

UG Physiology Degree Programs



A Career:

Medicine
PT, PA
Dentistry
Allied Health

Graduate
Physiology

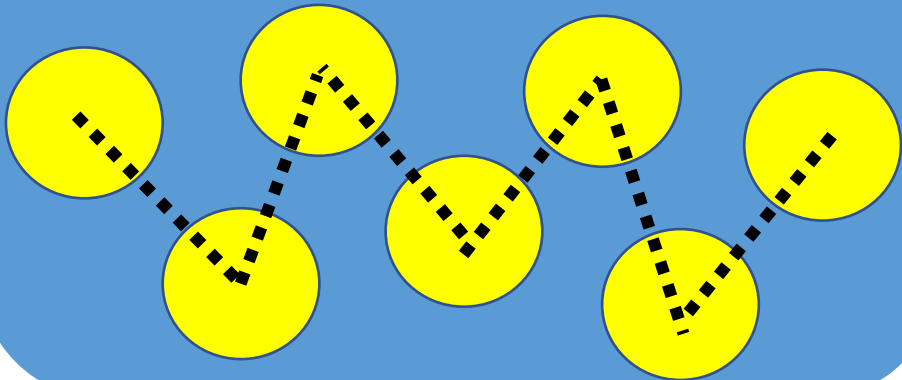
Industry

Faculty Support,
Mentoring,
Advising

Experiential Learning:
UG Research, Study
Abroad, Internships,
Outreach, Job Shadowing

**Professional
Development**

Curriculum → Courses →
Content: "The Facts"



Core Concepts

Core Concepts	Faculty Survey, <i>Adv Physiol Ed</i> 35:336-341, 2011	P-MIG Faculty Survey, 2017	P-MIG Faculty Survey, 2018	Student Survey: <i>"I have mastered this concept"</i>	Student Survey: Important for Desired Career	Input from Joel Michael *="Unpacked"	Input from ACDP
Causality					X		
Cell-cell communications*	X	X	X	X		X *	
Cell membrane*	X			X		X *	
Cell theory							
Energy			X	X		X	
Evolution*							
Flow down gradients*	X		X			X *	
Genes to proteins							
Homeostasis*	X	X	X	X	X	X *	
Interdependence*	X		X	X	X		
Levels of organization		X					
Mass balance						X *	
Physics/chemistry							
Scientific reasoning		X	X		X		
Structure/function*		X	X	X	X		

Concepts from Core Principles of Physiology

Michael J, Modell H, McFarland J, Cliff W. The "core principles" of physiology: what should students understand? *Adv Physiol Educ* 33: 10–16, 2009
 Michael, J., & McFarland, J. The core principles ("big ideas") of physiology: results of faculty surveys. *Adv Physiol Educ*, 35(4): 336-341, 2011

1	Causality Living organisms are causal mechanisms ("machines") whose functions are explainable by a description of the cause-and-effect relationships that are present.	Concept not included in my course	Students are only minimally exposed to this concept	Students are exposed to this concept in significant detail
2	Cell-cell communication The function of the organism requires that cells pass information to one another to coordinate their activities. These processes include endocrine and neural signaling.	Concept not included in my course	Students are only minimally exposed to this concept	Students are exposed to this concept in significant detail
3	Cell membrane Plasma membranes are complex structures that determine what substances leave/enter cell. They are essential for cell signaling, transport, etc.	Concept not included in my course	Students are only minimally exposed to this concept	Students are exposed to this concept in significant detail
4	Cell theory All cells making up the organism have the same DNA. Cells have many common functions but also many specialized functions that are required by the organism.	Concept not included in my course	Students are only minimally exposed to this concept	Students are exposed to this concept in significant detail

	PSIO	PSIO 202	PSIO 303	PSIO 305	PSIO	PSIO	F
	201				404	420	
Transformation of energy / matter	1	2	1	1	1	2	
Information flow	2	2	1	2	2	0	
Systems	2	2	2	2	2	2	
Structure/Function	2	2	1	2	2	1	