

**CURRICULUM VITAE**  
**of**  
**ALOK DEORAJ, PhD**

**PERSONAL DATA**

Instructor and Graduate Program Director                      11200 S.W. 8th Street  
Department of Environmental and                                      Building AHC5, Room 349  
Occupational Health    Miami, FL 33199  
Robert Stempel College of Public Health                      Email: [adeoraj@fiu.edu](mailto:adeoraj@fiu.edu)  
and Social Work    Phone: (305) 348-7793  
Florida International University                                      Fax: (305) 348-1996

**EDUCATION (List most recent degree first)**

<u>Degree</u>	<u>Institution</u>	<u>Field</u>	<u>Dates</u>
Certificate of Management	Belmont University - Jack C. Massey Graduate School of Business, Nashville. TN.	Business Management	2005
Ph.D.	National Institute of Immunology-JNU, New Delhi, India	Zoology-Immunology	1994
M.Sc.	Patna University, Patna. India	Zoology	1989
B. Sc.	Patna University, Patna. India	Zoology (Hons.)	1986

**PROFESSIONAL ENHANCEMENT TRAININGS**

2014 Provost's Course Design Institute at FIU  
2011 Global Learning Curriculum Development at FIU  
2009 Grant Writing USA Workshop, Miami, FL  
2007 Certificate Course in Health and Colony Management of Laboratory Fish, Mount Desert Marine Biological Laboratory, Bar Harbor, ME  
2004 Advance Leadership III Course at Sygen International, Berkeley, CA

**FULL-TIME ACADEMIC EXPERIENCE (list most recent first)**

<u>Institution</u>	<u>Rank</u>	<u>Field</u>	<u>Dates (Month &amp; Year)</u>
Florida International University, Miami, FL.	Instructor	Environmental Health	Aug 2010-
Florida International University, Miami, FL.	Assistant Research Professor	Environmental Health	Feb 2009-Jul 2010
University of Maryland-UMBI, Baltimore, MD.	Senior Research Associate	Biotechnology	Jun 1996-Jan 2002
University of Texas Health Center, At Tyler, Tyler. TX	NIH-Postdoctoral Research Fellow	Molecular biology and Biochemistry	Feb 1994-May 1996
National Institute of Immunology, New Delhi, India.	Staff Scientist I and II	Molecular biology and Biochemistry	Feb 1992-Jan 1994

**PART-TIME ACADEMIC EXPERIENCE (list most recent first)**

<u>Place of Employment</u>	<u>Title</u>	<u>Field</u>	<u>Dates (Month &amp; Year)</u>
University of Maryland-UMBI, Baltimore, MD.	Adjunct Research Assistant Professor	Biotechnology	Aug 2005 –Jul 2006

**NON-ACADEMIC EXPERIENCE**

<u>Place of Employment</u>	<u>Title</u>	<u>Dates (Month &amp; Year)</u>
Zygon, Atlanta. GA	Director of Scientific Operations	Mar 2007-Jan 2009
Genus Plc., Madison, WI	Senior Scientist and Manager	Jun 2006-Feb 2007
Sygen, Berkeley CA and Franklin, KY	Senior Scientist and Manager	Feb 2002-May 2006

## **EMPLOYMENT RECORD AT FIU**

<u>Rank</u>	<u>Dates (Month &amp; Year)</u>
Dissertation Advisory Faculty	Apr 2014-
Graduate Program Director for MPH and PhD	Aug 2013-
Graduate Faculty	Aug 2010-
Instructor	Aug 2010-
Assistant Research Professor	Feb 2009-Jul 2010

## **TEACHING AWARDS AND RECOGNITIONS**—provide full information and dates.

- 2015 Elected as Chair of the University Graduate Council
- 2015 Nominated for faculty award for Excellence in Teaching at FIU
- 2015 Nominated for the Provost Award for Outstanding Program Director
- 2015 Member of the Ashoka University-Change Team
- 2015 Joined in Assessment in Action project (AiA) with FIU library
- 2014 Selected to participate in summer provost course design institute
- 2014 Elected member of University Graduate Council
- 2013 Merit bonus award in recognition of my outstanding performance based on my AFA
- 2012 Elected member of University Graduate Council
- 2012 Merit bonus award in recognition of my outstanding performance based on my AFA
- 2012 Chaired poster session on molecular basis of carcinogenesis in the Society of Toxicology annual meeting
- 2011 Merit bonus award in recognition of my outstanding performance based on my AFA
- 2011 Participated in Global Learning Course Development Workshop
- 2007 Cash and citation award for the best article published in the World Aquaculture Society magazine
- 2000 US-Japan, National Science Foundation USA, travel award to participate in the International Symposium on Brain, Nose and Pituitary held at Waseda University, Tokyo, Japan
- 2000 UMBI-COMB Travel award to present seminar in the International Marine Biotechnology Conference, 2000 meeting in Townsville, Australia

- 1990 Chosen as a delegate to participate in the Indo-US brainstorming session on marine biotechnology, sponsored by the Department of Biotechnology Government of India
- 1990 Faculty of the short-term training course on Gene Transfer in Fish Embryos
- 1989 Senior research fellowship from the National Institute of Immunology, New Delhi, India
- 1988 Junior research fellowship from National Institute of Immunology, New Delhi, India

## PUBLICATIONS

### ABSTRACTS AND CONFERENCE PROCEEDINGS

1. Marisa Morgan, **Alok Deoraj**, Deodutta Roy. 2016. Association between serum concentrations of polychlorinated biphenyls (PCBs) and increased risk of breast cancer among US women. Submitted for presentation in the American Association of Cancer Research Annual Meeting to be held in New Orleans, LA.
2. Lazero Messa, Jayanta Das, **Alok Deoraj**, Deodutta Roy. 2015. Phospho deficient NRF-1 mutant suppresses the susceptibility of the breast epithelial cells to develop tumors when exposed to estrogen - a major breast cancer risk factor. American Association of Cancer Research Meeting, held in Philadelphia, PA. p 4559<sup>1</sup>.
3. **Alok Deoraj** and Deodutta Roy. 2015. Converging Bioinformatics Evidence Implicates Endocrine-Disrupting Pesticide Mixture Exposure on Epigenetic Regulation of KISS1-GnRH Control on Precocious or Delayed Puberty. Society of Toxicology Meeting held in San Diego, CA. March 2015.
4. James Lopez **and Alok Deoraj**. 2015. Effect of Gut Microbiome on Obesity Can Influence Precocious Puberty (CPP). 17th Annual Biomedical and Comparative Immunology Symposium, Held at Florida International University, Miami. FL.
5. **Alok Deoraj**, Harshath Gupta, Meredith Peyser, Mehmet T. Dorak, Antara Sinha. 2013. Oncogenes and their interaction in response to environmental chemical exposures, presented at the American Public Health Association held in Boston Nov 2013.
6. **Alok Deoraj**, Victor Okoh and Deodutta Roy. 2012. NRF-1 contributes in the production of breast lesions. Presented in Society for Toxicology annual meeting, held in San Francisco, Mar 2012.
7. **Alok Deoraj**, Victor Okoh and Deodutta Roy. 2012. NRF-1 contributes in the production of breast lesions. *The Toxicologist*, 126 (1): 428. PS-1989.

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<sup>1</sup> For this research work Lazero Mesa is a recipient of a 2015-2016 American Association for Cancer Research (AACR)-Thomas J. Bardos Science Education Scholar Award for Undergraduate Students for participation in two consecutive AACR Annual Meetings for this work.

8. Amir Radfar and **Alok Deoraj**. 2011. Above DNA: Predicting epigenetic signature of hypoxic response. *Cell Journal*. 13: O-19.
9. **Alok Deoraj** and Harshath Gupta. 2011. Evaluation of metastatic and apoptotic genes in non-small cell lung carcinoma through microarray database analysis. Proceedings of the 19th International Congress on Modeling and Simulation, Perth, Australia. 1023-1029.
10. Brian Kunkle, Quentin Felty, **Alok Deoraj**, Changwon Yoo, Fernando Trevino, Deodutta Roy. 2010. Differential role of estrogen receptor positive NRF1<sup>High</sup> and NRF1<sup>Low</sup> cells in breast cancer development and progression. Presented in 4<sup>th</sup> ESF Conference on Functional Genomics and Disease held in Dresden, Germany from April 14-17.
11. **Alok Deoraj**, Victor O. Okoh, Brian Kunkle, Brenda Luna, Jai Parkash, Deodutta Roy. 2009. Redox Sensitive Gene as a Biomarker for Breast Cancer. Breast Cancer Symposium, held at the Florida International University, Miami. NPR
12. Timothy C. Baranowski, Peter Eimon, Cara J. Jacob, Jamil Haider, **Alok Deoraj**. 2009. *In Vivo* Zebrafish Acute Toxicity Screening of ToxCast<sup>TM</sup> Library. Society for Biomolecular Sciences held at Lille, France. (withdrawn due to company sell out)
13. **Alok Deoraj**, Jamil Haider, T. Cameron Tran and Peter M. Eimon. 2008. Transgenic Zebrafish Assays for Lead Optimization and Early Stage Toxicity Testing. Presented in Molecular medicine Tri Conference held in San Francisco, CA from March 25-28, 2008. 70.
14. Andrew Stovall, Alen Miklica and **Alok Deoraj** 2007. Evaluation of the sedation effects of various anesthetics on *Litopenaeus vannamei* juveniles and adults. Submitted for presentation in the International Marine Biotechnology Conference 2007, held in Eilat, Israel. (withdrawn due to company sell out).
15. Lalantha R. Abeydeera, **Alok Deoraj**, Hein van der Steen. 2007. Survival of *Litopenaeus vannamei* embryos in various concentrations of sucrose and cryoprotective agents. Submitted for presentation in the International Marine Biotechnology Conference held in Eilat, Israel. (withdrawn due to company sell out).
16. Hein van der Steen, **Alok Deoraj**, Lali Abeydeera. 2006. Value of cryopreservation of germplasm in the context of shrimp breeding program. *Aquaculture America*. February 13-16, Las Vegas, Nevada, USA.
17. **Alok Deoraj**, Lali Abeydeera, John Rocha, Hein van der Steen. 2005. Opportunities and challenges for reproduction research in shrimp. The 2nd International Aquaculture Forum, December 1-3, Hermosillo, Sonora, Mexico.
18. **Alok Deoraj**, Alen Miklica, Anthony Trimboli, Komarey Moss, Lali Abeydeera, M. Andrew Stovall, Dustin Moss, Shaun Moss and Hein van der Steen. 2005. Current issues

- in shrimp triploidy induction. Aquaculture America 2005, January 17-20, New Orleans, Louisiana, USA, 60.
19. Brian P. Kinghorn, Hein van der Steen, Joao Rocha, Donghuo Jiang and **Alok Deoraj**. 2004. Genetic technologies to target efficient production of quality shrimp. Australian Aquaculture, 26-29 September, Sydney, Australia. p178.
  20. **Alok Deoraj**, Komarey Moss, Dustin Moss and Hein van der Steen. 2004. Development of a suite of reproductive technology for a shrimp breeding program. World Aquaculture Society Annual Conference. March 1-5, Honolulu, Hawaii, USA. p161.
  21. **Alok Deoraj**, Rahul Pal, Lalit C. Garg. 2004. GnRH induces differential plasma steroid levels in normal and artificially manipulated reproductive cycles in a fish model. Proceedings of the World Aquaculture Society Meeting, Honolulu. p122.
  22. Hein van der Steen, Alan Mileham, Joao Rocha, Donghuo Jiang, **Alok Deoraj**, Daniel Ciobanu and Shaun Moss. 2004. The role of genetic improvement in the development of a BioZEST system. World Aquaculture Society Annual Conference. March 1-5, Honolulu, Hawaii, USA. p607.
  23. Hein van der Steen, John Rocha, Daniel Ciobanu, **Alok Deoraj** and Donghuo Jiang. 2004. Integration of quantitative and molecular genetics – the way forward in shrimp breeding. Presented Feira Nacional de Camarao – 3rd to 7th of February, Natal, Brazil.
  24. **Deoraj Alok** and Yonathan Zohar. 2002. The role(s) of type II GnRH receptor II in vertebrate reproduction. Proceedings of the Society for studies in reproduction (SSR) annual meeting Baltimore. p510.
  25. Eytan Abraham, Brian Richardson, Steven Minkinen, **Deoraj Alok**, Yonathan Zohar, 2002. A study in reproductive biology and endocrinology of a primitive Teleostei, the American Shad (*Alosa sapidissima*). Proceedings of the Society for Studies in Reproduction (SSR) annual meeting Baltimore. p402.
  26. Katherine Kight, Colin Steven, Shigeho Ijiri, **Deoraj Alok**, Ulrike Klenke, Yonathan Zohar, 2002. The GnRH system in zebrafish: developing a model system for functional studies of GnRH multiplicity. Proceedings of the Society for Studies in Reproduction (SSR) annual meeting Baltimore. p498.
  27. **Deoraj Alok** and Yonathan Zohar. 2000. One receptor in the pituitary for three GnRHs in the brain: A perciform paradigm. Proceedings of the 4<sup>th</sup> international symposium on fish endocrinology. Seattle, WA. p22.
  28. R. Sampath Kumar, Shigeho Ijiri, Penny Swanson, Andrew Dittman, **Deoraj Alok**, Yonathan Zohar and John M. Trant. 2000. The novel expression of TSH-Receptor in the gonads and the seasonal expression of FSH-and LH-receptors in the ovary of fish. Proceedings of the 4<sup>th</sup> Int. Symposium on Fish Endocrinology. Seattle, WA. p34.

29. Colin R. Steven, Yoav Gothilf, **Deoraj Alok** and Yonathan Zohar. 2000. Comparison of GnRH/GtH/Gonadal profiles between wild and captive striped bass (*Morone saxatilis*) undergoing final stages of oogenesis. Proceedings of the 4<sup>th</sup> Int. Symposium on Fish Endocrinology. Seattle, WA. p81.
30. **Deoraj Alok**, Shimon Hassin and Yonathan Zohar. 1999. Cloning and characterization of a GnRH receptor (GnRH-R) from a perciform fish. 1999. In: "Proc. 6th Int. Symp. Reprod. Physiol. Fish.", Bergen, Norway. Eds. B. Norberg, O. S. Kjesbu, G. L. Taranger, E. Anderson and S. O. Stefansson. p487.
31. Costantinos C. Mylonas, Odile Blaise, Yoav Gothilf, **Deoraj Alok** and Yonathan Zohar. 1999. Gonadotropin-releasing activities in striped bass of the three native forms of Gonadotropin-releasing hormone (GnRH) and of novel agonists. In: "Proc. 6th Int. Symp. Reprod. Physiol. Fish." Bergen, Norway. p451.
32. **Deoraj Alok**, Jorge Enrique Blacio and Yonathan Zohar. 1997. Gonadotropin-releasing-hormone receptor (GnRH-R) in striped bass: cDNA cloning and expression. Proceedings of the advances in the molecular endocrinology of fish. Toronto, Canada. p14.
33. Marguerite Chow, Katherine Kight, **Deoraj Alok**, Yoav Gothilf and Yonathan Zohar. 1997. Multiple GnRHs present in a teleost species are encoded by separate genes. Proceedings of the advances in the molecular endocrinology of fish. Toronto, Canada. p14.
34. Usha R. Pendurthi, **Deoraj Alok** and L. Vijaya Mohan Rao, 1995. Cellular signaling mediated by binding of factor VIIa to tissue factor receptor. *Thrombosis and Hemostasis* 73(6): 1180.
35. **Deoraj Alok** and Jaspal S. Khillan. 1989. Gene transfer in fish embryos for increased productivity. *Theriogenology* 31(1): 167.
36. **Deoraj Alok**, Nasreen Haque, Manas Chaudhuri and Jaspal S. Khillan. 1989, Induced breeding in major carp *Labeo rohita* with salmon GnRH analogs. In National seminar on fourty years of fresh water aquaculture in India. CIFA, Kausalyaganga, 7 – 9, November, 1989, abstract/s II/2.
37. **Deoraj Alok** and Jaspal S. Khillan. 1988. Transgenic Fish: An approach to achieve optimum yield. Proceedings of the national symposium on recent trends in fertility management of farm animals. Aug. 22-24, 1988. Trichur, India.

#### CHAPTERS IN BOOKS AND WORKSHOP MANUAL

38. **Alok Deoraj**, Changwon Yoo and Deodutta Roy. 2016. Integrated Bioinformatics Biostatistics and Molecular Epidemiologic approaches to study How the Environment and Genes Work Together to Affect the Development of Complex Chronic Diseases. *In*

Gene Environment Interaction Analysis: Methods in Bioinformatics and Computational Biology. Ed. Sumiko Anno. Pan Stanford Publishing Pte. Ltd. (In Press, 37 pages. Single space, <https://goo.gl/sor84F>).

39. **Alok Deoraj**, Deodutta Roy. 2010. Approaches to identify environmental and epigenomic components or covariates of cancer and disease susceptibility and their Interactions with genes. *In: Environmental Factors, Genes, and the Development of Human Cancers*. Eds. Deodutta Roy and Dorak M. Tevfik. Springer USA. 197-220.
40. **Alok Deoraj**, 2007. "Extraterrestrial" GnRHs enhance fertility in fish. In *Translational Research, From Lab to Clinic*. Eds, Subrata Sinha and Ayub Quadri. Byword Books. New Delhi. 49-60.
41. **Alok Deoraj** and Yonathan Zohar. 2005. Genes for gonadotropin-releasing hormones (GnRHs) and their receptor(s): relevance to the aquaculture biotechnology. In *Fish Genetics and Aquaculture Biotechnology*. eds. T. J. Pandian, C.A. Strussmann, M.P. Marian and. CRC Press, Taylor and Francis Group. 81-101.
42. Charanjeet Singh and **Deoraj Alok**. 1990. Preparation of gene constructs. In: the manual of short term training cum workshop on "cloning and transfer of gene constructs in fish embryos", held at the National Institute of Immunology, March 1990. New Delhi, India. Pp. 26-36. NPR.
43. **Deoraj Alok**, T. Krishnan and Nasreen S. Haque. 1990. Microinjection of gene constructs in carp embryos. In: short term training cum workshop manual on "cloning and transfer of gene constructs in fish embryos", held at the National Institute of Immunology, New Delhi, India. March 1990. 37-41. NPR

#### PEER REVIEWED RESEARCH ARTICLES

44. Deodutta Roy, Marisa Morgan, Changwon Yoo, **Alok Deoraj**, Sandhya Roy, Vijay Kumar Yadav, Mohannad Garoub, Hamza Assaggaf, and Mayur Doke. Integrated bioinformatics, environmental epidemiologic and genomic approaches to identify environmental and molecular links between endometriosis and breast cancer. *International journal of molecular sciences* 16, no. 10 (2015): 25285-25322.
45. Miles Medina, Jayachandran Krishnaswamy, Mahadev G. Bhat and **Alok Deoraj**. 2015. Assessing plant growth, water quality and economic effects from application of a plant-based aquafeed in a recirculating aquaponic system. *Aquaculture International*. 1-13<sup>2</sup>.
46. Victor O. Okoh, Nana Aisha Garba, Rosalind B Penney, Jayanta Das, Brenda Luna, **Alok Deoraj**, Kamaleshwar P Singh, Subhashish Sarkar, Quentin Felty, Robert M. Jackson and Deodutta Roy. 2015. Redox Signaling to Nuclear Regulatory Proteins by Reactive

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<sup>2</sup> Thesis related to this research received the "Outstanding Thesis" award from the American Association of Hispanics for Higher Education and USDA in 2014

Oxygen Species Contributes to the Estrogen-Induced Breast Tumor Development. *British Journal of Cancer*. 112, 1687–1702.

47. Victor Okoh, **Alok Deoraj**, Deodutta Roy. 2011. Estrogen-induced reactive oxygen species (ROS)-mediated signaling pathways contribute to breast cancer. *Biochimica et Biophysica Acta (BBA) - Reviews on Cancer*. 1815(1):115-133.
48. Neil J. Duncan, Gustavo A. Rodriguez M. de O, **Deoraj Alok** and Yonathan Zohar. 2003. Effects of LHRHa administration by acute injection and by slow release EVac implants on the final oocyte maturation and ovulation of bullseye pufferfish. *Aquaculture*. 218: 625-635.
49. **Deoraj Alok**, R. Sampath Kumar, John M. Trant and Yonathan Zohar. 2001. Recombinant perciform GnRH-R expressed in a fish and mammalian heterologous cell lines activate differential signaling. *Comparative Biochemistry and Physiology*. 129: 375-380.
50. **Deoraj Alok**, Shimon Hassin, R. Sampath Kumar, John M. Trant, Kei-li Yu and Yonathan Zohar. 2000. Characterization of a pituitary GnRH-receptor from a perciform fish, *Morone saxatilis*: functional expression in a fish cell line. *Mol. Cell. Endocrinol*. 168(1-2): 65-75.
51. R. Sampath Kumar, Shigeho Ijiri, Katherine Kight, Penny Swanson, Andrew Dittman, **Deoraj Alok**, Yonathan Zohar and John M. Trant. 2000. Cloning and functional characterization of a thyrotropin receptor from the gonads of a vertebrate (bony fish): potential thyroid independent role for thyrotropin in reproduction. *Mol. Cell. Endocrinol*. 167(1-2): 1-9.
52. **Deoraj Alok**, G. P. Talwar and Lalit C. Garg. 1999. *In vivo* activity of the native chicken gonadotropin releasing hormone (cGnRH-II), salmon gonadotropin releasing hormone and its analogs (sGnRHa) with variable amino acid residues in position 6, 9, and 10 on the spawning of catfish, *Heteropneustes fossilis* (Bloch). *Aquaculture International* 7 (6): 383-392.
53. Marguerite Chow, Kathy Kight, Yoav Gothilf, **Deoraj Alok**, John Stubblefield and Yonathan Zohar. 1998. Multiple GnRHs in a teleost species are encoded by separate genes: analysis of the sbGnRH and cGnRH-II genes from the striped bass, *Morone saxatilis*. *J. Mol. Endocrinol*. 21(3): 277-289.
54. Takashi Kitahashi, **Deoraj Alok**, Hironori Ando, Masahide Kaeriyama, Yonathan Zohar, Hiroshi Ueda and Akihisa Urano. 1998. GnRH analog stimulates gonadotropin II gene expression in maturing sockeye salmon. *Zoological Science* 15: 761-765.
55. Takashi Kitahashi, Ayako Sato, **Deoraj Alok**, Masahide Kaeriyama, Yonathan Zohar, Kohei Yamauchi, Akihisa Urano and Hiroshi Ueda 1998. Gonadotropin-releasing

hormone analog and sex steroid shorten homing duration of sockeye salmon in Lake Shikotsu. *Zoological Science* 15: 767-771.

56. **Deoraj Alok**, T. Krishnan, G.P. Talwar and Lalit C. Garg 1998. Multiple induced spawning of the Indian Catfish, *Heteropneustes fossilis* (Bloch.) within a prolonged spawning season. *J. World Aquaculture Society* 29(2): 258-264.
57. Usha R. Pendurthi, **Deoraj Alok** and L. Vijaya Mohan Rao, 1997. Binding of factor VIIa to tissue factor induces alterations in gene expression in human fibroblast cells: Upregulation of poly(A) polymerase by factor VIIa. *Proceedings of the National Academy of Sciences USA*. 94: 12598-12603.
58. **Deoraj Alok**, Devika Pillai, G. P. Talwar and Lalit C. Garg, 1997. Effect of D-Lys<sup>6</sup> sGnRH-A alone and in combination with domperidone on the spawning of common carp during the late spawning season. *Aquaculture International*, 5 (4): 369-374.
59. Devika Pillai, Aparna Dixit, **Deoraj Alok** and Lalit C. Garg, 1996. Translational fusion of enterotoxin chain B and beta subunit of human chorionic gonadotropin (hCG): Periplasmic expression in *E. coli* and its immunogenicity. *FEBS Letters*, 387: 23-26.
60. **Deoraj Alok**, Nasreen S. Haque and Jaspal S. Khillan, 1995. Transfer of human growth hormone gene into Indian major carp (*Labeo rohita*). *International J. of Animal Science*, 10: 5-8.
61. **Deoraj Alok**, Devika Pillai, G. P. Talwar and Lalit C. Garg, 1995. D-Lys<sup>6</sup> salmon gonadotropin releasing hormone analog-domperidone induced ovulation in *Clarias batrachus*. *Asian Fisheries Science*, 8: 263-266.
62. **Deoraj Alok**, T. Krishnan, Dinakar Salunke, Hemamalini Gupta, G.P.Talwar and Lalit C. Garg, 1994. Precocious ovarian recrudescence and induced off-season spawning of *Heteropneustes fossilis* by D-Lys<sup>6</sup> salmon gonadotropin releasing hormone analogue (sGnRH-A). *J. of Fish Biol.*, 45: 909 - 915.
63. **Deoraj Alok**, T. Krishnan, G.P. Talwar and Lalit C. Garg, 1993. Induced spawning of catfish, *Heteropneustes fossilis* by D-Lys<sup>6</sup> salmon gonadotropin releasing hormone analog. *Aquaculture*, 115: 159-167.

#### MANUSCRIPTS IN PREPARATION

64. James D. Lopez and **Alok Deoraj**. Gut Microbiome as endocrine disruptor for obesity and puberty (*in Preparation*).
65. **Alok Deoraj** and Harshath Gupta. Lung adenocarcinoma specific overexpression of COL11A1 and under expression of FEZ1 in human patients samples by Taqman RT-PCR (*in Preparation*).

## PRESENTED PAPERS, AND LECTURES

<u>Title</u>	<u>Date</u>	<u>Venue</u>
<b>Pedagogic presentation (at FIU)</b>		
1. Environmental Carcinogenesis in Humans	Jan 2015	In PHC 6007 Epidemiological Course
2. Introduction to Global Health	Nov 2014	In PHC 6930 Integrative Seminar Course
3. Introduction to Global Health	Mar 2014	In PHC 6930 Integrative Seminar Course
<b>Disciplinary presentations</b>		
4. How healthy is your germs	Apr 2015	Global Learning Initiative, Florida International University, Miami. FL
5. How toxic is our Environment and How do we know it. Moderator: <a href="http://goo.gl/fkNjKm">http://goo.gl/fkNjKm</a>	Oct 2014	Global Learning Initiative, Florida International University, Miami. FL
6. There is a fly in my Tweet: Social Media and Global Public Health. Moderator: <a href="http://goo.gl/qFSU6h">http://goo.gl/qFSU6h</a>	Mar 2014	Global Learning Initiative, Florida International University, Miami, FL
7. Environmental Health and disease Presentation	Mar 2014	Panelist on Elements at GlobeMed event at Florida International University, Miami, FL.
8. Can Biotechnology Solve 21 <sup>st</sup> Century Global Health Issues. Moderator: <a href="http://goo.gl/4vb6gl">http://goo.gl/4vb6gl</a>	Oct 2013	Global Learning Initiative, Florida International University, Miami, FL
9. Environmental Interference, GnRH and Reproductive Health	Jan 2012	Robert Stempel College of Public Health and Social Work, Florida International University, Miami, FL
10. Business of Aquatic Models. Panel Member, <a href="http://vimeo.com/13466914">http://vimeo.com/13466914</a> .	May 2010	Enterprise Development Corporation, Life Science Conference on Environmental and Ecological Biotechnology, at Nova Southeastern University, Davie, FL
11. Impacts of reproductive dysfunction in aquatic models: causes and remedies	Feb 2009	RSMAS/MAF, University of Miami. Miami, FL
12. Zebrafish in drug discovery and drug safety.	Feb 2008	Clark Atlanta Univ, Atlanta, GA.
13. Physiological and molecular monitoring of reproduction and	Oct 2006	Conservation Fund Freshwater Institute, Shepherdstown, WV

growth in aquaculture species

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| 14. Value of cryopreservation of germplasm in the context of shrimp breeding program,                                       | Feb 2006  | World Aquaculture Society Meeting. Las Vegas, Nevada, USA  |
| 15. Opportunities and challenges of reproduction research in shrimp.  | Dec 2005  | The 2 <sup>nd</sup> International Aquaculture Forum, December 1-3, Hermosillo, Sonora, Mexico                        |
| 16. Current issues in shrimp triploidy.   | Jan 2005  | Aquaculture America, New Orleans, LA   |
| 17. Development of a suite of reproductive technology for a shrimp breeding program   | Mar 2004  | World Aquaculture Society Meeting, Honolulu, HI. USA   |
| 18. Vertebrate and Invertebrate assisted reproductive technologies for aquaculture  | Jul 2002  | Center of Marine Biotechnology, University of Maryland Biotechnology Institute, Baltimore, MD. USA                   |
| 19. Type II GnRH-receptor in vertebrate models: location and action   | Oct 2001  | Combined Center for Studies in Reproduction, Johns Hopkins Medical school-University of Maryland, Baltimore. MD. USA |
| 20. Neuroendocrine control of reproduction in fish models: basic and applied aspects.                                       | Apr 2001  | Marine Biological Laboratory, Woods Hole, MA   |
| 21. GnRH system in perciform fish   | Dec. 2000 | International Symposium on brain, nose and pituitary held at the Waseda University, Tokyo, Japan                     |
| 22. Receptor-mediated screening of GnRH-agonists for fish spawning manipulation: development of a reporter gene based assay | Sep 2000  | International Marine Biotechnology Conference 2000 held in Townsville, Australia                                     |
| 23. One receptor in the pituitary for three GnRH in the brain: A perciform paradigm   | Jul 2000  | International symposium on fish endocrinology. Seattle, WA. USA  |
| 24. Cellular signaling by a non-mammalian GnRH-receptor in a fish cell line.  | May 2000  | Foundation Pour Recherché Medicals, Geneva, Switzerland  |

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| 25. Spawning Fish: Intervention at the molecular and functional level in the endocrine axis       | Apr 2000  | Center of Veterinary Medicine, Federal Drug Administration, Laurel MD, USA                      |
| 26. Cloning and characterization of a GnRH receptor (GnRH-R) from a perciform fish                | July 1999 | International Symposium on Reproductive Physiology of Fish. Bergen, Norway                      |
| 27. Gonadotropin-releasing-hormone receptor (GnRH-R) in striped bass: cDNA cloning and expression | May 1997  | Meeting on Advances in the molecular endocrinology of fish. Toronto, Canada                     |
| 28. Induced breeding in major carp <i>Labeo rohita</i> with salmon GnRH analogs.                  | Nov 1989  | National seminar on forty years of fresh water aquaculture in India. CIFA, Kausalyaganga, India |
| 29. Transgenic Fish: An approach to achieve optimum yield.  | Aug 1988  | National symposium on recent trends in fertility management of farm animals. Trichur, India     |

## OTHER SCHOLARLY AND CREATIVE WORK

### MAGAZINE ARTICLE

1. **Deoraj Alok**, Lali Abeydeera and Hein van der Steen. 2006. Reproductive technologies for genetic improvement and marine shrimp production in controlled environments. *World Aquaculture* 37(2): 50-59<sup>3</sup>.

### ONLINE RESOURCE

1. **Alok, D** and Zohar, Y. 1999. *Morone saxatilis* pituitary gonadotropin releasing hormone receptor mRNA, complete cds. GenBank: [AF218841](#)
2. Pendurthi, U.R., **Alok, D.** and Rao, L.V. 1997. Human poly(A) polymerase mRNA, 3' UTR, GenBank: [AF002990.1](#)

### CURRENT RESEARCH INTERESTS

Findings in the potential adverse effects of endocrine disrupting compounds (EDCs) have increased both scientific and environmental public health concerns regarding the widespread use of pesticides, fertilizers, pharmaceuticals and naturaceuticals. Studies have reported that these chemicals and drugs, alone or in combination, produce deleterious reproductive health effects. Their complex exposure to neuroendocrine mechanisms have shown to affect precocious puberty

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<sup>3</sup> Best article published in the magazine in 2006

and cancer of reproductive origin including, breast, ovarian and endometrial cancer. Elucidation at the neuroendocrine level of complex environmental exposure on gene and environment interactions and its association with disease etiology will help develop environmental and epigenetic biomarkers of reproductive impairment, aging and complex diseases.

My current research focus is on understanding the microbiome and complex environmental exposure influence on upstream regulation (e.g., via Kisspeptin, GABA and other neuropeptides) of Gonadotropin-releasing Hormone-II (GnRH-II) release and cellular signaling on its downstream role in precocious puberty, reproductive aging, impairment and cancer. This will be achieved by a combination of meta-selection of candidate biomarkers and their further validation in cell culture, animal and in human studies. My research will potentially lead to:

1. Complex mixture exposure assessment biomarkers in relation to “exposome”
2. Environmental and epigenetic biomarkers of reproductive aging and impairment
3. Theranostic candidate(s) of Gene and Environment interactions in the etiology of complex diseases

#### PROPOSAL FOR CONTINUING EDUCATION UNIT CERTIFICATE COURSE

2014: Proposal submitted to the college (in review with Assistant Dean for External Affairs) to develop a fully online 10 credit CPE certificate course on Applied Global Public Health which will be open to any student and working health professionals who have interest in pursuing a career in global public health area. This CPE certificate course is affordable and flexible that can be tailored to the needs of an individual or an organization for specific topic(s) relevant to a disease, community, target population or a region of the world.

#### GRANT PROPOSALS

Pending proposal:

2016: Writing Health Status Report in Health without Borders (IDS3183) Online Course submitted to Writing across Campus Project Funding

Proposals submitted -not funded (while at FIU)

1. 2012: The Landscape of Environmental and Occupational Public Health (EPOH) Entrepreneurship in South Florida, (\$10,000, PI, Eugenio and Pino Family Global Entrepreneurship Center at FIU for Kauffman professor Proposal)
2. 2011: Can GnRHR-I and GnRHR-II Combination be a Novel Target to Prevent Metastasis of Triple Negative Breast Cancer? (\$30,000 PI, Submitted for FIU seed grant)
3. 2011: Role of NRF-1 in Estrogen-Induced Breast Cancer Pathogenesis Role: Co-PI
4. 2010: Gonadotropin-releasing hormone receptor 1 and 2 modulate invasive breast carcinoma (\$147,830.07, PI, DoD Concept)

5. 2010: GnRH-receptor combinations: novel therapeutic target for breast cancer (PI, DoD Idea)
6. 2009: Does NRF-1 status affect breast cancer diagnosis and treatment? (\$374, 999.00, PI, DoD Idea)
7. 2009: Can NRF-1 detect breast cancer at early stages? (PI, Susan G. Komen Breast Cancer Award, Pre-proposal)
8. 2009: Nuclear respiratory factor-1 (NRF1) signaling is a novel target for breast cancer prevention. (Co-PI, DoD)

#### FUNDED PEDAGOGIC PROJECT

Alok Deoraj & Deodutta Roy: Support for Enhancement of Doctoral Student Recruitment. University Graduate School, FIU. 2011-2012. \$10,000.00 (Funding was for the department and \$5000.00 Matched by the department).

#### Completed earlier Grants (as Co-PI)

1. Yonathan Zohar (PI) & **Alok Deoraj** (Co-PI). The gonadotropin-releasing hormone (GnRH) system: endocrine, molecular and applied studies. 2000-2002. NOAA-Maryland Sea-Grant (\$176,981).
2. Yonathan Zohar (PI) & **Alok Deoraj** (Co-PI). Spawning induction technology in striped bass: selection of GnRH agonists using recombinant receptors. 1999-2000. Maryland Agriculture Experimental Station. (\$40,000).
3. Yonathan Zohar (PI) & **Alok Deoraj** (Co-PI). The Novel GnRHs: It's Function, Regulation of Synthesis and Release, and Potential Use for Spawning Manipulations. 1998-2000. Funded from NOAA Maryland Sea-Grant (\$161,998).
4. **Alok Deoraj** (PI). Development of transgenic carp. The Dept. of Biotechnology, Govt. of India 1990- 1992. (\$4,000)

#### NATIONAL AND INTERNATIONAL CONFERENCES AND MEETINGS ATTENDED

2015: 5<sup>th</sup> International Conference on Global Health, May 2015. Florida International University, Miami, FL

2015: Society of Toxicology Annual Meeting, Mar. 22-26, 2015. San Diego, CA.

2013: 141<sup>st</sup> American Public Health Association Annual Meeting, Nov 2-6, 2013. Boston, MA.

2013: First Personalized Nanomedicine Conf., Florida International University, Feb 2013. Miami, FL.

2012: Society of Toxicology Annual Meeting, Mar. 2012. San Francisco, CA.

- 2010: Enterprise Development Corporation, Life Science Conference on Environmental and Ecological Biotechnology, at Nova Southeastern University, Davie, FL.
- 2009: Prenatal Programming and Toxicity II (PPTOX II): Role of environmental stressors in the developmental origins of disease. Dec 2009. Miami, FL.
- 2009: Breast Cancer Symposium, Florida International University, June 2009. Miami, FL.
- 2008: Zebrafish Development and Genetics. University of Wisconsin, June 25-29. Madison, WI
- 2008: Molecular Medicine Tri Conference. March 25-28, San Francisco, CA.
- 2007: American Association of Laboratory Animal Society National Meeting, Oct. 2007. Charlotte, NC.
- 2006: Aquaculture America. February 13-16, Las Vegas, Nevada, USA
- 2005: The 2nd International Aquaculture Forum, December 1-3, Hermosillo, Sonora, Mexico
- 2005: Aquaculture America, January 17-20, New Orleans, Louisiana, USA
- 2004: World Aquaculture Society Annual Conference. March 1-5, Honolulu, Hawaii, USA
- 2002: Annual Meeting of Society for Studies in Reproduction (SSR) annual meeting, July 2002, Baltimore, MD.
- 2001: Combined Center for Studies in Reproduction Meeting, Johns Hopkins Medical school- University of Maryland, Baltimore. MD. USA.
- 2000: International Symposium on brain, nose and pituitary held at the Waseda University, Dec. 2000. Tokyo, Japan.
- 2000: International Marine Biotechnology Conference, Sep 2000, Townsville, Australia..
- 2000: 4th international symposium on fish endocrinology. July 2000, Seattle, WA.
- 1999: Int. Symposium on Reproductive Physiology of Fish. July 1999. Bergen, Norway.
- 1998: International Congress on the Biology of Fish, July 1998. Towson, MD.
- 1997: 2nd IUBS Symposium on Molecular Aspects of Fish Genomes and Development, University of Toronto. May 1997. Toronto, Canada.
- 1995: American Heart Association Annual Meeting, March 1995. Dallas, TX.
- 1990: Cloning and transfer of gene constructs in fish embryos. March 1990. National Institute of Immunology, New Delhi, India.
- 1989: National seminar on forty years of fresh water aquaculture in India. CIFA, Kausalyaganga, Nov. 1989. Odisha, India.
- 1988: National symposium on recent trends in fertility management of farm animals. Aug. 22-24, 1988. Trichur, India.

## PROFESSIONAL SOCIETY AFFILIATIONS

- Member of American Public Health Association (2013-2014)
- Member of Society of Toxicology (SOT) (2010-2011)
- Member of Regulatory affairs professional society (RAPS) in 2008-2009
- Member of Society for studies in reproduction (SSR) in 2002
- Member of World Aquaculture Society 2002-2008
- Member of the Zebrafish Husbandry Association (ZFIN)
- Life member of Indian Science Congress
- Life member of the Indian Freshwater Fisheries Society

## CREATIVE WORK

- Organize end of the semester student poster sessions on Global Public Health topics since Spring 2013 for students enrolled in Health without Borders course
- Featured in the departmental (Environmental and Occupational Health) promotional video
- Actively participated in the development of departmental brochure and flyers for student recruitment
- Many presentations in university, college and departmental open houses to promote the department and college for student recruitment
- Developed a highly successful global learning and university core curriculum undergraduate course on “Health Without Borders” (IDS 3183)
- Primary organizer of the Environmental and Occupational Health Expert Seminar Series with a support from Graduate School Colloquium Enhancement Initiative from FIU (funded \$5000) and the college
- Designed, developed and maintained Biosecure Aquatic (freshwater) research facilities to hold transgenic zebrafish models used in preclinical cancer drug and environmental pollutant safety and toxicity screening
- Designed, developed and maintained Biosecure Aquatic (marine) research facilities to hold genetically improved invertebrate models used in the development of reproductive biotechnology.

- Member of the National Institute of Immunology Alumni Board (2004-2007). Responsibility included communication and publishing online quarterly Newsletter, Niity-Gritty and Organizing annual retreat, IgNiites.
- Main organizer of international symposium and workshop on Gene Transfer in fish embryos at the National Institute of Immunology

### **ADVISING (at FIU):**

Major Advisor to PhD student:

1. Ana Toro (2014- discontinued to complete MPH degree)

Ana was developing her proposal on the impact of environmental endocrine disruptor compound exposure on the onset of the timing of the puberty mediated by Kisseptin (KISS)-Gonadotropin releasing hormone pathways.

Masters/PhD dissertation advisory committee member at FIU:

Graduated:

1. Morgan, Marisa (PhD-Graduated Fall 2014)

I was a member of the committee. Marisa research was on the Exposure to Endocrine Disrupting Compounds and Reproductive Toxicity in Women specifically on breast cancer and endometriosis.

2. Medina Miles (MS-College of Arts and Sciences-Earth and Environment, Graduated Summer 2014)

I was the member of the dissertation committee where Miles conducted his research on the effect of Aquafeed on Productivity of Red Amaranth and on Water Quality under Aquaponic Cultivation.

Current

1. Assaggaf, Hamza D2
2. Avecilla, Vincent D2
3. Doke, Mayur D2
4. Preciados, Mark D1
5. Ramos, Jairo D1

Advisor to MPH student

Graduated

1. Hencke, Hermann (Fall 2013)
2. Baker, Senemeh (Spring 2014)
3. Cacho, Denise (Spring 2014)

4. Julien, Naissa (Spring 2014)
5. Upaddhyay, A. (Summer 2014)
6. Ezenwany, Efuribe Gift (Fall 2014)
7. Franco, Rachel (Fall 2014)
8. Diallo, Mariama (Spring 2015)
9. Aljifri, Tharaa (Spring 2015)

#### Current

1. Baptiste, Jamerson
2. Guerra, Lisseth
3. Arango Garces, Santiago
4. Brandon Chavez
5. Christian Perez

#### Advisor Graduate Certificate students

1. Consolo, Jennifer

#### Undergraduate Research advisor

1. James Lopez (2014- )
2. Yasmin Chelbi (2010-2011)

#### High school

1. Harshath Gupta

In 2010-2011, Harshath did his research on the evaluation of metastatic and apoptotic genes in non-small cell lung carcinoma through microarray database analysis.

- Prior to my appointment as graduate faculty status in 2010 worked closely with Masters and Graduate students at FIU on their dissertation proposal and facilitated their experimental planning, execution and writing. (e.g., Victor Okoh, Ph.D. Rosalind Penny, Ph.D. Brenda Luna, Ph.D., Prasad Kadam, MPH, Amir Radfar, MPH, Jesse Pulido, MS in Chemistry, Yasmin Chelbi, B.S., Harshath Gupta, High school, Antara Sinha, High School.
- Earlier worked with students at UMBI-UMD. 1. Jorge Enrique Blacio, MS; 2. Colin Steven, MS. Anchalee Jiemjit, MS. 3. Eytan Abraham, Ph.D, 4. TenTsoo Wong, Ph.D., Shimon Hassin, Ph.D. Trained and helped develop hands on projects for undergraduate and high school students at Zygon, Atlanta, GA and at Sygen international, Berkeley CA. Lectures in Neuroendocrine Regulation of Reproduction to Pre-Ph.D. students. Special topic: Transgenic Animals (National Institute of Immunology, New Delhi).

#### OFFICES HELD IN PROFESSIONAL SOCIETIES

- Chaired poster session on molecular basis of carcinogenesis in the Society of Toxicology annual meeting held in San Francisco, CA. Mar 2012.

## **UNIVERSITY AND PROFESSIONAL SERVICE**

- Member of the transition committee for the merger of University Graduate School and Office of the Research and Economic Development (2016- )
- Chair of the University Graduate Council (2015- )
- Member of the college award and scholarship committee (2014- )
- Chair of the Dean's academic excellence award committee (2014)
- Member of the departmental DAS approval committee (2014- )
- Chair of the EOH path award committee (2013-2014)
- Member of the University Graduate Council (2012- )
- Alternate member of the Educational Policy Committee (EPC) of Robert Stempel College of Public Health (2012- )
- Departmental representative for the integrative seminar course to evaluate practicum objectives (linked to EOH concentration competencies) (2012- )
- Task force member to develop core competencies and assessment tools for MPH core and EOH courses for CEPH accreditation (2011-2012)
- Member of the college faculty and chair search and screen committee (many times)
- Chairman of the departmental course content improvement committee (2011-2012)

### **Academic Editor**

PLOS Online Open Source journal which publishes peer reviewed research in science and medicine (2013- )

Reviewer of professional journals

Journal of Toxicology and Environmental Health

Journal of Modeling and Simulation Society of Australia and New Zealand,

Molecular and Cellular Endocrinology

Biology of Reproduction

Aquaculture

Reviewer of Grant Proposals

2002-2007: UMBI/BARD in reproduction and endocrine physiology

1998-2005: USDA since 1998-2005 in the area of reproduction and endocrine physiology

1999-2009: International Foundation of Science, Sweden, in the area of Aquaculture

**COURSES TAUGHT AT FIU: (Credentialed to teach following undergraduate, graduate and PhD level courses at FIU)**

1. PHC 3103 - Introduction to Public Health (3 credits)
2. IDS 3183 - Health without Borders<sup>4</sup> (3 credits).
3. PHC 6004 - Injury Epidemiology (3 credits)
4. PHC 6307 – Exposure Assessment in Environ. and Occup. Epid. (3 Credits)
5. PHC 6311 - Environmental Health Risk Assessment (3 credits)
6. PHC 6312c - Health Impact of Air, water and Land Pollution (3 credits)
7. PHC 6315 - Introduction to Environmental Health, MPH Core course (3 credits)
8. PHC 6520 - Public Health Aspects of Food Borne Illness (3 credits)
9. PHC 6442 - Global Public Health<sup>5</sup>, in class or online)
10. PHC 7374c - Advances in Cellular and Environmental Toxicology (3 credits)
11. PHC 7300 - Biological Aspects of Environmental Health
12. PHC 7713 - Advanced Environ. And Occup. Epid. Res. Methods (3 credits)

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<sup>4</sup> Developed New Interdisciplinary Global Learning and University Core Curriculum Course

<sup>5</sup> Developed New course

**Courses Taught at FIU Since FALL 2010:**

<b>Semester</b>	<b>Class</b>	<b>Class Title</b>	<b>Delivery Platform</b>
<b>Spr 2016</b>	PHC 6311-RVC (19951)	Env Hlh Risk Assess	On line
<b>Spr 2016</b>	PHC 6315 RVC (19990)	Intro to Env Hlth	On line
<b>Spr 2016</b>	IDS 3183 U01 (19987)	Hlth w/o Bdrs	On Campus
<b>Fall 2015</b>	IDS 3183 RVM (93378)	Hlth w/o Bdrs	On line
<b>Fall 2015</b>	PHC 6920-U05 (90787)	Spl topic Ev Occup Hlth	On Campus
<b>Fall 2015</b>	PHC 6315 RVC (89842)	Intro to Env Hlth	On line
<b>Fall 2015</b>	PHC 6315 U01 (89987)	Intro to Env Hlth	On campus
<b>Fall 2015</b>	IDS 3183 U01 (89987)	Hlth w/o Bdrs	On campus
<b>Sum 2015</b>	PHC 6307 RVCC (55110)	Exp Assess Env Epi	Online
<b>Spr 2015</b>	IDS 3183-U01 (14576)	Hlth w/o Bdrs	On Campus
<b>Spr 2015</b>	PHC 6311-RVC (14533)	Env Hlh Risk Assess	Online
<b>Spr 2015</b>	PHC 6315-RVC (14579)	Intro to Env Hlth	Online
<b>Spr 2015</b>	PHC 6442-U01 (14602)	GPH	On Campus
<b>Fall 2014</b>	IDS 3183-RVM (92742)	Hlth w/o Bdrs	Online
<b>Fall 2014</b>	IDS 3183-U01 (89207)	Hlth w/o Bdrs	On Campus
<b>Fall 2014</b>	PHC 6312C-RVC (89081)	Hlth Impact Pollution	Online
<b>Fall 2014</b>	PHC 6315-RVC (89051)	Intro to Env Hlth	Online
<b>Fall 2014</b>	PHC 6315-U01 (89010)	Intro to Env Hlth	On Campus
<b>Sum 2014</b>	PHC 3101-RVCC (56677)	Intro to PH	Online
<b>Sum 2014</b>	PHC 6307-RVCC (54750)	Exp Assess Env Epi	Online
<b>Spr 2014</b>	PHC 6315-RVC (17751)	Intro to Env Hlth	Online
<b>Spr 2014</b>	IDS 3183-U01 (17743)	Hlth w/o Bdrs	On Campus
<b>Spr 2014</b>	PHC 6442-U01 (20591)	Global Public Health	On Campus
<b>Spr 2014</b>	PHC 6311-U01 (17657)	Env Hlh Risk Assess	On Campus
<b>Fall 2013</b>	IDS 3183-RVM (93037)	Hlth w/o Bdrs	Online
<b>Fall 2013</b>	IDS 3183-U01 (90148)	Hlth w/o Bdrs	On Campus
<b>Fall 2013</b>	PHC 6312C-RVC (88281)	Hlth Impact Pollution	Online

<b>Fall 2013</b>	PHC 6312C-RXD (88295)	Hlth Impact Pollution	Online
<b>Fall 2013</b>	PHC 6315-RVC (88239)	Intro to Env Hlth	Online
<b>Fall 2013</b>	PHC 6315-U01 (88188)	Intro to Env Hlth	On Campus
<b>Sum 2013</b>	PHC 6307-RVAA (53608)	Exp Assess Env Epi	Online
<b>Sum 2013</b>	PHC 6307-RXDA (53609)	Exp Assess Env Epi	Online
<b>Spr 2013</b>	IDS 3183-U01 (19590)	Hlth w/o Bdrs	On Campus
<b>Spr 2013</b>	PHC 7374C-RVC (21172)	Adv in Cell and Env Tox	Online
<b>Spr 2013</b>	PHC 7374C-RXD (21173)	Adv in Cell and Env Tox	Online
<b>Fall 2012</b>	PHC 6312C-RVC (87762)	Hlth Impact Pollution	Online
<b>Fall 2012</b>	PHC 6312C-RXD (87776)	Hlth Impact Pollution	Online
<b>Fall 2012</b>	PHC 7374C-RVC (87780)	Adv in Cell and Env Tox	Online
<b>Fall 2012</b>	PHC 7374C-RXD (87781)	Adv in Cell and Env Tox	Online
<b>Fall 2012</b>	PHC 7713-U01 (87782)	Adv Env Occ Epi Res Methods	On Campus
<b>Sum 2012</b>	PHC 6315-U01A (53656)	Intro to Env Hlth	On Campus
<b>Sum 2012</b>	PHC 6520-RVAA (56377)	Ph Asp Food Disease	Online
<b>Sum 2012</b>	PHC 6520-RXDA (56378)	Ph Asp Food Disease	Online
<b>Spr 2012</b>	PHC 6004-U01 (17048)	Injury Epidemiology	On Campus
<b>Spr 2012</b>	PHC 6311-U01 (17056)	Env Hlh Risk Assess	On Campus
<b>Fall 2011</b>	PHC 6312C-U01 (83537)	Hlth Impact Pollution	On Campus
<b>Fall 2011</b>	PHC 6315-RVD (83591)	Intro to Env Hlth	Online
<b>Fall 2011</b>	PHC 7374C-U01 (87174)	Adv in Cell and Env Tox	On Campus
<b>Sum 2011</b>	PHC 6315-U01A (54335)	Intro to Env Hlth	On Campus
<b>Fall 2010</b>	PHC 6312C-RVC (86949)	Hlth Impact Pollution	Online
<b>Fall 2010</b>	PHC 6312C-RXD (87193)	Hlth Impact Pollution	Online
<b>Fall 2010</b>	PHC 6315-RVC (86895)	Intro to Env Hlth	Online
<b>Fall 2010</b>	PHC 6315-RVD (95654)	Intro to Env Hlth	Online
<b>Fall 2010</b>	PHC 6315-RXD (86896)	Intro to Env Hlth	Online
<b>Fall 2010</b>	PHC 7374C-RVC (87197)	Adv in Cell and Env Tox	Online
<b>Fall 2010</b>	PHC 7374C-RXD (87198)	Adv in Cell and Env Tox	Online