MARK A. ASNICAR, Ph.D.

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Indiana Wesleyan University
Div. of Natural Science & Math
4201 S. Washington
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EDUCATION:

Doctor of Philosophy **July 1998**
Experimental Pathology with emphasis on Molecular Pathology, Indiana University School of Medicine, Indianapolis, IN
Dissertation: *Characterization of Host Mitochondrial ATPase 6 Over-expression in* Pneumocystis carinii*-infected Rat Lung.*
Advisor: Chao-Hung Lee, Ph.D.

Master of Science **Jan. 1995**
Experimental Pathology with emphasis on Molecular Pathology, Indiana University School of Medicine, Indianapolis, IN
Thesis: *Development and Validation of a Differential Polymerase Chain Reaction Method for the Determination of N-*myc *Copy Number in Neuroblastoma*
Advisor: Chao-Hung Lee, Ph.D.

Bachelor of Arts **June 1983**
Biology/Medical Technology, Anderson University, Anderson, IN

Certificate of Completion **June 1981**
Medical Technology, School of Medical Technology, St. John's Medical Center Anderson, IN

RESEARCH EXPERIENCE:

Baylor College of Medicine
Huffington Center on Aging
Postdoctoral Fellowship and Research Associate **May 2002 to August 2007**
Mentor: Roy G. Smith, Ph.D., Director, Huffington Center on Aging
Molecular biology of aging.

- Studying the role of ghrelin in cancer cachexia and its efficacy as a possible pharmacological intervention in this disorder.
- Currently studying the role of ghrelin and growth hormone secretagogue receptor in glucose homeostasis centrally and at the level of the pancreas.
- Mentor other staff and Postdoctoral Fellows.
- Maintain the Director's laboratory.

Eli Lilly and Company, Endocrine Research - Obesity Division
Postdoctoral Fellowship **July 1998 to May 2002**
Advisor: Hansen M. Hsiung, Ph.D.
Determining gene function by gene targeting.

- Subcloned and mapped large genomic DNA fragments from BAC-based DNA library clones.
- Constructed targeting vectors – one set of vectors to do a null knockout and one set of vectors to do tissue-specific knockout using the Cre-*loxP* system.
- Transfected, cultured, and screened the DNA of mouse embryonic stem cells to detect colonies that had been correctly targeted by homologous recombination.
- Created a colony of mice deficient in the cocaine- and amphetamine-regulated transcript and studied the phenotype of that colony.
- Transiently expressed the *Cre* gene in embryonic cells that contained correctly targeting events to excise the DNA between *lox*P sites. Screened for correct clones.
- Created a colony of mice deficient in vasoactive intestinal peptide receptor 2 (VPAC2R) and studied the phenotype of that colony.

Indiana University School of Medicine, Department of Pathology and Laboratory Medicine
Graduate Student, Ph.D. track **Jan. 1995 – July 1998**
Advisor: Chao-Hung Lee, Ph.D.

- Demonstrated that the expression levels of a number of genes are increased in the rat lung during *Pneumocystis carinii* infection by differential mRNA display.
- Identified by sequencing, and confirmed by Northern and *in situ* hybidization analysis, the ATPase 6 gene as one of the genes up-regulated in the rat lung during *P. carinii* infection.
- Determined that the type II pneumocytes of the lung are the source of the over-expression of ATPase 6 during *P carinii* infection using 2-color fluorescent *in situ* hybridization with riboprobes.

Indiana University School of Medicine, Department of Pathology and Laboratory Medicine
Graduate Student, M.S. track **Sept. 1991 – Jan. 1995**
Advisor: Chao-Hung Lee, Ph.D.

- Developed a multiplex PCR-based assay (differential PCR) to determine N-*myc* copy number in neuroblastomas.
- Optimized the DNA extraction methods for the differential PCR for N-*myc* copy number determination to be used on archived, paraffin-embedded tissue, tissue from stained slides, and fresh tissues.
- Performed the necessary studies to validate N-*myc* copy number determination obtained by differential PCR.

EXPERIMENTAL and COMPUTER SKILLS:

Molecular Biology: DNA and RNA extraction from a variety of specimens; Manipulation of large fragments of DNA; Differential, multiplex, and reverse transcription polymerase chain reaction; Differential mRNA display; DNA cloning and sequencing; Southern, Northern, Western, *in situ*, and dot hybridization analysis; *in vitro* transcription; Site directed mutagenesis.

Gene Targeting: Global and tissue-specific (Cre/*loxP*) gene targeting strategies; Targeting vector construction.

Cell Biology: Mammalian cell culture in monolayers and suspension; Embryonic stem cell culture and manipulation; Isolation and primary cell culture of type II pneumocytes; Stable transfection; Insulin stimulation assays in MIN6 cells.

In vivo studies: Small animal surgery – placement of carotid and jugular catheters in mice; Oxymax determination of metabolic parameters; Dual energy x-ray absorptivity and nuclear magnetic resonance assays for body composition; small animal husbandry; Oral and i.p. glucose tolerance, insulin tolerance testing, 2-deoxyglucose challenge; Behavioral testing; *In vivo* pharmacology.

Computer Skills: Proficient in Microsoft operating systems (from Windows 98 through XP Professional), Microsoft Office (Word, PowerPoint, Excel, Outlook, and Access), Adobe Photoshop and Acrobat, Paint Shop Pro, SigmaPlot, and Vector NTI Advance.

CLINICAL EXPERIENCE:

Indiana University Medical Center, Department of Pathology and Laboratory Medicine
Supervisor, Molecular Diagnostics **July 1993 - Aug. 1994**
Department Chairman: James W. Smith, M.D.
Division Director: Stephen D. Allen, M.D.
Scientific Director: Chao-Hung Lee, Ph.D.

- Established a CLIA-regulated Molecular Diagnostics laboratory that conformed to CAP guidelines.
- Generated and implemented all laboratory policies and procedures.
- Generated and implemented test result report formats and computer report layouts.
- Established job descriptions for all personnel and implemented annual performance reviews.
- Researched and developed new molecular methods-based assays used to detect pathogens and gene abnormalities in patient samples.
- Validated all testing and maintain all records.
- Performed molecular-based testing using PCR, RT-PCR, Southern and dot hybridizations, and DNA cloning and sequencing techniques.

Community Hospital of Anderson and Madison County
Sr. Medical Technologist **Aug. 1987 - Aug. 1992**
Medical Technologist **July 1981- Aug. 1987**
Pathologists: J. Whitaker, M.D., & A. Marciniak, M.D.

- Maintained the chemistry section procedure manual.
- Ensured all preventative maintenance was performed on all automated instrumentation.
- Developed and implemented new quality control and quality assurance procedures.
- Worked as a 2nd-shift generalist (in all clinical laboratory areas) for one year.

- Worked as a day-shift clinical chemist - I performed all varieties of clinical chemistry testing including automated and special chemistry procedures and performed instrument maintenance.

REGISTRIES:

American Society of Clinical Pathologists
Registered **Medical Technologist** MT # 139652
Registered **Specialist in Chemistry** SC # 000953

TEACHING EXPERIENCE:

Indiana Wesleyan University, Marion, IN
Assistant Professor of Biology **Fall Semester 2007 to the present**
Courses: Anatomy and Physiology I and II (BIO111, -112), Cellular Biology (BIO351), Principles of Biology (BIO125), Histology (BIO330)

- Devised/implemented, and evaluated the curriculum; selected the textbook when necessary.
- Presented all lectures; created and designed laboratory exercises.
- Evaluated student performance and determined student grades.
- Provided academic advise to assist students in the discovery and selection of their vocation through developing short-and long-term educational goals, equipping them to make effective choices in course selection, and connecting them to resources and services that meet their needs.

Anderson University, Anderson, IN
Adjunct Professor **Semester II of 1995-1996 and 1996-1997**
Course: Cell Biology (BIOL 2240)

- Devised and implemented the curriculum; selected the textbook.
- Presented all lectures (except for 2 topics in 1996-1997); created and designed laboratory exercises.
- Evaluated student performance and determined student grades.

Indiana University School of Medicine, Department of Pathology and Laboratory Medicine
Graduate TeachingAssistant **Julys of 1991, 1992, and 1996**
Course: Methods in Molecular Biology and Pathology **Junes of 1993, 1994, 1995, 1997 and 1998**
Course Director: Chao-Hung Lee, Ph.D.

- Taught techniques used in molecular biology to students at the bench.
- Coordinated multiple experiments and supervised student involvement in those experiments.
- Answered questions relating to the theory and practice of molecular biology.

Anderson University, Anderson, IN
Student Teacher **January Term, 1978**
Course: General Endocrinology (BO 261)
Course Director: Professor Marie Mayo

- Devised and implemented the curriculum under Professor Mayo's guidance.
- Presented all lectures and created laboratory exercises in the field of Endocrinology.

PUBLICATIONS:

Sun Y, **Asnicar M**, and Smith RG. Central and peripheral roles of ghrelin on glucose homeostasis. *Neuroendocrinology.* 2007;86(3):215-28. Epub 2007 Sep 26.

Moffett M, Stanek L, Harley J, Rogge G, **Asnicar M**, Hsiung H, and Kuhar M. Studies of cocaine- and amphetamine-regulated transcript (CART) knockout mice. *Peptides*. 2006;27(8):2037-45. Epub 2006 Jun 8.

Sun Y, **Asnicar M**, Saha PK, Chan L, and Smith RG. Ablation of ghrelin improves the diabetic but not obese phenotype of ob/ob mice. *Cell Metab.* 2006;3(5):379-86.

Smith RG**,** Sun Y, Betancourt, L., and **Asnicar MA**. GH-Secretagogues: Prospects and potential pitfalls. *Best Pract Res Clin Endocrinol Metab.* 2004;18(3):333-347.

Asnicar MA, Köster A, Heiman ML, Tinsley F, Smith DP, Galbreath E, Fox N, Ma YL, Blum WF, and Hsiung HM. VPAC2 receptor deficiency in mice results in growth retardation and increased basal metabolic rate. ***Endocrinology*** 2002;143(10):3994-4006.

Chen Y, Hu C, Hsu CK, Zhang Q, Bi C, **Asnicar MA**, Hsiung HM, Fox N, Slieker LJ, Yang DD, Heiman ML, and Shi Y. Targeted disruption of the melanin-concentrating hormone receptor-1 results in hyperphagia and resistance to diet-induced obesity. ***Endocrinology*** 2002;143(7):2469-2477.

Asnicar MA, Smith DP, Yang DD, Heiman ML, Fox N, Chen Y-F, Hsiung HM , and Köster A. Absence of cocaine- and amphetamine-regulated transcript (Cart) results in obesity in mice fed a high caloric diet. ***Endocrinology*** 2001;142(10):4394-4400.

Asnicar MA, Henegariu O, Shaw MM, Goheen MP, Bartlett MS, Smith JW, Lee CH. Alteration in expression of the rat mitochondrial ATPase 6 gene during Pneumocystis carinii infection. *BMC Microbiology*. 2001;1(1):8.

Asnicar MA, Goheen M, Bartlett MS, Smith JW, Lee CH. Upregulation of host mitochondrial ATPase 6 gene in *Pneumocystis carinii*-infected rat lungs. *Journal of Eukaryotic Microbiology.* 1996 Sep-Oct;43(5):38S.

Chong SK, Lou Q, **Asnicar MA**, Zimmerman SE, Croffie JM, Lee CH, Fitzgerald JF. *Helicobacter pylori* infection in recurrent abdominal pain in childhood: comparison of diagnostic tests and therapy. *Pediatrics*. 1995 Aug;96(2 Pt 1):211-5.

PRESENTATIONS/POSTERS:

Title	**Venue**
Ghrelin Deficiency Does Not Protect Against Diet Induced Obesity in Mice	**ENDO 2003**, 85th Annual Meeting of the Endocrine Society Philadelphia, PA June 19-22, 2003

Expression and Gene Targeting of the Gene Encoding the Mouse Cocaine- and Amphetamine-Regulated Transcript (CART).	North American Association for the Study of Obesity 2000 Annual Scientific Meeting Long Beach, California October 29 – November 2, 2000
Genomic Organization and Chromosomal Location of the Gene Encoding the Mouse Cocaine- and Amphetamine-Regulated Transcript (CART).	**ENDO'99**, 81st Annual Meeting of The Endocrine Society San Diego, California June 12-15, 1999
Upregulation of Host Mitochondrial ATPase 6 Gene in *Pneumocystis carinii*-Infected Rat Lungs	Joint Meeting of The American Society of Parasitologists and The Society of Protozoologists Tucson, Arizona June 11-15, 1996