Fall	
BU	BIO 500.05	Modern Techniques in Molecular Biology	2021 Fall	

BU	BIO 152.01	Introduction to Modern Biology	2022 Spring	1.48
BU	BIO 322	Research Topics in Molecular Biology (contributing lecturer)	2022 Spring	
BU	BIO 407.01	Seminar II, Environmental sensing in seeds	2022 Spring	
BU	BIO 492.05	Special Projects II	2022 Spring	
BU	BIO 520.05	Lab Projects inBiology	2022 Spring	
BU	BIO 690.11	M. Sc. Thesis	2022 Spring	
BU	BIO 111	Prelude to Molecular Biology (contributing lecturer)	2022 Fall	
BU	BIO 201.01	Evolution and Biodiversity		
BU	BIO 407.05	Seminar II, Environmental sensing in seeds	2022 Fall	
BU	BIO 48K	Plant growth and development	2022 Fall	
BU	BIO 491.05	Special Projects I	2022 Fall	
BU	BIO 690.04	M.S. Thesis	2022 Fall	