


## Gifted Education Fund: Off-school Advanced Learning Programmes

### Programme No. 2020-06 (For secondary students)

Title of Programme	<b>Too Small to Be Taken Seriously: Bacteria and Infections</b>
Programme Provider	Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University
Theme	Self-initiated Research Study
Maximum No. of Participants and Class Level in the 2020/21 School Year	5 students (Secondary 4-5)
Pre-requisite	No special background knowledge or skills are required.
Programme Duration	About 15 months
Medium of Instruction	Course Material: English Class teaching/ Discussion: English
Objectives	<ul style="list-style-type: none"><li>• To broaden gifted students' knowledge of microbiology and increase their interest in microbiological research;</li><li>• To develop their skills in microbiological research through investigating an authentic research problem in microbiology, and also skills related to scientific writing and presentation;</li><li>• To enhance other generic skills such as critical thinking, creativity and collaboration; and</li><li>• To develop positive values and attitudes among students with emphasis on the ethics and moral values of being a responsible researcher and microbiologist.</li></ul>
Programme Outline*	<p>This programme aims to enhance the gifted students' knowledge of microbiology and develop their interest, skills, and values and attitudes related to conducting microbiological research. The programme consists of three phases.</p> <p>Phase I</p> <ul style="list-style-type: none"><li>• 6 lessons (3 hours each) on the following topics:<ul style="list-style-type: none"><li>- introduction to microbiology and our society;</li><li>- microbial physiology, metabolism and classification;</li><li>- microbial growth and metabolism and classification;</li><li>- bacterial interactions and functions in human body;</li><li>- bacterial diseases; and</li><li>- microbial control</li></ul></li></ul> <p>Phase II</p> <ul style="list-style-type: none"><li>• 2 practical training sessions (3 hours each) on microbiological techniques:</li></ul>

	<ul style="list-style-type: none"> <li>- Session 1: Aseptic and simple microbiological techniques</li> <li>- Session 2: Staining of microorganisms and biochemical tests</li> </ul> <ul style="list-style-type: none"> <li>• Each student will then propose and conduct an independent research project and have weekly consultation with their mentor.</li> </ul> <p>Phase III</p> <ul style="list-style-type: none"> <li>• Based on their research findings, students will each compile and submit a written report and deliver a seminar-style oral presentation to an audience that may consist of academics and postgraduate students of the department.</li> </ul> <p>* In view of the COVID-19 epidemic, some sessions of the programme may be conducted online.</p>
Admission Fee	Free of charge
Application method	<p>Application form can be downloaded from the following webpage:</p> <p><a href="https://www.edb.gov.hk/en/curriculum-development/curriculum-area/gifted/ge_fund/gef/osalp.html">https://www.edb.gov.hk/en/curriculum-development/curriculum-area/gifted/ge_fund/gef/osalp.html</a></p>  <p>Please complete the application form and send it by post <u>on or before 15 April 2021</u> (now extended to 30 April) to the following address:</p> <p>Department of Applied Biology and Chemical Technology  Room Y844, Block Y  Lee Shau Kee Building  The Hong Kong Polytechnic University  11 Yuk Choi Road, Hung Hom, Kowloon  (Attn: Dr CHUA Song-lin)</p>
Documents to be Submitted along with the Application	<ul style="list-style-type: none"> <li>• Evidence of Other Learning Experiences (e.g. a photocopy of record of extra-curricular activities) (if any)</li> <li>• A photocopy of school report card (last two academic years)</li> <li>• Please include the following in Part IV Student's Self-introduction of the application form: <ul style="list-style-type: none"> <li>- Statement of purpose (maximum 500 words)</li> </ul> </li> </ul>
Enquiry	<p>Dr CHUA Song-lin (Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University)</p> <p>Tel No.: 3400 8682  Email: <a href="mailto:song-lin.chua@polyu.edu.hk">song-lin.chua@polyu.edu.hk</a></p>
Date of Announcement of Result	By May 2021 (tentative)