Annual Report - 2015-2016

Wake Forest University Graduate School of Arts and Sciences

WAKE FOREST
UNIVERSITY

WAKE FOREST
UNIVERSITY

GRADUATE SCHOOL *of*
ARTS & SCIENCES

Annual Report
2015-2016

Table of Contents

Table 1. Application Summary
Fall 2015

Degree Program	# Applications	# Accepted	# Enrolled
Biomedical Engineering MS	83	18 (22%)	11 (61%)
Biomedical Engineering PhD	157	51 (32%)	19 (37%)
Biomedical Engineering MD/PhD	16	1 (6%)	0 (0%)
Biomedical Sciences MS (IPP, MCB, NEUR)	27	24 (89%)	18 (75%)
Biomedical Sciences MS (Pre-medical Postbac)	94	19 (10%)	16 (84%)
Clinical and Population Translational Sciences MS	5	4 (80%)	4 (100%)
Health Disparities in Neuroscience-related Disorders MS	11	7 (64%)	5 (71%)
Integrative Physiology and Pharmacology PhD	27	7 (26%)	5 (71%)
Integrative Physiology and Pharmacology MD/PhD	4		
Molecular and Cellular Biosciences PhD	150	12 (8%)	8 (67%)
Molecular and Cellular Biosciences MD/PhD	44	5 (11%)	2 (40%)
Molecular Medicine and Translational Science PhD	1	1 (100%)	1 (100%)
Molecular Medicine and Translational Science MS	2	2 (100%)	2 (100%)
Neuroscience PhD	72	11 (15%)	4 (36%)
Neuroscience MD/PhD	25		
TOTAL	**718**	**162 (23%)**	**95 (59%)**

Table 2. Applicant Demographics
Fall 2015

Degree Program	TOTAL	Male	Female	Not Reported	American Indian/ Alaska Native	Asian	Black or African American	Hispanic/ Latino	Pacific Islander	White	Two or more races	Not Reported
Biomedical Engineering MS	83	42	40	1		7	3	2		32	1	38
Biomedical Engineering PhD	157	80	73	4		15	8	4		70	8	52
Biomedical Engineering MD/PhD	16	13	3			6	1	2		5		2
Biomedical Sciences MS (IPP, MCB, NEUR)	27	15	12				2	3		11		11
Biomedical Sciences MS (Pre-medical Postbac)	94	40	54			8	35	10	1	32		8
Clinical and Population Translational Sciences MS	5	3	2							3	1	2
Health Disparities in Neuroscience-related Disorders MS	11	3	8			2	2			5		2
Integrative Physiology and Pharmacology PhD	27	11	16			1	2	1		11	1	11
Integrative Physiology and Pharmacology MD/PhD	4	2	2				1	1		1		1
Molecular and Cellular Biosciences PhD	150	64	86			6	9	2		49	3	81
Molecular and Cellular Biosciences MD/PhD	44	29	15		1	11	1			25		6
Molecular Medicine and Translational Science PhD	1		1									1
Molecular Medicine and Translational Science MS	2	2										2
Neuroscience PhD	72	29	43			3	3	1		38	3	24
Neuroscience MD/PhD	25	10	15			7	3	1		10		4
TOTAL	**718**	**343**	**370**	**5**	**1**	**66**	**70**	**27**		**292**	**17**	**245**

Table 3. Applicant Average Test Scores and GPA
Fall 2015

Degree Program	GRE Verbal	GRE Quantitative	(V + Q)	GRE Analytical	GPA	TOEFL	MCAT
Biomedical Engineering MS	142	148	291	3.5	3.33	38.95	
Biomedical Engineering PhD	151	158	309	3.8	3.48	18.13	
Biomedical Engineering MD/PhD					3.62		34
Biomedical Sciences MS (IPP, MCB, NEUR)	142	145	287	3.2	3.21	28.96	
Biomedical Sciences MS (Pre-medical Postbac)					2.99		17
Clinical and Population Translational Sciences MS	40	43	82	0.9	3.64	26.50	20
Health Disparities in Neuroscience-related Disorders MS	136	136	273	3.5	3.10	7.18	
Integrative Physiology and Pharmacology PhD	142	144	286	3.4	3.34	17.85	
Integrative Physiology and Pharmacology MD/PhD					3.68		29
Molecular and Cellular Biosciences PhD	147	151	298	3.5	3.58	27.71	
Molecular and Cellular Biosciences MD/PhD					3.63		32
Molecular Medicine and Translational Science PhD	157	155	312	4.5		115	
Molecular Medicine and Translational Science MS					3.72		13
Neuroscience PhD	140	142	282	3.5	3.49	18.97	
Neuroscience MD/PhD					3.64		33
AVERAGES	**133**	**136**	**269**	**3.3**	**3.46**	**33.25**	**25**

Table 4. Accepted Student Profile
Fall 2015

Degree Program	TOTAL	Male	Female	Not Reported	American Indian/ Alaska Native	Asian	Black or African American	Hispanic/ Latino	Pacific Islander	White	Two or more races	Not Reported
Biomedical Engineering MS	18	11	6	1		1	2	1		13		1
Biomedical Engineering PhD	51	26	22	3		3	2	1		31	2	12
Biomedical Engineering MD/PhD	1		1					1				
Biomedical Sciences MS (IPP, MCB, NEUR)	24	12	12				2	3		10		9
Biomedical Sciences MS (Pre-medical Postbac)	19	10	9			1	10	3	1	4		
Clinical and Population Translational Sciences MS	4	3	1							3		1
Health Disparities in Neuroscience-related Disorders MS	7	2	5				1			4		2
Integrative Physiology and Pharmacology PhD	7	1	6			1				5	1	
Molecular and Cellular Biosciences PhD	12	4	8				1			9		2
Molecular and Cellular Biosciences MD/PhD	5	2	3							5		
Molecular Medicine and Translational Science PhD	1		1									1
Molecular Medicine and Translational Science MS	2	2										2
Neuroscience PhD	11	4	7					1		4	2	4
TOTAL	162	77	81	4		6	18	10	1	88	5	34

Table 5. Accepted Student Average Test Scores and GPA
Fall 2015

Degree Program	GRE Verbal	GRE Quantitative	(V + Q)	GRE Analytical	GPA	TOEFL	MCAT
Biomedical Engineering MS	132	134	266	3.6	3.71		
Biomedical Engineering PhD	155	159	314	4.0	3.64	8.25	
Biomedical Engineering MD/PhD					3.30		33
Biomedical Sciences MS (IPP, MCB, NEUR)	141	144	284	3.2	3.23	28.92	
Biomedical Sciences MS (Pre-medical Postbac)					3.24		20
Clinical and Population Translational Sciences MS					3.60		25
Health Disparities in Neuroscience-related Disorders MS	126	129	254	3.1	3.06	11.29	
Integrative Physiology and Pharmacology PhD	157	158	314	4.1	3.27		
Molecular and Cellular Biosciences PhD	155	154	309	4.3	3.33		
Molecular and Cellular Biosciences MD/PhD					3.80		34
Molecular Medicine and Translational Science PhD	157	155	312	4.5		115.00	
Molecular Medicine and Translational Science MS					3.72		13
Neuroscience PhD	126	127	253	3.4	3.72	8.27	
AVERAGES	**138**	**140**	**278**	**3.5**	**3.51**	**9.52**	**22**

Table 6. Matriculant Student Profile
Fall 2015

Degree Program	TOTAL	Male	Female	Not Reported	American Indian/ Alaska Native	Asian	Black or African American	Hispanic/ Latino	Pacific Islander	White	Two or more races	Not Reported
Biomedical Engineering MS	11	8	2	1						10		1
Biomedical Engineering PhD	19	11	6	2		1				12		6
Biomedical Sciences MS (IPP, MCB, NEUR)	18	10	8				2	3		6		7
Biomedical Sciences MS (Pre-medical Postbac)	16	9	7			1	9	2	1	3		
Clinical and Population Translational Sciences MS	4	3	1							3		1
Health Disparities in Neuroscience-related Disorders MS	5	1	4				1			3		1
Integrative Physiology and Pharmacology PhD	5		5							4	1	
Molecular and Cellular Biosciences PhD	8	4	4				1			5		2
Molecular and Cellular Biosciences MD/PhD	2	1	1							2		
Molecular Medicine and Translational Science PhD	1		1									1
Molecular Medicine and Translational Science MS	2	2										2
Neuroscience PhD	4	2	2					1				3
TOTAL	**95**	**51**	**41**	**3**		**2**	**13**	**6**	**1**	**48**	**1**	**24**

Table 7. Matriculant Average Test Scores and GPA
Fall 2015

Degree Program	GRE Verbal	GRE Quantitative	(V + Q)	GRE Analytical	GPA	TOEFL	MCAT
Biomedical Engineering MS	115	115	231	3.0	3.47		
Biomedical Engineering PhD	157	162	319	3.9	3.50	16.84	
Biomedical Sciences MS (IPP, MCB, NEUR)	144	147	292	3.4	3.15	27.11	
Biomedical Sciences MS (Pre-medical Postbac)					3.16		19
Clinical and Population Translational Sciences MS					3.60		25
Health Disparities in Neuroscience-related Disorders MS	117	119	236	3.0	3.08		
Integrative Physiology and Pharmacology PhD	154	157	312	4.1	3.28		
Molecular and Cellular Biosciences PhD	155	154	309	4.4	3.24		
Molecular and Cellular Biosciences MD/PhD					3.69		32
Molecular Medicine and Translational Science PhD	157	155	312	4.5		115.00	
Molecular Medicine and Translational Science MS					3.72		13
Neuroscience PhD	74	73	147	1.6	3.80	22.75	14
AVERAGES	**134**	**135**	**270**	**3.5**	**3.43**	**45.43**	**21**

Table 8. Student Enrollment by Program and Degree
Fall 2015

Degree Program	Total	PhD	MD/PhD	MS	BS/MS	Unclassified
Biochemistry and Molecular Biology (BAMB)	7	7				
Biomedical Engineering - WFU (BMES)	38	32	1	5		
Biomedical Engineering - VT (SBES)	47	42		5		
Biomedical Sciences (BMSC)	44			44		
Cancer Biology (CABI)	16	16				
Clinical and Population Translational Sciences (CPTS)	12			12		
Health Disparities in Neuroscience-related Disorders (HDND)	5			5		
Integrative Physiology and Pharmacology (IPP)	22	21	1			
Microbiology and Immunology (MICR)	3	3				
Molecular and Cellular Biosciences (MCB)	7	6	1			
Molecular Genetics and Genomics (MOGN)	12	12				
Molecular Medicine and Translational Science (MMTS)	29	26	1	2		
Molecular Pathology (MCPA)	4	4				
Neurobiology and Anatomy (NBAT)	3	3				
Neuroscience (NEUR)	31	21	5		5	
Unclassified (UNCL)	13					13
TOTAL	293	193	9	73	5	13

Table 9. Registered Student Profile
Fall 2015

		Asian		Black or African American		Hispanic/ Latino		Native Hawaiian/ Pacific Islander		White		Not Reported	
Degree Program	TOTAL	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Biomedical Engineering - WFU (BMES)	38	2	1		2					13	9	7	4
Biomedical Engineering - VT (SBES)	47	1		2	2					8	23	5	6
Biomedical Sciences (BMSC)	44	1		5	9	2	1		2	10	7	5	2
Cancer Biology (CABI)	16	1	2							4	4	4	1
Clinical and Population Translational Sciences (CPTS)	12									5	4	3	
Health Disparities in Neuroscience-related Disorders (HDND)	5				1						3	1	
Integrative Physiology and Pharmacology (IPP)	22		2							9	8	1	2
Microbiology and Immunology (MICR)	3									2	1		
Molecular and Cellular Biosciences (MCB)	7				1					2	3	1	
Molecular Genetics and Genomics (MOGN)	12									5	4	3	
Molecular Medicine and Translational Science (MMTS)	29		2	3	3					10	6	3	2
Molecular Pathology (MCPA)	4				1					2	1		
Neurobiology and Anatomy (NBAT)	3									2	1		
Neuroscience (NEUR)	31		1		1		2			11	11	2	3
Unclassified (UNCL)	13	1			3	1				4	1	2	1
TOTAL	293	6	8	10	23	3	3		2	91	89	37	21

Table 10. New (1st Year) International Student Enrollment by Country
Fall 2015

Degree Program	TOTAL	Brazil	China	Colombia	Hong Kong	India	Iran	Zimbabwe
Biomedical Engineering - WFU (BMES)	5		1	1		1	2	
Biomedical Sciences (BMSC)	5		2		1	2		
Cancer Biology (CABI)	1					1		
Molecular and Cellular Biosciences (MCB)	1							1
Molecular Medicine and Translational Science (MMTS)	1					1		
Neuroscience (NEUR)	1	1						
Unclassified (UNCL)	1					1		
TOTAL	15	1	3	1	1	6	2	1

Table 11. International Enrollment by Country
Fall 2015

Degree Program	TOTAL	Australia	Brazil	China	Colombia	Hong Kong	India	Indonesia	Iran	Israel	Lebanon	Nepal	Russia	Rwanda	Zimbabwe
Biomedical Engineering - WFU (BMES)	10			3	1		1		4	1					
Biomedical Engineering - VT (SBES)	11	1		6			2					1	1		
Biomedical Sciences (BMSC)	5			2		1	2								
Cancer Biology (CABI)	2			1			1								
Clinical and Population Translational Sciences (CPTS)	1						1								
Integrative Physiology and Pharmacology (IPP)	3		1	1										1	
Molecular and Cellular Biosciences (MCB)	1														1
Molecular Genetics and Genomics (MOGN)	3			1			1	1							
Molecular Medicine and Translational Science (MMTS)	2						1				1				
Neuroscience (NEUR)	1		1												
Unclassified (UNCL)	2			1			1								
TOTAL	41	1	2	15	1	1	10	1	4	1	1	1	1	1	1

Table 12. Financial Aid Summary
Fall 2015

Degree Program	Total	Institutional Support				External Support				
		Graduate Fellowship	Non-Grad Institutional	Tuition Scholarship	Teaching Assistantship	Individual Award	Research Grant	Training Grant	Self-Pay	Other
Biochemistry and Molecular Biology (BAMB)	7	3		7	1	2	1	3		
Biomedical Engineering - WFU (BMES)	38	7	1	37		2	23		5	
Biomedical Engineering - VT (SBES)*	47									
Biomedical Sciences (BMSC)**	44			44					44	
Cancer Biology (CABI)	16	3		16		1	11	3		
Clinical and Population Translational Sciences (CPTS)**	12		1	11				4	7	
Health Disparities in Neuroscience-related Disorders (HDND)**	5			5			5		5	
Integrative Physiology and Pharmacology (IPP)	22	10		22		1	9	4		
Microbiology and Immunology (MICR)	3	2		3		1		2		
Molecular and Cellular Biosciences (MCB)	7	7		7						
Molecular Genetics and Genomics (MOGN)	12	1	2	12			10	1	1	
Molecular Medicine and Translational Science (MMTS)	29	8	6	29		1	13	6		
Molecular Pathology (MCPA)	4	1		4			1			
Neurobiology and Anatomy (NBAT)	3	1		3	1			1		
Neuroscience (NEUR)	31	10	3	31		5	6	8		
Unclassified (UNCL)	13								13	
TOTAL	293	53	13	231	2	13	79	32	75	0

*Virginia Tech support information not available

**Master's students received some tuition benefits only

Some students received multiple types of financial aid

Table 13. Class of 2015/2016: Degrees Conferred by Program and Degree

Degree Program	Total	PhD	MD/PhD	MS	CRT
Biochemistry and Molecular Biology (BAMB)	1	1			
Biomedical Engineering (BMES)	11	6		5	
Biomedical Sciences (BMSC)	29			29	
Cancer Biology (CABI)	1	1			
Clinical and Population Translational Sciences (CPTS)	7			4	3
Integrative Physiology and Pharmacology (IPP)	5	5			
Microbiology and Immunology (MICR)	4	4			
Molecular Genetics and Genomics (MOGN)	4	4			
Molecular Medicine and Translational Science (MMTS)	8	7		1	
Molecular Pathology (MCPA)	1	1			
Neurobiology and Anatomy (NBAT)	1	1			
Neuroscience (NEUR)	6	6			
TOTAL	78	36		39	3

Table 14. Class of 2015/2016: Average Years to Degree Completion by Program

Degree Program	PhD	MD/PhD	MS	CRT
Biochemistry and Molecular Biology (BAMB)	4.98			
Biomedical Engineering (BMES)	5.97		1.77	
Biomedical Sciences (BMSC)			1.94	
Cancer Biology (CABI)	5.98			
Clinical and Population Translational Sciences (CPTS)			2.97	4.61
Integrative Physiology and Pharmacology (IPP)	5.31			
Microbiology and Immunology (MICR)	5.23			
Molecular Genetics and Genomics (MOGN)	6.22			
Molecular Medicine and Translational Science (MMTS)	5.48		2.94	
Molecular Pathology (MCPA)	5.98			
Neurobiology and Anatomy (NBAT)	7.99			
Neuroscience (NEUR)	5.15			
TOTAL	**5.62**		**2.05**	**4.61**

Table 15. Class of 2015/2016: Placement by Program, Undergraduate Institution, Degree, and Plan

Program	Undergraduate Institution	Degree	Future Plan
BAMB	Concord University	PhD	Postdoc, UNC-Chapel Hill
BMES	North Carolina State University	PhD	Postdoc, UT-Southwestern
	University of Rochester		Postdoc, University of Maryland
	Beihang University		Research Associate, UNC-Charlotte
	UNC-Charlotte		Research Assistant Professor, WFU Biomedical Engineering
	Jilin University		CT Imaging Scientist, GE Healthcare
	University of Miami		Unknown
	SUNY-Buffalo	MS	Continuing PhD student
	University of Delaware		Continuing PhD student
	Washington & Lee		Mechanical Engineering Intern, Adidas
	Virginia Tech		Continuing PhD student
	Gardner-Webb University		PhD student, University of Nebraska Medical Center
BMSC	San Diego State University	MS	MD student, Wake Forest School of Medicine
(Pre-med)	Hampton University		MD student, Wake Forest School of Medicine
	Appalachian State University		MD student, Wake Forest School of Medicine
	South Carolina State University		MD student, Unknown Medical School
	UNC-Chapel Hill		MD student, Wake Forest School of Medicine
	Morehouse College		MD student, Wake Forest School of Medicine
	Morehouse College		MD student, Wake Forest School of Medicine
	Wake Forest University		MD student, Wake Forest School of Medicine
	UNC-Charlotte		MD student, Wake Forest School of Medicine
	University of Maryland-College Park		MD student, Wake Forest School of Medicine
	UNC-Chapel Hill		MD student, Wake Forest School of Medicine
	Johns Hopkins University		MD student, Unknown Medical School
	University of Michigan		MD student, Wake Forest School of Medicine
	Vanderbilt University		MD student, Unknown Medical School
	UNC-Chapel Hill		MD student, Unknown Medical School
	Davidson College		MD student, Wake Forest School of Medicine
BMSC	Virginia Tech	MS	PA student, Wake Forest School of Medicine
	North Carolina State University		Pharmacy Technician, Wake Forest Baptist Hospital
	Wake Forest University		PhD student, Wake Forest Graduate School
	Southwestern Baptist University		Unknown Industry Position
	UNC-Greensboro		Clinical Research Associate, Wake Forest School of Medicine
	Wake Forest University		Technician, Purdue Animal Disease Diagnostic Laboratory
	Wake Forest University		Lecturer, Unknown Liberal Arts College
	Northern Michigan University		PhD student, Wake Forest Graduate School

Program	Undergraduate Institution	Degree	Future Plan
BMSC	Wake Forest University	MS	Chief Science Officer, EncepHeal Therapeutics
(continued)	UC-Santa Barbara		Communication/Education Specialist, Fleet Science Center
	Wake Forest University		Laboratory Technician, Unknown Company
	Smith College		Laboratory Manager, InSphero
	UNC-Chapel Hill		Unknown
CABI	UNC-Charlotte	PhD	Unknown
CPTS	University of Aleppo	MS	Cardiology Fellow, University of Texas Medical Branch
	University of Miami		Cardiology Fellow, Wake Forest Baptist
	University of Notre Dame		General Surgery Resident, Wake Forest Baptist
	Duke University		Physician, Wake Forest Baptist
	Wake Forest University	CRT	PA, Vanderbilt Medical School
	Carleton College		Surgeon, Wake Forest Baptist
	Wake Forest University		Senior Clinical Research Associate, Edwards Lifesciences
IPP	UNC-Charlotte	PhD	Postdoc, University of Cincinnati
	Wake Forest University		Medical researcher, US Army
	University of Florida		Postdoc, Wake Forest Baptist
	Central South University		Senior Fellow, University of Washington
	University of Pune		Postdoc, University of Pennsylvania
MICR	Hastings College	PhD	Postdoc, Wake Forest School of Medicine
	Clemson University		Postdoc, KeraNetics, LLC
	Michigan State University		Assistant Professor, Ohio State University
	Georgia Tech		Postdoc, Emory University
MOGN	UNC-Greensboro	PhD	Proposal Development Officer, UNC-Greensboro
	Dickinson College		Postdoc, Monell Chemical Senses Center
	Colorado School of Mines		Postdoc, University of Richmond
	UNC-Chapel Hill		Postdoc, UNC-Chapel Hill
MMTS	Virginia Tech	PhD	Researcher, Wake Forest Institute for Regenerative Medicine
	Campbell University		Postdoc, UNC-Chapel Hill
	Berry College		Junior Scientist/Project Manager, Ray Biotech
	Penn State University		Medical Science Liaison, Unknown Company
	Appalachian State University		PA student, Wake Forest School of Medicine
	Louisiana State University		Postdoc, UNC-Chapel Hill
	University of Isfahan		Postdoc, UC-San Francisco
	UC-Irvine	MS	Surgery Resident, University of Hawaii
MCPA	Emory & Henry College	PhD	Postdoc, Unknown University

Program	Undergraduate Institution	Degree	Future Plan
NBAT	North Dakota State University	PhD	Postdoc, Unknown University
	UC-Irvine		Postdoc, University of Massachusetts Medical School
	University of Maine		Postdoc, UNC-Chapel Hill
NEUR	High Point University	PhD	MS student, Elon University
	Furman University		Clinical Research Associate, Quintiles
	University of Pittsburgh		Postdoc, Ludwig Maximilians Universität
	Binghamton University		Postdoc, Massachusetts Institute of Technology

Table 16. Degree Completion Rates, based on Fall 2014 (Masters)* or Fall 2010/2011 (PhD)

	Matriculated			Graduated			On-time Completion (%)		
Degree Program	**PhD**	**MS**	**CRT**	**PhD**	**MS**	**CRT**	**PhD**	**MS**	**CRT**
Biochemistry and Molecular Biology (BAMB)	7			1			14%		
Biomedical Engineering (BMES)	19	1		6	5		21%	100%	
Biomedical Sciences (BMSC)		23			29			70%	
Cancer Biology (CABI)	5			1			20%		
Clinical and Population Translational Sciences (CPTS)		4			4	3		25%	
Integrative Physiology and Pharmacology (IPP)	10			5			40%		
Microbiology and Immunology (MICR)	11			4			55%		
Molecular Genetics and Genomics (MOGN)	8			4			25%		
Molecular Medicine and Translational Science (MMTS)	14			7	1		29%		
Molecular Pathology (MCPA)	7			1			14%		
Neurobiology and Anatomy (NBAT)	3			1			67%		
Neuroscience (NEUR)	17			6			18%		
TOTAL	**101**	**28**	**0**	**36**	**39**	**3**			

*Premedical Postbacs - Summer 2015, rather than Summer 2014