**Research Environment**

A central theme is the desire to understand the genetic and molecular basis of specific developmental events and how defects in these events lead to developmental disorders and disease, such as cancer and neurodegeneration.

*Areas of research include:*

- regenerative and stem cell biology
- organogenesis
- animal models of human developmental disorders
- aging and longevity
- neuronal development, differentiation and plasticity
- genetic/developmental basis of cancer
- growth factors and cell signaling during development
- establishment of cell and tissue polarity
- circadian rhythms
- growth control and nutrition
- hormonal regulation
- gene regulatory networks/systems biology
- epigenetic control of development

**what is developmental, regenerative & stem cell biology?**

Developmental biology is the study of how a fertilized egg develops into a mature, complex organism. Regenerative biology is the study of how developing or differentiated organs or tissues can regulate their development to replace lost or damaged tissue. Stem cell biology is the study of the development, cell biology, and pluripotent nature of stem cells, as well as of the mechanisms that direct stem cells to differentiation into specific cell-types.

**For More Information:**


To request information: [dbbs-info@wustl.edu](mailto:dbbs-info@wustl.edu)
### Faculty Honors

Among the Developmental, Regenerative, and Stem Cell Biology Program faculty are:

- **Member, National Academy of Sciences**
- **Investigator, Howard Hughes Medical Institute**
- **Fellows, American Association for the Advancement of Science (6)**
- **Pew Scholars (3)**
- **Keck Young Scholar**
- **Damon Runyon Scholar**

Find information on DRSCB faculty research by visiting:

[http://dbbs.wustl.edu/divprograms/devbio/Pages/Faculty.aspx](http://dbbs.wustl.edu/divprograms/devbio/Pages/Faculty.aspx)

### benefits

- Health, life and disability coverage are provided.
- Students in the Division enjoy access to all of Washington University’s educational, entertainment and recreational resources.
- The University’s MetroPass provides all students with free use of Metro-Link lightrail and Metro buses. MetroLink connects students to all Washington University campuses, Forest Park, Clayton, Lambert Airport and downtown.

### stipend and support

- Each student accepted into the Division is guaranteed a generous stipend and tuition is provided for the duration of training as long as all academic standards are upheld.
- Many students hold national fellowship awards, such as those offered by the National Science Foundation.
- Funds are provided for students to attend and participate in a scientific meeting.

DBBS celebrates diversity in all of its forms. We invite all students to apply, especially those from backgrounds historically underrepresented in the sciences such as African, Latin and Native Americans, those with disabilities and individuals from low-income backgrounds.

To learn more about diversity initiatives in DBBS please visit [http://dbbs.wustl.edu/divoutreach/Pages/DiversityOutreach.aspx](http://dbbs.wustl.edu/divoutreach/Pages/DiversityOutreach.aspx)

### typical schedule

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<td>Pre-Candidacy</td>
<td>Qualifying Exam</td>
<td>Candidacy</td>
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<td>• Nucleic Acids &amp; Protein Biosynthesis</td>
<td>• Choose Thesis Lab</td>
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<td>• Fundamentals of Molecular Cell Biology</td>
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<td>• Developmental Biology</td>
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<td>• Advanced Genetics</td>
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<td>• Molecular Cell Biology</td>
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<td>• Ethics (YR2)</td>
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<td>• Microbial Physiology and Biochemistry</td>
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<td>• Macromolecular Interactions</td>
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<td>• Developmental Biology</td>
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<td>• Modeling Biomolecular Systems I &amp; II</td>
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<td>• Genomics</td>
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<td>• Computational Molecular Biology</td>
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<td>• Fundamentals of Computer Science</td>
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<td>• Molecular Microbiology &amp; Pathogenesis</td>
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### Teaching Assistantship (one semester)

### Special Topics and Journal Clubs

- **Special Topics**: Expanding the Central Dogma: Detours between Genome and Proteome; High Throughput, High Content and You; Pathobiology of Human Disease States; Special Emphasis Pathway in Cancer Biology; Special Topics in Microbial Pathogenesis; Introduction to SAS programming for Biomedical Researchers; Molecular Mechanisms of Disease; Advanced Topics in Immunology; Chromatin Structure and Gene Expression; Special Topics in Molecular Genetics; DNA Repair; ID Gateway: Translational and Public Health Aspects of Basic Infectious Disease Research

- **Journal Clubs**: Experimental Hematopoietic; Student-Run Cell Biology; Cell Biology of Extracellular Matrix; Ion Channels; Molecular Mechanism of Aging; Development, Regeneration and Stem Cell Biology; Cancer Biology; Genetics; Experimental Skeletal Biology; Current Research in Chromatin, Epigenetics and Nuclear Organization; Molecular Virology; Tropical and Molecular Parasitology; Molecular Microbiology & Pathogenesis; Hematology/Oncology; DNA Metabolism; Genetics & Development of C. Elegans; Seminar in Computational Molecular Biology

### Admissions Information:

- September 1 - December 1
- No Application Fee