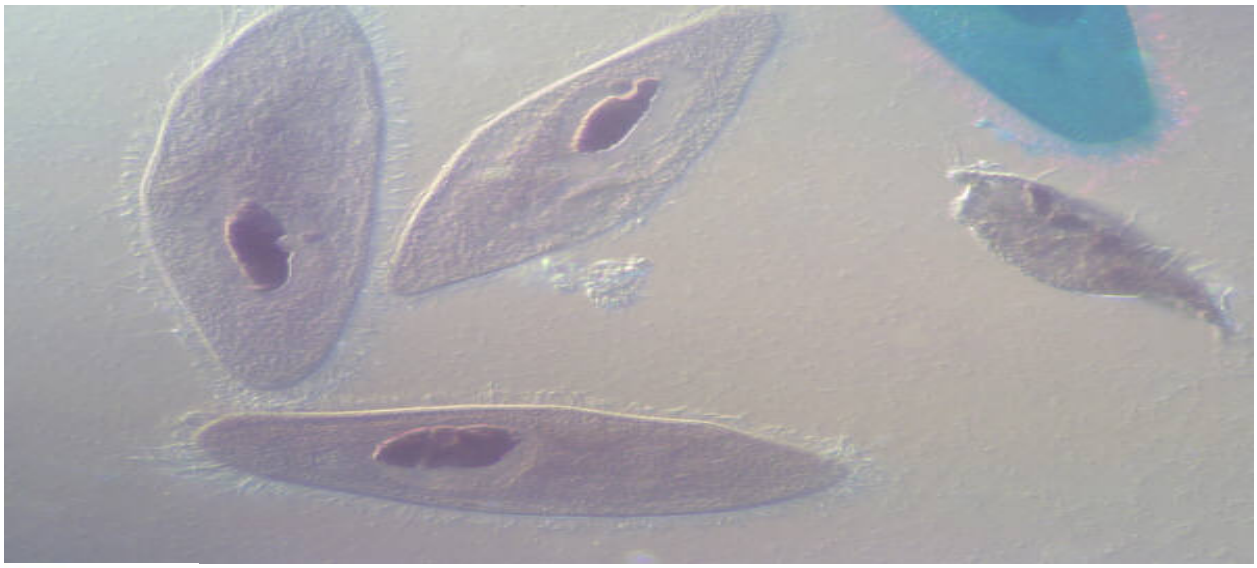
NEWSLETTER
Department of Cell Biology

Volume 2, Issue 2 October 2009



EMORY UNIVERSITY SCHOOL OF MEDICINE

INSIDE THIS ISSUE:

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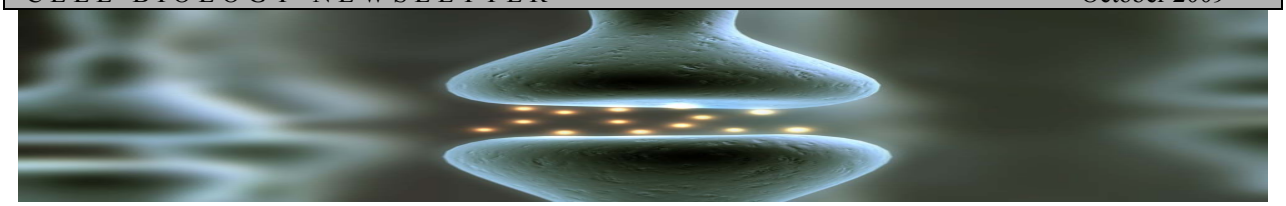


LABS:

Bassell	(415)	Luskin	(555)
Chen	(555)	McKeon	(535)
Dunlap	(415)	Moberg	(435)
English	(425)	Powers	(455)
Faundez	(455)	Sale	(465)
Hartzell	(535)	Sanyal	(435)
Joshi	(455)	Scott	(425)
Kowalczyk	(465)	Shur	(475)
Lin	(535)	Zheng	(555)

NEW HIRES

Jennifer Nicolini, Research Specialist – English Lab
Pearl Ryder, MD/Ph.D., Grad Prog. – Faundez Lab
Jiaping Gu, Postdoctoral Fellow – Zheng Lag
Emily Grossniklaus, Emory Honor Thesis – Faundez Lab
Lian Li, Lead Research Specialist – Bassell Lab
Avanti Gokhale, Postdoc – Faundez Lab
Eric Vitriol, Postdoctoral Fellow – Zheng Lab
Lea Alford, Postdoctoral Scholar – Sale Lab
Rasagnya Viswanadha, Grad Student in BCDB from Toronto Canada – Sale Lab

AWARDS and RECOGNITIONS

- Dr. Ping Chen was promoted to Associate Professor
- Dr. Gary Bassell was promoted to Professor
- Dr. Maureen Wirschell is an Invited Speaker at the Gordon Research Conference on Cilia and Mucociliary Interactions, Il Ciocco Italy Feb. 2009.
- Dr. Rida Padmashree, Postdoc in Chen lab received travel awards for ASCB meeting, (December 2008) San Francisco, and CDB Symposium (2009) "Shape and Polarity" (March 2009) Kobe, Japan.
- Dr. Shuangding Li won the best poster award from the SDB SE regional meeting to attend the annual SDB meeting in San Francisco (July 2009).

FELLOWSHIPS:

- Esther Yim received the "William and Enid Rosen Summer Student Fellowship" from the National Fragile X Foundation" (June-August 2009). Esther is an Emory undergraduate doing honors thesis research with Dr. Christina Gross in Gary Bassell's lab.
- Sharon Swanger received an NIH NRSA predoctoral fellowship "Role of CPEB in dendritic mRNA transport and translation". Sharon is a Ph.D. Candidate in the graduate neuroscience program, doing her thesis in Gary Bassell's lab.
- Avanti Gokhale was awarded NIH First Postdoctoral Fellowship at Emory to work with Victor Faundez.
- Kristy Welshhans, Ph.D., a Postdoctoral Fellow in Gary Bassell's lab, received an NIH NRSA postdoctoral fellowship "ZBP-mediated transport and local translation of β-actin mRNA in growth cones".
- Jennifer Larimore, was awarded a Postdoctoral First Fellowship, in Victor Faundez's lab.
- Candice Elam was awarded an NIH NRSA to study "Regulation of ciliary motility by an axonemal PP2A phosphatase." 2009.
- Candice Elam 2009-Present. Undergraduate Curriculum Development and Teaching Fellowship, sponsored by the Emory College Center for Science Education Howard Hughes Medical Institute grant.
- Lea Alford in Win Sale's lab, is a NIH First Awardee and received her Ph.D. from Boston College working with David Burgess.

NEW FUNDING:

- Gary Bassell, NARSAD 9/15/09–9/14/11, "CPEB mediated translational regulation at synapses".
- David Dunlap, Human Frontier Science Program (in collaboration with groups in Adelaide, Australia and Pittsburgh) 8/1/09–7/31/12, "Quantitative analysis of the DNA loop-domain model/long range regulation".
- Wilfried Rossoll, Ph.D. received an Emory University Research Council (URC) grant "The role of the RNA binding protein TDP-43 in motor neurons".
- Gary Bassell NIH R01 MH086405 Role: PI 12/01/04-11/30/13 "Imaging FMRP Regulation and Function".
- Gary Bassell and Yue Feng (multi-PI) NIH RO1 HD061344 08/01/09-07/31/11 FMRP mediated translation in neuronal development (supported by ARRA).
- Gary Bassell NIH R21 DA027080 Role: PI 06/01/09-05/31/11 "Identification of localized miRNAs for neuronal development and plasticity" (supported by ARRA).
- Gary Bassell, NIH R21 (ARRA) 06/01/09-05/31/11, "Identification of localized miRNAs for neuronal development and plasticity".
- Gary Bassell, Muscular Dystrophy Association 1/1/09–12/31/11, "Axonal mRNA regulation by HNRNPQ1 and SMN".
- Subhabrata Sanyal, NIH R03 8/15/09–5/31/11, "Transcriptional regulation of behavioral adaptation in Drosophila.
- Subhabrata Sanyal, Neuroscience Initiative Seed Grant 2/1/09–1/31/10, "Restless Legs Syndrome in flies: Understanding the role of BTBD9 in Drosophila" Neuroscience Initiative Seed Grant.
- Arthur English, Subcontract from GaTech, NIH R01 7/17/09–6/30/11 (ARRA) "Bioengineered scaffolds for peripheral nerve regeneration".
- Andrew Kowalczyk, NIH R01 9/18/09–8/31/11 (ARRA), "Cadherin regulation in dermal endothelial cells".
- Victor Faundez, NIH R01 9/1/09–8/31/13, "Mechanisms of endosome trafficking in neurons".

The following ARRA (Stimulus) funded supplements to previously funded projects have been awarded by NIH:

Gary Bassell	Student supplement and research supplement
Arthur English	Student supplement
Winfield Sale	Research supplement
John Scott	Student supplement and equipment supplement
Erica Werner	Career development supplement
James Zheng	Research supplement

THESIS DEFENSES

Adam Raymond in the Shur lab, defended his thesis (December 2008) entitled "Novel tissue-intrinsic functions of SED1/MGG-E8 in the male epididymis" in partial fulfillment of the requirements for the degree Doctor of Philosophy.

Nathan Mortimer in the Moberg lab, defended his thesis (February 2009) entitled "Drosophila archipelago regulates oxygen homeostasis via novel roles in tracheogenesis and the hypoxic response" in partial fulfillment of the requirements for the degree Doctor of Philosophy.

Emma Delva in the Kowalczyk lab, defended her thesis (March 2009) entitled "Determining the Cellular Mechanism Involved in Pemphigus Vulgaris-Induced Desmoglein 3 Internalization and Desmososmal Disassembly" in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Bi Mo, Working with Dr. Wilfried Rossoll in the Bassell lab, defended his B.S. thesis entitled "A screen for novel interacting partners of TAR DMA Binding Protein 43 (TDP-4)" and graduated at Emory with highest honors (May 2009). Bi is now in a combined MD/MPH program at Marshall University in West Virginia.

Marie Cross in the Powers lab, defended her thesis (May 2009) entitled "The Nucleoporin Nup98 Regulates Microtubule Dynamics During Spindle Assembly" in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Karen Newell-Litwa in the Faundez lab, defended her Ph.D. thesis (July 16, 2009).

Robert Lyng in the Shur lab, defended his thesis (August 2009) entitled "Mouse Oviduct Specific Glycoprotein (OGP) is an Egg-Associated AP3-Independent Sperm Adhesion Ligand" in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Dan Pont working with Dr. Christina Gross in the Bassell lab, defended his M.S. Thesis entitled "Translational Regulation in a Fragile X Mouse Model" (August 2009). Dan is now a first year medical student at University of Texas-Galveston.

Avanti Gokhale in the Sale lab defended her thesis (September 2009) entitled "Regulation of ciliary dynein by the axonemal protein kinase CK1" in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Emma Delva and Nathan Mortimer

Adam Raymond

Avanti Gokhale

Robert Lyng

PUBLICATIONS

Bassell Lab

- Santangelo PJ, Lifland AW, Curt P, Sasaki Y, Bassell GJ, Lindquist ME and Crowe JE. Single molecule sensitive probes for imaging RNA in live cells. (2009) Nature Methods, 5:347-349.

- Li C, Bassell GJ and Sasaki Y. (2009) FMRP is involved in protein synthesis-dependent collapse of growth cones induced by semaphoring-3A. Frontiers in Neural Circuits, in press.

- Bassell GJ and Warren ST. (2008) Fragile x syndrome: Loss of Local RNA regulation alters synaptic development and function. Neuron, 60(2):201-214.

- Rossoll W and Bassell GJ. (2009) Spinal Muscular Atrophy and a model for SMN function in axons.

- RNA disorders of axonal degeneration in Cell Biology of the Axon. Results and Problems in Cell Differentiation, Springer, D. Richter and H. Tiedge, editors. Vol. 48, pgs. 289-326.

- Muddashetty R and Bassell GJ. (2009) A boost in miRNAs shapes of the neuron. EMBO J., 28(6):617-618.

Chen Lab

- Jones, C. and Chen, P. (2008) Primary cilia in planar cell polarity regulation. Current Topics in Developmental Biology 85, 197-224.

- Etheridge, S.L., Ray, S., Li, S., Hamblet, N.S., Lijam, N., Tsang, M., Greer, J., Kardos, N., Wang, J., Sussman, D.H., Chen, P., and Wynshaw-Boris, A. (2008) Murine Dishevelled 3 is required for normal cardiac outflow tract, cochlea and neural tube development. PloS Genetics 4, e1000259.

- Vivancos, V., Chen, P., Spassky, N., Qian, D., Dabdoub, A., Kelley, M., Studer, M., Guthrie, S. (2009) Wnt activity guides facial branchiomotor neuron migration, and involves the PCP pathway and JNK and ROCK kinases. Neural Development 4, 7.

- Chacon-Heszele, M.F. and Chen, P. (2009) Mouse models for dissecting vertebrate planar cell polarity signaling in the inner ear. Brain Research 1277, 130-140.

- Padmashree, R. and Chen, P. (2009) Line up and listen: planar cell polarity regulation in the mammalian inner ear. Seminars in Cell and Developmental Biology. PMID: 19508855, Mar31. Epub ahead of print.

- Kelly, M. and Chen, P. (2009) Development of form and function in the mammalian cochlea. Current Opinion in Neurobiology. 19, 295-401.

Faundez Lab

- Salazar, G, Zlatic, S.; Craige, B; Peden, A.A.; Pohl, J.; Faundez (2009) Hermansky-Pudlak Syndrome Complexes associate with Phosphatidylinositol-4-kinase type II Alpha in Neuronal and Non-Neuronal cells. *J. Biol. Chemistry* 284(3):1790-802.

- Guang-dan, Salazar, G.; Zlatic, S.; Michele M. Doucette, Craig J. Heilman, Babar Fiza, Allan I. Levey,

- Faundez, V.; Steven W. L, Hernault (2009) SPE-39 Family Proteins Interact with the HOPS Complex and Function in Lysosomal Delivery. *Molecular Biology of the Cell* 20(4):1223-40. (Corresponding authors) Newell-Litwa, K; Salazar, G.; Smith, Y; Faundez, V. (2009). Roles of BLOC-1 and two AP-3 isoforms in cargo sorting to synaptic vesicles. *Molecular Biology of the Cell* 20(5):1441-53.

- Mol Biol Cell. 2009 Mar; 20(5):1441-53. Epub 2009 Jan 14. Roles of BLOC-1 and adaptor protein-3 complexes in cargo sorting to synaptic vesicles. Newell-Litwa k, Salazar G, Smith Y, Faundez V.

- Christine Chiasson, Kristin Wittich, Peter Vincent, Victor Faundez, Kowalczyk, A. (2009) p120-Catenin Inhibits VE-cadherin Internalization Through a Rho-Independent Mechanism. *Molecular Biology of the Cell* 20(7): 1970-80.

- Salazar, G., Falcon-Perez, J.; Harrison, R.; Faundez, V. (2009) SLC3A3 (AnT3) Oligomerization by di-Tyrosine Bonds Regulates its Sub-Cellular Localization and Metal Transport Capacity. *Plos One* 4(6):e5896.

- Ryder, PV; Faundez, V. (2009) Schizophrenia: The 'BLOC' May Be in Endosomes. *Science Signaling.* In press.

Sale Lab

-Wirschell, M, Nicastro, D., Porter, ME., and Sale, WS. (2009) Structural basis for regulation of flagellar motility: organization of the dynein regulatory complex, inter-dynein linkers and a network of axonemal kinases and phosphatases. Chlamydomonas Sourcebook. Second Edition

-Wirschell, M., T. Hendrickson and W. S. Sale. (2008) Keeping and eye on I1: I1 dynein as a model for flagellar dynein assembly and regulation. Cell Motility and Cytoskeleton 64: 569-579.

-Wirschell, M., Zhao, F., Gaillard. A., Yang, C., Diener, D., Yang, P., J. Rosenbaum, and W. Sale. (2008) Building a flagellar radial spoke: radial spoke protein 3 (RSP3) is a dimer. Cell Mot and Cytoskel. 65(3):238-48.

- Wirschell M. Yang, C, Yang, P, Fox, L, Yanagisawa, H, Kamiya, R, Witman, GB, Porter, M, and Sale, WS. (2009) IC97 is a novel intermediate chain of I1 dynein that interacts with tubulin and regulates interdoublet sliding. Molecular Biology of the Cell. 20(13): 3044-3054.

- Bower, R, Perrone, C, O'Toole, E, Fox, L, Wirschell, M, Sale, WS, and Porter, ME. (2009) IC138 defines a sub-domain at the base of the I1 dyneing that regulates microtubule sliding and flagellar motility. Molecular Biology of the Cell. 20(13) 3055-3063.

-Ikeda, K, Yamamoto, R, Wirschell, M, Yagi, T, Bower, R, Porter, ME, Sale, WS, and Kamiya, R. (2009) A novel ankryin-repeat protein interacts with the regulatory complex of inner arm dynein f (I1) of *Chlamydomonas reinhardtii*. Cell Motil Cytoskeleton. 66(8). 448-456.

- Yang, P, Yang C, Wirschell M and Davis S. (2009) Novel LC8 mutaitions have disparate affects on the assembly and stability of flagellar complexes. Journal of Biological Chemistry, *in press* (JBC Papers in Press published on August 19, 2009 s doi:10.1074/jbc.M109.090.666).

- Elam, C., Wirschell, M., and Sale, W.S. (2009) The regulation of dynein-driven microtubule sliding in Chlamydomonas flagella by axonemal kinases and phosphatases. Methods in Cell Biology. S.M. King and G.J. Pazour, editors. Book chapter in press.

- Gokhale, A., Wirschell, M., and Sale, W.S. (2009) Regulation of dynein-driven microtubule sliding by the axonemal protein kinase CK1 in *Chlamydomonas* flagella. Journal of Cell Biology, *in press.*

Sanyal Lab

- Hartwig CL, Worrell J, Levine RB, Ramaswami M, Sanyal S. (2008) Normal dendrite growth in Drosophila motor neurons requires the AP-1 tanscription factor. Dev Neurobiol. Sep 1;68 (10):1225-42.

- Franciscovich AL, Mortimer Ad, Freeman AA, Gu j, Sanyal S. (2008) Overexpression screen in Drosophila identifies neuronal roles of GSK-3 beta/shaggy as a regulator of AP-1-dependent developmental plasticity. Genetics. Dec; 180 (4):2057-71.

- Genomic mapping and expression patterns of C380, OK6 and D42 enhancer trap lines in the larval nervous system of Drosophila. MOD: Gene Expression Patterns (in press).

Shur Lab

- Raymond, A. and Shur, B.D. (2009) A novel role for SED1/MFG-E8 in maintaining the integrity of the epididymal epithelium. J. Cell Sci.122:849-858.

- Raymond, A., Ensslin, M.A. and Shur, B.D. (2009) SED1/MFG-E8: a bimotif protein that orchestrates diverse cellular interactions. J. Cell. Biochem. 106:957-966.

- Lyng, R. and Shur, B.D. (2009) Mouse oviduct-specific glycoprotein (OGP) is an egg-associated ZP3-independent sperm adhesion ligand. J. Cell Sci. e-pub 6 Oct.

- Joseph, A., Hess, R., Schaeffer, D.J., Ko, C., Hudgin-Spivey, S., Chambon, P. and Shur, B. Absence of estrogen receptor alpha leads to physiological alterations in the mouse epididymis and consequent defects in sperm function. Biol. Reprod., in press.

CELEBRITY PHOTO ALBUM

New Arrivals:

Congrats to Ken and Karolina Moberg! Annika Jordan Moberg Born Sept. 26th: 7lbs, 15ozs.

Yangfang Rui's daughter Caroline
Born Nov. 24th, 2008; 7.6lbs.

Smiling Faces:

Pearl and Emily

Victor Faundez, Erica Werner, Andy Kowalczyk

Maria Chacon, Padmashree Rida, Avanti Gokhale

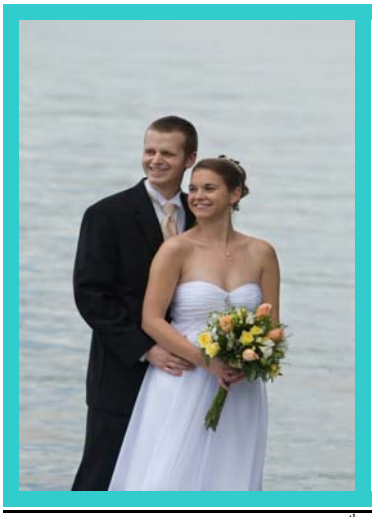
Jocasta Odom and Wendy Lo

Ping Chen

Caroline Rui

Victor Faundez, Gary Bassell, David Dunlap, Barry Shur

Rebecca Oas, Kayan Xiao, Susan Smith, Linda Jordan



Mr. & Mrs. Michael Kelly: Married, July 24th in NY

Parties & Receptions:

Barry Shur

Barry and Judy Shur

Carolyn Eason, Harish Joshi, Avanti Gokhale

EVENTS

HIGHLIGHTS
October 02, 2009 David Katz - Chalk Talk
November 12, 2009 Carolyn Beam (Moberg lab) - Dissertation

B & G SCHEDULE
October 12, 2009 David Dunlap
November 09, 2009 Arthur English
December 14, 2009 Victor Faundez

SEMINAR SCHEDULE
October 01, 2009 Bettina Winckler, University of Virginia
(Host: Barry Shur)
December 03, 2009 Thierry Galli, Institut Jacques Monod, Paris
(Host: Victor Faundez)

HOLIDAY SCHEDULE
Thursday 11/26/09, Friday 11/27/2009: Thanksgiving
Thursday 12/24/09, Friday 12/25/2009: Christmas
Thursday 12/31/09, Friday 1/01/2010: New Year's

FEEDBACK REQUESTED: Send to: Dorothy W. Brown
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