



DEPARTMENT OF

# BIOCHEMISTRY



## Research Overview

The Department of Biochemistry is committed to basic research and training undergraduate and graduate students for careers in biochemistry, molecular biology, medicine, health sciences, and other science-related careers. Our faculty, graduate students, and staff are located in the Biochemistry Building with additional offices and laboratories in the Hansen Life Science Research Building, Whistler Agricultural Research Building and Hockmeyer Hall of Structural Biology.

The research programs of the department span fundamental plant and biomedical biochemistry.




## Research Areas

- METABOLIC AND NATURAL PRODUCT BIOCHEMISTRY
- OMICS: GENOMICS, PROTEOMICS AND METABOLOMICS
- CANCER BIOCHEMISTRY
- EPIGENETICS AND GENE EXPRESSION
- STRUCTURE, DYNAMICS AND FUNCTION OF BIOLOGICAL MACROMOLECULES
- BIOINFORMATICS AND COMPUTATIONAL GENOMICS



## Affiliated Units

- PURDUE CENTER FOR CANCER RESEARCH
- INSTITUTE OF DRUG DISCOVERY
- CENTER FOR PLANT BIOLOGY
- INSTITUTE FOR INTEGRATIVE NEUROSCIENCE
- BINDLEY BIOSCIENCES CENTER
- INSTITUTE FOR INFLAMMATION, IMMUNOLOGY AND INFECTIOUS DISEASE



*Pictured at left from top: graduate student Mackenzie Chapman, postdoc Pan Liao, Dr. Joe Ogas with students, postdoc Mohd Saleem Dar, and Dr. Mark Hall's lab group*

**JOE OGAS**  
DEPARTMENT HEAD

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# Faculty and Research Areas

Scott Briggs                      sdbriggs@purdue.edu  
Epigenetics, Antifungal Drug Resistance and Fungal Pathogenesis

Clint Chapple                    chapple@purdue.edu  
Biochemistry and molecular biology of plant secondary metabolism

Kyle Cottrell                    cottrellka@purdue.edu  
RNA editing, post-transcriptional regulation, and cancer

Brian Dilkes                     bdilkes@purdue.edu  
Plant Genetics

Natalia Dudareva              dudareva@purdue.edu  
Plant biochemistry and molecular biology

James Forney                  forney@purdue.edu  
Regulation of differentiation in protozoa

Barbara Golden                barbgolden@purdue.edu  
Structural basis for RNA function

Humaira Gowher                hgowher@purdue.edu  
Regulation of DNA methylation in development and disease

Mark Hall                        mchall@purdue.edu  
Cell cycle regulation and fungal pathogenesis

Majid Kazemian                kazemian@purdue.edu  
Research area: Studying gene regulation in viral associated cancers, autoimmune disorders, and infectious diseases

Ann Kirchmaier                kirchmaier@purdue.edu  
Epigenetic processes that mediate heritable modifications to chromatin

Xing Liu                          xingliu@purdue.edu  
Roles and regulations of ubiquitin-proteasome dependent protein degradation

Andrew Mesecar                amesecar@purdue.edu  
Gene-to Lead Drug Discovery

Joe Ogas                         ogas@purdue.edu  
Regulation of cell identity, signal transduction, chromatin remodeling

Sujith Puthiyaveetil            spveetil@purdue.edu  
Genetic and molecular control of photosynthetic light utilization

W. Andy Tao                    watao@purdue.edu  
Proteomics and biological mass spectrometry

Elizabeth Tran                 ejtran@purdue.edu  
RNA helicases and Post-transcriptional gene regulation

Feng Wang                      fwang@purdue.edu  
Molecular mechanisms of RNA-mediated gene silencing

Vikki Weake                    vweake@purdue.edu  
Chromatin modifying complexes in Drosophila development as a model for neurodegenerative disease and cancer

Jen Wisecaver                 jwisecav@purdue.edu  
The evolution of eukaryotic chemodiversity using genomics and phylogenetics

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## CLINICAL TEACHING FACULTY

Ben Carter                        bccarter@purdue.edu  
Clinical Assistant Professor

Orla Hart                         ohart@purdue.edu  
Clinical Associate Professor

## RESEARCH FACULTY

Hana Hall                        hallh@purdue.edu  
Research Assistant Professor  
Molecular mechanisms of aging and neurodegenerative disease, with focus on gene expression regulation, R-loop biology, and RNA epigenetics.

## JOINT/COURTESY APPOINTMENT FACULTY

Seema Mattoo                  smattoo@purdue.edu  
(Biochemistry, Signal Transduction, and Microbiology) Investigation of Fic domain containing proteins in Cellular Signaling. Post-translational modification of proteins is a common theme in signal transduction.

John Morgan                    jamorgan@purdue.edu  
Metabolic engineering of photosynthetic microbes and mathematical modeling of metabolism and transport of plant volatiles

Pete Pascuzzi                 ppascuzz@purdue.edu  
Bioinformatics; research data management; chromatin organization; DNA replication