

# Pharmaceutical Sciences

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## Department Information

- **Department Chair:**  
Jagdish Singh, Ph.D.
- **Department Location:**  
136 Sudro Hall
- **Department Phone:**  
(701) 231-8902
- **Department Email:**  
ndsu.pscigradinfo@ndsu.edu
- **Department Web Site:**  
[https://www.ndsu.edu/pharmacy/degrees\\_and\\_programs/graduate\\_program/](https://www.ndsu.edu/pharmacy/degrees_and_programs/graduate_program/)
- **Application Deadline:**  
March 15 for fall semester and October 1 for spring semester, if positions are available.
- **Credential Offered:**  
Ph.D.
- **Test Requirement:**  
GRE (300 or more)
- **English Proficiency Requirements:**  
TOEFL ibT 90; IELTS 6.5; Duolingo 115

## Program Description

The Department of Pharmaceutical Sciences offers graduate study leading to the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees. Advanced work may be selected from pharmaceuticals, pharmacokinetics, pharmacology, and medicinal chemistry."

The pharmaceutical sciences curriculum consists of a core of courses involving both basic and pharmaceutical sciences. In addition, students will select courses that will prepare them to be competent scientists in their fields.

## Admissions Requirements

The Department of Pharmaceutical Sciences graduate program is open to all qualified graduates of recognized universities and colleges. In addition to the Graduate College requirements, the applicant must have adequate preparation in pharmacy or a biological or physical science related to pharmaceutical sciences.

Students interested in the Master of Science degree should contact the Department of Pharmaceutical Sciences for more information.

## Financial Assistance

Graduate assistantships are available. To be considered for an assistantship, the student must have completed a Graduate College application, be accepted by the department, and submit a formal letter to the department chair requesting an assistantship.

## Doctor of Philosophy

The Doctor of Philosophy program requires the completion of 90 credits, including 30 semester credits of letter-graded course work with a GPA of 3.0 or better. Of these 30 credits, at least 18 credits must be at 700 level. Candidates defend their dissertations. Candidates for the Ph.D. will be required to take an examination directed at determining competency in the pharmaceutical sciences.

The department requires the following core courses:

Code	Title	Credits
<b>Core Courses</b>		
BIOC 701	Comprehensive Biochemistry I	4
BIOC 702	Comprehensive Biochemistry II	4
PSCI 611	Principles of Pharmacokinetics and Pharmacodynamics	3
PSCI 670	Pharmacokinetics	3
STAT 725	Applied Statistics	3

<b>Additional Credits</b>	<b>7</b>
	<b>(minimum)</b>
Courses numbered 700-789, 791	
<b>Seminars</b>	
PSCI 790 Graduate Seminar (one credit each semester)	
<b>Research</b>	<b>60</b>
PSCI 899 Doctoral Dissertation	
<b>Total Credits</b>	<b>90</b>

## Master of Science

In consultation with the adviser and student's supervisory committee a Plan of Study would be developed. The Master of Science in Pharmaceutical Sciences program follows Graduate College degree requirements (<https://bulletin.ndsu.edu/graduate/graduate-school-policies/masters-program-policies/>).

### Natasha Fillmore, Ph.D.

University of Alberta, 2016

Postdoctoral: National Heart, Lung, and Blood Institute 2016-2021

Research Interests: Understanding the Role of Energy Metabolism in Insulin Resistance, the Role of Fatty Acid Signaling in Regulating Cardiac Hypertrophy and Function

### Roberto Gomes, Ph.D.

University of Sao Paulo, 2011

Postdoctoral: Harvard University 2017-2020, Federal University of Mato Grosso do Sul 2012-2013, and University of São Paulo 2011

Research Interests: Enantioselective Synthesis; Development of Novel Small Molecules, Nucleotides and Antibodies; Tumor-Targeting Strategy Using Eneiones Engineered With Cytotoxic Moiety/Nir Probes; Development of New NIR Fluorescent Probe-Therapeutic Agent Conjugate Triggered by the Acid pH of the Environment of the Tumor Cell for the Early Diagnosis of Pancreatic Cancer and Molecular Drug Discovery of Proteolysis Targeting Chimeric (Protac) Based Prototype.

### Ang Guo, Ph.D.

Shanghai Institute for Biological Sciences, Chinese Academy of Sciences, 2010

Postdoctoral: University of Iowa 2015

Research Assistant Professor 2019

Research Interests: Cardiovascular Pharmacology and Pathophysiology

### Yagna Jarajapu, M.Pharm., Ph.D.

University of Strathclyde, 1998

Glasgow Caledonian University, 2002

Postdoctoral: University of Florida and Wake Forest University 2003-2008

Research Interests: ACE2/Angiotensin-(1-7) and Bone Marrow Progenitor Cells in Diabetes

### Buddhadev Layek, Ph.D.

North Dakota State University, 2014

Postdoctoral: University of Minnesota 2017

Researcher 5, University of Minnesota, 2020

Research Interests: Pharmacokinetic, Toxicokinetic, and Metabolic Profiling of Small Molecule Drug Candidates and Biologics

### Estelle Leclerc, Ph.D.

University Paris XI, 1994

Postdoctoral: ETH-Zurich, 1994-1998; The Scripps Research Institute, 1998-2003

Junior Group Leader Children's Hospital Zurich, 2004

Research Assistant Professor Florida Atlantic University, 2005-2009

Research Interests: Biopharmaceutics

### Elisabetta Liverani, Ph.D.

University of the West of England, 2007

Postdoctoral: Temple University, 2010-2016; Queen Mary University of London, 2008-2010

Research Interests: Platelet Function and Regulation During Inflammation, the Role of the P2Y12 Signaling Pathway in Regulating Platelet-Lymphocyte Interactions During Sepsis, Sex-Related Differences in Platelet Activity and Regulation in Patients With Sepsis, Sex-Specific Targeting of Purinergic Signaling Pathways As Novel Drug-Based Therapies for the Improved Treatment of Sepsis

### Sanku Mallik, Ph.D.

Case Western Reserve University, 1992

Postdoctoral: California Institute of Technology, 1993-95  
Research Interests: Synthetic Medicinal Chemistry

**Sijo Mathew, Ph.D.**

Central Food Technological Research Institute, 2006  
Postdoctoral: University of Tennessee, 2008; Vanderbilt University Medical Center, 2012  
Research Interests: Kidney Disease, Pancreatic Cancer, Biopharmaceutics

**Stephen T. O'Rourke, Ph.D.**

University of Wisconsin, 1985  
Postdoctoral: Mayo Clinic and Foundation, 1985-87  
Research Interests: Vascular Pharmacology

**Jagdish Singh, Ph.D.**

Banaras Hindu University, 1982  
Postdoctoral: University of Otago, 1985-88; University of California–San Francisco, 1992-94  
Research Interests: Novel Dosage and Drug Delivery Systems, Biopharmaceutics

**Kristine Steffen, Pharm.D., Ph.D.**

North Dakota State University, 2002  
North Dakota State University, 2007  
Postdoctoral: Neuropsychiatric Research Institute, 2007-2009  
Research Interests: Pharmacokinetics, Bariatric Surgery, Eating Disorder and Obesity Pharmacotherapy

**Chengwen Sun, M.D., Ph.D.**

Norman Bethune University of Medical Sciences, 1988  
Norman Bethune University of Medical Sciences, 1996  
Postdoctoral: Medical College of Wisconsin, 1996-2000  
Research Interests: Central Blood Pressure Control and Hypertension Gene Therapy

**Sathish Venkatachalem, Ph.D.**

University of Madras, 2003  
Postdoctoral: University of Western Ontario, 2004-2006  
Research Interests: Human Lung Diseases (Asthma, Chronic Obstructive Pulmonary Disease and Pulmonary Hypertension)

**Stefan Vetter, Ph.D.**

Swiss Institute of Technology (ETH) Zurich, 1998  
Postdoctoral: The Scripps Research Institute, 2000-2005  
Research Interest: Medicinal Protein Biochemistry