Modulbezeichnung: **BB Wahlpflicht und IB Wahlpflicht: Metabolism in a box: A virtual grant challenge**	Modulnummer:
Institution: Studiendekanat Biologie	Modulabkürzung:

Workload:	300 h	Präsenzzeit:	160 h	Semester:	0
Leistungspunkte:	10	Selbststudium:	140 h	Anzahl Semester:	1
Pflichtform:	Wahlpflicht			SWS:	10

Lehrveranstaltungen/Oberthemen:

Vorlesung Metabolism in a box: A virtual grant challenge (Bio-BB/Bio-IB) (V)
Praktikum Metabolism in a box: A virtual grant challenge (Bio-BB/Bio-IB) (P)
Übung Metabolism in a box: A virtual grant challenge (Bio-BB/Bio-IB) (Ü)

Belegungslogik (wenn alternative Auswahl, etc.):

Lehrende:

Prof. Thekla Cordes

Qualifikationsziele:

After completing the module, students are able to:

- understand how metabolism influence cellular mechanisms and how metabolic vulnerabilities can be exploited to buffer human disease outcome
- identify and apply techniques to analyze human metabolism
- explain how metabolic techniques can be applied in the context of different disease settings
- develop strategies on how analyzing metabolism may be applied in the context of various metabolic diseases
- write, present, and discuss scientific work
- evaluate and interpret scientific literature and proposals
- provide critical feedback on scientific work
- Work on a research project as a team in a “real” scientific environment

Inhalte:

The students will be focusing on metabolism in the context of mitochondria and metabolic diseases (including cancer, inflammation, and neurodegenerative disease like parkinsons or epilepsy) which will allow the students to cover a broad field of exciting research topics. The overall goal is to learn a broader picture of science to better understand the complexity of metabolism and disease mechanisms.

The course will focus on a “flipped classroom” model and students will be actively involved in the course design. Each student will be focusing and gain expert knowledge on one metabolic technique to analyze specific disease questions. The students will then work as a team (with diverse knowledge of metabolic techniques) on a scientific grant challenge to learn concepts of research proposals and management. The aim is to develop and apply a research strategy plan with diverse metabolic techniques to identify and exploit metabolic vulnerabilities that can be targeted with pharmaceutical treatment strategies.

The students will learn the current stage of scientific knowledge in background lectures, design and execute scientific experiments and present results in a short video clip, critically discuss scientific proposals, and can virtually meet young international scientists.

They will also learn about scientific grant writing, budgeting, organizing a research project in a team, and presenting and communicating scientific findings. All classes will be held in a virtual research environment (online sessions) to promote digital and international teaching experiences.

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Lernformen:

Vorlesung, Praktikum, Übung

Prüfungsmodalitäten / Voraussetzungen zur Vergabe von Leistungspunkten:
Studienleistung:
- Experimentelle Arbeit

Prüfungsleistung:
- Portfolio

Die Modulnote entspricht der Note der Prüfungsleistung.

Turnus (Beginn):
jährlich Wintersemester

Modulverantwortliche(r):
Prof. Thekla Cordes

Sprache:
Englisch

Medienformen:

Literatur:
Wird in der Vorlesung bekannt gegeben

Erklärender Kommentar:
Voraussetzungen für dieses Modul:
zwingend: keine
empfohlen: keine

Sprache:
Englisch

The modul is supported by ProDiGi (Promoting Digital education through Global Interconnection, https://www.tu-braunschweig.de/lehreundmedienbildung/angebote/internationale-lehre/prodigi/gefoerderte-projekte). We will integrate innovative learning approaches to improve digital and international learning experiences. The course will be held in English and will use a virtual (online) classroom.

Kategorien (Modulgruppen):
Wahlpflichtbereich BB und IB

Voraussetzungen für dieses Modul:
Teilnahmevoraussetzungen siehe Besondere Prüfungsordnung Biologie (BL-STD2-66)

Studiengänge:
Biologie (2019) (Master)

Kommentar für Zuordnung:
