

**Andre P. Seale**  
**College of Tropical Agriculture and Human Resources**  
 Human Nutrition Food and Animal Sciences  
 FTE Distribution: 30% I; 70% R; 0% E

**Education**

<u>Degree</u>	<u>University</u>	<u>Major</u>
Bachelors	University of Miami	Marine Science and Biology
Masters		
PhD	University of Hawai‘i at Mānoa	Zoology

**Lifetime and Fellow Achievement Awards (peer nominated and endorsed national and International-  
 important for those without accreditation that is peer nominated and endorsed, recognized)**

**Professional Appointments**

<u>Title</u>	<u>Employer</u>	<u>Dates Employed</u>
<i>Interim Chair, Animal Sciences Graduate Program</i>	HNFAS - UHM	2022- 2023
<i>Associate Researcher and Professor</i>	HNFAS - UHM	2020- present
<i>Assistant Researcher and Professor</i>	HNFAS - UHM	2016- 2020
<i>Assistant Researcher</i>	HIMB - UHM	2011- 2016
<i>Postdoctoral fellow</i>	HIMB - UHM	2009- 2010
<i>Senior Research Scientist</i>	Proteonik Inc.	2004- 2006
<i>Postdoctoral fellow</i>	PBRC – UHM	2002- 2003

**Courses Taught**

**Course Number and Title (credits); (# of students from 2017 to date)**

- ANSC450/OCN450 (3 cr.) - Aquaculture Production (166)
- ANSC472 (3 cr.) - Comparative Endocrinology (70)
- ANSC682 (1cr.) – Advanced Topics in Animal Sciences (4)
- ANSC641 (1 cr.)- Seminar in Human Nutrition, Food and Animal Sciences (50)
- FSHN681 (1 cr.) - Seminar in Human Nutrition, Food and Animal Sciences (50)
- ANSC491 (1 cr.) - Topics in Animal Sciences (13)
- ANSC699 (1-9 cr.) - Directed Research (13)
- FSHN699 (1-9 cr.) – Directed Research (6)
- ANSC499 (1-9 cr.) - Directed Research (9)
- CMB700 (3 cr.) Directed thesis research (1)
- MBBE699 (3 cr.) Directed research (1)
- MBBE691 (1 cr.)– Topics Comparative Endocrinology

**Publications (reverse chronological order)**

**Books**

**Seale, A. P.** and Seale L. A. (2009). "Tropical Marine Gardens" 240 pps. Metalivros, São Paulo. ISBN 978-85-85371-83-8.

### Book Chapters

1. **Seale, A. P.**, Hirano, T., and Grau, E. G. (2006). Osmoreception: a fish model for a fundamental sensory modality. *In* "Fish Endocrinology" (G. Zaccone and M. Reinecke, Eds.), pp. 419-440 Oxford & IBH Publishing Company.
2. **Seale, A. P.**, Hirano, T., and Grau, E. G. (2005). Stimulus-secretion coupling in the osmoreceptive prolactin cell of the tilapia. *In* "Mechanosensitivity of the Cells from Various Tissues" (A. Kamkin and I. Kiseleva, Eds.), pp. 371-389. Academia, Moscow.
3. Shepherd, B. S., Weber, G. M., Vijayan, M. M., **Seale, A. P.**, Riley, L. G., Richman, N. H., Hirano, T., and Grau, E. G. (2005). Control of growth in tilapia: developments and prospects. *In* "Tilapias: Culture, Nutrition and Feeding" (C. D. Webster and C. E. Lim, Eds.). Haworth Press.
4. Meredith, H. O., Richman, N. H., Collier, J. T., **Seale, A. P.**, Riley, L. G., Ball, C. H., Shimoda, S. K., Stetson, M. H., and Grau, E. G. (1999). Pesticide effects on prolactin release from the rostral pars distalis in vitro and their effects on growth in vivo in the tilapia (*Oreochromis mossambicus*). *In* "Environmental Toxicology and Risk Assessment: Eighth volume, ASTM STP 1364" (D. S. Henshel, M. C. Black, and M. C. Harrass, Eds.). American Society for Testing and Materials, West Conshohocken, PA.

### Conference Proceedings

1. **Seale, A. P.** (2022), Endocrine and osmotic responses to tidally-changing salinities in Mozambique tilapia, *Oreochromis mossambicus*. The FASEB Journal, 36:S1-R3248. <https://doi.org/10.1096/fasebj.2022.36.S1.R3248>
2. Celino-Brady, F., Breves, J. and **Seale, A. P.** (2022), Sexually Dimorphic Responses to Growth Hormone and Luteinizing Hormone within the Somatotropic and Reproductive Axes of Tilapia. The FASEB Journal, 36:S1-R3790. <https://doi.org/10.1096/fasebj.2022.36.S1.R3790>
3. Nelson, N., Petro-Sakuma, C., Celino-Brady, F., **Seale, A. P.**, Breves, J. P. (2020). Coordinated Gene Expression of *Na<sup>+</sup>/Cl<sup>-</sup> cotransporter 1 (ncc1)* and *Clc family Cl<sup>-</sup> channel 2 (clcn2c)* in Kidney and Urinary Bladder of Euryhaline Tilapia. FASEB J. 34, 1-1. <https://doi.org/10.1096/fasebj.2020.34.s1.04903>
4. Keith, P. L., Hunt, B. L., Inokuchi, M., Yamaguchi, Y., **Seale, A. P.**, Lerner, D. T., Grau, E. G., and Breves, J. P. (2016). Prolactin and Extracellular Osmolality Regulate Branchial *clc2c* Expression in Tilapia. FASEB J. 30, 760.5-760.5.
5. Rowell, T.R., Seale, L. A., **Seale, A. P.**, Banuelos, G. S., Grau, E. G., Riley, L.G. (2013). Effects of selenium-enriched meal on growth performance, endocrine control of growth and selenoprotein expression in tilapia (*Oreochromis mossambicus*). *Integr. Comp. Biol.* 53, E185-E185.

6. **Seale, A. P.**, Weber, G. M., Richman, N. H., 3rd, Stetson, M., Hirano, T., and Grau, E. G. (2004). Cell size regulates hormone release in the osmoreceptive prolactin cell of the euryhaline tilapia, *Oreochromis mssambicus*. In "Trends in Comparative Endocrinology. Proceedings of the Fifth Congress of Asia and Oceania Society for Comparative Endocrinology" (T. Oishi, K. Tsutsui, S. Tanaka, and S. Kikuyama, Eds.), pp. 138-140.
7. Hirano, T., Leedom, T. A., **Seale, A. P.**, and Grau, E. G. (2002). Facilitative effects of angiotensin II on prolactin cell responses to osmotic stimulation in tilapia. *Symp. Soc. Exp. Biol.* 97-108.
8. **Seale, A. P.**, Richman, N. H., Riley, L. G., Hirano, T., and Grau, E. G. (2000). The Control of Prolactin Secretion in Tilapia: Hypothalamic and Environmental Factors. In "Proceedings of the Japan Society for Comparative Endocrinology" (Y. Sasayama and N. Suzuki, Eds.), Vol. 15, pp. 2, Noto, Japan.

Refereed Journal Publications (in revision; \* corresponding author)

1. **Seale, A.P.\***, Cao, K., Chang, R.J.A., Goodearly, T.R., Malintha, G.H.T., Merlo, R.S., Peterson, T.L., Reighard, J.R. (2023). Salinity tolerance of fish: experimental approaches and implications for aquaculture production. *Rev. Aquacul.* In revision

Refereed Journal Publications (published; \* corresponding author)

1. Malintha, G.H.T., Woo, D.W., Celino-Brady, F.T., **Seale, A. P.\*** (2023) Thermally-induced changes in the osmosensitivity of tilapia prolactin cells. *Sci. Rep.* 13: 20217.
2. Chang, R. J. A., Celino-Brady, F. T., **Seale, A. P.\*** (2023) Changes in cortisol and corticosteroid receptors during dynamic salinity challenges in Mozambique Tilapia. *Gen. Comp. Endocrinol.* 342:114340.
3. Malintha, G.H.T., Celino-Brady, F.T., **Seale, A. P.\*** (2023) Osmosensitive transcription factors in the prolactin cell of a euryhaline teleost. *Comp. Biochem. Physiol. A.* 278: 111356. doi: 10.1016/j.cbpa.2022.111356
4. Celino-Brady, F.T., Breves, J.P., **Seale, A.P.\*** (2022). Sex-specific responses to growth hormone and luteinizing hormone in a model teleost, the Mozambique tilapia. *Gen. Comp. Endocrinol.* 329, 114119.
5. **Seale, A.P.\***, Breves, J.P. (2022). Endocrine and osmoregulatory responses to tidally-changing salinities in fishes. *Gen. Comp. Endocrinol.* 326, 114071.
6. Woo, D.W., Malintha, G.H.T., Celino-Brady, F.T., Yamaguchi, Y., Breves, J.P., **Seale, A.P.\***(2022). Tilapia prolactin cells are thermosensitive osmoreceptors. *Am. J. Physiol.* 322, R609-R619.
7. Seale, L. A., Gilman, C. L., Zavacki, A. M., Larsen, P. R., Inokuchi, M., Breves, J. P., **Seale, A. P.\*** (2021) Regulation of thyroid hormones and branchial iodothyronine deiodinases during freshwater acclimation in tilapia. *Mol. Cell. Endocrinol.* 538: 111450. doi: 10.1016/j.mce.2021.111450
8. Breves, J. P., Nelson, N. N., Koltenyuk, V., Petro-Sakuma, C., Celino-Brady, F. T., **Seale, A. P.\*** (2021) Enhanced expression of *ncc1* and *clc2c* in the kidney and urinary bladder accompanies

freshwater acclimation in Mozambique tilapia. *Comp. Biochem. Physiol.* 260: 111021; doi: 10.1016/j.cbpa.2021.111021

9. Inokuchi, M., Moorman, B., Yamaguchi, Y., **Seale, A. P.\*** (2021). Age-dependent decline in salinity tolerance in a euryhaline fish. *Front. Aging.* 2: 15.
10. Caetano-Anolles, K., Ewers, B., Iyer, S., Lucas, J. R., Pavlic, T. R., **Seale, A. P.**, Zeng, Y. (2021). A minimal framework for describing living systems: a multi-dimensional view of life across scales. *Integr. Comp. Biol.*
11. Celino-Brady, F., Lerner, D. T., **Seale, A. P.\*** (2021). Experimental Approaches for Characterizing the Endocrine Disrupting Effects of Environmental Chemicals in Fish. *Front. Endocrinol.* 11:1170. <https://doi.org/10.3389/fendo.2020.619361>
12. **Seale, A. P.\***, Malintha, T., Celino-Brady, F. T., Head, T., Belcaid, M., Yamaguchi, Y., Lerner, D. T., Baltzegar, D. A., Borski, R. J., Stoytcheva, Z. R. and Breves, J. P. (2020). Transcriptional regulation of prolactin in a euryhaline teleost: characterization of gene promoters through in silico and transcriptome analyses. *J. Neuroendocrinol.* 32: e12905.
13. Petro-Sakuma, C. K., Celino-Brady, F., Breves, J. P., **Seale, A. P.\*** (2020). Growth hormone regulates intestinal gene expression of nutrient transporters in tilapia, *Oreochromis mossambicus*. *Gen. Comp. Endocrinol.* 292: 113464.
14. **Seale, A. P.\***, Pavlosky, K. K., Celino-Brady, F., Lerner, D. T. (2020). Sex, salinity and sampling period dependent patterns of growth hormone mRNA expression in Mozambique tilapia. *Aquaculture.* 519: 734766.
15. Celino-Brady, F., Petro-Sakuma, C. K., Breves, J. P., Lerner, D. T., **Seale, A. P.\***(2019). Early-life exposure to 17 $\beta$ -estradiol and 4-nonylphenol impacts the growth hormone/insulin-like growth-factor system and estrogen receptors in Mozambique tilapia, *Oreochromis mossambicus*. *J. Aqua. Tox.* <https://doi.org/10.1016/j.aquatox.2019.105336>
16. **Seale, A. P.\***, Pavlosky, K. K., Celino-Brady, F., Yamaguchi, Y., Breves, J. P., Lerner, D. T. (2019). Systemic versus tissue-level modulation of prolactin signaling in a euryhaline teleost subjected to tidally changing salinities. *J. Comp. Physiol.* doi: 10.1007/s00360-019-01233-9.
17. Pavlosky, K. K., Yamaguchi, Y., Lerner, D. T., **Seale, A. P.\***(2019). The effects of transfer from steady-state to tidally-changing salinities on plasma and branchial osmoregulatory parameters in adult Mozambique tilapia. *Comp. Biochem. Physiol.* 227, 134-145. doi: 10.1016/j.cbpa.2018.10.005.
18. Douros, J. D., Baltzegar, D. A., Reading, B. J., **Seale, A. P.\***, Lerner, D. T., Grau, E. G., Borski, R. J. (2018). Leptin stimulates cellular glycolysis through a STAT3 dependent mechanism in tilapia. *Front. Endocrinol.* 9, 465. doi: 10.3389/fendo.2018.00465
19. Yamaguchi, Y., Breves, J. P., Haws, M. C., Lerner, D. T., Grau, E. G., **Seale, A. P.\*** (2018). Acute salinity tolerance and the control of prolactin 177 and prolactin 188 release and gene expression by extracellular osmolality in the Nile tilapia: a comparative study. *Gen. Comp. Endocrinol.* 257, 168-176.

20. Breves, J. P., Keith, P. L. K., Hunt, B. L., Pavlosky, K. K., Inokuchi, M., Yamaguchi, Y., Lerner, D. T., **Seale, A. P.\***, Grau, E. G. (2017). *clc-2c* is regulated by salinity, prolactin and extracellular osmolality in tilapia gill. *J. Mol. Endocrinol.* 59(4):391-402
21. Douros, J. D., Baltzegar, D. A., Mankiewicz, J. L.; Taylor, J. D., Yamaguchi, Y., Lerner, D. T., **Seale, A. P.\***, Grau, E. G., Breves, J. P., Borski, R. J. (2017). Control of leptin by metabolic state and its regulatory interactions with pituitary growth hormone and hepatic growth hormone receptors and insulin like growth factors in the tilapia (*Oreochromis mossambicus*). *Gen. Comp. Endocrinol.* 240, 227-237.
22. Breves, J., Inokuchi, M., Yamaguchi, Y., **Seale, A. P.\***, Hunt, B. L., Watanabe, S., Lerner, D. T., S., Kaneko, T., Grau, E. G. (2016). Hormonal regulation of aquaporin 3 in tilapia gill: opposing actions of prolactin and cortisol. *J. Endocrinol.* 230, 325-337.
23. Moorman, B. P., Yamaguchi, Y., Lerner, D. T., Grau, E. G., **Seale, A. P.\*** (2016) Rearing Mozambique tilapia in tidally-changing salinities: effects on growth and the growth hormone/insulin-like growth factor I axis. *Comp. Physiol. Biochem.* 198, 8-14.
24. Yamaguchi, Y., Moriyama S., Lerner, D. T., Grau, E. G., **Seale, A. P.\*** (2016). Autocrine regulation of prolactin release from tilapia prolactin cells: modulation of hormonal responses by extracellular osmolality. *Endocrinology.* 157, 3505-16.
25. Yamaguchi, Y., Takagi, W., Kuraku, S., Moriyama, S., Bell, J. D., **Seale, A. P.\***, Lerner, D. T., Grau, E. G., Hyodo, S. (2015). Discovery of conventional prolactin from the holocephalan elephant fish, *Callorhinchus milii*. *Gen. Comp. Endocrinol.* 224, 216-227.
26. Inokuchi, M., Breves, J., Moriyama, S., Watanabe, S., Kaneko, T., Lerner, D. T., Grau, E. G., **Seale, A. P.\*** (2015). Prolactin 177, prolactin 188 and extracellular osmolality independently regulate the expression of ion transport effectors in the gills of Mozambique tilapia. *Am. J. Physiol.* 309(10): R1251-1263.
27. Nakamura, M., Nozu, R., Ijiri, S., Kobayashi, T., Yamaguchi, Y., **Seale, A. P.**, Lerner, D.T., Grau, E. G. (2015). Sexual characteristics of high-temperature sterilized male Mozambique tilapia, *Oreochromis mossambicus*. *Zool. Lett.* 1-21
28. Furukawa, F., Watanabe, S., **Seale, A. P.**, Breves, J. P., Lerner, D. T., Grau, E. G., Kaneko, T. (2015). In vivo and *in vitro* studies reveal that branchial expression of ROMK $\alpha$  in seawater-acclimated Mozambique tilapia directly responds to high-K<sup>+</sup> stress. *Comp. Biochem. Physiol.* 187, 111-118.
29. Moorman, B. P., Lerner, D. T., Grau, E. G., **Seale, A. P.\*** (2015). The effects of acute salinity challenges on Osmoregulation in Mozambique tilapia reared in a tidally changing salinity. *J. Exp. Biol.* 218, 731-9.
30. Zikos, A., **Seale, A. P.**, Lerner, D. T., Grau, E. G., Korsmeyer, K. E. (2014). Effects of salinity on metabolic rate and branchial expression of genes involved in metabolism and mitochondrial biogenesis in Mozambique Tilapia (*Oreochromis mossambicus*). *Comp. Biochem. Physiol.* 178, 121-31.
31. **Seale, A.P.\***, Stagg, J. J., Yamaguchi, Y., Breves, J. P., Soma, S., Watanabe, S., Kaneko, T., Cnaani, A., Harpaz, S., Lerner, D. T., Grau, E.G. (2014). Effects of salinity and prolactin on the transcription

- of ion transporters, ion pumps and prolactin receptors in Mozambique tilapia intestine. *Gen. Comp. Endocrinol.* 206, 146-54.
32. Seale, L. A., Gilman, C. L., Moorman, B. P., Berry, M. J., Grau, E.G., **Seale, A.P.\*** (2014). Effects of acclimation salinity on the expression of selenoproteins in the tilapia, *Oreochromis mossambicus*. *J. Tr. El. Med. Biol.* 28(3), 284-92.
  33. Douros, J. D., Baltzegar, D. A., Breves, J. P., Lerner, D. T., **Seale, A. P.**, Grau, E. G., Borski, R. J. (2014) Prolactin is a major inhibitor of hepatic Leptin A synthesis and secretion: studies utilizing a homologous Leptin A ELISA in the tilapia. *Gen. Comp. Endocrinol.* 207, 86-93.
  34. Breves, J. P., Tipsmark, C. K., Stough, B. A., **Seale, A. P.**, Flack, B. R., Moorman, B. P., Lerner, D. T., Gau, E. G. (2014) Nutritional status and growth hormone regulate insulin-like growth factor binding protein (IGFBP) transcripts in Mozambique tilapia. *Gen. Comp. Endocrinol.* 207, 66-73.
  35. Moorman, B. P., Inokuchi, M., Yamaguchi, Y., Lerner, D. T., Grau, E. G., **Seale, A. P.\*** (2014). The osmoregulatory effects of rearing Mozambique tilapia in a tidally changing salinity. *Gen. Comp. Endocrinol.* 207, 94-102.
  36. Breves J. P., **Seale, A.P.**, Moorman, B. P., Lerner, D. T., Moriyama, S., Hopkins, K. D., Grau, E.G. (2014). Pituitary control of branchial NCC, NKCC and Na<sup>+</sup>, K<sup>+</sup>-ATPase  $\alpha$ -subunit gene expression in Nile tilapia, *Oreochromis niloticus*. *J. Comp. Physiol.* 184, 513-523.
  37. **Seale, A.P.\***, Yamaguchi, Y., Johnstone III, W.M., Borski, R.J., Lerner, D.T. Grau, E.G. (2013). Endocrine regulation of prolactin cell function and modulation of osmoreception in the Mozambique tilapia. *Gen. Comp. Endocrinol.* 192, 191-203.
  38. **Seale, A.P.\***, Watanabe, S., Breves, J. P, Lerner D.T., Grau, E.G. (2012). Differential regulation of TRPV4 by acclimation salinity and extracellular osmolality in euryhaline tilapia. *Gen Comp. Endocrinol.* 178, 123-130.
  39. **Seale, A.P.\***, and Watanabe, S., Grau, E. G. (2012). Osmoreception: perspectives on signal transduction and environmental modulation. *Gen. Comp. Endocrinol.* 176, 354-360.
  40. **Seale, A.P.\***, Moorman B. P., Stagg, J. J., Breves, J. P., Lerner, D. T., Grau, E.G. (2012). Prolactin<sub>177</sub>, prolactin<sub>188</sub> and prolactin receptor 2 in the pituitary of the euryhaline tilapia, *Oreochromis mossambicus*, are differentially osmosensitive. *J. Endocrinol.* 213, 89-98.
  41. Watanabe, S., **Seale, A.P.**, Grau, E.G, Kaneko, T. (2012). TRPV4 stretch-activated cation channel mediates hyposmolality-induced prolactin release from prolactin-producing cells of Mozambique tilapia, *Oreochromis mossambicus*. *Am. J. Physiol.* 302, R1004-1011.
  42. Tipsmark, C. K., Breves, J. P., **Seale, A. P.**, Lerner, D. T., Hirano, T., Grau, E. G. (2011). Switching of Na<sup>+</sup>, K<sup>+</sup>-ATPase isoform gene expression by salinity and prolactin in the gill of a euryhaline cichlid. *J. Endocrinol.* 209, 237-44.
  43. Breves, J. P., **Seale, A. P.**, Helms, R. E., Tipsmark, C. K., Hirano, T., Grau, E. G, (2011). Dynamic gene expression of GH/PRL-family hormone receptors in gill and kidney during freshwater-acclimation of Mozambique tilapia. *Comp. Biochem. Physiol. A Mol. Integr. Physiol.* 158, 194-200.

44. **Seale, A.P.**, Mita, M., Hirano, T., and Grau, E. G. (2011). Involvement of the cAMP messenger system and extracellular Ca<sup>2+</sup> during hyposmotically-induced prolactin release in the Mozambique tilapia. *Gen. Comp. Endocrinol.* **170**, 401-407.
45. **Seale, A. P.**, de Jesus, L. A., Park, M. C., and Kim, Y. S. (2006). Vanadium and insulin increase adiponectin production in 3T3-L1 adipocytes. *Pharmacol. Res.* **54**:30-8.
46. **Seale, A. P.**, Fiess, J. C., Hirano, T., Cooke, I. M., and Grau, E. G. (2006). Disparate release of prolactin and growth hormone from the tilapia pituitary in response to osmotic stimulation. *Gen. Comp. Endocrinol.* **145**, 222-31.
47. Kajimura, S., **Seale, A.P.**, Hirano, T., and Grau, E. G. (2006). Ouabain as a possible osmoregulatory hormone. *J. Exp. Zool.* **305**, 138-138.
48. Kajimura, S., **Seale, A.P.**, Hirano, T., and Grau, E. G. (2005). Physiological Concentrations of Ouabain Rapidly Inhibit Prolactin Release from the Tilapia Pituitary. *Gen. Comp. Endocrinol.* **143**, 240-50.
49. **Seale, A. P.**, de Jesus, L. A., Kim, S. Y., Choi, Y. H., Lim, H. B., Hwang, C. S., and Kim, Y. S. (2005). Development of an automated protein-tyrosine phosphatase 1B inhibition assay and the screening of putative insulin-enhancing vanadium (IV) and zinc (II) complexes. *Biotechnol. Lett.* **27**, 221-5.
50. **Seale, A. P.**, Cooke, I., Hirano, T., and Grau, G. (2004). Evidence that IP(3) and Ryanodine-sensitive Intra-cellular Ca Stores are not Involved in Acute Hyposmotically-Induced Prolactin Release in Tilapia. *Cell. Physiol. Biochem.* **14**, 155-66.
51. Weber, G. M., **Seale, A. P.**, Richman, N. H., Stetson, M., and Grau, E. G. (2004). Hormone release is tied to changes in cell size in the osmoreceptive prolactin cell of a euryhaline teleost fish, the tilapia, *Oreochromis mossambicus*. *Gen. Comp. Endocrinol.* **138**, 8-13
52. Hyde, G. N., **Seale, A. P.**, Grau, E. G., and Borski, R. J. (2004). Cortisol rapidly suppresses intracellular calcium and voltage-gated calcium channel activity in prolactin cells of the tilapia (*Oreochromis mossambicus*). *Am J. Physiol. Endocrinol. Metab.* **286**, E626-33.
53. **Seale, A. P.**, Richman, N. H., 3rd, Hirano, T., Cooke, I., and Grau, E. G. (2003). Cell volume increase and extracellular Ca<sup>2+</sup> are needed for hyposmotically induced prolactin release in tilapia. *Am. J. Physiol. Cell Physiol.* **284**, C1280-9.
54. **Seale, A. P.**, Richman, N. H., 3rd, Hirano, T., Cooke, I., and Grau, E. G. (2003). Evidence that signal transduction for osmoreception is mediated by stretch-activated ion channels in tilapia. *Am. J. Physiol. Cell Physiol.* **284**, C1290-6.
55. **Seale, A. P.**, Itoh, T., Moriyama, S., Takahashi, A., Kawauchi, H., Sakamoto, T., Fujimoto, M., Riley, L. G., Hirano, T., and Grau, E. G. (2002). Isolation and characterization of a homologue of mammalian prolactin-releasing peptide from the tilapia brain and its effect on prolactin release from the tilapia pituitary. *Gen. Comp. Endocrinol.* **125**, 328-39.
56. **Seale, A. P.**, Riley, L. G., Leedom, T. A., Kajimura, S., Dores, R. M., Hirano, T., and Grau, E. G. (2002). Effects of environmental osmolality on release of prolactin, growth hormone and ACTH from the tilapia pituitary. *Gen. Comp. Endocrinol.* **128**, 91-101.

### Extension Publications

1. **Seale, A. P.** and Ellis, S. (2019). Sustainable capture-based aquaculture of rabbitfish in Pacific Island Lagoons. College of Tropical Agriculture and Human Resource. Aquaculture and Aquaponics AA-1. ISBN 978-1-929054-15-2.
2. Haws, M., **Seale A. P.**, Corbin, J., Moss, S., Callan, C., Klinger-Bowen, R., Asuncion, B., Tamaru, C., Sombardier, L., Weidenbach, R., Leung, P., Sims, N. A., Cohen, D. and Yamasaki, L. (2019) Aquaculture in Hawai‘i - Ancient Traditions, Modern Innovation. World Aquaculture Society Inc. website (<https://www.was.org>).

### Creative Works (i.e., Extension Videos, Websites, Blogs, Creative Designs and Exhibitions, etc.)

**Seale, A. P.**; Stender, K.; Pickett, M. (2004); Fishes in Hawaii, Bess Press.

### Leadership Roles (Committees, Boards, Advisory, etc.)

- Member, Departmental Promotion Committee
- Member of Curriculum Pathway Development Committee of the Intercollege Nutrition PhD Program, Department of Human Nutrition, Food and Animal Sciences, University of Hawai‘i at Mānoa.
- Research and extension committee member, Department of Human Nutrition, Food and Animal Sciences, University of Hawai‘i at Mānoa.
- Member, search committees, HIMB, HNFAS – UHM
- Animal facility inspector, Institutional Animal Care and Use Committee, University of Hawai‘i at Mānoa
- Member, Fish Advisory Committee, Institutional Animal Care and Use Committee, University of Hawai‘i at Mānoa.
- Voting member, Institutional Animal Care and Use Committee, University of Hawai‘i at Mānoa.
- Organizer and host: International mini-symposium: Approaches for experimental challenges in aquaculture research
- Workshop organizer, Edwin Pauley Summer Program in Marine Biology, “Integrative, experimental and environmental physiology of marine organisms,” Hawai‘i Institute of Marine Biology, University of Hawai‘i at Mānoa, Kāne’ohe, HI.
- Session co-chair, 2nd meeting of the North American Society for Comparative Endocrinology
- Steering committee member for the World Aquaculture Society Meeting



- External reviewer for search committee for grade B of the Israeli Civil Service at Volcani Institute, Agricultural Research Organization
- Ad hoc reviewer for 28 peer-refereed journals and 3 federal funding agencies.

### Graduate Students

<u>Category</u>	<u>Current Number of Students</u>	<u>Number Graduated (Career)</u>
Chair of Master's Committees	1	5
Chair of PhD Committees	2	1
Member of Master's Committees	2	2
Member of PhD Committees	10	7

### Grant Support

PI: University of Hawai'i Sea Grant College Program omnibus grant "The development of environmental acclimation-based rearing strategies to optimize survival and growth in ama'ama or striped mullet, *Mugil cephalus*"; \$180,714. 2024-2026

PI: University of Hawai'i Sea Grant College Program omnibus grant "Development of gonadal maturation and spawning strategies in Hawaiian sea cucumbers"; \$180,285. 2024-2026

PI: NOAA; "Resolving Impediments to Captive Longevity and Fecundity in Seriolids, America's Most Successful Offshore Marine Fish Species"; \$999,999. 2022-2025

Co-PI: NOAA "Hawaii-Pacific Aquaculture Consortium: Continuing the Expansion of An Aquaculture Development Program"; \$237,701. 2022-2025

PI: University of Hawai'i Sea Grant College Program omnibus grant; "Identifying the physiological responses to extreme environmental changes in native Hawaiian Sea cucumbers found in traditional fishponds"; \$152,467. 2022-2024

Co-PI: Advanced Aquaculture Collaborative Programs (NOAA); "Establishing a Hawai'i-Pacific Aquaculture Consortium: A Revitalization and Expansion of the Aquaculture Development Program"; \$1,196,344. 2019-2022

Co-PI; Department of Commerce, National Oceanic and Atmospheric Administration (NOAA); "Establishing an aquaculture program at the University of Hawai'i that leverages and integrates Land Grant and Sea Grant research, extension and education resources"; \$749,816. 2018-2021

PI; National Science Foundation (IOS-1755016); "Collaborative Research: Identifying osmosensitive molecular targets using a unique vertebrate model" \$348,400. 2018-2021

PI; Travel grant from the Hawai'i Institute of Marine Biology for the 2019 International Marine Biotechnology Conference and the Asia Pacific Marine Biotechnology Conference; \$2,000. 2019

PI; Sea Grant Program Development Project (E/ET-1 OOPD), "Training for extension professionals in sustainable cage farming and rearing methods of Rabbitfishes (Siganidae), in Pohnpei, Federated States of Micronesia"; \$3,467. 2018

Mentor; Undergraduate Research Opportunity Program grant, "*In-silico* analysis of the Prolactin (PRL)

promoters to predict elements regulating PRL expression and elucidate mechanisms of osmoregulation in *Oreochromis mossambicus*"; \$5,000. 2018

PI; Travel grant from the Office of the Vice-Chancellor for Research; \$2,000. 2017

PI; College of Tropical Agriculture and Human Resources (CTAHR) / United States Department of Agriculture Hatch Proposal (HAW02051-H); "Physiological effects of environmental stressors in a key finfish for aquaculture"; \$40,000. 2017-present

PI; Smith-Lever extension funds; "Integrated Tilapia Aquaculture Research, Education and Outreach"; \$1,000 / year. 2016-2019

PI; National Institutes of Health (1R21DK111775-01); "Integrating Osmosensitivity and Autocrine Signaling in a Model for Osmoregulation"; \$450,830. 2016-2020

PI; University of Hawai'i Sea Grant College Program omnibus grant (R/SB-18) "The use of a euryhaline tilapia to assess the endocrine disrupting effects of anthropogenic chemicals on growth and osmoregulation of a tropical teleost species inhabiting coastal waters and wetlands in Hawai'i and the tropics."; \$75,853 + 2 years of funding for Graduate Assistant. 2016-2018

PI; Sub-award from California State University at Fresno / United States Department of Agriculture, "Investigations into the Stress Reducing Effects of Selenium enriched Feed in an Important Aquaculture Species, Tilapia (*Oreochromis mossambicus*)"; \$33,000. 2015-2016

PI; University of Hawai'i Sea Grant College Program omnibus grant (R/SS-12) "The development of acclimation salinity-based rearing strategies to maximize growth in Mozambique tilapia, *Oreochromis mossambicus*"; \$64,121 + 2 years of funding for Graduate Assistant. 2014-2016

Co-PI and Co-organizer; 2012 Edwin Pauley Summer Program in Marine Biology "Integrative, experimental and environmental physiology of marine organisms", Pauley Foundation; \$80,000. 2012

### **Presentations at Conferences (Oral)**

1. **Seale, A.P.** and Goodearly, T. (2023) Identifying the physiological responses to extreme environmental changes in native Hawaiian Sea cucumbers. 2023 Hawai'i Sea Grant Research Symposium (Dec 8th).
2. **Seale, A.P.** and Malintha, G.H.T (2023) The prolactin cell as nexus for the integration of osmotic and thermal sensory modalities. 7th Biennial Conference of the North American Society for Comparative Endocrinology, Queretaro, Mexico (May28th – Jun1st).
3. Malintha G.H.T., Celino-Brady F.T., Breves J.P., Hudson A.G., Rathnayake S. and **Seale A.P.** (2023) Salinity-dependent endocrine pathways in tilapia gill and kidney. 7th Biennial Conference of the North American Society for Comparative Endocrinology, Queretaro, Mexico (May28th – Jun1st).
4. **Seale, A.P.**, and Malintha, G.H.T. (2023) Regulation of *prolactin*<sub>177</sub> and *prolactin*<sub>188</sub> by thermo- and osmosensitive transcription factors in Mozambique tilapia. International Symposium on Aquatic Animal Physiology, University of Tokyo, Kashiwa, Japan (May12-13).

5. **Seale, A.P.**, Celino-Brady F.T. and Breves J.P. (2023) Involvement of the GH/IGF system in sexual size dimorphism in tilapia. Aquaculture America 2023, New Orleans, Louisiana (Feb 23<sup>rd</sup> -26<sup>th</sup>).
6. Inokuchi, M., Moorman, B., Yamaguchi, Y., **Seale, A. P.** (2022). Age-dependent decline in salinity tolerance in a euryhaline fish. The 46<sup>th</sup> Annual Meeting of the Japan Society for Comparative Endocrinology, Tokyo, Japan (Oct 28<sup>th</sup>- Oct 30<sup>th</sup>).
7. **Seale, A. P.**, Woo, D.W., Malintha, G.H.T., Celino-Brady, F.T., Yamaguchi, Y., Breves, J.P. (2022) Effects of temperature on prolactin release from the tilapia pituitary. 14<sup>th</sup> International Congress on the Biology of Fish, Montpellier, France (Jun 28<sup>th</sup>-Jul 1<sup>st</sup>).
8. Malintha, G.M.T, Celino-Brady, F.T., **Seale, A. P.** (2022) How does temperature affect a fish's response to changing salinities? Clues from an euryhaline teleost. The 46th annual Albert L. Tester Memorial Symposium, Honoulu, Hawai'i (Apr 20-23).
9. **Seale, A.P.** (2022) Aquaculture Training Project. Promoting Local Food Sustainability Forum. CTAHR, Honoulu, Hawai'i (Apr14<sup>th</sup>).
10. **Seale, A.P.**, Gilman, C.L, Zavacki, A.M., Larsen, P.R., Inokuchi, M., Breves, J.P. Seale, L.A. (2022). The involvement of deiodinases and thyroid hormones during freshwater acclimation in an euryhaline fish. 12<sup>th</sup> International Symposium on Selenium in Biology and in Medicine, Honoulu, Hawai'i (Feb 16-20).
11. **Seale, A.P.** (2022). Introduction to aquaculture program at CTAHR. Workforce Development working group meeting of the Hawai'i Aquaculture Collaborative. Virtual (Feb 4)
12. **Seale, A.P.** and Seale L.A. (2021). A "pair" review of academic careers. 45th Annual Meeting of the Japan Society for Comparative Endocrinology, Tokyo, Japan. Virtual (Nov 12-14).
13. Lerner, D.T., Okimoto, D.K., Tagarino, K.A., Sudnovsky, M., **Seale, A.P.**, Haws, M., M., Ellis, S. (2021) Establishing a Hawai'i-Pacific Consortium: A Revitalization and Expansion of an Aquaculture Development Program. Advanced Aquaculture Collaboratives (Hubs) Sea Grant NOAA Aquaculture Research Symposium. Virtual Meeting (Nov 1-3).
14. **Seale, A. P.** (2021). A prolactin cell model to study sensory transduction of environmental stimuli in fish. Genes and Animal Biology, Department of Human Nutrition, Food and Animal Sciences, University of Hawai'i. Virtual (Oct 12).
15. **Seale, A. P.** (2021). A fish model to investigate the endocrine integration of environmental stimuli. Seminar in Biomedical Sciences, Department of Cell and Molecular Biology, John A. Burns School of Medicine, University of Hawai'i. Virtual (Aug 30).
16. Lucas, J. R., Pavlic, T. R., Caetano-Anolles, K., Ewers, B., Iyer, S., **Seale, A. P.**, Zeng, Y. (2021). Constraints bring clarity to animal behavior: Re-integrating life sciences through resource limitation. The 58<sup>th</sup> Annual Conference of the Animal Behavior Society, Virtual Meeting; Resource Limitation: A Tie That Binds in the Evolution of Sociality? (Aug 1-7).
17. **Seale, A.P.**, Seale, L.A., Gilman, C.L, Zavacki, A.M., Larsen, P.R., Inokuchi, M., Breves, J.P. (2021) Effects of freshwater acclimation on thyroid hormones and branchial deiodinases in

- Mozambique tilapia. 6th Biennial Conference of the North American Society for Comparative Endocrinology. Virtual Meeting (May 25-27).
18. Malintha, G.H.T., Celino-Brady, F.T., **Seale, A.P.** (2021) Osmotic regulation of transcription factor mRNA levels in prolactin cells of Mozambique tilapia. 6th Biennial Conference of the North American Society for Comparative Endocrinology. Virtual Meeting (May 25-27).
  19. Woo, D.W., Malintha, G.H.T., Celino-Brady, F.T., Breves, J.P., Yamaguchi, Y., **Seale, A.P.** (2021) Thermally-induced changes in cell volume and hormone release in prolactin cells of Mozambique tilapia. 6th Biennial Conference of the North American Society for Comparative Endocrinology. Virtual Meeting (May 25-27).
  20. Celino-Brady, F.T., Breves, J.P., **Seale, A.P.** (2021) Sex-dependent modulation of genes involved in growth and reproduction by growth hormone and luteinizing hormone in tilapia. 6th Biennial Conference of the North American Society for Comparative Endocrinology. Virtual Meeting (May 25-27).
  21. E. Barba, E. Conklin, D. Kraft, I. Knapp, **A. Seale**, R. Toonen (2021) Aquaculture applications of Poolseq: Scanning genomes for traces of salinity tolerance. The 45th annual Albert L. Tester Memorial Symposium, Virtual Meeting (Apr 20-23).
  22. Woo, D. W., Malintha, G.M.T, Celino-Brady, F.T., **Seale, A. P.** (2021) Do fish sense and respond to changes in temperature and salt concentration in similar ways? Clues from the endocrine system. The 45th annual Albert L. Tester Memorial Symposium, Virtual Meeting (Apr 20-23).
  23. Malintha, G.M.T, Celino-Brady, F.T., **Seale, A. P.** (2021) How do fish detect salinity changes? Clues from the molecular regulation of the prolactin gene. The 45th annual Albert L. Tester Memorial Symposium, Virtual Meeting (Apr 20-23).
  24. Celino-Brady, F.T., Petro-Sakuma C.K., Breves J.P., Lerner D.T., **Seale, A.P.** (2020) Estrogenic chemical pollutants affect growth and reproduction-related genes in male Mozambique Tilapia, *Oreochromis mossambicus*. Aquaculture America 2020, Honolulu, Hawai'i (Feb 10).
  25. **Seale, A.P.**, Petro-Sakuma C.K., Celino-Brady F.T., Breves, J.P. (2020) Growth hormone regulates intestinal nutrient transporters in Mozambique tilapia *Oreochromis mossambicus*. Aquaculture America 2020, Honolulu, Hawai'i (Feb 10).
  26. **Seale, A. P.** (2020) From live cell imaging to radioimmunoassays to animal facilities: approaches in tilapia research. International mini-symposium: Approaches for experimental challenges in aquaculture research, University of Hawai'i at Mānoa (Jan 15).
  27. **Seale, A. P.** (2019) New perspectives on osmoreception and osmoregulation in a euryhaline fish model. University of Arkansas seminar, Fayetteville, AK (Sep 19).
  28. **Seale, A. P.** (2019) The osmotic control of prolactin release in a euryhaline fish model. North Carolina State University seminar, Raleigh, NC (May 30).
  29. **Seale, A. P.** (2019) *A fish prolactin cell model to investigate the emerging integration between osmoreception, thermoreception and autocrine signaling.* The Growth Hormone (GH)/ Prolactin (PRL) Family in Biology and Disease. Federation of American Societies for Experimental Biology (FASEB) Science Research Conferences, West Palm Beach, FL (July 7-12).

30. **Seale, A.P.** (2019) Acclimation of fish to dynamically changing salinities: insights from the euryhaline Mozambique tilapia. 5th Biennial Conference of the North American Society for Comparative Endocrinology. Gainesville, FL (May 27-29).
31. Celino-Brady, F.T., Petro-Sakuma, C.K., Lerner, D.T., **Seale, A.P.** (2019) Effects of early life exposure to estrogenic compounds on the growth and reproductive physiology of Mozambique tilapia. 5th Biennial Conference of the North American Society for Comparative Endocrinology. Gainesville, FL (May 27-29).
32. Petro-Sakuma, C.K., Celino-Brady, F.T., **Seale, A.P.** (2019) Regulation of Intestinal Nutrient Transporters by the pituitary gland in Mozambique Tilapia (*Oreochromis mossambicus*). College of Tropical Agriculture and Human Resources Student Research Symposium, University of Hawai‘i, Honolulu, Hawai‘i.
33. **Seale, A.P.**, Yamaguchi Y., Pavlosky, K.K., Lerner, D.T., Grau, E.G. (2018) Endocrine control of ion balance in steady state versus dynamically changing salinity regimes in Mozambique tilapia. 13<sup>th</sup> International Congress on the Biology of Fish, Calgary, Canada (July 16-19).
34. **Seale, A.P.** (2018) Control of growth and osmoregulation in tilapia under dynamically-changing salinities. Sino-US Symposium on Food Nutrition and Health, Hainan University, Haikou, China (June 4-8).
35. **Seale, A.P.** (2017) How do fish tolerate salinity changes? Science night, He‘eia Fishpond (Dec. 7).
36. **Seale, A.P.**, Celino-Brady, F. T. (2017) The Use of a Euryhaline Tilapia to Assess the Endocrine Disrupting Effects of Anthropogenic Chemicals on Growth and Osmoregulation of a Tropical Teleost Species Inhabiting Coastal Waters and Wetlands in Hawai‘i and the Tropics. Hawai‘i Sea Grant Research Symposium, Honolulu, HI.
37. **Seale, A. P.**, Yamaguchi, Y., Inokuchi, M., Moorman, B., Lerner, D. T. and Grau, E. G. (2017) Endocrine Control of Growth and Osmoregulation in fish: a comparison between steady state and dynamically changing salinity regimes. *In* “University of Hawaii and University of Tokyo, Joint Symposium on Ocean, Coastal, and Atmospheric Sciences,” Honolulu, HI.
38. Celino-Brady, F. T., Yamaguchi, S., Miura C., Miura T., Lerner, D. T., and **Seale, A. P.** (2017) Modulation of Reproductive and Growth Axes by Environmental Endocrine Disruptors. *In* “University of Hawaii and University of Tokyo, Joint Symposium on Ocean, Coastal, and Atmospheric Sciences,” Honolulu, HI.
39. **Seale, A.P.**, Pavlosky, K. Keano, Moorman, B.P., Yamaguchi, Y., Lerner, D.T., Grau, E.G. (2017) Hormonal control of growth and osmoregulation under dynamically changing salinities in mozambique tilapia *Oreochromis mossambicus*. World Aquaculture 2017. Cape Town, South Africa.
40. **Seale, A.P.**, Obaldo, L.G., Low, T.E., Okimoto, D. K., Xu, L.J. (2017) Tilapia industry in Hawai‘i: an update. World Aquaculture 2017. Cape Town, South Africa.
41. **Seale, A.P.**, Yamaguchi, Y., Breves, J. P., Haws, M. C., Lerner, D.T., Grau, E.G., (2017) Osmotic regulation of prolactin 188 and prolactin 177 and their receptors in two tilapia congeners with

distinct salinity tolerances. North American Society for Comparative Endocrinology and 9<sup>th</sup> International Conference in Comparative Endocrinology. Chateau Lake Louise, Canada.

42. Breves J.P., Keith P.L.K., Hunt B.L., Pavlosky K.K., Inokuchi M., Yamaguchi Y., Lerner D.T., Grau E.G., **Seale A.P.** (2017) Multifactorial control of branchial clc-2c gene expression in tilapia: effects of salinity, prolactin and extracellular osmolality. North American Society for Comparative Endocrinology and 9<sup>th</sup> International Conference in Comparative Endocrinology. Chateau Lake Louise, Canada.
43. **Seale, A.P.** (2017) Hormonal control of growth and osmoregulation in the tilapia under dynamically changing salinities. Okayama University International Workshop "Strategies of plants and animals on environmental response/adaptation," Okayama City, Japan; Mar. 09.
44. Celino-Brady, F.T., Yamaguchi, S., Miura, C., Miura, T., Lerner, D.T., **Seale, A.P.** (2017) Endocrine Disrupting Effects of Anthropogenic Pollutants on Fish Reproduction and Growth. Okayama University International Workshop " Strategies of plants and animals on environmental response/adaptation"; Okayama City, Japan; Mar. 09.
45. **Seale, A. P.**, Yamaguchi, Y., Lerner, D. T., and Grau, E.G. (2017) The osmotic control of prolactin release in a euryhaline fish model. Okayama University Seminar. Okayama City, Japan.
46. **Seale, A. P.** (2017) Hormonal control of growth in tilapia under dynamically changing conditions; Hawaii Aquaculture and Aquaponics Association conference. Kapi'olani Community College, HI.
47. **Seale, A.P.**, Yamaguchi, Y., Lerner, D.T., Grau, E.G. (2016) A fish model for prolactin cell regulation and osmoreception. International Symposium on Pituitary Gland and its Related System. (Sept. 1-5) University of Hawai'i, HI, USA.
48. **Seale, A. P.**, Yamaguchi, Y., Lerner, D.T., Grau, E.G. (2016) Recent advances in the tilapia cell model for osmoreception. In "8<sup>th</sup> International Symposium on Fish Endocrinology," Gothenburg, Sweden.
49. Pavlosky, K., Yamaguchi, Y., Lerner, D.T., Grau, E.G., **Seale, A. P.** (2015) Tilapia: A Model for Osmoregulation. In "40<sup>th</sup> Annual Albert L. Tester Memorial Symposium," Honolulu, HI, USA.
50. Yamaguchi, Y., Moriyama, S., Lerner, D.T., Grau, E.G., **Seale, A.P.** (2015) Autocrine regulation of prolactin release from tilapia prolactin cells: modulation of hormonal responses by extracellular osmolality. In "3<sup>rd</sup> International Congress of the North American Society of Comparative Endocrinology," Ottawa, Canada.
51. Breves, J.P., Inokuchi, M., Yamaguchi, Y., **Seale, A.P.**, Watanabe, S., Lerner, D.T., Kaneko, T., Grau, E.G. (2015) Prolactin and cortisol direct branchial aquaporin 3 expression in euryhaline tilapia. In "3<sup>rd</sup> International Congress of the North American Society of Comparative Endocrinology," Ottawa, Canada.
52. **Seale, A. P.**, Yamaguchi, Y., Inokuchi, M., Moorman, B., Lerner, D. T. and Grau, E. G. (2015) Environmental and Hormonal Control of Osmoregulation in a Euryhaline Teleost Fish. In "University of Hawaii and University of Tokyo, Joint Symposium on Ocean, Coastal, and Atmospheric Sciences", Kashiwa, Japan.

53. Yamaguchi, Y., Moriyama, S., Lerner, D.T., Grau, E.G., **Seale, A.P.** (2015) Autocrine regulation of prolactin release from tilapia prolactin cells: modulation of hormonal responses by extracellular osmolality. *In* "University of Hawaii and University of Tokyo, Joint Symposium on Ocean, Coastal, and Atmospheric Sciences," Kashiwa, Japan.
54. **Seale, A. P.** (2014) Endocrine and Environmental Control of Osmoregulation in a Euryhaline Teleost. Okayama University Summer Program, Ushimado Marine Station, Okayama University, Japan.
55. **Seale, A. P.**, Inokuchi, M., Lerner, D. T., Grau, E. G. (2013) The tilapia prolactin cell and gill filament models for studying osmoreception and osmoregulation. *In* "Perspectives in Endocrinology of Cichlids," BARD workshop, Ein Harod, Israel.
56. **Seale, A. P.**, Moorman, B. P., Inokuchi, M., Lerner, D. T., and Grau, E. G. (2013) Effects of tidally changing rearing salinities on osmoregulation and growth in the Mozambique tilapia. *In* "10<sup>th</sup> International Symposium on Tilapia in Aquaculture," Jerusalem, Israel.
57. Moorman, B.P., Lerner, D. T., Grau, E. G., **Seale, A. P.** (2013) Effects of steady-state and tidally changing rearing salinities on osmoregulation in the Mozambique tilapia. *In* "2<sup>nd</sup> International Congress of the North American Society of Comparative Endocrinology," Queretaro, Mexico.
58. Inokuchi, M., Lerner, D. T., Grau, E. G., Watanabe, S., Kaneko, T., **Seale, A. P.** (2013) Effects of ambient osmolality and prolactin on gill osmoregulatory function in cultured gill filaments from freshwater-acclimated Mozambique tilapia. *In* "2<sup>nd</sup> International Congress of the North American Society of Comparative Endocrinology," Queretaro, Mexico. **Best talk award.**
59. **Seale, A. P.**, Breves, J. P., Watanabe, S., Kaneko, T., Lerner, D.T., Hirano, T., Grau, E. G. (2012) Environmental salinity modulates osmotic responsiveness of tilapia via TRPV4. *In* "7<sup>th</sup> International Symposium on Fish Endocrinology," Buenos Aires, Argentina.
60. Breves, J.P., **Seale, A.P.**, Tipsmark, C., Stagg J. J., Moorman, B. P., Lerner, D. T., Grau, E. G. (2012) Hypophysectomy and growth hormone replacement elicit tissue-specific responses by the growth hormone (GH)/ insulin-like growth factor (IGF) system in Mozambique tilapia. *In* "10<sup>th</sup> International Congress on the Biology of Fish," Madison, WI, USA.
61. Moorman, B. M., **Seale, A. P.**, Lerner, D.T., Grau, E. G. (2012) Rearing Mozambique tilapia in a tidal environment: effects on growth and osmoregulation. *In* "The 2012 Edwin W. Pauley Summer Program in Marine Biology," Honolulu, HI, USA.
62. Watanabe, S., **Seale, A. P.**, Grau, E. G., Kaneko, T. (2012) Molecular equipment for osmoreception in prolactin cells. *In* "The 2012 Edwin W. Pauley Summer Program in Marine Biology," Honolulu, HI, USA.
63. **Seale, A. P.**, Watanabe, S., Kaneko, T., Lerner, D.T., Grau, E. G. (2012) Environmental Modulation of the Osmoreceptive PRL cell in Tilapia, *Oreochromis Mossambicus*. *In* "University of Hawaii and University of Tokyo, Joint Symposium on Ocean, Coastal, and Atmospheric Sciences," Honolulu, HI, USA.
64. **Seale, A. P.** and Grau, E. G. (2012) Environmental Modulation of the Osmoreceptive PRL cell in Tilapia, *Oreochromis Mossambicus*. *In* "Cellular Neurobiology and Endocrine Signaling: A Symposium in Honor of Dr. Ian M. Cooke," Honolulu, HI, USA.

65. **Seale, A. P.** (2005) Vanadium, Insulin Signaling and Adiponectin Production. *Invited lecturer*, Ajou University, Seoul, South Korea.
66. Cooke, I. M., Shimahara, T., Xu, S., and **Seale, A.** (2002) Transduction of the hyposmotic stimulus for prolactin secretion in tilapia pituitary. *In* "Gordon series conference," Rhode Island.
67. Hirano, T., Leedom, T. A., **Seale, A. P.**, Eckert, S. M., and Grau, E. G. (2001) Effects of blood withdrawal and angiotensin II on prolactin secretion in the tilapia. *In* ""Drink or Die" Society for Experimental Biology Satellite Meeting (14<sup>th</sup> International Congress of Comparative Endocrinology), Sorrento, Italy.
68. **Seale, A. P.** (2001) Osmoreception: an Essential Modality for Euryhaline Life. *In* "26<sup>th</sup> Annual Albert L. Tester Memorial Symposium," Honolulu, HI.
69. **Seale, A. P.**, and Richman, N. H. (2000) Osmoreception in the euryhaline tilapia, *Oreochromis mossambicus*. *In* "25<sup>th</sup> Annual Albert L. Tester Memorial Symposium," Honolulu, Hawai'i.
70. **Seale, A. P.**, Hirano, T., and Grau, E. G. (2000) The control of prolactin secretion in tilapia: hypothalamic and environmental factors. *In* "Japan Society for Comparative Endocrinology symposium," Noto, Japan.

#### Presentations at Conferences (Poster)

71. Chang, R.C., Celino-Brady F., **Seale A.P.** (2023) Changes in cortisol, glucose and corticosteroid receptors during salinity challenges in Mozambique tilapia. 7th Biennial Conference of the North American Society for Comparative Endocrinology, Queretaro, Mexico (May28th – Jun1st).
72. **Seale, A.P.**, Breves, J. P., Celino-Brady, F. (2023) Sex-specific responses within the gonadotropic axis of Mozambique tilapia to growth hormone, prolactin, and luteinizing hormone. 12<sup>th</sup> International Symposium on the Reproductive Physiology of Fish, Crete Greece (May 15th-19th).
73. Cao, K, Malintha, G.H.T., Celino-Brady F., **Seale A.P.** (2023) Coping with change: tight junction proteins offer a clue on how fish acclimate to salinity challenge. Tester Symposium, Department of Biology, University of Hawai'i, Honolulu, Hawai'i.
74. Malintha, G.M.T, Celino-Brady, F.T., **Seale, A. P.** (2022) Osmotically sensitive transcription factors in Mozambique tilapia prolactin cells. 14<sup>th</sup> International Congress on the Biology of Fish. Montpellier, France (Jun 28<sup>th</sup>-Jul 1<sup>st</sup>).
75. **Seale, A.P.** (2022). Endocrine and osmotic responses to tidally-changing salinities in Mozambique tilapia, *Oreochromis mossambicus*. Experimental Biology 2022, Philadelphia (Apr 2-5).
76. Celino-Brady, F.T., Breves, J.P., **Seale, A.P.** (2022) Sexually Dimorphic Responses to Growth Hormone and Luteinizing Hormone within the Somatotropic and Reproductive Axes of Tilapia. Experimental Biology 2022, Philadelphia (Apr 2-5).



77. Celino-Brady, F.T., Pavlosky K.K., Lerner D.T., **Seale, A.P.** (2020) Sex, salinity, and sampling period modulate growth hormone expression in Mozambique Tilapia *Oreochromis mossambicus*. Aquaculture America 2020, Honolulu, Hawai'i.
78. Chang, R., Celino-Brady F.T., Breves J.P., **Seale, A.P.** (2020): Regulation of growth and reproductive genes by pituitary hormones in male and female Mozambique Tilapia (*Oreochromis mossambicus*). Aquaculture America 2020, Honolulu, Hawai'i.
79. Woo, D.W., Celino-Brady F.T., Pavlosky K.K., Lerner D.T., **Seale, A.P.** (2020) Effects of environmental salinity on the stress response in Mozambique tilapia, *Oreochromis mossambicus*. Aquaculture America 2020, Honolulu, Hawai'i.
80. Barba, E., Conklin, E., Kraft, D., **Seale, A.P.**, Toonen, R. (2019) AssessPool: a flexible pipeline for population genomic analyses of pooled sequencing data. A case study on salinity acclimation in tilapia. Joint Conference of the 12<sup>th</sup> International Marine Biotechnology Conference and the 12<sup>th</sup> Asia Pacific Marine Biotechnology Conference, Shizuoka, Japan.
81. Celino-Brady, F.T., Petro-Sakuma C.K., Breves J.P., Lerner D.T., **Seale, A.P.** (2019) Early Life exposure to 17 $\beta$ -estradiol and nonylphenol affects the gh/igf system and expression of estrogen receptors in Mozambique tilapia. 5th Biennial Conference of the North American Society for Comparative Endocrinology, Gainesville, Florida.
82. Woo, D.W., Celino-Brady, F. T., Pavlosky, K.P., Lerner, D.T., **Seale, A.P.** (2018) The effects of salinity on plasma glucose in Mozambique tilapia, *Oreochromis mossambicus*. Imi Wai Ola Student Science Conference (May 4). Honolulu, HI, USA.
83. Chang, R., Celino-Brady, F.T., **Seale, A.P.** (2019) Control of growth-related genes by pituitary hormones in the liver and gonad of male and female Mozambique Tilapia (*Oreochromis mossambicus*). Tester Symposium, Department of Biology, University of Hawai'i, Honolulu, Hawai'i.
84. Ferrier, A., Petro-Sakuma, C.K., Celino-Brady, F.T., **Seale, A.P.** (2019) Effect of steady-state and tidally changing salinities on the expression of intestinal aquaporins in *Oreochromis mossambicus*. Tester Symposium, Department of Biology, University of Hawai'i, Honolulu, Hawai'i.
85. Head, T., Stoytcheva, Z., **Seale, A. P.** (2018) *In-silico* analysis of Prolactin 177 and 188 promoters to identify mechanisms of osmoreception in Mozambique Tilapia (*Oreochromis mossambicus*). 29<sup>th</sup> Annual CTAHR and COE student research symposium (April 8). Honolulu, HI, USA. **Best poster award.**
86. Woo, D.W., Celino-Brady, F. T., Pavlosky, K.P., Lerner, D.T., **Seale, A.P.** (2018) Stress response of Mozambique tilapia, *Oreochromis mossambicus*, subjected to cyclical changes in environmental salinity. 29<sup>th</sup> Annual CTAHR and COE student research symposium (April 8). Honolulu, HI, USA.
87. Petro-Sakuma, C.K., Celino-Brady, Lerner, D.T., **Seale A.P.** (2018) Effects of waterborne exposure to nonylphenol on the growth and reproductive physiology of Mozambique Tilapia (*Oreochromis mossambicus*). 29<sup>th</sup> Annual CTAHR and COE student research symposium (April 8). Honolulu, HI, USA. **Gamma Sigma Delta Poster award.**
88. Petro-Sakuma, C. K., Celino-Brady, F. T., Lerner, D. T., **Seale, A. P.** (2017) Endocrine Disrupting Effects of the Anthropogenic Pollutants, Ethynylestradiol and Nonylphenol on Growth and

- Reproduction in Mozambique Tilapia (*Oreochromis mossambicus*). In “University of Hawaii and University of Tokyo, Joint Symposium on Ocean, Coastal, and Atmospheric Sciences. Honolulu, HI.
89. Reyes, A., **Seale, A. P.**, Seale, L. A. (2016) Investigation of amino acid transporters in the gut of an euryhaline species, the Mozambique tilapia, (*Oreochromis mossambicus*). Biomedical Science and Health Disparity Symposium (April 21). John A. Burns School of Medicine – University of Hawai‘i. Honolulu, HI.
  90. Pavlosky, K., Yamaguchi, Y., Lerner, D. T., Grau, E. G. G., and **Seale, A. P.** (2016) Effects of cyclical changes in environmental salinity on osmoregulatory parameters in the Mozambique tilapia, *Oreochromis mossambicus*. 28<sup>th</sup> Annual CTAHR and COE student research symposium (April 8). Honolulu, HI.
  91. Keith, P. L., Hunt, B. L., Inokuchi, M., Yamaguchi, Y., **Seale, A. P.**, Lerner, D. T., Grau, E. G., and Breves, J. P. (2016) Prolactin and Extracellular Osmolality Regulate Branchial *clc2c* Expression in Tilapia. Experimental Biology Annual Meeting (April). San Diego, CA.
  92. Pavlosky, K., Moorman, B., Lerner, D. T., Grau, E. G. G., and **Seale, A. P.** (2014) Effects of tidal rearing conditions on growth in Mozambique tilapia. Sea-grant Mini-Symposium. Honolulu, HI.
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  94. **Seale, A.P.**, Stagg, J. J., Yamaguchi, Y., Breves, J. P., Soma, S., Watanabe, S., Kaneko, T., Lerner, D. T., Grau, E.G. (2013) The Na<sup>+</sup>/K<sup>+</sup>/2Cl<sup>-</sup> co-transporter is a target of prolactin in the intestine of Mozambique tilapia. In “10<sup>th</sup> International Symposium on Tilapia in Aquaculture,” Jerusalem, Israel.
  95. Seale L. A., Berry M. J., Grau EG, **Seale A. P.** (2013) The effects of fresh water and seawater adaptation on the expression of selenoproteins in the Mozambique tilapia, *Oreochromis mossambicus*. In: “Selenium,” Berlin, Germany.
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