KENNETH J. SEMMENS

Aquaculture Research Center, 103 Athletic Road • Frankfort, KY 40601
ken.semmens@kysu.edu • 502 352-6389 (ofc)

EDUCATION

PhD in Fisheries • Auburn University, Auburn, AL
MS in Fisheries • Auburn University, Auburn, AL
BS in Fisheries, Emphasis in Fish Culture and Water Quality • University of Washington, Seattle, WA
Certified Fisheries Professional, American Fisheries Society

PROFESSIONAL EXPERIENCE

KENTUCKY STATE UNIVERSITY, Frankfort, KY

Interim Chair, School of Aquaculture and Aquatic Science (2/1/2023 to present).

Associate Professor in Aquaculture – Physiology and Reproduction (7/2021 to present)

Assistant Professor in Aquaculture – Physiology and Reproduction (4/2015 to 7/2021)

Tenured position for Research (75%) and Teaching (25%). Develop a research program addressing production and marketing issues facing the aquaculture industry relevant to small farms in the state of Kentucky and the region. Conduct research on design and management of floating raceways, induced spawning and production of largemouth bass, holding systems for food fish, integrating aquaculture and water reuse for decommissioned wastewater treatment facilities, aquaponics, and culture of paddlefish. Develop curriculum for entry level undergraduate course, implementing both dual credit and online sections. Teach Fish Morphology/ Physiology (AQU 412, 512), Fisheries for an Educated Consumer (AQU 201), Survey of Production Methods (AQU 451/551), and co-teach Fish Reproduction Lab (AQU 428,528).

WEST VIRGINIA UNIVERSITY (WVU), Morgantown, WV

Extension Specialist and Clinical Professor – Aquaculture (2/1999 to 4/2015)

Identify needs and develop professional development programs to engage, inform and educate extension faculty, land owners and state/federal agency staff on critical and relevant issues in the aquaculture industry. Teach course in Aquaculture to undergraduate students. Developed a research program from the ground up that addresses production and marketing issues facing the aquaculture industry in the state of West Virginia, collaborated with other faculty in planning and executing the Aquaculture Food and Marketing Development Project (secured $8M in grant funding).

Selected contributions:

- Balanced educational responsibilities with research and analysis; initially hired as Co-investigator and advanced to Coordinator in ’01, Principal Investigator in ’02 and the first-ever Aquaculture Project Leader at the university in ’07.
- As Aquaculture Project Leader, recruited 28 faculty from a wide range of disciplines (Food Science, Resource Economics, Forestry, Fisheries and Wildlife, Marketing, Civil Engineering, Environmental Engineering, Chemical Engineering, Environmental Law and Horticulture), and provided vision and leadership in pinpointing challenges and opportunities for aquaculture development statewide.
- Demonstrated the value of “impaired” mine water for aquaculture.
- Shaped the future of policies and regulations for aquaculture as a member and Chair of the WV Aquaculture Advisory Board.
- Developed facilities and presented sustainable methods for cold flowing water systems to grow trout by integrating aquaponics and methods for nutrient recovery.

OWEN AND WILLIAMS FISH FARM, INC., Newton, GA **Fish Farm Supervisor** (6/1995 to 7/1998)

PINELAND PLANTATION, Newton, GA **Fish Farm Supervisor** (2/1987 to 6/1995)

SELECTED PUBLICATIONS:

Colt, John and Kenneth Semmens, 2022. Computation of feed conversion ratio (FCR^{plant}) and plant-fish mass ratio (PFRM) for aquaponic systems. Aquacultural Engineering 98 (2022) 102260. https://doi.org/10.1016/j.aquaeng.2022.10226

Bo Smith, Joseph Dvorak, Ken Semmens, and Donald Colliver, 2022. Using a computer based selection model for sizing of solar panels and battery back-up systems for use in a floating in-pond raceway. Aquacultural Engineering 97 (2022) 102238, https://doi.org/10.1016/j.aquaeng.2022.102238

Sharma, Amit, Kenneth Semmens and Boris Gomelsky, 2021. Evaluation of Hormonal Agents for Artificial Propagation of Largemouth Bass (*Micropterus salmoides*). NAJA, ISSN: 1522-2055 print / 1548-8454 online, https://doi.org/10.1002/naaq.10208

John Colt, Anthonie M. Schuur, Dallas Weaver & Kenneth Semmens, 2021. Engineering Design of Aquaponics Systems, Reviews in Fisheries Science & Aquaculture, https://doi.org/10.1080/23308249.2021.1886240

Bhattarai, Sujan and Kenneth J. Semmens, 2021. Evaluation of Two Densities for Holding Live Food Fish in a Small Recirculating Aquaculture System. NAJA 83(3) pp 165-176. http://doi.org/10.1002/naaq.10180

Káldy, J.; Mozsár, A.; Fazekas, G.; Farkas, M.; Fazekas, D.L.; Fazekas, G.L.; Goda, K.; Gyöngy, Z.; Kovács, B.; Semmens, K.; Bercsényi, M.; Molnár, M.; Patakiné Várkonyi, E. 2020. Hybridization of Russian Sturgeon (*Acipenser gueldenstaedtii*, Brandt and Ratzeberg, 1833) and American Paddlefish (*Polyodon spathula*, Walbaum 1792) and Evaluation of Their Progeny. Genes 2020, 11(7), 753; https://doi.org/10.3390/genes11070753

Shelton, W.L., S.D. Mims, K.J. Semmens and R. Cuevas-Uribe. 2019. Artificial Propagation of Paddlefish: An Overview of Developments. Ch. 9, pp 191-210 in J.D. Schooley and D.L. Scarnecchia, editors. Paddlefish: Ecological, Aquacultural, and Regulatory Challenges of Managing a Global Resource. American Fisheries Society, Symposium 88, Bethesda, Maryland.

Gomelsky, G., Semmens, K. J., Peatman, E., Coyle, S. D. and M.D. Matthews. 2019. Reproduction and Genetics. Ch 5, pp 61-90. in book: Largemouth Bass Aquaculture, Tidwell, J.H., Coyle, S.D. and L.A. Bright eds., 5m Publishing, Ltd., Sheffield, UK.

Moriarty, Matthew J, Kenneth Semmens, Gary K. Bissonnette, and Jacek Jaczynski, 2019. Internalization assessment of E. coli O157:H7 in hydroponically grown lettuce. LWT - Food Science and Technology 100 (2019) 183–188.

Johnson, Gaylynn E., K.M Buzby, K.J. Semmens, and N.L. Waterland, 2017. Year-Round Lettuce (Lactuca sativa L.) Production in a Flow-Through Aquaponic System. Journal of Agricultural Science, Vol 9(1):74-84.

Buzby, Karen M., N.L. Waterland, K.J. Semmens, and LS Lin, 2016. Evaluating aquaponic crops in a freshwater flow-through fish culture system. Aquaculture 460 (15-24).

Wei X., KM Buzby, JJ Hendricks, A Creel, KJ Semmens, and RC Viadero, Jr., 2015. Application of Geotextile Bag Filters in Flow-Through Aquaculture Systems: Solid Waste Management and Water Quality Implication. J J Environ Sci. 2015, 1(1): 004.

Weber, Gregory M., M. A. Hostuttler, K. J. Semmens, and B. A. Beers, 2015. Induction and viability of tetraploids in brook trout (*Salvelinus fontinalis*). CJFAS 72(10):1443-1449.

Love, David C., J. Fry, L. Genello, E. S. Hill, J. A. Frederick, X. Li, K. Semmens, 2014. An International Survey of Aquaponics Practitioners, PLoS ONE 9(7): e102662. https://doi.org/10.1371/journal.pone.0102662 .

Semmens, K.J., and Jacobs J.J. 2014. Sustainable Aquaculture Using Treated and Untreated Water from Coal Mines. Chapter 4.8 in Handbook of Acid Mine Drainage, Rock Drainage and Acid Sulfate Soils authored/edited by JA Jacobs, JH Lehr, and SM Testa. John Wiley & Sons, Inc. Hoboken, NJ.