

# Yutaka Nagahata



Belongings            The Institute for Chemical Reaction Design and Discovery (WPI-ICReDD),  
Hokkaido University

Office                Molecule & Life Nonlinear Sciences Laboratory,  
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## Education

Apr. 1st, 2004 - Mar. 18th, 2008    B.S. Physics, School of Science and Technology, Kwasei Gakuin University

Apr. 1st, 2008 - Mar. 24th, 2011    M.A. Mathematics, Graduate School of Science, Hokkaido University

Apr. 1st, 2011 - Mar. 24th, 2016    Ph.D. Life Science, Graduate School of Life Science, Hokkaido University

## Publications

### *Peer-Reviewed Journal Articles*

- Y. Nagahata, H. Teramoto, C.-B. Li, S. Kawai, and T. Komatsuzaki, "Reactivity Boundaries to Separate the Fate of a Chemical Reaction Associated with an Index-two Saddle", *Physical Review E* **87**, 062817 (2013)
- Y. Nagahata, H. Teramoto, C.-B. Li, S. Kawai, and T. Komatsuzaki, "Reactivity Boundaries for Chemical Reactions Associated with Higher-index and Multiple Saddles", *Physical Review E* **88**, 042923 (2013)
- Y. Sumiya, Y. Nagahata, T. Komatsuzaki, T. Taketsugu, and S. Maeda, "Kinetic Analysis for the Multistep Profiles of Organic Reactions: Significance of the Conformational Entropy on the Rate Constants of the Claisen Rearrangement", *The Journal of Physical Chemistry A* **119**, 11641 (2015)
- Y. Nagahata, S. Maeda, H. Teramoto, T. Horiyama, T. Taketsugu, and T. Komatsuzaki, "Deciphering Time Scale Hierarchy in Reaction Networks", *The Journal of Physical Chemistry B* **120**, 1961 (2016)
- Y. Nagahata, F. Borondo, R. M. Benito, R. Hernandez "Identifying reaction pathways in phase space via asymptotic trajectories" *Physical Chemistry Chemical Physics* DOI: 10.1039/c9cp06610a

## Awards

- |                 |  |
|-----------------|--|
| Oct. 26th, 2015 | Best Poster Award at The 9th Annual Meeting of Japan Society for Molecular Science   |
| Jun. 4th, 2015  | Best Poster Prize at 31st Symposium on Chemical Kinetics and Dynamics  |
| Dec. 17th, 2014 | Poster Award at The 15th RIES-Hokudai International Symposium Hibiki   |
| Mar. 11th, 2014 | Presentation Award at the Meeting of Hokkaido Branch of the Biophysical Society of Japan   |
| Aug. 31st, 2012 | Best Question award at Summer School for the Organization of Young Biophysicists   |
| Mar. 10th, 2010 | An excellent award in a Sakigake mathematical workshop on "AIJcooperation between applied mathematics and physics- let's make and move your mathematical model." |

## Scholarships

- |                         |   |
|-------------------------|---|
| May., 31st 2014         | Eligibility for Repayment Exemption of Scholarship Loan Program (JASSO) by having achieved an especially excellent record (4,392,000 yen) |
| Apr., 2011 - Mar., 2014 | Scholarship Loan Program Type I (JASSO, interest-free loan: 4,392,000 yen)  |
| Apr., 2008 - Mar., 2010 | Scholarship Loan Program Type I (JASSO, interest-free loan: 2,112,000 yen)  |

## Grant Awards

None

## Employment

### *Teaching Assistant*

Oct. 1st, 2009 - Feb. 8th, 2010	Introduction to Time Series Analysis with Application to Real Complex Systems
Oct. 1st, 2010 - Feb. 28th, 2011	Introduction to Time Series Analysis with Application to Real Complex Systems
Spt. 28th, 2011 - Feb. 29th, 2012	Introduction to Time Series Analysis with Application to Real Complex Systems

### *Research Assistant*

Apr., 2011 - Feb., 2012	Research Institute for Electronic Science, Hokkaido University
Apr., 2012 - Feb., 2013	Research Institute for Electronic Science, Hokkaido University
Feb., 2013 - Mar., 2013	Faculty of Advanced Life Science, Hokkaido University
Apr., 2013 - Feb., 2014	Research Institute for Electronic Science, Hokkaido University
Apr., 2014 - Feb., 2015	Research Institute for Electronic Science, Hokkaido University
Apr., 2015 - Feb., 2016	Research Institute for Electronic Science, Hokkaido University
Apr., 2015 - Feb., 2016	Minato ERATO Discrete Structure Manipulation System Project, JST
Apr., 2016 - Jun., 2016	Faculty of Science, Hokkaido University

### *Postdoctoral Fellow, Research Fellow*

Apr., 2016 - Jun., 2016	Graduate School of Information Science and Technology, Hokkaido University
Jul., 2016 - Sep., 2019	Department of Chemistry, Johns Hopkins University
Oct., 2019 -	The Institute for Chemical Reaction Design and Discovery, Hokkaido University

## Presentations

### *International*

#### **Conference**

Jul. 16, 2017 - Jul. 21, 2017	American Conference on Theoretical Chemistry 2017, Boston University, Boston, MA (Poster)
Sep. 13, 2015 - Sep. 15, 2015	The 53rd Annual meeting of Biophysical Society of Japan, Kanazawa Univ. Kakuma Campus, Kanazawa, Ishikawa (Poster)
Jun. 3, 2015 - Jun. 5, 2015	The 31th Symposium on Chemical Kinetics and Dynamics, Hokkaido University, Sapporo, Hokkaido (Poster)
Sep. 25, 2014 - Sep. 27, 2014	The 52nd Annual Meeting of Biophysical Society of Japan, Sapporo Convention Center, Sapporo, Hokkaido (Poster)
Oct. 28, 2013 - Oct. 30, 2013	The 51st Annual Meeting of Biophysical Society of Japan, Kyoto International Conference Center, Kyoto, Kyoto (Poster)
Jun. 6, 2012 - Jun. 8, 2012	The 28th Symposium on Chemical Kinetics and Dynamics, Tsukushi Campus, Kyushu University, Kasuga, Hukuoka (Oral)

**Meeting, Workshop, Symposium**

- Nov. 10, 2015 - Nov. 11, 2015 The 16th RIES-Hokudai International Symposium, CHATERAISE Gateaux Kingdom SAPPORO, Sapporo, Hokkaido (Poster)
- Dec. 16, 2014 - Dec. 17, 2014 The 15th RIES-Hokudai International Symposium, CHATERAISE Gateaux Kingdom SAPPORO, Sapporo, Hokkaido (Poster)
- Dec. 11, 2013 - Dec. 12, 2013 The 14th RIES-Hokudai International Symposium, CHATERAISE Gateaux Kingdom SAPPORO, Sapporo, Hokkaido (Poster)
- Aug. 23, 2013 - Aug. 25, 2013 A Symposium on Single Molecule Biophysics and Cyt c Biochemistry, Jyozankei View Hotel, Sapporo, Hokkaido (Oral)
- Jun. 16, 2013 - Jun. 20, 2013 The Complexity of Dynamics and Kinetics in Many Dimensions, Telluride Intermediate School, Telluride, CO. (Oral)
- Jun. 10, 2013 - Jun. 14, 2013 Geometry of Chemical Reaction Dynamics in Gas and Condensed Phases, Telluride Intermediate School, Telluride, CO. (Oral)
- Nov. 21, 2011 - Nov. 22, 2011 The 12th RIES-Hokudai International Symposium, CHATERAISE Gateaux Kingdom SAPPORO, Sapporo, Hokkaido (Poster)

*Domestic (Japan)***Conference**

- Sep. 10, 2017 - Sep. 13, 2018 The 12th Annual Meeting of Japan Society for Molecular Science (2018), Fukuoka International Congress Center, Fukuoka, Fukuoka (Oral)
- May. 16, 2017 - May. 18, 2017 The 20th Symposium on Theoretical Chemistry, Kyoto University, Kyoto, Kyoto (Oral)
- Sep. 13, 2016 - Sep. 15, 2016 The 10th Annual meeting of Japan Society for Molecular Science (2016), Kobe Fashion Mart, Kobe, Hyogo (Poster)
- May. 23, 2016 - May. 25, 2016 The 19th Symposium on Theoretical Chemistry, Waseda University, Nishiwaseda Campus, Shinjuku, Tokyo (Oral)
- Sep. 16, 2015 - Sep. 19, 2015 The 9th Annual Meeting of Japan Society for Molecular Science (2015), Tokyo Institute of Technology, Meguro, Tokyo (Poster)
- Sep. 21, 2014 - Sep. 24, 2014 The 8th Annual Meeting of Japan Society for Molecular Science (2014), Higashi Hiroshima Campus, Hiroshima University, Higashihiroshima, Hiroshima (Oral)
- May. 22, 2014 - May. 24, 2014 The 17th Symposium on Theoretical Chemistry, Higasiyama Campus, Nagoya University, Nagoya, Aichi (Oral)
- Mar. 27, 2014 - Mar. 30, 2014 The 68th Annual Meeting of The Physical Society of Japan, Shonan Campus, Tokai University, Hiratsuka, Kanagawa (Oral)
- Sep. 24, 2013 - Sep. 27, 2013 The 7th Annual meeting of Japan Society for Molecular Science (2013), Kyoto TERRSA, Kyoto-city, Kyoto (Oral)
- Mar. 26, 2013 - Mar. 29, 2013 The 68th Annual Meeting of The Physical Society of Japan, Higashi Hiroshima Campus, Hiroshima University, Higashihiroshima, Hiroshima (Oral)
- Sep. 18, 2012 - Sep. 21, 2012 The 6th Annual meeting of Japan Society for Molecular Science (2012), Hongo Campus, Tokyo University, Hongo, Tokyo (Poster)
- Mar. 24, 2012 - Mar. 27, 2012 The 67th Annual Meeting of The Physical Society of Japan, Uegahara Campus, Kwansei University, Uegahara, Hyogo (Oral)
- Sep. 20, 2011 - Sep. 23, 2011 The 5th Annual meeting of Japan Society for Molecular Science (2011), Sapporo Convention Center, Sapporo, Hokkaido (Oral)
- Mar. 25, 2011 - Mar. 28, 2011 The 66th Annual Meeting of The Physical Society of Japan, Igarashi Campus, Niigata University, Niigata, Niigata (Oral)
- May. 23, 2010 - May. 25, 2010 The 13th Symposium on Theoretical Chemistry, Hokkaido University, Sapporo, Hokkaido (Poster)
- Mar. 20, 2010 - Mar. 23, 2010 The 65th Annual Meeting of The Physical Society of Japan, Tsushima Campus, Okayama University, Okayama, Okayama (Poster)

**Meeting, Workshop, Symposium**

- Jun. 17, 2016 - Jun. 18, 2016 Kiban (S) Discrete Manipulation System Project, F.Y.2016, Spring Workshop, Hokkaido University, Sapporo, Hokkaido (Poster)
- Nov. 8, 2015 - Nov. 10, 2015 Minato ERATO Discrete Structure Manipulation System Project F. Y. 2015 Autumn Workshop, Marugoma Onsen, Chitose, Hokkaido (Oral)
- Sep. 15, 2015 Symposium for Reaction Path Search, Curian hall, Shinagawa, Tokyo (Oral)
- Jun. 11, 2015 - Jun. 12, 2015 Minato ERATO Discrete Structure Manipulation System Project F. Y. 2015 Early Summer Workshop, Hokkaido University, Sapporo, Hokkaido (Poster)
- Jul. 18, 2015 The Chemical Society of Japan, Hokkaido Branch, Summer Research Meeting 2015, Hokkaido University of Education, Hakodate Campus, Haakodate, Hokkaido (Oral)
- Mar. 3, 2015 - Mar. 6, 2015 Workshop on dynamical systems and computation 2015, Hokkaido University, Sapporo, Hokkaido (Oral)
- Jan. 23, 2015 - Jan. 24, 2015 JST ERATO Kawarabayashi Large Graph Project / Minato Discrete Structure Manipulation System Project Joint Workshop, Miraikan, Tokyo (Poster)
- Oct. 9, 2014 - Oct. 11, 2014 Theory and Experiment 2014, Higashi Hiroshima Campus, Hiroshima University, Higashihiroshima, Hiroshima (Oral)
- Sep. 7, 2014 - Sep. 10, 2014 Minato ERATO Discrete Structure Manipulation System Project F. Y. 2014 Autumn Workshop, Pisca21, Rebun Island, Hokkaido (Poster)
- Apr. 18, 2014 - Apr. 19, 2014 Minato ERATO Discrete Structure Manipulation System Project F. Y. 2014 Spring Workshop, Hokkaido University, Sapporo, Hokkaido (Poster)
- Apr. 3, 2014 - Apr. 4, 2014 Dynamics and Logics of Cell Systems, Riken (Wako), Wako, Saitama (Oral)
- Apr. 3, 2014 - Apr. 4, 2014 Dynamics and Logics of Cell Systems, Riken (Wako), Wako, Saitama (Poster)
- Mar. 11, 2014 The Annual Meeting of Hokkaido Branch of the Biophysical Society of Japan., Hokkaido University, Sapporo, Hokkaido (Oral)
- Nov. 25, 2013 - Nov. 27, 2013 Minato ERATO Discrete Structure Manipulation System Project F. Y. 2013 Autumn Workshop, Dai-ichi Takimoto kan, Noboribetsu, Hokkaido (Oral)
- Nov. 25, 2013 - Nov. 27, 2013 Minato ERATO Discrete Structure Manipulation System Project F. Y. 2013 Autumn Workshop, Dai-ichi Takimoto kan, Noboribetsu, Hokkaido (Poster)
- Oct. 11, 2013 Theory and Experiment 2013, Higashi Hiroshima Campus, Hiroshima University, Higashihiroshima, Hiroshima (Poster)
- Sep. 5, 2013 Theoretical Chemistry in Hokkaido Joint Workshop 2013, Hokkaido University, Sapporo, Hokkaido (Oral)
- Jul. 20, 2013 The Chemical Society of Japan, Hokkaido Branch, Summer Research Meeting 2013, Kitami Institute of Technology (Kitami), Kitami, Hokkaido (Oral)
- Jan. 29, 2013 - Jan. 30, 2013 The Chemical Society of Japan, Hokkaido Branch, Winter Research Meeting 2013, Hokkaido University, Sapporo, Hokkaido (Oral)
- Aug. 2, 2012 Theoretical Chemistry in Hokkaido Joint Workshop 2012, Hokkaido University, Sapporo, Hokkaido (Oral)
- Mar. 28, 2012 - Mar. 30, 2012 Investigation of Intermediate between Dynamic Deterministic and Statistic Properties IV, Kansai Seminar House, Syugakuin, Kyoto (Oral)

**Seminar, Lecture**

May. 15, 2017	Kiban (S) Discrete Manipulation System Project Seminar, Hokkaido University, Sapporo, Hokkaido (Oral)
Apr. 15, 2016	Hokkaido University Theoretical Chemistry Seminar, Hokkaido University, Sapporo, Hokkaido (Oral)
Jan. 15, 2015	Non-linear Dynamics Seminar, Nara Women's University, Nara, Nara (Oral)
Apr. 30, 2014	Minato ERATO Discrete Structure Manipulation System Project Seminar, Hokkaido University, Sapporo, Hokkaido (Oral)
Jan. 6, 2014	Non-linear Dynamics Seminar, Nara Women's University, Nara, Nara (Oral)
Oct. 1, 2013	Minato ERATO Discrete Structure Manipulation System Project Seminar, RIES, Hokkaido Univ., Sapporo, Hokkaido (Oral)

**Yang Rsearchers Meeting**

Aug. 18, 2014 - Aug. 22, 2014	The 54th Molecular Science Summer School for Yang Scientists, Ikoi no Mura Noto Hanto, Shiga, Ishikawa (Poster)
Mar. 3, 2014 - Mar. 6, 2014	The 10th Mathematics Conference for Young Researchers, Hokkaido University, Sapporo, Hokkaido (Oral)
Sep. 6, 2013 - Sep. 9, 2013	The 53th Summer School of Young Biophysicists, Komatsuya, Hachino-bou, Izunokini-city, Shizuoka (Poster)
Mar. 4, 2013 - Mar. 7, 2013	The 9th Mathematics Conference for Young Researchers, Hokkaido University, Sapporo, Hokkaido (Oral)
Aug. 31, 2012 - Sep. 3, 2012	The 52th Summer School of Young Biophysicists, Shikotsuko Youth Hostel, Chitose, Hokkaido (Poster)
Aug. 20, 2012 - Aug. 24, 2012	The 52th Molecular Science Summer School for Yang Scientists, Hongo Campus, Tokyo University, Hongo, Tokyo (Poster)
Feb. 27, 2012 - Mar. 1, 2012	The 8th Mathematics Conference for Young Researchers, Hokkaido University, Sapporo, Hokkaido (Poster)
Jan. 30, 2012	The 6th HPAPS+ (Special Edition), Hokkaido University, Sapporo, Hokkaido (Oral)

**Outreach**

Smooth Plinco [ [https://youtu.be/Ps\\_1LYwi9mo](https://youtu.be/Ps_1LYwi9mo), <https://youtu.be/xPC2A0EuVP8>, <https://youtu.be/JXntfkDDzMU> ]

Jun. 6, 2015	Open laboratories of RIES, Hokkaido University
Jun. 7, 2014	Open laboratories of RIES, Hokkaido University
Jun. 8, 2013	Open laboratories of RIES, Hokkaido University
Jun. 9, 2012	Open laboratories of RIES, Hokkaido University
Jun. 4, 2011	Open laboratories of RIES, Hokkaido University