



## **The Discovery Society Annual Report 2021**

Report of the Trustees for the year ending 31<sup>st</sup> December 2021.

The Discovery Society was registered as a charity (Charitable Incorporated Organisation – CIO) on 21<sup>st</sup> November 2019. As such its first full year of operation should have been the year ending 31<sup>st</sup> December 2020. There was however no report for the year 2020, as this was not required by Charities Commission rules, and the majority of the society's activities were severely disrupted by lockdown measures related to the global COVID-19 pandemic. These restrictions commenced just 4 months after the charity's registration date.

### **Our Aims**

The charitable object of The Discovery Society is to advance the education of the students at The Bewdley School by providing and assisting in the provision of facilities [not required to be provided by the local education authority] for understanding of and engagement in exploration and scientific research.

### **Our Research Strategy**

The Discovery Society is a Charitable Organisation attached to an 11-18 comprehensive Secondary School with the purpose of encouraging scientific exploration and research. We live in an era where the popular view is that the world is 'discovered' and the only 'new knowledge' is based around technologies that we create. The world for school age children is so technologically oriented that the fundamental principle which has driven the creation of this charity, is that children need to be encouraged to interact with the natural world and to view finding out how it works as a central component of their learning about science. Without such an impetus we will always struggle to understand both the concept of climate change and the impact of human activity on the other species we share the planet with.

### **Research Interests**

Students at the school follow the National Curriculum for Science for year 7 to 11 (age 11-16). In our Sixth Form students study Advanced Levels in Biology, Computer Science, Chemistry and Physics with Geology on offer but as yet not studied. The curriculum for all of these subjects is prescribed by the examination bodies under the regulation of the Joint Council for Qualifications (JQC). The core elements of study are therefore determined beyond the institution:

**Head Teacher Dave Hadley-Pryce BSc MSc FRSA**

**Registered charity number:**

**1186512** • Learning materials are determined by these externally driven curriculum

arrangements  
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- Research interests are drawn from these learning materials and the themes from which they arise

We are also partnered with the University of Birmingham Earth Sciences Department (School of Geography, Earth and Environmental Sciences) who will support us with our research, and many of the research interests will draw from the research areas they are currently focussing on. These will include postgraduate and postdoctoral researchers. In the event that any of our sixth form students become co-authors in research papers, the drafting and publication processes will be carried out by the professional scientists at the University. This also includes the potential for students to engage in research through Operation Wallacea.

## Member Benefits

Aside from the benefits offered by involvement in exploration and research, members will potentially have access to the following accreditations:

- Bronze, Silver and Gold Duke of Edinburgh Awards
- Bronze, Silver and Gold Crest Awards
- Involvement in Operation Wallacea which offers PADI registration

It is anticipated that this initial menu will expand as the charity matures and hones its expertise.

## Review of Activities

The principle activities planned for 2020 were:

1. Science week – comprehensive programme of activities planned for 9-13/3/2020
2. Spring lecture series – series of 4 after school lectures planned commencing 5/3/2020
3. Operation Wallacea – planned for 2 staff and 7 students from 11/7/21 to 24/7/21
4. Duke of Edinburgh – planned offer of Bronze, Silver and Gold Awards
5. Crest Award – planned offer of Bronze, Silver and Gold Awards

## Science Week Plan

British Science Week 9th – 13th March

Theme: Our Diverse Planet

### All week

- Year 7 making DNA necklaces in one of their 3 lessons
- Year 8 Bronze Crest Award in 3 lessons and continue at home to make up the required 10 hours
- Photography competition set by form tutors on Monday 9th March. Deadline Friday 13th March.
- Poster competition (optional) Teachers can use in lessons or set as homework as they wish. School deadline Friday 13th March and the best 4 entered into the national competition.

### Optional activities (students sign up using online form)

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- Tuesday 10th March 3:30-4:30 in D3: Mission to Mars for year 7 students. Students set the task of creating a mars lander to safely land an egg on the surface of Mars
- Wednesday 11th March 9am-12: Big Science Quiz in the Hall for years 7-10
- Wednesday 11th March 3:30-4:30 in D6: Dissection class for year 9 students
- Thursday 12th March 3:30-4:30 in D4: Whizz, Bang, Pop 'The diversity of Elements' for year 8 students

#### Trip

Friday 13th March: Big Bang Science Fair for 45 year 9 students.

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## Spring Lecture Series Plan

**5 March      Georgia Jacobs      Abberley and Malvern Hills Geopark**

4-5pm

Geological Inspirations in Textile Art

### Lecturer Bio

Georgia Jacobs

Representing Abberley and Malvern Hills Geopark

Georgia was a Further Education lecturer in Geography and Geology, then a Senior Lecturer and Guidance Manager for Student Services, for a total of 19 years at Halesowen College, from 1983 until 2002. For the first 8 years of her career she taught Geography and Geology to 'A' level in secondary school 6th forms. Now retired, Georgia still has a keen interest in these subjects. She is a member and registered speaker on Recreational Geology and Textile Art for the Worcestershire Federation of Womens' Institutes and also belongs to Geologists in the Geopark as a volunteer.

### Lecture Abstract

To show how the geology of AMH Geopark can be used as inspiration for Textile Art: to produce painted and stitched panels, mixed media art boards and sampling sketchbooks. The textiles were created for displays at Bewdley Museum, Wyre Forest Visitor Centre and Severn Valley Country Park, as part of the annual Geofest programme of events.

**12 March      Dr Karen Cameron**

**Aberystwyth University**

4-5pm & 6-7pm

Living Ice (glacial microbial ecology)

### Lecturer Bio

Dr Karen Cameron Ser Cymru II COFUND Research Fellow at Aberystwyth University

Karen has been studying the microbial ecology of Arctic and Antarctic environments for almost 15 years. In this time, she has amassed over 16 months of field experience in some of the most remote and extreme places on earth. Through her research, she aims to better understand the form and function of microbial communities within glacial environments. She is driven to use this knowledge to predict the impact of climate warming on these rapidly changing, globally important glacial ecosystems, and to investigate the implications of increased glacial melt and periglacial warming on downstream environments. Karen has been awarded a prestigious Marie Skłodowska-Curie Actions Research Fellowship to pursue her research at Aberystwyth University, and she looks forward to starting a new position at the University of Glasgow in the Spring.

### Lecture Abstract

In this lecture we will explore the life that lives on, in, under and out of glaciers. We will look at the challenges that organisms within these environments face; from the extreme cold and lack of nutrients and liquid water, to months of

darkness followed by intense UV radiation. We will consider some of the mechanisms that these organisms use to not only survive, but thrive within these

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environments. With climate warming casting its shadow over these fragile, fast-changing frozen habitats, it is now more important than ever to understand their current state, so that we can predict how they might change, and what impact that might have in a warming world. Through looking at various research studies that Karen has led, we will get a sense of what it means to explore and work in these magnificent, yet vulnerable polar environments.

**19 March Kate Unwin**

**University of Worcester**

4-5pm & 6-7pm

Forensic Biology behind the scenes

#### Lecturer Bio

Kate Unwin Principal Lecturer in Forensic and Applied Biology at the University of Worcester

Since February 2002 Kate has been a Forensic Biologist and has worked in this area and role since that time, first with the Forensic Science Service as a Reporting Officer and then with Cellmark Forensic Services. She has worked on hundreds of criminal cases, examining evidence, both within a laboratory environment and at scenes of crimes. She has been classified as an expert witness and her areas of expertise include body fluid evidence, damage assessment and DNA profiling and has given evidence in both Crown and Magistrates courts, her first court appearance being at the Old Bailey!

#### Lecture Abstract

Covering elements of "a day in the life of" as well as some case examples to demonstrate how biological evidence can be used to help the Crown Prosecution Service and the wider community.

**2 April Dr Chris Brown**

**University of Worcester**

4-5pm & 6-7pm

In the company of penguins

#### Lecturer Bio

Dr Chris Brown Principal Lecturer in Animal Biology/Biology at the University of Worcester

Chris studied at the University of Cape Town in South Africa and spent a number of years working for the Percy FitzPatrick Institute of African Ornithology where he worked on their sub-Antarctic programme. This included over two years carrying out research on the energetics and ecology of penguins, albatrosses and petrels on Marion Island in the sub-Antarctic.

#### Lecture Abstract

Marion Island is a small, remote island in the sub-Antarctic that is home to large numbers of penguins, albatrosses and other seabirds as well as fur seals and elephant seals. This talk will describe the island, its wildlife and some of the research I was involved with during my time on the island.

### **Operation Wallacea Plan**

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**1186510 Proposed Schedule**

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11/7/20	Travel to Dominica
12 – 16/7/20	Week 1 - Forest campsite and Caribbean Island Ecology course
17/7/20	Volcanology day
18/7/20	Whale research and transfer to Fort Shirley
19 – 23/7/20	Week 2 - Learn to dive or complete Caribbean reef ecology course
24/7/20	Travel back to UK

Two staff and seven students were scheduled to travel as above, with donations of £5,000 from the Bewdley Old Grammar School charity and £500 from Bewdley Town Council towards costs.

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## **Duke of Edinburgh Plans**

The Duke of Edinburgh Award is offered to:                      Year 10                      – Bronze Award

Year 11                      – Silver Award

Years 12/13                      – Gold Award

Supported by a mixture of after school and weekend sessions, with some expeditions taking place during school time. For example, a typical Bronze expedition will mean 2 large groups each having a 2 day expedition on Friday/Saturday and Sunday/Monday.

## **Crest Award Plans**

The Crest Award was new in 2020 and offered to:    Year 8                      – Bronze Award

Year 9                      – Silver Award

Years 12/13                      – Gold Award

This was launched during science week 9th – 13th March 2020.

## **Engagement Levels**

The level of engagement with all of these opportunities was severely curtailed by the pandemic lockdown restrictions, so was not the launch that the Society had hoped for.

## **Science Week**

The timing meant that this occurred just prior to the first lockdown, meaning that students were fully engaged throughout the week, and it was an excellent launch for the Society.

## **Spring Lecture Series**

Although lockdown did not happen until 23/3/2020, the timing of these lectures meant that the host institutions were beginning to apply their own restrictions during March. As such we were able to offer the first lecture only and then had to cancel all that followed. There were 22 staff, students and visitors present at this first lecture. There was also a summer lecture series in planning which also had to be abandoned.

## **Operation Wallacea**

Following advice from the Opwall Team about restrictions in the Caribbean area, the expedition was postponed until 4<sup>th</sup> July – 16<sup>th</sup> July 2022. We have lost 3 of the 7 students as they have left and started university courses. We are currently recruiting from years 11 and 12.

## **Duke of Edinburgh**

The Duke of Edinburgh Awards were able to proceed in modified format, with engagement levels being very high, with 287 participated in DofE since 21/11/19:

2019-20

Bronze - 66

Silver - 36

Gold - 8

2020-21

Bronze - 84

Silver - 63

Gold - 30

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## **Crest Award**

Lockdown prevented lower school students engaging with Crest beyond science week, with 2 sixth form students completing the gold award.

## **Future Plans**

When restrictions have been fully lifted we plan to relaunch all of the activities described above.

As members of Abberley and Malvern Hills Geopark Forum, we are also undertaking to lead our partners in a 'Heritage Lottery' bid, to develop a peripatetic 'time capsule' with a programme to visit all Geopark visitor centres on an on-going basis. This is planned to run for 5 years in the first instance, with legacy plans built into the project.

## **Our Finances**

To be added following meeting with DRB.

## **Policy Framework**

As all of our trustees and activities fall within the operating environment of The Bewdley School – A Foundation School, all of our operations work within the policy framework of the school. The statutory policies which apply to our activities can be found at:

<https://www.bewdley.worcs.sch.uk/statutory-policies/>

## **Our Trustees**

We currently have 3 trustees, which we intend to expand as momentum builds:

<b>Name</b>	<b>Date first</b>	<b>Term</b>	<b>Term</b>	<b>Relationship to</b>
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	<b>held</b>		<b>Ends</b>	<b>School</b>
David Hadley-Pryce*	21/11/2019	4 years	20/11/2023	Head Teacher
Derek Haskins	21/11/2019	3 years	20/11/2022	Chair of Governors
Catherine McDougall	21/11/2021	3 years	20/11/2024	Deputy Head Teacher

\* Chair of Trustees