Shiv Chhatrapati Shikshan Sanstha's

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur

Department of Biotechnology

A) Summary Report

1) Title of Programme:		**A Lecture Series on Nobel Laureates** Lecture 03 : Sir John B. Gurdon and Shinya Yamanaka		
2) Name of Organizing Department/Unit:		Biotechnology		
3) Name of the Coordinator(s)/ Convener(s)/ Organizer(s) of the Programme:		**Chair Person**: Dr. Mahadev Gavhane (Principal) **Joint-Organizer:** Dr. A. J. Raju (Vice-Principal) Prof. S. N. Shinde (Vice-Principal) **Head** Dr. S. S. Kulkarni		
4) Date(s) of the Programme:		9th September 2021		
5) Venue/ Mode:		Online (Microsoft Team Platform)		
6) Target Group:		UG Students		
7) Number of Participants:		Male	Female	Total
A separate list with signatures be maintained in the department/Unit)	Teaching	00	00	00
	Non-Teaching	00	00	00
	Students	19	30	49
8) Name(s) and details of Resource Person(s), if any:		Mr.Udaybhanu P. Sirdeshmukh, Assistant Professor, Department of Biotechnology, Rajarshi Shahu Mahavidyalaya (Autonomous), Latur		
9) Total Expenditure for the Programme:		NIL		
10) Source of Funding:		Not Applicable		

B) Report

i. Title: A Lecture Series on Nobel Laureates Lecture 03: Sir John B. Gurdon and Shinya Yamanaka

ii. Introduction : -

The Nobel Prize in Physiology or Medicine 2012 was awarded jointly to Sir John B. Gurdon and Shinya Yamanaka "for the discovery that mature cells can be reprogrammed to become pluripotent."

Animal development starts from single cellular life known as zygote.Initially ,their is consideration ,development of animal is unidirectional,from zygote to young one.Once specilization happen ,embryonic cells donot show any reversal in development.But ,in 1962, John B. Gurdon challenged the dogma that the specialised cell is irreversibly committed to its fate. He hypothesised that its genome might still contain all the information needed to drive its development into all the different cell types of an organism. Gurdon's research taught us that the nucleus of a mature, specialized cell can be returned to an immature, pluripotent state.

Shinya Yamanaka was able to answer this question in a scientific breakthrough more than 40 years after Gurdon´s discovery. His research concerned embryonal stem cells, i.e. pluripotent stem cells that are isolated from the embryo and cultured in the laboratory. Yamanaka tried to find the genes that kept them immature. When several of these genes had been identified, he tested whether any of them could reprogram mature cells to become pluripotent stem cells.

iii. Objectives of Lecture Séries on Nobel Lauréates : -

- To give students the information on discovery of iPS cells and it's potential applications in development.
- To make the students to understand the future applications of this discovery in medicine and other field.
- To aware the students about nobel work in developmental biology and stem cell technology.
- To inspire students to work in this field in future.

iv. Details of Participants

49 participants (19 Male and 30 female) attended the Programme.

v. Brief Summary of Events / Session : -

Mr.Udaybhanu Sirdeshmukh, Assisstant Professor, Department of Biotechnology,Rajarshi Shahu Mahavidyalaya (Autonomous), Latur, conducted a lecture on"for the discovery that mature cells can be reprogrammed to become pluripotent."

He addresed in details about the contribution of 'Sir John B. Gurdon and Shinya Yamanaka', who received the Nobel Prize in Physiology or Medicine 2012.

The Nobel Prize recognizes two scientists who discovered that mature, specialised cells can be reprogrammed to become immature cells capable of developing into all tissues of the body. Their findings have revolutionised our understanding of how cells and organisms develop.

John B. Gurdon discovered in 1962 that the specialisation of cells is reversible. In a classic experiment, he replaced the immature cell nucleus in an egg cell of a frog with the nucleus from a mature intestinal cell. This modified egg cell developed into a normal tadpole. The DNA of the mature cell still had all the information needed to develop all cells in the frog.

Shinya Yamanaka discovered more than 40 years later, in 2006, how intact mature cells in mice could be reprogrammed to become immature stem cells. Surprisingly, by introducing only a few genes, he could reprogram mature cells to become pluripotent stem cells, i.e. immature cells that are able to develop into all types of cells in the body.

These ground-breaking discoveries have completely changed our view of the development and cellular specialisation. We now understand that the mature cell does not have to be confined forever to its specialised state. Textbooks have been rewritten and new research fields have been established. By reprogramming human cells, scientists have created new opportunities to study diseases and develop methods for diagnosis and therapy.

vi. Conclusion, with feedback on the Lecture : -

Students are motivated to learn animal development and its future applications in medicine and research.

vii. Appendix : List of Participants.

Date : - 10/09/2021.

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Principal
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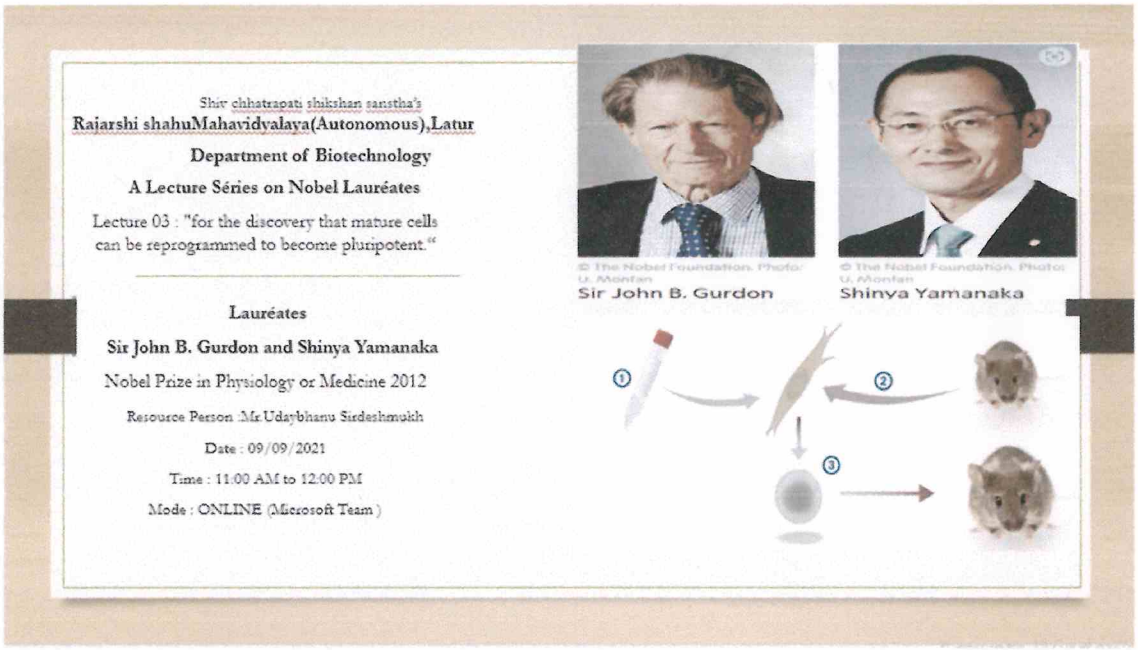
C) Geotagged Photographs / Screenshot : -

Resource person: Mr.U.P.Sirdeshmukh, Assistant Professor, Department of Biotechnology, Rajarshi Shahu Mahavidyalaya(Autonomous),Latur. Delivering the lecture on Nobel Laureate Sir John B. Gurdon and Shinya Yamanaka.

D) Broucher



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