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Shigeyoshi Matsumae
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Tokai University has announced the winners of the 2020 Shigeyoshi Matsumae Award. The Shigeyoshi Matsumae Award is named after the founder of the university and recognizes achievements by students from kindergarten to university, alumni, and professors, who have distinguished themselves exceptionally in the fields of culture, sports, and academic research in keeping with the spirit in which the university was founded. This year (as of January 15, 2021), a total of 254 groups and individuals have been recognized. The awarding/conferring ceremony, which is usually held every year, was cancelled owing to the COVID-19 pandemic, and the awards were presented individually at each institution.

The academic department was recognized in the 1st award ceremony for the academic year of 1991. Since the 20th ceremony in 2010, both the Shigeyoshi Matsumae Academic Award and the Shigeyoshi Matsumae Academic Promotion Award have been conferred upon its members. There has been a total of 80 recipients so far, including two individuals of the 30th Award for the academic year of 2020.



2020 Shigeyoshi Matsumae Academic Promotion Award

Keisuke Utsu

Associate Professor, Department of
Communication and Network Engineering,
School of Information and Telecommunication
Engineering

“Research on telecommunication systems for
information sharing in the event of a disaster”

So Nakagawa

Junior Associate Professor, Basic Medical Science
and Molecular Medicine Course, Faculty of
Medicine, School of Medicine

“Medical and life science research using large-scale
nucleotide sequences”



2020 Shigeyoshi Matsumae Award awarding/conferring ceremony, held at the Shonan campus

Keisuke Utsu

Associate Professor, Department of Communication and Network Engineering, School of Information and Telecommunication Engineering

“Research on telecommunication systems for information sharing in the event of a disaster”



With its rapid evolution in the last decade, social media has permeated all aspects of human life. In this context, his research deals with the effective utilization of social media as a disaster management tool for large-scale disasters. Besides analyzing Twitter posts during a disaster and evaluating the actual situation pertaining to rescue requests, damage information, and safety information, his team also participated in an on-campus joint research project—“Glocal Monitoring Project”—that contributes to analyzing disaster-related information and information posting applications.



On Receiving the Shigeyoshi Matsumae Academic Promotion Award

I was initially studying low-power wireless network technology related to information sharing in the event of a disaster. However, after seeing several people posting disaster-related information on social networking services (SNS) in the aftermath of the Great East Japan Earthquake and the Kumamoto Earthquake, I began to take interest in how SNS could be utilized in the event of disasters.

In particular, I am currently working on the analysis of social media posts in the event of a disaster and development of a new information sharing system. The former involves the analysis of rescue requests, damage status, and photos, among other information related to disasters posted on Twitter during the heavy rains in western Japan in 2018 and typhoon No. 19 in 2019. At the same time, my project also aims to develop ways to determine the reliability and usefulness of this information.

The first part of the project involves studying systems to analyze SNS information at the same time as it is posted. Ultimately, our goal is to present the results of our analyses to local governments and the general public in real time. The second part of the project involves activities of the Glocal Monitoring Project, including conduction of research on systems that monitor disasters and environmental changes on-campus, and development of the Disaster Information Tweeting/Mapping System (DITS/DIMS)—an SNS application led by Professor Osamu Uchida of the School of Information Science and Technology. Since DITS/DIMS is an application specifically designed for handling disaster

information, it is expected to post highly reliable information. Besides developing the information technology approach based on the analysis of results of the aforementioned social media posts, another objective of the project is to conduct demonstration experiments and social media workshops for users. To-collabo is a regional collaboration project of Tokai University and is a joint initiative by professionals in sociology, physical science, civil engineering, among other fields. This project conducts workshops and verification experiments with the participation of residents.

Although the use of SNS will likely increase in the future, there are still many issues to address, including handling of personal information and leakage of information—emphasizing the importance of human discretion in the usage of technology. Apart from improving internet literacy of users through social media workshops, there is a need for government officials and experts to provide interdisciplinary support and explore ways to utilize social media. In this context, I believe that the environment in Tokai University is very much conducive for us researchers as it actively encourages on-campus collaboration.

Our research also focusses on analysis of information on the COVID-19 pandemic. Several prefectural governors, authorities, and local government officials independently disseminate information on SNS in response to the COVID-19 crisis, which in essence is a type of disaster. Japan is lagging behind the rest of the world in terms of how new media is utilized. Therefore, I want to contribute by conducting analysis in Japan and comparing our situation with that of the rest of the world.

Career Summary

- March 2011: Doctorate degree; completed PhD at the Course of Science and Technology, Graduate School of Science and Technology, Tokai University
- April 2012: Assistant Professor at the Department of Communication and Network Engineering, School of Information and Telecommunication Engineering, Tokai University
- April 2015: Junior Associate Professor at the Department of Communication and Network Engineering, School of Information and Telecommunication Engineering, Tokai University
- April 2018: Associate Professor at the Department of Communication and Network Engineering, School of Information and Telecommunication Engineering, Tokai University (to date)



So Nakagawa

Junior Associate Professor, Basic Medical Science and Molecular Medicine Course, Faculty of Medicine, School of Medicine

“Medical and life science research using large-scale nucleotide sequences”



He specializes in large-scale nucleotide sequence analysis to decipher genetic information of living organisms on earth — from viruses to humans — and studies dynamic biological function and evolution at the genomic level. He conducts comparative genomic and molecular evolution analyses of various species and identification of bacterial species and viruses from given samples. His research is expected to contribute to the medical field by elucidating parasite-host interactions using large-scale nucleotide sequence data.



On Receiving the Shigeyoshi Matsumae Academic Promotion Award

In recent years, next-generation sequencers, which are capable of generating large-scale nucleotide sequence data, have led to a significant progress in the field of comparative genomics—the analysis of the genetic information of different species. Since all organisms, including humans, have evolved from one universal common ancestor, all living things share several genes. As such, comparing and analyzing the nucleotide sequences of genomes and transcriptomes can provide insights on the shared important functions of specific points on the genomes that are retained across species; contrarily, differences at these points may represent unique characteristics of each organism.

I started studying viruses because I was interested in viral sequences that are integrated into various organisms including us, humans. Such endogenous viral sequences vary greatly across species and can therefore be associated with organism-specific functions. In fact, several studies on different organisms, including on humans, have shown that such endogenous viral sequences are involved in the acquisition of specific biological functions.

Lately, we have also focused on searching for undetected viruses. Studies I was associated with have identified novel RNA viruses from cat urine and mosquitos, and a new DNA virus from crane feces. Most of the emerging and re-emerging viral infections in humans are of animal origin, and as the number of viral infections in humans continues to increase, the search for viruses will continue to gain attention, as it can aid in predicting possible

infectious diseases. For instance, research on the novel coronavirus is underway and terms like “mutant strains” have entered the common parlance. It is also known that organisms that host viruses, including humans, have developed various means to counter such viral infections over the course of co-evolution—a repetitive cycle of mutual evolution. I would like to elucidate the actual situation related to this phenomenon.

Aside from infectious diseases research, the knowledge gained through genome analysis is instrumental for developments in cancer research.

Thus, with interest in interdisciplinary research, I have engaged in extensive collaborative research with various researchers at the Institute of Medical Sciences and the Micro/Nano Technology Center, in addition to the School of Medicine of Tokai University. I have found the institutional environment to be extremely conducive for us to conduct such collaborative research, not only with institutional researchers but with those from other universities and research institutes. Moving forward, I plan to continue research in collaboration with people from various specialized fields, focusing on medical and life science research that uses large-scale nucleotide sequences.

Career Summary

March 2008: Doctorate degree; completed PhD at the Graduate School of Biomedical Science, Tokyo Medical and Dental University

April 2008: Postdoctoral Researcher at the Bioinformation and DDBJ Center, National Institute of Genetics

April 2013: Assistant Professor at the Basic Medical Science and Molecular Medicine Course, Faculty of Medicine, School of Medicine, Tokai University

April 2018: Junior Associate Professor at the Basic Medical Science and Molecular Medicine Course, Faculty of Medicine, School of Medicine, Tokai University (to date)

(August 2011 to March 2013: Visiting Scholar at Harvard University)

Shigeyoshi Matsumae Award
Academic Divisions
Past Winners

Academic Year 2019

【Shigeyoshi Matsumae Academic Award】

Shinichiro Higashi,
Associate Professor, Center for Liberal Arts

【Shigeyoshi Matsumae Academic Promotion Award】

Hitoshi Endo,
Junior Associate Professor, Department of
Preventive Medicine, Faculty of Medicine, School of
Medicine

Kazunari Yoneda,
Associate Professor, Department of Bioscience,
School of Agriculture

Academic Year 2014

【Shigeyoshi Matsumae Academic Award】

Shinji Hadano,
Professor, Basic Medical Science and Molecular
Medicine Course, Faculty of Medicine, School of
Medicine

Tomoko Ishino (Kaneko),
Professor, Department of Nursing, School of Health
Sciences

【Shigeyoshi Matsumae Academic Promotion Award】

Tomotaka Mabuchi,
Associate Professor, Specialized Clinical Science
Course, Faculty of Medicine, School of Medicine

Academic Year 2018

【Shigeyoshi Matsumae Academic Award】

Daisuke Sakai,
Associate Professor, Surgical Science Course, Faculty
of Medicine, School of Medicine

Shogo Tanaka,
Professor, Center for Liberal Arts

Academic Year 2013

【Shigeyoshi Matsumae Academic Award】

Toshie Iwata,
Professor, Department of Architecture and Building
Engineering, School of Engineering

Joji Mochida,
Professor, Surgical Science Course, Faculty of
Medicine, School of Medicine

【Shigeyoshi Matsumae Academic Promotion Award】

Koji Tomita,
Junior Associate Professor, Department of Chemistry,
School of Science

Minoru Matsunami,
Associate Professor, Department of Sport & Leisure
Management, School of Physical Education

Takashi Yahata,
Associate Professor, Basic Clinical Science and Public
Health Course, Faculty of Medicine, School of
Medicine

Academic Year 2017

【Shigeyoshi Matsumae Academic Promotion Award】

Hiroshi Kimura,
Associate Professor, Department of Mechanical
Engineering, School of Engineering

Hiroataka Komaba,
Junior Associate Professor, Medical Science
Course, Faculty of Medicine, School of Medicine

Academic Year 2012

【Shigeyoshi Matsumae Academic Promotion Award】

Yoshikazu Hoshi,
Associate Professor, Department of Plant Science,
School of Agriculture

Yoshihiro Nakagawa,
Assistant professor, Specialized Clinical Science
Course, Faculty of Medicine, School of Medicine

Academic Year 2016

【Shigeyoshi Matsumae Academic Award】

Akihiro Misagawa,
Professor, Occidental History Course, Department
of History, School of Letters

Yutaka Inagaki,
Professor, Basic Clinical Science and Public Health
Course, Faculty of Medicine, School of Medicine

Academic Year 2011

【Shigeyoshi Matsumae Academic Award】

Hidetoshi Inoko,
Professor, Basic Medical Science and Molecular
Medicine Course, Faculty of Medicine, School of
Medicine

【Shigeyoshi Matsumae Academic Promotion Award】

Koichiro Abe,
Junior Associate Professor, Basic Medical Science and
Molecular Medicine Course, Faculty of Medicine,
School of Medicine

Naoki Niikura,
Assistant professor, Surgical Science Course, Faculty
of Medicine, School of Medicine

【Shigeyoshi Matsumae Academic Promotion Award】

Shin Yasuda,
Associate Professor, Department of Bioscience,
School of Agriculture

Takamasa Ishij,
Junior Associate Professor, Basic Medical Science
and Molecular Medicine Course, Faculty of
Medicine, School of Medicine

Academic Year 2015

【Shigeyoshi Matsumae Academic Award】

Taiji Matsusaka,
Associate Professor, Basic Medical Science and
Molecular Medicine Course, Faculty of Medicine,
School of Medicine

【Shigeyoshi Matsumae Academic Promotion Award】

Shinya Hasegawa,
Junior Associate Professor, Department of Prime
Mover Engineering, School of Engineering

Masato Ohtsuka,
Associate Professor, Basic Medical Science and
Molecular Medicine Course, Faculty of Medicine,
School of Medicine

Academic Year 2010

【Shigeyoshi Matsumae Academic Promotion Award】

Takashi Nakajima,
Associate Professor, Department of Network and
Computer Engineering, School of Information and
Design Engineering

and 50 others.

(The affiliations and qualifications are those at the time of
the awards ceremony)