

Janet Genz

Contact Information

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Professional Experience

Associate Professor July 2018 - present
Biology Department, University of West Georgia

Assistant Professor Aug. 2013 - June 2018
Biology Department, University of West Georgia

Postdoctoral Fellow May 2011 - May 2013
Department of Biological Sciences, University of Manitoba

Education

University of Miami Ph.D.
Rosenstiel School of Marine and Atmospheric Science (Miami, FL) Dec. 2010
Marine Biology and Fisheries
Dissertation: *Physiological Effects of High Salinity in Teleost Fish*

University of Miami (Coral Gables, FL) B.S.
Major: Biology Dec. 2005
Minors: Marine science, Chemistry

Professional Development & Awards

- AFS Certified Fisheries Professional 2016 – present
- UWG Honors College Faculty Fellow Aug. 2019 – May 2020

Professional Service

Academic Society Memberships:

- Society for Integrative and Comparative Biology 2017 - present
- American Fisheries Society (Georgia chapter) 2015 - present
Physiology section; Fish culture section
- Council on Undergraduate Research 2014 - present
- Society for Experimental Biology 2007 – present
- American Physiological Society 2014 - 2017
Water & Electrolyte Homeostasis section
- Canadian Society of Zoologists 2011-2014

Institutional Service:

- Student Organization Advisor, West Georgia Women in Science July 2017 - present
- Honors Council Advisory Committee Aug. 2016 - present

- Michael Arnette (B.S. Biology, 2015)
- Courtney Gilbert (B.S. Biology, 2016)
- Vanessa Thornton (B.S. Biology, 2016)
- J.T. Sparks (B.S. Biology, 2016)
- Caryn West (B.S. Biology, 2016)
- LeeAnn Frank (B.S. Biology, 2017)
- Olivia Howard (B.S. Nursing, 2018)
- Sommer Starr (B.S. Biology, 2018)
- Godfred Frimpong (B.S. Biology, 2019)
- Caitlin Forkin (B.S. Biology, 2020)
- Lindsey Monkiewicz (B.S. Biology, 2020)
- Chazz Edwards (B.S. Biology – anticipated spring 2021)
- Trevor Hindman (B.S. Biology – anticipated Spring 2021)
- Katlin Davenport (B.S. Biology – anticipated Spring 2021)

Courses Taught

Undergraduate

- BIOL1110, Biological Diversity
120-seat introductory course for Biology majors
- BIOL1110H, Biological Diversity (Honors)
20-seat, discussion-based introductory course for Biology majors in the Honors College.
- HONR2102, Sophomore Honors Colloquium - Inquiry
16-seat Honors College seminar course exploring the research process and development of an Honors thesis hypothesis
- XIDS 2002, What Do You Know About the Honors College?
16-seat, first-year seminar course
- BIOL4539, Comparative Physiology
30-seat advanced course focused on physiology of vertebrate and invertebrate animals, taught using jigsaw collaborative learning method
- BIOL4733, Animal Nutrition
24-seat advanced course for pre-vet students covering nutrition of domesticated vertebrate animals
- BIOL4981, Laboratory Instruction
15-seat training course for undergraduate teaching assistants instructing the laboratory portion of BIOL1110
- BIOL4985, Science Communication in Society
40-seat, interdisciplinary, co-taught course with Dr. Laura Miller (English, UWG) Influences on, and changes to, scientific communication from publication of Isaac Newton's *Principia* (1687) to the present day

Graduate

- BIOL5539, Comparative Physiology
Graduate-level course focused on physiology of vertebrate and invertebrate animals, taught concurrently with BIOL4539
- BIOL6981, Introduction to Fisheries Careers
Graduate-level course focused on development of networking skills and production of application materials for new fisheries professionals

- BIOL6984, Graduate Biology Seminar
Cohort-building course focused on development of networking skills, engaging students in useful discussion about original research across biological sub-disciplines with peers and senior colleagues

Grants

External Funding (\$2,000 Awarded):

- American Wildlife Conservation Foundation (\$2,000) 2017
Energy demands in hatchery-raised lake sturgeon

Intramural Funding (\$30,139 Awarded):

- UWG STEM Education Enhancement Plan (\$4,487), Univ. of West Georgia 2018
Determination of factors influencing student success on computer-based assessments
- Student Research Assistant Program (\$1,450), Univ. of West Georgia 2018
Influences of nutrition and feed composition on growth performance and intestinal absorption pathways in juvenile lake sturgeon
- COSM Faculty Research Grant (\$1,000), Univ. of West Georgia 2018
Influences of nutrition and feed composition on growth performance and intestinal absorption pathways in juvenile lake sturgeon
- SEEP Undergraduate Research & Mentoring Program 2017
(\$1,660), Univ. of West Georgia
Influences of water chemistry on development of ion regulation in lake sturgeon
- UWG STEM Education Improvement Plan (\$4,217), Univ. of West Georgia 2017
Impacts of perceived instructor effectiveness on student success in an introductory biology laboratory course
- COSM Faculty Research Grant (\$1,495), Univ. of West Georgia 2017
Physiological impacts of oxygen stress in lake sturgeon: Localization, characterization, and functional assessment of branchial neuroepithelial cells
- COSM Faculty Research Grant (\$1,200), Univ. of West Georgia 2016
Metabolism of lake sturgeon in early life
- COSM Faculty Research Grant (\$1,100), Univ. of West Georgia 2015
Effects of anemia and low temperature on metabolic recovery from hypoxia
- UWISE Undergraduate Research Grant (\$5,000), Univ. of West Georgia 2015
- Student Research Assistant Program (\$2,520), Univ. of West Georgia 2015
*Dietary and energetic requirements of a threatened fish species, *Acipenser fulvescens**
- Faculty Development Grant (\$1,650), Univ. of West Georgia 2015
*Dietary and energetic requirements of a threatened fish species, *Acipenser fulvescens**
- Student Research Assistant Program (\$1,800), Univ. of West Georgia 2014
*Sources and absorption mechanisms of functional chloroplasts in the kleptoplastic sea slug *Elysia clarki**
- President's Development Award (\$2,560), Univ. of West Georgia 2014
Incorporation of plastids in kleptoplastic sea slugs: sources and absorption mechanisms of functional chloroplasts

Publications

*Indicates undergraduate student

†Indicates graduate student

Peer Reviewed Publications:

- 1) **Genz J.** and Anderson, W.G. 2020. Effects of calcium availability on growth of larval Lake Sturgeon. *Aquaculture Research* 51:497–505.
- 2) Deslauriers D., Svendsen J.C., **Genz J.**, Wall A.J.*, Baktoft H., Enders E.C., Anderson W.G. 2018. Environmental calcium and variation in yolk sac size influence swimming performance in larval lake sturgeon (*Acipenser fulvescens*). *Journal of Experimental Biology* 221:jeb164533.
- 3) Whittamore J.M., **Genz J.**, Grosell M., Wilson R.W. 2016. Measuring intestinal fluid transport in vitro: Gravimetric method versus non absorbable marker. *Comparative Biochemistry and Physiology, Part A* 194:27-36.
- 4) **Genz J.**, McDougall C.A.†, Burnett D.†, Arcinas L.*, Khetoo S.*, Anderson W.G. 2014. Induced spawning of wild-caught adult lake sturgeon: assessment of hormonal and stress responses, gamete quality, and survival. *Journal of Applied Ichthyology* 30:1565–1577.
- 5) Svendsen J.C., **Genz J.**, Anderson W.G., Stol J.A.†, Watkinson D.A., Enders E.C. 2014. Evidence of circadian rhythm, oxygen regulation capacity, metabolic repeatability and positive correlations between forced and spontaneous maximal metabolic rates in lake sturgeon *Acipenser fulvescens*. *PloS one* 9(4):e94693.
- 6) **Genz J.**, Shute L.*, Anderson W.G. 2014. Regulation of calcium transport in the early life stages of an ancient fish, *Acipenser fulvescens*. *Physiological and Biochemical Zoology* 87(2):299-309.
- 7) **Genz J.**, Carriere B.*, Anderson W.G. 2013. Mechanisms of calcium absorption by anterior and posterior segments of the intestinal tract of juvenile lake sturgeon. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology* 166(2):293-301.
- 8) **Genz J.**, Jyde M.B.†, Svendsen J.C., Steffensen J.F., Ramløv H. 2013. Excess post-hypoxic oxygen consumption is independent from lactate accumulation in two cyprinid fishes. *Comparative Biochemistry and Physiology, Part A: Molecular & Integrative Physiology* 165(1):54-60.
- 9) Gilmour K.M., Perry S.F., Esbaugh A.J., **Genz J.**, Taylor J.R., Grosell M. 2011. Compensatory regulation of acid-base balance during salinity transfer in rainbow trout (*Oncorhynchus mykiss*). *Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology* 182(2):259-274.
- 10) **Genz J.** and Grosell M. 2011. *Fundulus heteroclitus* acutely transferred from seawater to high salinity require few adjustments to intestinal transport associated with osmoregulation. *Comparative Biochemistry and Physiology, Part A: Molecular & Integrative Physiology* 160(2):156-165.
- 11) **Genz J.**, Esbaugh A.J., Grosell M. 2011. Intestinal transport following transfer to increased salinity in an anadromous fish (*Oncorhynchus mykiss*). *Comparative Biochemistry and Physiology, Part A: Molecular & Integrative Physiology* 159:150-158.

- 12) **Genz J.**, McDonald M.D., Grosell M. 2011. Concentration of $MgSO_4$ in the intestinal lumen of *Opsanus beta* limits tolerance to hypersalinity. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology* 300:R895-909.
- 13) Perry S.F., Braun M.H., **Genz J.**, Vulesevic B., Taylor J.R., Grosell M., Gilmour K.M. 2010. Acid-base regulation in the plainfin midshipman (*Porichthys notatus*), an aglomerular marine teleost. *Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology* 180:1213-1225.
- 14) Grosell M., **Genz J.**, Taylor J.R., Perry S., Gilmour K.M. 2009. The involvement of H^+ -ATPase and carbonic anhydrase in intestinal HCO_3^- secretion in seawater-acclimated rainbow trout. *Journal of Experimental Biology* 212:1940-1948.
- 15) **Genz J.**, Taylor J.R., Grosell M. 2008. Effects of salinity on intestinal bicarbonate secretion and compensatory regulation of acid-base balance in *Opsanus beta*. *Journal of Experimental Biology* 211:2327-2335.
- 16) Grosell M. and **Genz J.** 2006. Ouabain sensitive bicarbonate secretion and acidic fluid absorption by the marine teleost fish intestine play a role in osmoregulation. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology* 291(4):1145-56.

Other Publications:

- 1) **Genz J.** 2010. Physiological Effects of High Salinity in Teleost Fish. *Open Access Dissertations*. Paper 936.

Invited Presentations:

- 1) **Genz J.** *Environmental factors influencing growth of lake sturgeon*. UGA Student AFS Chapter. Athens, GA. Oct. 18, 2018.
- 2) Britton S., Green K. *Being a Productive Researcher While Still a Valued Educator*. liP. Carrollton, GA. May 15, 2018. [panelist]
- 3) **Genz J.** *Survival Secrets of an Ancient Fish*. Wolf Science Café. Carrollton, GA. July 24, 2017.
- 4) **Genz J.** *Interdisciplinarity in Science*. Freshman Honors Seminar (XIDS2002: What Do You Know About The Honors College). Carrollton, GA. Oct. 3, 2016.
- 5) **Genz J.** *Assessing Student Responses to the Flipped Classroom*. COSM Dean's Teaching and Learning Seminar Series. Carrollton, GA. Feb. 19, 2016.
- 6) **Genz J.** and Edelman A. *Teaching Methods for Collaborative Learning*. University of West Georgia Faculty Workshop Series. Carrollton, GA. Oct. 6, 2015
- 7) **Genz J.** *Solar-powered sea slugs!* University of West Georgia Celebration of Faculty Scholarship. Carrollton, GA. April 11, 2014.
- 8) **Genz J.** *Short-term effect of Ovaprim on estrogen and androgen levels in adult lake sturgeon*. Hudson Bay Drainage Lake Sturgeon Working Group Meeting. Winnipeg, MB, Canada. Jan. 10, 2011.

Conference Contributions:

- 1) Forkin, C.*, **Genz J.** *Comparison of ion transport expression in Lake Sturgeon exposed to differing water chemistries*. Georgia Undergraduate Research Conference. Nov. 2, 2019. [poster]

- 2) **Genz J.** *Physiological comparisons between juvenile lake sturgeon (Acipenser fulvescens) reared in captivity vs. simulated natural recruitment.* Upper Coosa Conservation Summit. Kennesaw, GA. Oct. 25, 2019.
- 3) **Genz J.** *Environmental impacts on energy usage by hatchery-reared lake sturgeon.* Georgia Chapter of The Wildlife Society. Carrollton, GA. Sept. 13, 2019.
- 4) **Genz J.** *Interactions between student preferences and test-mode effect.* The Teaching Professor Conference. New Orleans, LA. June 8, 2019.
- 5) Hindman T.*, **Genz J.** *Influences of water chemistry on juvenile Lake Sturgeon.* UWG Scholar's Day. Carrollton, GA. April 2, 2019. [poster]
- 6) Hicks, R.†, **Genz J.** *Dorsal scute development in Acipenser fulvescens in different environmental calcium concentrations.* GAS. Gainesville, GA. March 15, 2019.
- 7) Hicks, R.†, **Genz J.** *Dorsal scute development in Acipenser fulvescens in different environmental calcium concentrations.* TN-AFS. Chattanooga, TN. Feb. 26, 2019.
- 8) Hicks, R.†, **Genz J.** *Dorsal scute development in Acipenser fulvescens in different environmental calcium concentrations.* GA-AFS. Cordele, GA. Feb. 5, 2019.
- 9) **Genz J.** *Low temperature reduces physiological impacts of accumulated oxygen debt for a hypoxia-tolerant cyprinid fish.* SEB. Florence, Italy. July 5, 2018.
- 10) **Genz J.** *Do You Like Your TA? Student perceptions of instructor ability and authority influence their academic performance.* SEB. Florence, Italy. July 5, 2018.
- 11) **Genz J.** *Student perceptions of instructor ability and authority influence academic performance.* The Teaching Professor Conference. Atlanta, GA. June 1, 2018. [poster]
- 12) **Genz J.** *Storytime! That Time My Professor Almost Died - & I Enjoyed It.* liP. Carrollton, GA. May 15, 2018.
- 13) Gordon S., Gaquere A., Carmack C., Sterling N., **Genz J.**, Garner Y., Duckett E. *Pedagogical Innovations in STEM Education.* liP. Carrollton, GA. May 15, 2018. [panel]
- 14) **Genz J.** *Interaction of Temperature and Hypoxia on the Metabolism of Golden Shiners.* SD-AFS. San Juan, PR. March 10, 2018.
- 15) **Genz J.**, Gilbert C.*, Svendsen J.C. *Combined Effects of Temperature and Hypoxia on Anaerobic Metabolism and Development of Oxygen Debt in a Common Cyprinid.* SICB. San Francisco, CA. Jan. 4, 2018.
- 16) **Genz J.**, West C.*, Anderson W.G. *Diet Assimilation and Energy Distribution in Larval Lake Sturgeon.* AFS. Tampa, FL. Aug. 21, 2017.
- 17) Ferreira P.G.†, Flavio, H.†, Hacking, H.*, **Genz J.**, Wilson, J.M., Behrens, J., Svendsen J.C. *Is the osmorepiratory compromise limiting invasive species?* SEB. Gothenburg, Sweden. 2017.
- 18) **Genz J.** *Online Tools to Facilitate Student Collaboration: Reducing Resistance to Learning in Groups.* liP. Carrollton, GA. May 16, 2017.
- 19) **Genz J.** and West C.* *Rearing Temperature Produces Both Short-term and Long-term Energetic Impacts in Lake Sturgeon (Acipenser fulvescens).* GA-AFS. Statesboro, GA, Jan. 24, 2017.
- 20) **Genz J.** *Metabolic Plasticity of Juvenile Lake Sturgeon Associated with Rearing Temperature.* SICB. New Orleans, LA, Jan. 5, 2017. (poster)
- 21) **Genz J.** *Influence of Temperature on Metabolic Rate of Juvenile Lake Sturgeon.* ICBF. San Marcos, TX, June 13, 2016.
- 22) West C.* and **Genz J.** *Temperature Effects on Developmental Growth and Nutritional Status of Juvenile Lake Sturgeon.* ICBF. San Marcos, TX, June 13, 2016.

- 23) Frank, L.*, Arnette M., **Genz J.** *Nutrition Acquired from Kleptoplasty in Elysia clarki*. NCUR. Asheville, NC, April 8, 2016.
- 24) **Genz, J.** *Calcium regulation during early ontogeny in Acipenser fulvescens*. GA-AL AFS. Columbus, GA, Feb. 9, 2016.
- 25) **Genz J.** *Peer Instruction Using the Jigsaw Method: More Work Than It's Worth?* IiP. Carrollton, GA, April 28, 2015.
- 26) **Genz J.** and Edelman, A. *Teaching Methods for Collaborative Learning*. IiP. Carrollton, GA, April 28, 2015. (workshop)
- 27) Arnette M.*, Shelton A.*, **Genz J.** *Investigation of algal feeding preferences in the solar-powered sea slug, Elysia clarki*. APS. San Diego, CA, Oct. 6, 2014. (poster)
- 28) **Genz J.** and Anderson W.G. *Effects of calcium availability on growth and survival of Acipenser fulvescens in early life stages*. APS. San Diego, CA, Oct. 7, 2014.
- 29) **Genz J.**, Shute L.*, Anderson W.G. *Growth and the role of MRCs during calcium stress in larval lake sturgeon*. CSZ. Guelph, ON, May 15, 2013.
- 30) Brandt C.*, Arcinas L.*, **Genz J.**, Anderson, W.G. *Effects of chlorpyrifos on in vitro sex steroid production in lake sturgeon, Acipenser fulvescens*. CSZ. Guelph, ON, May 15, 2013.
- 31) **Genz J.**, Khetoo S.*, Arcinas L.*, Anderson, W.G. *Larval lake sturgeon inherit survivorship from maternal stores*. CSZ. Guelph, ON, May 15, 2013.
- 32) Carriere B.*, **Genz J.**, Anderson W.G. *Calcium handling in the intestinal tract of a cartiliagenous fish, the lake sturgeon*. ICBF. Madison, WI, July 15-19, 2012.
- 33) **Genz J.**, Klassen, C.†, Anderson, W.G. *Whole-body calcium regulation of larval freshwater lake sturgeon (Acipenser fulvescens) during growth*. SEB. Salzburg, Austria. July 1, 2012.
- 34) **Genz J.**, Carriere, B.*, Anderson, W.G. *Calcium absorption by the gastrointestinal tract of freshwater juvenile lake sturgeon (Acipenser fulvescens)* SEB. Salzburg, Austria. June 29, 2012.
- 35) **Genz J.** and Grosell M. *What limits tolerance to hypersalinity in marine teleosts?* SEB. Glasgow, Scotland, UK. June 28, 2009. Comp. Biochem. and Physiol. A- Molec. & Integr. Physiol. 153A(2):S95-96.
- 36) Grosell M., Taylor J.R., Mager E.M., Williams C.*, **Genz J.**, Perry S.F., Gilmour K.M. *What's new with intestinal transport processes in marine teleost osmoregulation?* SEB. Glasgow, Scotland, UK. June 28, 2009. Comp. Biochem. and Physiol. A- Molec. & Integr. Physiol. 153A(2):S80
- 37) Grosell M., **Genz J.**, Perry S., Gilmour K., Taylor J. *Apical proton pump activity and CAIV act to control luminal osmotic pressure and enhance intestinal water absorption by seawater acclimated rainbow trout (RBT)*. SEB. Marseille, France. July 2008. Comp. Biochem. and Physiol. A- Molec. & Integr. Physiol. 150(3):S56.
- 38) **Genz J.**, Taylor J.R., Grosell M. *Branchial H⁺ extrusion in the gulf toadfish compensates for increased intestinal HCO₃⁻ secretion in elevated salinity*. SEB. Glasgow, Scotland, UK. April 2, 2007. Comp. Biochem. and Physiol. A- Molec. & Integr. Physiol. 146(4):S94-S95.
- 39) Grosell M., Gilmour K., Perry S., **Genz J.**, Taylor J. *Intestinal water absorption, anion exchange, proton transport and epithelial metabolic rate in marine teleost fish*. SEB. Glasgow, Scotland, UK. April 2, 2007. Comp. Biochem. and Physiol. A-Molec. & Integr. Physiol. 146(4):S91.

- 40) Grosell M., **Genz J.**, Taylor J.R. *Intestinal anion exchange in teleost water balance*. SEB. Canterbury, UK. April 5, 2006. *Comp. Biochem. and Physiol. A- Molec. & Integr. Physiol.* 143(4):S44.
- 41) Grosell M., Taylor J.R., **Genz J.** *Marine teleost osmoregulation involves highly acidic and hyperosmotic fluid absorption by the intestine*. SICB, Orlando, FL. January 5, 2006. *Integrative and Comparative Biology* 45(6):1005.