

# MS in Pharmaceutical Sciences

Jefferson College of Pharmacy

# Presentation Overview

- Program Description
- Plan of Study
- Faculty Profile
- Admission Information
- Contacts

# Dr. Alok Bhushan

CHAIR AND PROFESSOR  
DEPARTMENT OF PHARMACEUTICAL SCIENCES



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208-241-2306

# Program Overview

MS program in Pharmaceutical Sciences is housed in Jefferson College of Pharmacy (JCP).

Pharmaceutical sciences encompasses pharmacology, toxicology, medicinal chemistry and pharmaceuticals

Students enrolled in the program will need to successfully complete 34 credits of course work.

Thesis and non-thesis tracks available

Live didactic coursework integrated with laboratory research.

Includes some courses from JCLS and JIB

# Program Overview

Focused on research methodologies and process of development of drugs (small molecules and biologics)

Individualized mentoring students by faculty in the JCP Department of Pharmaceutical Sciences

Goal is to prepare graduates for positions in academic laboratories and pharmaceutical industry as well as for continuing into PhD programs

- Research focused 2-year program
- 34-credits to graduate
- Thesis and Non-thesis tracks to choose from
- Full-time and Part-time students accepted
- All tracks have research component
- Faculty mentored
- Individually guided program
- Most didactic classes will be late afternoon
- Electives to choose from JCP, JCLS and JIB

# Required Courses

## Didactic courses

Molecular Pharm. Sciences (3 cr)  
Biological Pharm. Sciences (3 cr)  
Drug Discovery (2 cr)  
Research Foundations and Ethics (1 cr)  
Pharmaceutical Biotechnology and drug development (2 cr)  
Pharmaceutical Sci Seminar (1 cr)  
Bio statistical Methods of Data Analysis (3 cr)  
Scientific Writing (2 cr)

## Lab based courses

Pharmaceutical Sci Rotation (1 cr)  
Special Techniques in Pharmaceutical Sciences (2 cr)  
Pharmaceutical Sciences Research (6 cr)  
Pharmaceutical Sciences Practicum (6 cr)

## Elective Courses

6 credits - from among existing JCP/JCLS/JIB courses

# Thesis Track - Year 1

Semester	Course Name	Course No.	Credits
Fall	Molecular Pharmaceutical Sciences	PSCI 704	3
	Drug Discovery	PHRM 577	2
	Biostatistical Methods of Data Analysis	GC 660	3
	Pharmaceutical Sciences Rotation	PSCI 703	1
	Semester Total		9
Spring	Biological Pharmaceutical Sciences	PSCI 705	3
	Research Foundation and Ethics	PSCI 702	1
	Pharmaceutical Sciences Research	PSCI 799	3
	Special Techniques in Pharmaceutical Sciences	PSCI 706	2
	Semester Total		9
	Total Credits (Year 1)		18
Summer	Pharmaceutical Sciences Research	PSCI 799	1

# Thesis Track - Year 2

## PROGRAM DESCRIPTION

Semester	Course Name	Course No.	Credits
Fall	Methods and Pharmaceutical Technology	PHRM 581	2
	Elective	PSCI XXX	2
	Scientific Writing	GC 720	2
	Pharmaceutical Sciences Research	PSCI 799	2
	Pharmaceutical Sciences Seminar	PSCI 701	1
	Semester Total		9
Spring	Elective	PSCI XXX	2
	Elective	PSCI XXX	2
	Pharmaceutical Sciences Research	PSCI 799	2
	Semester Total		6
	Grand Total (Program)		34

# Non-Thesis Track - Year 1

## PROGRAM DESCRIPTION

Semester	Course Name	Course No.	Credits
Fall	Molecular Pharmaceutical Sciences	PSCI 704	3
	Drug Discovery	PHRM 577	2
	Bio statistical Methods of Data Analysis	GC 660	3
	Pharmaceutical Sciences Rotation	PSCI 703	1
	Semester Total		9
Spring	Biological Pharmaceutical Sciences	PSCI 705	3
	Research Foundation and Ethics	PSCI 701	1
	Pharmaceutical Sciences Practicum	PSCI 798	3
	Special Techniques in Pharm. Sc.	PSCI 706	2
	Semester Total		9
	Total Credits (Year 1)		18
Summer	Pharmaceutical Sciences Practicum	PSCI 798	1

# Non-Thesis Track - Year 2

## PROGRAM DESCRIPTION

Semester	Course Name	Course No.	Credits
Fall	Methods and Pharmaceutical Technology	PHRM 581	2
	Elective	PSCI XXX	2
	Scientific Writing	GC 720	2
	Pharmaceutical Sciences Practicum	PSCI 798	2
	Pharmaceutical Sciences Seminar	PSCI 701	1
	Semester Total		9
Spring	Elective	PSCI XXX	2
	Elective	PSCI XXX	2
	Pharmaceutical Sciences Practicum	PSCI 798	2
	Semester Total		6
	<b>Grand Total (Program)</b>		<b>34</b>

A Baccalaureate degree in Pharmaceutical Sciences, Pharmacy, Chemistry or Biology or related area

Additionally, the following courses are recommended to have been completed :

General Chemistry with lab

Organic Chemistry with lab

Calculus

Physiology

Biochemistry

Pharmacology

# Members of Department of Pharmaceutical Sciences

Dr. Alok Bhushan, Chair  
Dr. Roger Armen  
Dr. Jitendra Belani  
Dr. Vikas Bhardwaj  
Dr. Gabriele Brailoiu  
Dr. Asha Lakshmi Kuttyamma  
Dr. Gagan Kaushal  
Dr. Sunday Shoyele  
Kristin Lord  
Annie Chhun  
Dr. Ankit Rochani



# Expertise of Faculty in the Department of Pharmaceutical Sciences

Roger Armen: Medicinal chemistry and computational chemistry

Alok Bhushan: Cancer pharmacology

Jitendra Belani: Medicinal chemistry and synthesis

Vikas Bhardwaj: Cancer Pharmacology

Gabriela Brailoiu: Calcium signaling and central cardiovascular regulation.

Gagan Kaushal: Formulation, drug development and drug delivery.

Asha Lakshmikuttyamma: Cancer pharmacology

Sunday Shoyele: Drug delivery, formulation and nano particle delivery systems



# Program Information

**Alok Bhushan, PhD**

Chair and Professor

Department of Pharmaceutical Sciences

208-241-2306

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**Kristin Lord**

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# Program Deadlines

Term	Deadline	Term Start
Spring	December 1 <sup>st</sup>	January
Fall	August 1 <sup>st</sup>	September

# MS in Pharmaceutical Sciences Admissions Requirement Checklist

Completed Jefferson application ([my.jefferson.edu/apply](https://my.jefferson.edu/apply))

Official Transcripts from all college/schools attended

WES evaluation (if applicable)

2 letters of recommendation

Academic or professional

Resume/CV

Essay/Personal Statement

TOEFL is required for international students

GRE is not required

## Office of Admissions

Devin Phillips, Assistant Director, Graduate Admissions  
[dxs448@Jefferson.edu](mailto:dxs448@Jefferson.edu)

## Financial Aid

[jefferson.edu/tuition-and-financial-aid.html](http://jefferson.edu/tuition-and-financial-aid.html)  
Email Address: [Fiancial.Aid@Jefferson.edu](mailto:Fiancial.Aid@Jefferson.edu)



Provide highly trained graduates for academic research support and pharmaceutical and related industries

Faculty in the department are committed and highly motivated to implement this program





**Jefferson**

Thomas Jefferson University