Syllabus

1. Course Title, style, and credit
   Neuronal regulation of metabolism
   Lecture, 1 credit

2. Appropriate grade level and Eligible Departments
   D1, D2 (obligatory), D3-5 (optional) School of Life Science

3. Lecturer(s)
   Yasuhiko Minokoshi
   E-mail: minokosh@nips.ac.jp
   Phone: 0564-55-7742
   NIPS (Myodaiji)

4. Time
   [oral]
   10:00-12:00 on every Friday from April 4 to June 27, 2014

5. Place
   1F Lecture room in Myodaiji building of NIPS

6. Prerequisites and Styles
   This course is given as oral lecture in English.

7. Contents
   Energy homeostasis is important for living organism. Recent studies demonstrate that inter–tissue communications for metabolic regulation play a crucial role in the achievement of physiological functions in cells and tissues. In this course, we present the recent understanding of the brain control of food intake, whole body metabolism and immune function. We also present a role of rhythm and stress in body metabolic homeostasis. In addition, we present the recent topic of the brain control of “longevity”.
8. Course objectives

1. To understand the crucial roles of inter-tissue communications in the control of metabolic homeostasis and physiological functions in cells and tissues
2. To understand the integrated role of the brain in the control of feeding behavior, metabolism and immune system
3. To understand a crucial role of rhythm and stress in the control of body metabolic homeostasis

9. Schedule

1. April 4
   - Introduction of metabolic homeostasis
   Yasuhiko Minokoshi (NIPS)
2. April 18
   - Molecular dissection of the circadian clock in health and disease
   Hitoshi Okamura (Kyoto University)
3. May 2
   - Molecular mechanism of food intake regulation
   Yasuhiko Minokoshi (NIPS)
4. May 9
   - Neural control of stress response
   Tatsushi Onaka (Jichi Medical University)
5. May 23
   - Hypothalamic and autonomic regulation of immune function
   Shiki Okamoto (NIPS)
6. June 6
   - Brain regulation of metabolism
   Yasuhiko Minokoshi (NIPS)
7. June 20
   - A role of orexin-producing neurons in regulation of sleep/wakefulness states
   Takeshi Sakurai (Kanazawa University)
8. June 27
   Brain regulation of longevity
   Yasuhiko Minokoshi (NIPS)

10. Lecture materials and readings

11. Grades
   The lecturer will present a theme based on the course objectives at the end of the course. Students are requested to submit an essay report on the theme by the deadline. The grades will be determined by the quality of the report, and will be either “passed” or “failed”.

12. Notes
   Nothing particular.