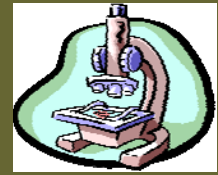


# Cell Biology In Focus



January 1 – March 31, 2006

## Introduction

Roy Silverstein, M.D.

The first quarter of 2006 was busy and productive for the Department of Cell Biology. We had several staff candidates in town for visits and two, Ofer Reizes from Cincinnati and Fawaz Haj from Boston have been invited back for revisits in the spring.

The third Chair's Award for Art in Science was made in January and the picture is now hanging on the wall outside the Departmental Office. Staff published more than 20 papers this quarter – a significant accomplishment! On the grant front, Don Jacobsen's and Phil Howe's competitive NIH RO1 renewals received superb scores and will undoubtedly be funded. My own NIH SCCOR program in Thrombosis was funded in February. This 5 year grant will provide funding for 5 scientific research projects, an administrative core, and 4 scientific cores. Project leaders include myself and Dr. McIntyre in our Department along with Dr. Plow (Molecular Cardiology), Drs. Marchant and Topol (Lab Medicine and Case Genetics) and Dr. McCrae (Case Hematology).

Finally, the Department has announced a new program, the Employee of the Quarter, to begin in the second quarter of 2006. Details on this award will be coming soon.

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## Publications

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### DiCorleto

Parsons-Wingeter P, McKay TL, Leontiev D, Vickerman MB, Condrich TK, DiCorleto PE. Lymphangiogenesis by blind-ended vessel sprouting is concurrent with hemangiogenesis by vascular splitting. *Anat Rec* 2006 Mar; 288(3):233-47.

### Febbraio

Sun M, Finnemann SC, Febbraio M, Shan L, Annangudi SP, Podrez EA, Hoppe G, Darrow R, Organisciak DT, Salomon RG, Silverstein RL, Hazen SL. Light-induced Oxidation of Photoreceptor Outer Segment Phospholipids Generates Ligands for CD36-mediated Phagocytosis by Retinal Pigment Epithelium: A POTENTIAL MECHANISM FOR MODULATING OUTER SEGMENT PHAGOCYTOSIS UNDER OXIDANT STRESS CONDITIONS. *J Biol Chem*. 2006 Feb 17;281(7):4222-4230. Epub 2005 Dec 13.

### Feldstein

Feldstein AE, Werneburg NW, Li Z, Bronk SF, Gores GJ. Bax Inhibition Protects Against Free Fatty Acid Induced Lysosomal Permeabilization. *Am J Physiol Gastrointest Liver Physiol*. 2006 Feb 16.

### Hazen

Sun M, Finnemann SC, Febbraio M, Shan L, Annangudi SP, Podrez EA, Hoppe G, Darrow R, Organisciak DT, Salomon RG, Silverstein RL, Hazen SL. Light-induced Oxidation of Photoreceptor Outer Segment Phospholipids Generates Ligands for CD36-mediated Phagocytosis by Retinal Pigment Epithelium: A POTENTIAL MECHANISM FOR MODULATING OUTER SEGMENT PHAGOCYTOSIS UNDER OXIDANT STRESS CONDITIONS. *J Biol Chem*. 2006 Feb 17; 281(7):4222-4230. Epub 2005 Dec 13.

Lockwood SF, Penn MS, Hazen SL, Bikadi Z, Zsila F. The effects of oral Cardaxtrade mark (disodium disuccinate astaxanthin) on multiple independent oxidative stress markers in a mouse peritoneal inflammation model: influence on 5-lipoxygenase in vitro and in vivo. *Life Sci*. 2006 Feb 6; [Epub ahead of print]

Gross GJ, Hazen SL, Lockwood SF. Seven day oral supplementation with Cardax (TM) (disodium disuccinate astaxanthin) provides significant cardio protection and reduces oxidative stress in rats. *Mol Cell Biochem.* 2006 Feb;283(1-2):23-30.

Galijasevic S, Saed GM, Hazen SL, Abu-Soud HM. Myeloperoxidase Metabolizes Thiocyanate in a Reaction Driven by Nitric Oxide. *Biochemistry.* 2006 Jan 31; 45(4):1255-1262.

Gross E, Peng DQ, Hazen SL, Smith JD. A novel folding intermediate state for Apo lipoprotein a-I: role of the amino and carboxy termini. *Biophys J.* 2006 Feb;90(4):1362-70. Epub 2005 Dec 2.

## Howe

Qi XJ, Wildey GM, Howe PH. Evidence that Ser87 of BimEL is phosphorylated by Akt and regulates BimEL apoptotic function. *J Biol Chem.* 2006 Jan 13; 281(2):813-23. Epub 2005 Nov 10.

## Jacobson

Budy B, O'neill R, Dibello PM, Sengupta S, Jacobsen DW. Homocysteine transport by human aortic endothelial cells: Identification and properties of import systems. *Arch Biochem Biophys.* 2006 Jan 13.

Jacobsen DW. Homocysteine targeting of plasma proteins in hemodialysis patients. *Kidney Int.* 2006 Mar; 69(5):787-9.

## Kinter

Low SH, Vasanth S, Larson CH, Mukherjee S, Sharma N, Kinter MT, Kane ME, Obara T, Weimbs T. Polycystin-1, STAT6, and P100 function in a pathway that transduces ciliary mechanosensation and is activated in polycystic kidney disease. *Dev Cell.* 2006 Jan; 10(1):57-69.

## McIntyre

Stafforini DM, Sheller JR, Blackwell TS, Sapirstein A, Yull FE, McIntyre TM, Bonventre JV, Prescott SM, Roberts LJ 2nd. Release of Free F2-isoprostanes from Esterified Phospholipids Is Catalyzed by Intracellular and Plasma Platelet-activating Factor Acetylhydrolases. *J Biol Chem.* 2006 Feb 24; 281(8):4616-23.

## Morton

Le Goff W, Settle M, Greene DJ, Morton RE, Smith JD. Reevaluation of the role of the multidrug-resistant P-

glycoprotein in cellular cholesterol homeostasis. *J Lipid Res.* 2006 Jan; 47(1):51-8. Epub 2005 Oct 7.

## **Penn**

Mills WR, Mal N, Forudi F, Popovic ZB, Penn MS, Laurita KR. Optical mapping of late myocardial infarction in rats. *Am J Physiol Heart Circ Physiol.* 2006 Mar; 290(3):H1298-306. Epub 2005 Oct 7.

Lockwood SF, Penn MS, Hazen SL, Bikadi Z, Zsila F. The effects of oral Cardaxtrade mark (disodium disuccinate astaxanthin) on multiple independent oxidative stress markers in a mouse peritoneal inflammation model: influence on 5-lipoxygenase in vitro and in vivo. *Life Sci.* 2006 Feb 6; [Epub ahead of print]

Penn MS Stem-cell therapy after acute myocardial infarction: the focus should be on those at risk. *Lancet.* 2006 Jan 14; 367(9505):87-8.

## **Silverstein**

Sun M, Finnemann SC, Febbraio M, Shan L, Annangudi SP, Podrez EA, Hoppe G, Darrow R, Organisciak DT, Salomon RG, Silverstein RL, Hazen SL. Light-induced Oxidation of Photoreceptor Outer Segment Phospholipids Generates Ligands for CD36-mediated Phagocytosis by Retinal Pigment Epithelium: A POTENTIAL MECHANISM FOR MODULATING OUTER SEGMENT PHAGOCYTOSIS UNDER OXIDANT STRESS CONDITIONS. *J Biol Chem.* 2006 Feb 17; 281(7):4222-4230. Epub 2005 Dec 13.

## **Smith**

Le Goff, W., Settle, M., Greene, D.J., Morton, R.E., and Smith, J.D. Reevaluation of the role of the multidrug resistant P-glycoprotein in cellular cholesterol homeostasis. (2006) *J Lipid Res* 47: 51-58.

Smith, J.D., Peng, D.-Q., Dansky, H.M., Settle, M., Baglione, J., Le Goff, W., Chakrabarti, E., Xu, Y., and Peng, X. Transcriptome profile of macrophages from atherosclerosis sensitive and resistant mice. (2006) *Mamm Genome* 17: 220-229..

Smith, J.D., Bhasin, J.M., Baglione, J., Settle, M., Xu, Y., and Barnard, J. Atherosclerosis susceptibility loci identified from a strain intercross of apoE-deficient mice via a high density genome scan. (2006) *Arterioscl Thromb Vasc Biol* 26: 597-603.

Le Goff, W., Zheng, P., Brubaker, G., and Smith, J.D. Identification of the cAMP responsive enhancer of the murine ABCA1 gene: Requirement for CREB1 and STAT3/4 elements. (2006) *Arterioscl Thromb Vasc Biol* 26: 527-533.

Gross, E., Peng, D.-Q., Hazen, S.L., and Smith, J.D. A novel intermediate folding state for Apo lipoprotein A-I: Role of amino and carboxy termini. (2006) *Biophys J*. 90: 1362-1370.

Chakrabarti, E. Wang, J., Olsen-Claire, J., and Smith, J.D. Lack of protective effect of estrogens on cerebral Ab levels in intact female and male APP transgenic mice. (2006) *Drug Dev Res* 66: 136-141..

Brubaker G., Peng, D-Q., Somerlot, B., Abdollahian, D., and Smith, J.D. Effects Apo lipoprotein A-I lysine modification: Effects on helical content, lipid binding, and cholesterol acceptor activity. (2006) *Biochim Biophys ACTA* 1761: 64-72.

## Wolfman

Sakai Y, Patterson TE, Ibiwoye MO, Midura RJ, Zborowski M, Grabiner MD, Wolfman A. Exposure of mouse preosteoblasts to pulsed electromagnetic fields reduces the amount of mature, type I collagen in the extracellular matrix. *J Orthop Res*. 2006 Feb; 24(2):242-53.

Karasarides M, Dee K, Schulman D, Wolfman A, Weyman CM. Active Ras-induced effects on skeletal myoblast differentiation and apoptosis are independent of constitutive PI3-kinase activity. *Cell Biol Int*. 2006 Feb 22.

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## Committees, Meetings, Seminars, Posters, Awards, Special Recognition, Special Achievement

### Adams

Dr. Adams was appointed to serve as the American Society for Cell Biology Representative on the Editorial Board of "Physiological Reviews" (American Physiological Society) for Jan 2006-Dec 2009.

On February 13th Dr. Adams was invited to present a seminar at Case Western Reserve University, Dept. of Pathology seminar series. "Thrombospondins : ancient, conserved components of extracellular matrix that regulate cell adhesion and motility".

On February 28th 2006 Dr. Adams gave a seminar at King's College London, UK. Randall Centre Division of Cell and Molecular Biophysics seminar series. "Roles of fascin, an ECM-regulated actin binding protein, in the migration of normal and carcinoma cells".

Dr. Adams was also invited on March 1st to the University College London, UK. Laboratory for Molecular Cell Biology seminar series. "Thrombospondins in Cell Adhesion and Signaling".

Ritu Chakravarti was awarded the 2006 Dept. of Cell Biology Moran Training Fellowship in Cardiovascular Research.

## Febbraio

Dr Febbraio gave a talk at Cleveland State University, Dept. of Biological Sciences, on March 10, 2006. The title was "The role of CD36 in Malaria".

## Fox

Dr. Fox was an invited speaker at Department of Microbiology & Immunology, Vanderbilt University Medical Center, Nashville, TN, February, 2006.

## Ladd

Dr. Ladd was invited to speak at the Department of Biology, John Carroll University 3/16/06 titled: "The role of alternative splicing regulation in the vertebrate heart"

## Morton

Dr. Morton gave a presentation titled: *Putting cholesterol in its place*. Department of Biology, Cleveland State University, Cleveland, OH 2/10/06.

## Silverstein

Dr. Silverstein was a visiting professor for the "Discovery Series" sponsored by the Ohio State University Davis Heart and Lung Research Institute.

Dr. Silverstein also gave a presentation at the American Society of Hematology Annual Meeting Reviews held In Short Hills, NJ and Independence Ohio.

Dr. Silverstein was named one of Cleveland's "Best Doctors" by Cleveland Magazine.

**Dr Silverstein gave a talk at Cleveland State University, Dept. of Chemistry.**

## **Smith**

**Dr. Smith gave as presentation on; High throughput screening to identify a lead compound to prevent Alzheimer disease. Case Neurodegenerative Disease Research Group, Feb. 6, 2006.**

**Dr. Smith also gave a presentation on; Identification of atherosclerosis modifier genes. Wooster College, March 2, 2006.**

## **Zhu**

**Dr. Zhu presented a poster at the 47th Annual Drosophila Research Conference, held in Houston, TX, in March 2006.**

**Dr. Zhu was also invited to give a talk at the Department of Genetics, at Case Western Reserve University in February 2006.**

## **Poster presentations by lab members:**

### **Fox**

**Abul Arif and Partho Ray received ASBMB Graduate/Postdoctoral Travel Fellowship to attend EB2006 meeting.**

### **Silverstein**

**Philip Klenotic attended the Nature Biotechnology Winter Symposia on Angiogenesis in Cancer and Vascular Disease held in Miami on Feb 4-8, 2006, and presented a poster**

## New NIH Funding or Competitively Renewed Funding

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<u>PI</u>	<u>Grant No</u>	<u>Amount</u>	<u>Period</u>	<u>Source</u>	<u>Title</u>
Febbraio	HL 082511	114,750	2/15/06- 1/31/11	NHLBI	The role of CD36 in ischemic inflammation and injury
Silverstein	P50 HL081011	13,277,726	3/24/06- 2/28/11	NHLBI	SCCOR / Genetics and Cellular Determinants of Arterial Thrombosis

## New Funding From Other Sources

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<u>PI</u>	<u>Grant No</u>	<u>Amount</u>	<u>Period</u>	<u>Source</u>	<u>Title</u>
Ladd	5-FY05-1226	150,000	2/1/06- 1/31/08	March of Dimes	The Role of CELF/MBNL-mediated pre-mRNA Alternative Splicing Regulation in Vertebrate Cardiac Morphogenesis
Hazen	Fee for Service	119,900	12/13/05- 12/12/06	Pfizer	MPO Assay Wizard Samples Service Agreement
Cathcart		\$850,000	4/1/06- 3/31/10	Howard Hughes Medical Institute	Integrating Medical Knowledge into Graduate Education

## Promotions This Quarter...

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Vincent Barnes promoted to Senior Technologist, McIntyre Lab.  
 Sai Kuchibhotla promoted to Technologist, Febbraio lab.  
 Alison Liscoe promoted to Technologist, Jacobsen lab.

## New Employees

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<u>Name</u>	<u>Position</u>	<u>PI</u>
Mazen Khalil	Fellow	Penn
Zhu Zhu Cheng	Postdoc	Morton
Maryann Zamanian-Daryoush	Research Associate	Hazen
Kevin Shrestha	Technician	Tang
Ling-Yun Chu	Grad Student	Silverstein

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## The Chairman's Award for Science and Art

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More than a dozen images for the January 15 2006, deadlines were submitted. The winners are Matt Kiedrowski and Amanda Finan from Dr. Penn's lab. Their image is framed and displayed in the NC-1 corridor.

The Department of Cell Biology "Chair's Award for Science and Art" continues. The next competition will be held in July. It is open to all members of the Department, including full time students, rotating students, technologists, postdoctoral fellows, research associates, project scientists, and staff. Applicants may submit any image related to their research, including micrographs and structural models. Deadline is July 15, 2006.

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## Bench Notes

Amber Smith (Adams Lab), Partho Ray (Fox lab) and Judy Schiciano (Admin) are identified as first, second contact and third contacts, respectively, on the NC/NN freezer alarm contact list beginning in April. Many thanks to Amber, Partho, and Judy for volunteering to take this watch over the next 6 months.

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## Other Activities

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### Schiciano

Congratulations to Sandy Crouch (Department Coordinator) on the birth of her 1st Grandchild: Isaac David.



Isaac David  
February 24, 2006  
8 lbs 20 ½ inches

## **Driscoll**

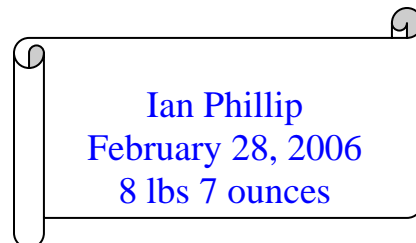
### ***Honorable Mention:***

**Dr. Donna Driscoll for coordinating the adopt a family program for the holidays.**

**In the spirit of the holiday season, the department decided to adopt a family in need. We collaborated with Open Doors, Inc., a nonprofit aftercare program for at-risk middle school students. A wonderful three-generation family of 16 had recently joined the program and they were in great need of help for the holidays. Members of the department donated many new toys, books, and clothing items and contributed over \$1400. The money was used to buy gifts for the family as well as food for their holiday dinner. The items were delivered to the family by the Open Doors staff just in time for Christmas.**

## **Howe**

**Warm wishes to Dr. Phillip Howe on the birth of his son Ian Phillip. He was a keeper at 8.7 lbs.**



**Congratulations to the 2005 Elsa Albrecht winners:**

**1<sup>st</sup> Laurent Chavatte, Ph.D.**

**2<sup>nd</sup> Ritu Chakravarti, Ph.D.**

**Shown below from left to right, Ritu Chakravarti, Ph.D., Josephine Adams, Ph.D., and Donna Driscoll, Ph.D. (accepting on behalf of Laurent Chavatte, Ph.D.).**

