

## 2021 Application Results for New Grand Challenge Seed Program

A total of 19 Grand Challenge Seed Program applications were received this year (11 from the Division of Life Sciences ;6 from the Division of Mathematics and Physical Sciences; 2 from the Division of Humanities and Social Sciences). Of the 19 applications, 6 were approved during the First-round and Second-round Review meetings, including 4 from the Division of Life Sciences and 2 from the Division of Mathematics and Physical Sciences. Please refer to the following table for detailed information. Approved projects shall be undertaken only after their budget plans have been officially approved.

### A. Division of Life Sciences (4 Projects)

Project No.	Project Title	(1)Project Director (2)Co-Director	Affiliation	Grant Period
AS-GCS-110-03	Structural analysis of the transcription-splicing supra-machinery	(1) Tien-Hsien Chang	Genomics Research Center, AS	2
AS-GCS-110-04	Regulation of the gut-brain axis: to investigate how lysosome dysfunction in the gut contributes to Parkinson's disease	(1) Jr-Wen Shui	Institute of Biomedical Sciences, AS	2
AS-GCS-110-05	Investigation of inter-species mRNA exchange between plants and fungi	(1) Tien-Shin Yu	Institute of Plant and Microbial Biology, AS	2
AS-GCS-110-06	The development of ultra-high-resolution expansion microscopy (E x MM) to break barriers of nanoscale observation in plants	(1) Chung-Ju Rachel Wang	Institute of Plant and Microbial Biology, AS	2

### II. Division of Mathematics and Physical Sciences (2 Projects)

Project No.	Project Title	(1)Project Director (2)Co-Director	Affiliation	Grant Period
AS-GCS-110-07	Development of iterative $\pi$ -extension reaction toward precise synthesis of heteroatom-doped nanographene	(1) Hsiao-hua Yu  (2) Kenichiro Itami	Institute of Chemistry, AS  Dept. of Chemistry, Graduate School of Science, Nagoya University	4+1
AS-GCS-110-08	Alchemizing Skyrmion Racetrack Memory for Ultra-high Performance Computing in the Future	(1) Yuan-Hao Chang  (2) Ming-Chang Yang  (2) Po-Chun Huang	Institute of Information Science, AS  Dept. of Computer Science & Engineering, The Chinese University of Hong Kong  Taipei Tech Electronic Engineering	1+4