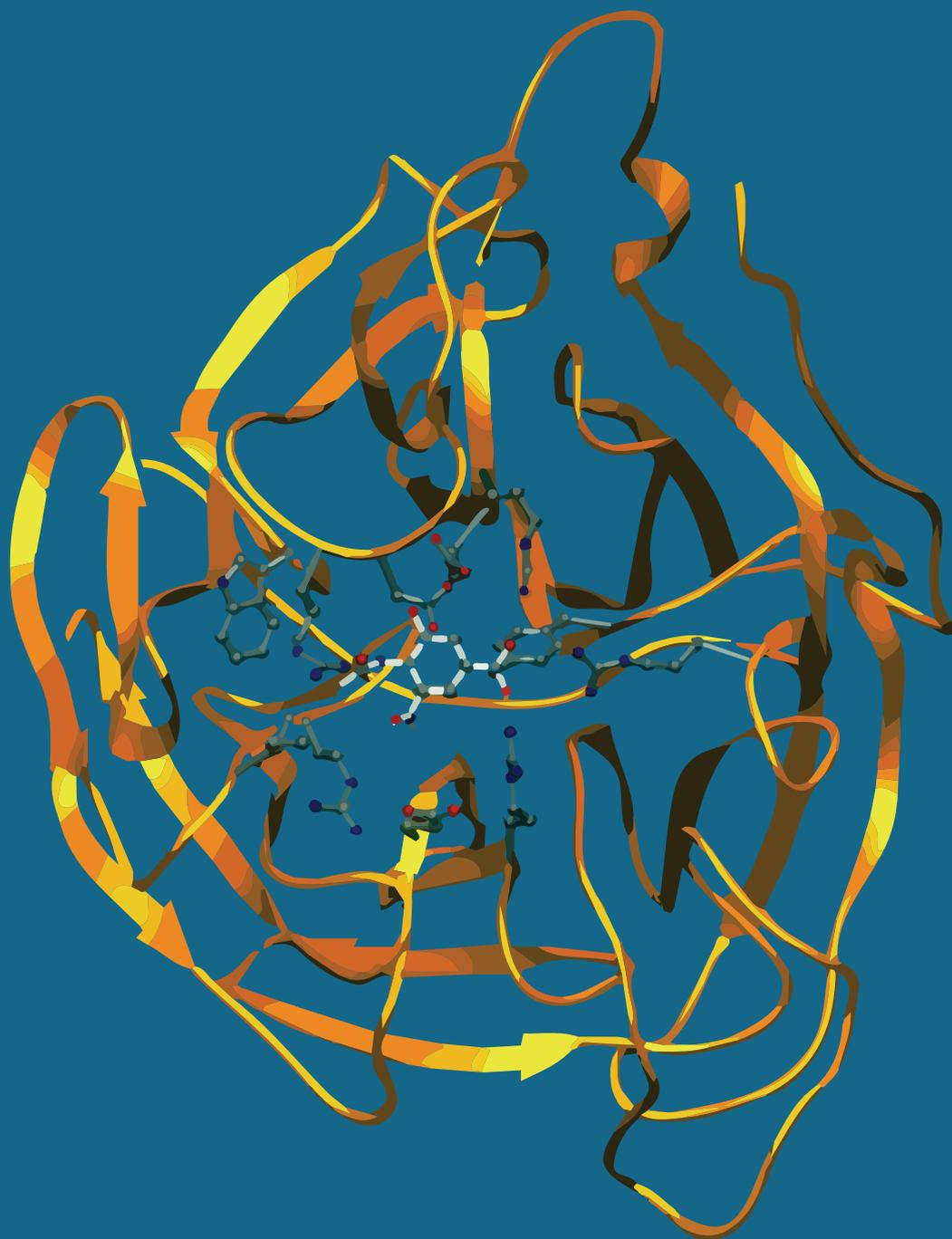




СИБИРСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ  
SIBERIAN FEDERAL UNIVERSITY



# PhD

Biophysics

## Key Information

### Duration:

4 years (this period can be shorter depending on the availability of a PhD thesis)

### Language:

English

### Entry Requirements:

Master's degree in Biophysics, Biology, Biological Engineering, Physics, Ecology, Biochemistry, Chemistry, Bioinformatics, an adequate level of English proficiency (certificate or another document)

### Tuition fees (2015/2016):

€ 1 850 (the cost does not include accommodation and living expenses).

### Accommodation:

on-campus accommodation is available.

### Costs (2015/2016):

single ensuite room: €45 per month,

twin ensuite room: €30 per month.

### Practicalities:

airport transfer, an invitation letter to apply for a Russian study visa and an optional survival course of Russian as a foreign language are provided by Siberian Federal University.

### Further details:

SibFU's Graduate School

[aspirantura@sfu-kras.ru](mailto:aspirantura@sfu-kras.ru),

tel.: +7 391 291-28-31

## Programme Leader

Professor Valentina Kratasyuk's research interests are mechanisms of bioluminescence, bioluminescent enzymatic biosensors, enzymatic toxicity bioassays, bioluminescent analysis, biotechnological design, biochemistry, science education, history of sciences, immobilization of enzymes.

## Overview

Doctoral students do research at the Bioluminescent Biotechnology Laboratory under the supervision of Professor Valentina Kratasyuk. Their research focuses on studying the chemical nature of light emission by luminous bacteria and other luminous species, modeling the enzyme metabolism in cell hyaloplasm, developing new generations of bioluminescent biosensors for environmental monitoring and medical diagnostics and other issues of bioluminescence research.

## Contacts

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## Key publications

1. Lonshakova-Mukina, V., Esimbekova, E., Kratasyuk, V. Impact of enzyme stabilizers on the characteristics of biomodules for bioluminescent biosensors. *Sensors & Actuators: B. Chemical*, 2015, 213, pp. 244-247.
2. Esimbekova, E., Kratasyuk, V., and Shimomura, O. Application of enzyme bioluminescence in ecology. *Advances in Biochemical Engineering-Biotechnology*, 2014, 144, pp. 67-109.
3. Bezrukikh, A., Esimbekova, E., Nemtseva, E., Kratasyuk, V., Shimomura O. Gelatin and starch as stabilizers for the coupled enzyme system of luminous bacteria NADH:FMN-oxidoreductase-luciferase. *Analytical and Bioanalytical Chemistry*, 2014, 406 (23), pp. 5743-5747.
4. Esimbekova, E., Kondik, A., Kratasyuk, V. Bioluminescent enzymatic rapid assay of water integral toxicity. *Environmental Monitoring and Assessment*, 2013, 185 (7), pp. 5909-5916.
5. Kratasyuk, V., Esimbekova, E., Correll, M., Bucklin, R. Bioluminescent enzyme assay for the indication of plant stress in enclosed life support systems. *Luminescence*, 2011, 26 (6), pp. 543-546.
6. Esimbekova, E.N., Torgashina, I.G, and Kratasyuk, V.A. Comparative Study of Immobilized and Soluble NADH:FMN-Oxidoreductase–Luciferase Coupled Enzyme System. *Biochemistry (Moscow)*, 2010,74 (6), pp.695-700.
7. Esimbekova, E.N., Kratasyuk, V.A., Torgashina, I.G. Disk-shaped immobilized multicomponent reagent for bioluminescent analyses: correlation between activity and composition. *Enzyme and microbial technology*. 2007, 40 (2), pp. 343-346.
8. Vetrova, E.V., Kudryasheva, N.S., Kratasyuk, V. A. Redox compounds influence on the NAD(P)H:FMN-oxidoreductase – luciferase bioluminescent system . *Photochem. Photobiol. Sci.*, 2007, 6, pp. 35-40.
9. Vetrova, E., Esimbekova, E., Rimmel, N., Kotova, S., Beloskov, N., Kratasyuk, V., Gitelson, I. A bioluminescent signal system: detection of chemical toxicants in water. *Luminescence*, 2007, 22 (3), pp. 206-214.

# Krasnoyarsk

Krasnoyarsk is the administrative capital of Krasnoyarsky kray, the second largest region in Russia. It is a big industrial and educational centre with a population of more than 1 million people. It is also an important junction of the Trans-Siberian Railway.

The city is located on the Yenisey River in the valley formed by the Eastern Sayan Mountains. Nature reserve Stolby has become the city's famous landmark.

Krasnoyarsk will host the XXIX Winter Universiade 2019.



## University

Siberian Federal University (SibFU) with over 35 000 students is one of the most vibrant Russian universities. Annually, more than 200 visiting professors – leading researchers from the UK, Germany, Spain and USA – visit SibFU to give lectures and attend conferences. Siberian Federal University receives funding from the RF Government that supports research projects developed under the supervision of prominent Russian scientists and international researchers.

One of the research projects is carried out at the Bioluminescence Biotechnology Laboratory created in 2012 and supervised by Professor Osamu Shimomura (USA, Nobel Prize in Chemistry) and Professor Valentina Kratasyuk. The laboratory staff includes SibFU's professors Joseph Gitelson, Lyudmila Frank, Eugene Vysotskii, Vladimir Bondar, Valentin Petushkov, Sergey Bartsev, Petr Belobrov, Elena Nemtseva, Elena Esimbekova, Irina Sukovataya.

