

# Delong ZHOU

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Web site: <https://delongzhou.github.io>

## Education

**PhD in Bioinformatics, University of Sherbrooke, QC** **2013 – 2022**  
Supervised by Dr. Scott, M.S. and Dr. Abou Elela, S.

**Engineer, École Centrale Paris, France** **2008 – 2012**  
Research Intern Supervised by Dr. Mir, L., Institut Gustave-Roussy.

## Research Experience

**Post-doctoral Fellow, IRCM, QC** **2025 – Present**  
Supervised by Dr. Lecuyer, E.  
**Using Machine learning models to predict RNA mis-localization in cancer and neurodegeneration**

**Post-doctoral Fellow, McGill University, QC** **2022 – 2024**  
Supervised by Dr. Bagot, R.C.  
**Sex difference in the effects of psilocybin for individualized depression treatment**  
**Main research projects:**

- Evaluate the effect of psilocybin in male and female mice by standardized behavior tests
- Analyze single-cell RNA-seq data to identify cell type specific response to stress and psilocybin

**Collaboration**

- Evaluate the effect of psilocybin and stress on learning in mice

**PhD in Bioinformatics, University of Sherbrooke, QC** **2013 – 2022**  
Supervised by Dr. Scott, M.S. and Dr. Abou Elela, S.  
**Regulations and consequences of alternative splicing**  
**Main research projects:**

- Conducted transcriptomic and proteomics experiments to identify mechanisms of alternative splicing regulation in ovarian cancer
- Constructed a webserver to predict impact of alternative splicing on cellular function by identifying alternatively included protein features

**Collaboration:**

- Transcriptomic changes during senescence
- Transcriptomic effect of brain tumor-related mutations in mouse neurons
- Role of Srsf3 in heart contraction defects in mouse
- Impact of mutations on the transcriptome response to nutrient depletion in yeast

## Publications

- **Zhou, D.**, Schuler, H., Cvetkovska, V., ..., Bagot, R.C. (preprint). Single-cell sequencing reveals psilocybin induces sustained cell-type specific plasticity in mouse medial prefrontal cortex. bioRxiv 2025.01.08.631940.
- **Zhou, D.**, Schuler, H., Cvetkovska, V., ..., Bagot, R.C. (In preparation). Single cell transcriptomic analysis reveals sex difference in resilience in mouse medial prefrontal cortex.
- **Zhou, D.**, Tran Y., Abou Elela, S., Scott, M.S. (BMC Bioinformatics, 2022). SAPFIR: a webserver for the identification of alternative protein features. PMID: 35751026
- **Zhou, D.**, Couture S., Scott, M.S., Abou Elela, S. (Nucleic Acids Research, 2021). RBFOX2 alters splicing outcome in distinct binding modes with multiple protein partners. PMID:34244793
- Julie Parenteau, ..., **Zhou, D.**, Michelle S. Scott, Jeffrey A. Pleiss and Sherif Abou Elela. (Submitted). Cells resist starvation through a nutrient dependent splice switch.
- Schuler, H., ..., **Zhou, D.**, ..., Bagot, R.C. (Biological psychiatry, 2025). Data-driven analysis identifies female-specific social modulation deficit after chronic social defeat stress. PMID: 39638223
- Dumont, A.A., Dumont, L., **Zhou, D.**, ..., Scott M.S., Auger-Messier, M. (FASEB J. 2021). Cardiomyocyte-specific Srsf3 deletion reveals a mitochondrial regulatory role. PMID:33819356

## Research Communications

### **Oral presentations**

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| 2024 | Profiling the psilocybin-induced transcriptional response in mouse medial prefrontal cortex. European Behavioural Pharmacology Society Biennial Workshop. Banff, AB. |
| 2024 | Psilocybin Induced Transcriptional Response in Mouse Medial Prefrontal Cortex. Center for Studies in Behavioral Neurobiology Symposium. Montreal, QC.                |
| 2019 | RBFOX2 splicing complex regulates alternative splicing with different binding modes and functional outcome. Ribowest. Winnipeg, MB.                                  |
| 2017 | Finding the codes for cancer specific regulation of alternative splicing. Riboclub monthly session. Sherbrooke, QC.  |
| 2014 | Identification of the pre-mRNA targets of the cancer associated RNA binding proteins RBFOX2 and QKI. Riboclub monthly session. Sherbrooke, QC.                       |

### **Poster presentations**

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| 2024      | Profiling the psilocybin-induced transcriptional response in mouse medial prefrontal cortex. European Behavioural Pharmacology Society Biennial Workshop. Banff, AB. |
| 2019      | RBFOX2 splicing complex regulates alternative splicing with different binding modes and functional outcome. Journée Phare. Orford, QC.                               |
| 2015-2019 | Riboclub annual meetings. Orford, QC.  |

## Awards

- 2023-2024** Postdoctoral Fellowship Award (\$50 000). Initiative in Adversity and Mental Health. McGill-Douglas & Max Planck Institute of Psychiatry.
- 2024** Travel award (€ 500). European Behavioural Pharmacology Society Biennial Workshop. Banff, AB.
- 2019** Travel award (\$500). Ribowest. Winnipeg, MB.
- 2012** Trophy of Innovation and Sustainable Developments (€ 6000). Paris, France.

## Supervising & Teaching Experiences

### **Supervising of undergraduate student honor thesis** **2023 – 2024**

Identifying Transcription Factors Regulating Gene Expression Alteration Induced by Stress or Psilocybin

### **Lecturing BCM420 Bioinformatics** **2021**

Undergraduate course, 2 credits, 25 students

## Community Services

### **Manuscript peer review** **2019 – Present**

- Assess novelty and potential impact
- Evaluate methodology and statistical approaches
- Suggest improvements on experimental design

### **Riboclub Student Seminar Jury & Executive Committee** **2016 – 2020**

- Organize Riboclub Social Day
- Assist organization of Riboclub annual meeting
- Evaluate student seminars for the best student seminar awards