Department of Biostatistics

School of Graduate Studies

Medical College of Georgia

Annual Report

July 1, 2005 – June 30, 2006

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Introduction

This document summarizes the activities of the Department of biostatistics in the School of Graduate Studies of the Medical College of Georgia (MCG) for the period of July 2005 – June 2006. As part of the strategic initiative and research mission of MCG, the Biostatistics Department was formed in 2003 as a full-fledged academic department from its previous status as the Office of Biostatistics, with strong emphasis in teaching, mentoring, and collaborative and methodological research. The Department is housed in the School of Graduate Studies. This unique setup is in recognition by MCG of the broad and vital role of biostatistics in multidisciplinary and translational research, crossing the boundaries of academic schools. We maintain strong collaborative relationships with departments and research centers in the Schools of Allied Health, Dentistry, Medicine and Nursing. As of June 30, the Department has six primary, four joint, two adjunct, one visiting and one emeritus faculty members, and two Masters level statisticians. Another new faculty is also hired, expected to start on September 1, 2006.

Mission

The overarching mission of the Biostatistics Department at MCG is to advance knowledge in the field of biostatistics, and to provide leadership and scholarship in research, teaching and mentoring for the advancement of biomedical science and improvement of human health. The mission is achieved by:

- Implementing high caliber graduate programs in biostatistics;
- Conducting original research to develop and evaluate biostatistical methodologies;
- Collaborating with investigators on biomedical research that requires biostatistics support.

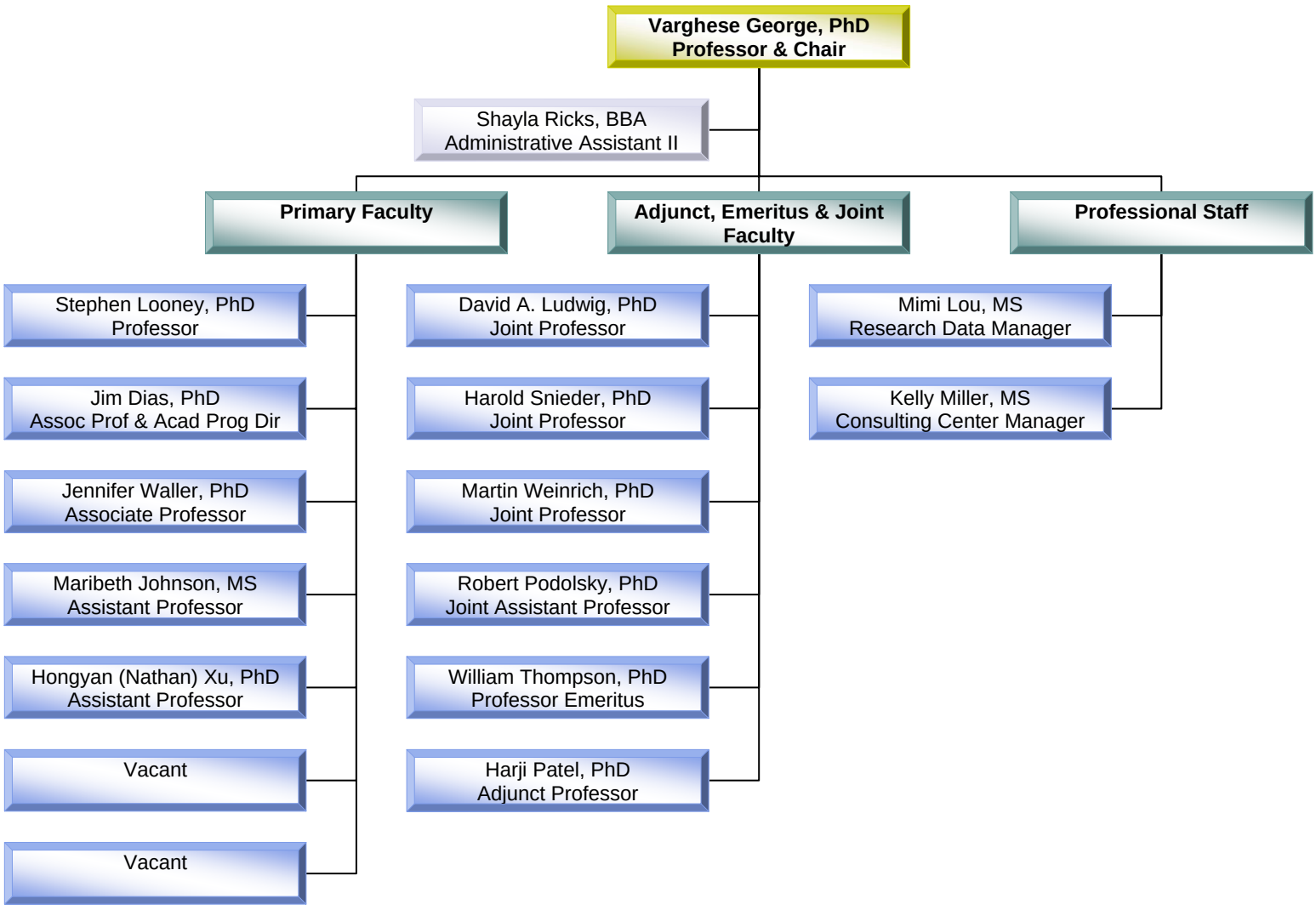
The long-term goal for the Department is to become a nationally and internationally recognized department with strengths and competency in graduate training, collaborative research and methodological research. Moving toward this goal, we are recruiting faculty members with strong records of methodological and collaborative research in biostatistics and epidemiology. A masters program in Biostatistics is slated to start in the Fall of 2006. About 10 students, five of whom are with graduate assistantships, are already admitted into the first batch of the program. The Department also offers several courses, primarily catering to pre- and post-doctoral trainees and junior faculty investigators in Biomedical, Clinical, Nursing and Public Health research. We plan to start a doctoral program in Biostatistics, and Masters in Clinical and Translational Science within the next 2 years.

I should take this opportunity to express our utmost appreciation and gratitude for Drs. Gretchen Caughman (Dean, School of Graduate Studies), Barry Goldstein (the Provost) and Dan Rahn (the President) for their commitments, guidance and support for building a strong department. In the following pages we provide the details of our professional activities over the past year. We hope that this document will provide a good idea of the breadth of our Department and our contribution to the Medical College community.

Varghese George, Ph.D.

Professor& Chair

Organizational Chart as of June 30, 2006



Personnel Changes

- *Dr. David Smith left for a Biostatistician position in industry in New Jersey in August 2005*
- *Verna Brantley left for a Data Manager position close to home in South Carolina in August 2005*
- *Mimi Lou joined as Research Data Manager in August 2005*
- *Kelly Miller joined as Biostatistics Consulting Center Manager in October 2005*
- *Dr. Hongyan Xu joined the faculty in November 2005*
- *Drs. David Ludwig, Robert Podolsky and Harold Snieder became joint faculty in December 2005*
- *Shayla Ricks replaced Debra Wright as Administrative Assistant II in March 2006*
- *Dr. Stephen Looney joined the faculty in June 2006*

Research Achievements and Benchmarks

Research

The Department is actively involved in methodological and collaborative research, and has a strong applied research thrust. The Biostatistics faculty members have extensive experience in providing statistical support for NIH, NSF and private foundation grants. Collaborative research is conducted by serving as co-investigators in grant proposals and funded projects. The collaboration has resulted in substantial extra-mural funding support for the Department and many peer-reviewed publications. With the recruitment of at least two more new faculty members in the immediate future, we expect to expand the methodological and collaborative research, and to increase the funding support substantially.

Dr. Hongyan Xu, who joined the Department in November, received the MCG Scientists Training Award (STP) with Drs. Varghese George and Abdullah Kutlar as his mentors. This grant provides 80% support for Dr. Xu and 10% each for the mentors for 3 years, contingent on satisfactory progress. Dr. Xu has also submitted an R21 application with NIH, which is under review. As of the end of FY06, the combined non-RI funding level for the Department was 3.2 FTE for 8 full-time professional faculty/staff, which is a substantial improvement from the previous year.

Visiting Scholar Program

In order to facilitate exchange of research ideas and long term collaborations, the department started a visiting scholar program in FY06. Dr. Ashis SenGupta, an internationally renowned statistical methodologist and a professor of Statistics at the Indian Statistical Institute in Kolkata and at the University of California in Riverside, visited the campus during June 19 – 24, 2006, and gave two seminar presentations. Dr. George Mathew, Professor of Mathematics at the Missouri State University, is visiting Professor in the department during June 19 – August 18, 2006.

Biostatistics Consulting Center

The Department has an active consulting service, provided through the Biostatistics Consulting Center (BCC). Ms. Kelly Miller serves as the Manager of BCC. We offer comprehensive statistical consulting for investigators within the Medical College, and from other academic institutions, government agencies and private industries. Specific services offered include assistance in grant proposal preparation, design of clinical trials, experimental design, survey design, and determination of sample size requirements, randomization, data management, statistical modeling, data analysis and interpretation. The Medical College of Georgia investigators receive a 50% discount. The biostatistics faculty members have extensive experience in providing statistical support for NIH, NSF and private foundation grants.

Articles published or submitted for publication by Biostatistics Primary Faculty

Barbeau P, **Johnson MH**, Howe CA, Allison J, Davis CL, Gutin B, Lemmon CR: MCG Exercise Project: Changes in body composition, visceral adiposity, and fitness in young black girls. *Obesity Research* (Submitted).

Bergeron MF, **Waller JL**, Marinik EL (2006): Voluntary fluid intake and core temperature responses in adolescent tennis players: sports beverage vs. water. *British Journal of Sports Medicine* 40:406-410.

Chernecky C, Macklin D, **Waller JL**. Cancer patient preferences for internet design. *Oncology Nursing Forum* (in press).

Curtis J, Westfall A, Allison J, Bijlsma J, Freeman A, **George V**, Kovac S, Spettell C and Saag K: A population based assessment of adverse events associated with chronic glucocorticoid use. *Arthritis Care and Research* (In Press).

Ergul A, Jupin D, **Johnson MH**, Prisant LM (2006): Elevated ET-1 Levels are Associated with Decreased Arterial Elasticity in Hypertensive Patients. *J. Clin. Hypertens* (In Press).

Faddy MJ, **Smith DM** (2005): Modelling the dependence between the number of trials and the success probability in binary trials. *Biometrics* 61, 1112-1114.

Fagan SC, Kozak A, Hill WD, Pollock DM, Xu L, **Johnson MH**, Ergul A, Hess DC (2006): Hypertension after cerebral ischemia: candesartan provides neurovascular protection. *Journal of Hypertension* 24:535-539.

Gutin B, Howe CA, **Johnson MH**, Humphries MC, Snieder H, Barbeau P (2005): Heart rate variability in adolescents: relations to physical activity, fitness and adiposity. *Med & Sci in Sports & Exercise* 37:1856-63.

Gutin B, **Johnson MH**, Humphries MC, Hatfield-Laube JL, Kapuku GK, Allison JD, Gower BA, Daniels SR, Barbeau P: Relations of visceral adipose tissue to cardiovascular disease risk factors in black and white adolescents. *Obesity Research* (Submitted).

Harris AK, Ergul A, Kozak A, Machado LS, **Johnson MH**, Fagan SC (2005): Effect of neutrophil depletion on gelatinase expression, edema formation and hemorrhagic transformation after focal ischemic stroke. *BMC Neuroscience* 6:49.

Harris AK, Hutchinson JR, Sachindanandam K, Dorrance A, Stepp D, **Johnson MH**, Fagan SC, Ergul A (2005): Type 2 diabetes causes remodeling of cerebrovasculature via differential regulation of matrix metalloproteinases and collagen synthesis: role of endothelin-1. *Diabetes* 54(9):2638-44.

Hashimoto M, Ito S, Tay FR, Sano H, Kaga M, **Waller JL**, Pashely DH: Permeability of adhesive resin films. *Journal of Dental Research* (Submitted).

Hepp GR, Kennamer RA, **Johnson MH** (2006): Maternal effects in wood ducks: incubation temperature influences incubation period and neonate phenotype. *Functional Ecology* 20:307-314.

Hernandez CM, Gearhart DA, Parikh V, Hohnadel EJ, Davis LW, Middlemore ML, Warsi SP, **Waller JL**, Terry Jr AV (2006): Comparison of galantamine and donepezil for effects on nerve growth factor, cholinergic markers, and memory performance in aged rats. *Journal of Pharmacology & Experimental Therapeutics* 316:679-694.

Hess DC, Wang W, Hamilton W, McVicker R, Lee S, Pardue C, **Waller JL**, Gross H, Nichols F, Hall C, Adams RJ (2005): REACH: Clinical feasibility of a rural telestroke network. *Stroke* 36:2018-20.

Higgins TS, Ritchie CS, Stetson BA, Burke JD, **Looney SW**: An examination of the moderating effect of treatment with anti-depressants on the association of heart disease with depression in males with type 2 diabetes attending a veterans medical center. *Diabetes Research and Clinical Practice* (In Press).

Hoffman WH, Barbeau P, Litaker MS, **Johnson MH**, Howe CA, Gutin B: Secondary sexual characteristics and body composition, blood pressure and insulin in black girls. *Obesity Research* (In Press).

Ito S, Tay FR, Hashimoto M, Yoshiyama M, Saito T, Brackett WW, **Waller JL**, Pashley DH (2005): Effects of multiple coatings of two all-in-one adhesives on dentin bonding. *Journal of Adhesive Dentistry* 7:133-41, 2005.

Kolanowski A, Fick D, **Waller JL**, Ahern F: Outcomes of Antipsychotic Drug Use in Community-dwelling Elders with Dementia. *Archives of Psychiatric Nursing* (In Press).

Lane, JE, **Waller, JL**, Davis, LS. Relationship between age of ear piercing and keloid formation. Pediatrics 115(5):1312-1314, 2005.

Mazzella FM, **Smith D**, Horn P, Cotelingam JD, Rector JT, Shrit MA, Pesce A, Schumacher HR (2006): Prognostic Significance of Pronormoblasts in Erythrocyte Predominant Myelodysplastic Patients. *American Journal of Hematology* 81: 484-491.

Meeks S, Teri L, Haitsma KV, **Looney SW** (2006): Increasing Pleasant Events in the Nursing Home: Collaborative Behavioral Treatment for Depression *Clinical Case Studies* 5: 287-304.

Nalamolu VRP, Patel RN, **Dias JK,** Kaminski RJ, Kersey TW, Robinson VJB: Utility of the Stress Minus Delay Bullseye Map in Improving Interpretative Accuracy of Myocardial Perfusion Scans. *Journal of Nuclear Cardiology* (In Press).

Nishitani Y, Yoshiyama M, Tay FR, Wadgaonkar B, **Waller** J, Agee K, Pashley DH (2005): Tensile strength of mineralized/demineralized human normal and carious dentin. *Journal of Dental Research* 84:1075-1078.

Ogbureke KUE, Nikitakis NG, Warburton G, Ord RA, Sauk JJ, **Waller JL**, Fisher LW: Bone sialoprotein, dentin sialophosphoprotein, and osteopontin are strongly up-regulated in oral cancer. *Oral Oncology* (Submitted).

Portik-Dobos V, Harris AK, Song W, Hutchison J, **Johnson MH,** Imig J, Pollock DM, Ergul A (2006): Endothelin antagonism prevents EGFR transactivation but not early activation of renal matrix metalloproteinase activity in Type 2 diabetes. *Am. J. Physiol.,* 290: 435-441.

Prasad S, Shah R, Khanal S, Dudar B, **Dias J,** Mandawat M, Kapoor D, Thornton J, Calkins J, Robinson V: Is Left Ventricular End-Diastolic Pressure (LVEDP) an Accurate Surrogate Of The Pulmonary Artery Wedge Pressure (PAWP)? *American Journal of Cardiology* (Submitted).

Prisant LM, Mehta P, Arora V, Gentry M, **Waller JL** (2006)**.** Relationship between glycosylated hemoglobin and arterial elasticity. *Preventive Cardiology* 9: 160-165.

Rogers LQ, Gutin B, Humphries M, Lemmon CR, **Waller JL**, Baranowski T, Saunders R (2006): Evaluation of internal medicine residents as exercise role models and associations with self-reported counseling behavior, confidence, and perceived success. *Teach Learn Med* 18: 215-221.

Shah R, Thakore H, **Dias J,** Landolfo C: Are Women with Osteoporosis at Risk for Coronary Heart Disease? *J. Am. Heart Assoc.* (Submitted).

Sharma GK, Gudapati S, **Waller** JL, Prisant LM (2005): Assessment of test repeatability of arterial stiffness index. *Blood Pressure Monitoring* 10: 271-274.

Tan YD, Fornage M, **George V**, **Xu H**: A New Design for Detecting Associations of Risk Factors with Complex Disease. *Human Heredity* (Under Revision).

Terry, AV, Gearhart, DA, Mahadik, SP, Warsi, Sm Davis, LW, **Waller, JL** (2005): Chronic exposure to typical or atypical antipsychotics in rodents: Temporal effects of clinical 7 nicotinic acetylcholine receptors. Neuroscience 136: 519-529.

Terry Jr AV, Gearhart DA, Mahadik SP, Warsi S, **Waller JL**: Chronic Treatment with First or Second Generation Antipsychotics in Rodents: Effects on High Affinity Nicotinic and Muscarinic Acetylcholine Receptors in the Brain. *Neuroscience* (In Press).

Tingen MS, **Waller JL**, Smith M, Baker RR, Reyes J, Trieber FA (2006): Tobacco prevention in children and cessation in family members. *Journal of the American Academy of Nurse Practitioners* 18: 169-179.

Tiwari HK, Beasley, TM, **George V**, Allison DB: Multifactorial Inheritance and Complex Diseases. In "Genetic Analysis of Complex Traits in Principles and Practice of Medical Genetics" 5th Ed, Emery and Ramin (Eds.) *Elsevier Inc, Philadelphia* (In press).

Tiwari HK, Patki A, Musani S, Beasley TM, **George V** and Allison DB (2005): Incorporating Missing Data Methods in Familial Genetic Data Analyses. *JSM Proceedings* 402-406.

Vender JR, Hester S, **Waller JL**, Rekito A, Lee MR (2006): Identification and management of intrathecal baclofen pump complications: a comparison of pediatric and adult patients. *Journal of Neurosurgery* 104:9-15.

Wang LY, Yin Z, Barbeau P, Moore JB, Hanes Jr J, **Johnson MH**, Cavnar M, Thornburgh J, Gutin B: Cost-effectiveness of a school-based obesity prevention program. *Obesity Research* (Submitted).

Wells B, Andres R-A, Gentry M, **Dias J,** Landolfo C: The Relationship between Body Mass Index and Clinical Outcomes in Acute Myocardial Infarction. *American Heart Journal* (In Press).

Wiener HW, Go CPR, **George V**, Page GP (2005): COGA phenotypes and linkage on Chromosome 2. *BMC Genetics* 6:125.

Xu H, Shete S (2005): Effects of population structure on genetic association studies. BMC Genetics 6: 109.

Xu H, Shete S: Mixed-effects logistic approach for association following linkage scan for complex disorders. *Annals of Human Genetics* (Submitted).

Yin Z, Moore JB, **Johnson MH**, Barbeau P, Cavnar M, Thornburg J, Gutin B: The Medical College of Georgia FitKid Project: the relations between program attendance and changes in outcomes in year 1. *International Journal of Obesity* (In Press).

Yin Z, Gutin B, **Johnson MH**, Hanes Jr J, Moore JB, Cavnar M, Thornburg J, Moore D, Barbeau P. 2006. An environmental approach to obesity prevention in children: MCG FitKid Project year 1 results. *Obesity Research* (In Press).

Zhang K, Wiener H, Beasley TM, **George V**, Amos CI, Allison DB (2005): An Empirical Bayes Method for Analysis of Quantitative Trait Loci from Multiple Genome Scans. *Genetics* (In Press).

Presentations by Biostatistics Primary Faculty

Barbeau P, Lemmon CR, Stallmann-Jorgensen I, Hatfield-Laube J, **Johnson MH,** Gutin B. Relationship of eating attitudes with adiposity and food intake in young black girls. *NAASO Annual Meeting,* Vancouver, BC, October 2005.

Bassali R, **Waller JL**, Gower B, Boyle CA, **Davis CL**. Clinical utility of waist circumference for cardiovascular risk evaluation in overweight children. *Abstract accepted for poster presentation to Pediatric Academic Societies,* San Francisco, April 29-May 2, 2006.

Bundy V, Barbeau P, **Johnson MH**, Humphries MC, Pollock JS, Gutin B. Protective effect of adiponectin on the association of adiposity and insulin in adolescents. *NAASO Annual Meeting,* Vancouver, BC, October 2005.

Chernecky C, Macklin D, Nugent K, **Waller JL**. Issues and educational preferences for cancer patients with venous access devices. *Royal College of Nursing in England,* November 2005.

Easom L, **Waller JL.** Folk Home Remedy Use in Rural Adults. *Gerontological Society of America National Conference*, 2006.

Ergul A, Jupin D, **Johnson MH**, Prisant ME. Elevated ET-1 levels are associated with decreased arterial compliance in hypertensive patients. *59th AHA High Blood Pressure Council Meeting*, Washington, DC, September 2005.

Fagan SC, Kozak A, Hill WD, Pollock DM, Xu L, **Johnson MH**, Ergul A, Hess DC. Hypertension after experimental stroke: Candesartan provides neurovascular protection. *59th AHA High Blood Pressure Council Meeting*, Washington, DC, September 2005.

Gutin B, **Johnson MH**, Gower B, Humphries MC, Hoffman W, Barbeau P. Fasting insulin concentrations in adolescents: relations to general & visceral adiposity, cardiovascular fitness & free-living physical activity. . *NAASO Annual Meeting*, Vancouver, BC, October 2005.

Hodo D, Fick DM, Martindale R, **Waller JL**. Medication Use Following Bariatric Surgery in a Managed Care Cohort. *Academy Health Annual Research meeting,* 2006.

Johnson MH. Analysis of Longitudinal Data: Comparison between PROC GLM and PROC MIXED. *Presented at the University of South Carolina Department of Statistics Colloquium series*, November 10, 2005.

Johnson MH. Analysis of Longitudinal Data: Comparison between PROC GLM and PROC MIXED. *Presented at the Research Triangle SAS Users Group,* May 31, 2006.

McKie KT, Hanevold C, **Waller JL**, Ortiz L, McKie K. Prevalence, prevention and treatment of microabluminaria and proteinuria in children with sickle cell disease. *American Society of Nephrology Renal Week 2005,* Philadelphia, PA, November, 2005.

Patel R, Nalamolu V, **Dias J,** Kaminski R, Kersey T, Robinson V. Reperfusion Pattern On The Stress Minus Delay Bull's-eye Map Can Improve Sensitivity Of Myocardial Perfusion Scans. *Canadian Cardiovascular Congress*, Toronto, Canada, October 2005.

Prasad S, Kapoor D, Williams H, **Dias J,** Thornton J, Mandawat M, Robinson V. Left Ventricular End Diastolic Pressure Cannot Be Used as a Surrogate of the Pulmonary Artery Wedge Pressure in the Catheterization Laboratory. *Canadian Cardiovascular Congress*, Toronto, Canada, October 2005.

Tingen MS, Andrews JO, **Waller JL**. Impact of adherence to cdc guidelines for preventing tobacco use on student and parent smoking rates and psychosocial *variables. Society for Research on Nicotine and Tobacco*, 2006.

Wang X, **Xu H**, Zhu H, Snieder H, Dong Y, Harshfield G, **George V**, Treiber F. Endothelin-1 and endothelin receptor type A gene variants and blood pressure at rest and in response to stress in a multi-ethnic sample of youth. *21st Annual Conference of the International Society on Hypertension in Blacks*, Atlanta, GA June, 2006.

Young-Hyman D, Lemmon CR, **Johnson MH**, Davis CL, O'Brien D, Howe CA, Gower B, Barbeau P. MCG exercise project: depression predicts change in insulin resistance (IR) after controlling for effects of a physical activity (PA) intervention in young black girls. *American Diabetes Association 66th Annual Meeting,* Washington, DC, February, 2006.

Professional Meetings attended by Biostatistics Primary Faculty

George: Joint Statistical Meetings, Minneapolis, MN, August 2004

Johnson: SouthEast SAS® Users Group, Portsmouth, VA, October 2005
SAS Users Group International, San Francisco, CA, March 2006

Waller: SouthEast SAS® Users Group, Portsmouth, VA, October 2005
SAS Users Group International, San Francisco, CA, March 2006

Funded Grants with Biostatistics Primary Faculty as PI/Co-I

Biostat Faculty	*PI/ Department*	*Title*	*Agency*	*Total Direct Cost*	*Funding Period*
Dias	J Imig Vascular Biology	Oxygenase Metabolites and Renal Microvascular Reactivity	NIH	$1,516,500	2002-2006
George	F Treiber VP For Research	MCG's Clinical and Translational Research Transformation	NIH	$236,275	2006-2007
George Lou	B Kirkpatrick Psychiatry	Diabetes in Neuropsychiatric Disorders	NIH	$1,125,000	2005-2010
George Brantley Lou	A Muir Pediatrics	Computer-Assisted Training (CAT) in self management education of children with T1D and their families	ADA	$260,870	2003-2006
George Xu	H Xu Biostatistics	Effects of Population Structure on Genetic Association Studies	MCG	$375,000	2006 - 2009
Johnson	P Barbeau GPI/Pediatrics	Medical College of Georgia FitKid Project	NIH	$2,395,985	2002 - 2007
Johnson	Paule Barbeau GPI/Pediatrics	APEX: Adiposity Prevention by Exercise in Black Girls	NIH	$2,328,375	2000 - 2006
Johnson	A Ergul UGA	Vascular Protection and Endothelin B Receptors in Diabetes	NIH	$900,000	2005 - 2009
Johnson	S Fagan UGA	Vascular Protection in Acute Ischemic Stroke	NIH	$41,274 (Subcontract)	2003 - 2006
Johnson Smith	F Treiber GPI/Pediatrics	PPG: Exercise Impact on Reactivity and BP Risk Factors, Project 3	NIH	$7,027,802	2002 - 2007
Waller	J Andrews Nursing	A Social Support Intervention for Low Income AA Women who Smoke	ALF	$100,000	2005 - 2006
Waller	C Davis GPI/Pediatrics	Effects of exercise on brain function and breathing symptom	MCG	$50,000	2006 - 2007
Waller	C Davis GPI/Pediatrics	Exercise Dose and Insulin Sensitivity in Obese Children	NIH	$428,242	2003 - 2007
Waller	C Davis GPI/Pediatrics	Exercise and Overweight Children's Cognition and Achievement	NIH	$188,000	2005 - 2007
Waller	D Fick Penn State Univ	Delirium in Persons with Dementia	NIH	$100,000	2006 - 2008
Waller	K Ogbureke Dentistry	SIBLING Family of Protein in Oral Cancer Transition	MCG	$375,000	2006 - 2007
Waller	D Pashley Dentistry	Determinants of the Durability of Resin Dentin Bonds	NIH	$1,429,200	2003 - 2007
Waller	D Pashley Dentistry	Reasons for Poor Durability of Resin Dentin Bonds	NIH	$1,850,549	2004 - 2009
Waller	J Switzer Neurology	Alterations in matrix metalloproteinase in acute stroke	MCG	$375,000	2006 - 2007
Waller	A Terry UGA	Antipsychotics: Temporal Effects on Cognitive Function	NIH	$1,111,980	2003 - 2006

Grants under Review with Biostatistics Primary Faculty as PI/Co-I

Biostat Faculty	*PI/Department*	*Title*	*Total direct costs*	*Agency*
George Miller	V George Biostatistics	Biostatistics Core: PPG - Molecular Mechanisms of Bone Repair with Aging. *Overall PI: C Isales, Dept. of Medicine*	$11,422,855	NIH 2006-2011
George	W Hill Cell Bio & Anatomy	Effects on Mesenchymal Stem Cells and Bone Homeostasis in Aging.	$1,000,000	NIH 2007-2011
George Xu	H Xu Biostatistics	Association Study of Stroke Risk in an Admixed Population of African Americans	$250,000	NIH 2006-2008
Johnson	P Barbeau GPI/Pediatrics	Active Around Augusta	$2,228,566	NIH 2006-2011
Johnson	P Barbeau GPI/Pediatrics	The Junior Heritage: Physical Activity Project for Youths	$433,496	NIH 2007-2009
Johnson	S Fagan UGA	Neurovascular consequences of hypertension after stroke	$90, 413 (subcontract)	NIH 2007-2010
Johnson	P Prasad OB GYN	Study to Compare Circulating IL-1 Beta Levels in Serum before and after Delivery and correlate SERT Allele in Control and Women with Postpartum Depression	$638,939	HRSA 2007-2010
Johnson	P Wagner Family Medicine	Validation of an Instrument to assess Cultural Competency through Detection of Implicit Bias	$228,549	NIH 2006-2008
Looney	Suzanne Meeks Uni. of Louisville	A Behavioral Intervention for Depression in Nursing Homes	$375,000	NIMH 2006-2011
Looney Miller	M D'Amico Ocupational Therapy	Sensory Processing, Motor Praxis and Social Adaptation in Individuals with Autism Spectrum Disorders	$55,500	MCG 2006-2007
Waller Miller	J Buccafusco Pharmacology	Treatment Strategies Limiting Acute and Chronic Toxicity to Nerve Agent Exposure	$7,787,744	NIH 2006-2011
Waller	C Davis GPI/Pediatrics	Exercise and Overweight Children's Cognition and Sleep Disordered Breathing	$2,435,845	NIH 2007-2012
Waller Lou	D Hess Neurology	Minocycline to Improve Neurologic Outcome		NIH 2007-2010
Waller	J Mailhout Dentistry	Survival Rate of Dental Implants in Post-Menopausal Women	$517,662	NIH 2006-2008
Waller	K Ogbureke	SIBLING Family of Proteins in Oral Cancer Transition	$625,000	NIH 2007-2012
Waller	A Terry Pharmacology	Anti-psychotics, Temporal Effects on Cognitive Function		NIH 2007-2012

Grants applied for but not funded with Biostatistics Primary Faculty as PI/Co-I

Biostatistics Faculty	*PI/Department*	*Title*	*Agency*
Dias	V Robinson Cardiology	Determinants of Venous Conduit Remodeling in Healthy Adults	AHA
Dias Miller	V Robinson Cardiology	Provocative D-Dimer Testing in Patients with Thromboembolism: Improving Sensitivity and Specificity	MCG
Dias	S Shelton	PST-PC for MS Patients with Depression: Comparing In-Person vs. Telephone Modalities	NMSS
George	R Adams Neurology	Comprehensive Adult Sickle Cell Stroke Evaluation Study	NIH
George	A Kutlar Neurology	Research Career Development Program for Sickle Cell Disease	NIH
Johnson	P Barbeau GPI/Pediatrics	Take Charge! Multidisciplinary Treatment of Teen Obesity	NIH
Waller	M Bergeron Physical Therapy	Reducing thermal strain and heat injury risk in youth sports	NIH
Waller	W Hill	Mechanisms of G-CSF Protection Following Stroke: Brain or Bone?	NIH
Waller	J Mailhout Dentistry	Survival rate of dental implants in post-menopausal women	Osseointegration Foundation
Waller	O Mathew Pediatrics	Apnea, bradycardia and desaturation in pre-term infants	NIH
Waller	M Tingen GPI/Pediatrics	The Sun-Safe study	MCG

Biostatistics Consulting Center Projects

Biostatistics Faculty	*PI/Department*	*Title*
Dias	C Landolfo, H Thakore Internal Medicine	CHD and Osteoporosis – CHD Risk Assessment of Osteoporosis Interactions with risk-factors
Dias	A Khocht School of Dentistry	Periodontal Agreement Study
Dias	Larry Mellick Emergency Medicine	Cervical Injections for Headaches: Inter-rater Reliability Study
Dias	C Landolfo Internal Medicine	Obesity and MI Study
Dias	YKhalifa, J Nussbaum Ophthalmology	Current Surgical Competency Assessment Tools and a Possible Role for Virtual Reality Simulation
Dias	R Chong Physical Therapy	Study on motor activities
Dias	W Herman, A Thompson School of Dentistry	Gingival Overgrowth Study
Dias	J Reyes Respiratory Therapy	Tobacco-Use Prevention (TUP) Education:
Dias	V Prasad, V Robinson, J Shah Cardiology	PAWP and LVEDP Bland-Altman Analysis
Dias	P Sodomka Assist Dean of Clinical Affairs	Patient and Family Centered Care Survey
George Brantley, Lou	S Wragg, A Pridemore School of Medicine	Development of new Item Analysis component for School of Medicine test scoring program
George Lou	A Akinwuntan Physical Therapy	Pain reduction and functional improvement of patients receiving different treatment modifiers
George Lou	R Adams Neurology	Sickle Cell Database management
George Lou	R Adams Neurology	Iron Loading in Children with Sickle Cell Disease for Primary Stroke Prevention
George Lou	R Adams Neurology	Relationship among different variants and the PFH or sVCAM-1 values from STOP studies
George Lou	R Adams Neurology	HYRETRO ANALYSIS: Methods to determine comparison group of untreated STOP subjects
George Brantley, Lou	G Adrales Surgery	SAGES: Hernia Surgery Study Database - SAS/AF Application Development
George Brantley, Lou	D Munn Hematology/Oncology	IDO Assay study - SAS/AF Application Development
George Xu	P Shekhawat Pediatrics	Meta analysis of association between IBD5 locus and incidence of Crohn's Disease
Johnson	M Rivner Neurology	Double blind study on back pain (Myobloc vs placebo injections) using a repeated measures
Johnson	J Morgan Neurology	Parkinson's disease grant preparation

Biostatistics Faculty	*PI/Department*	*Title*
Johnson	M Marrufo, Y Park, M Cohen Neurology	Pyridoxine reduction of Levetiracetam induced abnormal Behavior Study (PLEBES)
Johnson	K Sachidanandam, A Ergul UGA Clinical Pharmacy	Power, sample size and design considerations for a pre-doctoral AHA grant application
Johnson Miller	S Rahimi Neurosurgery	Postoperative pain management following craniotomy with cox-2 inhibitors
Johnson Miller	W Browning Oral Rehabilitation	Inter- and intra- rater agreement: Comparing the Easyshade system to three practitioners
Johnson Miller	J Murphy, J Wilde Pediatric Emergency Medicine	Management of Influenza-like illness in young children
Johnson Miller	M Fritsche, M Terris Urology	Vasectomy and prostate cancer pathology for patients undergoing radical prostatectomy
Johnson Miller	Z Wang, A Foster Pathology, Psychiatry	Correlation between genotypes and phenotypes of drug metabolizing with a lab testing
Johnson Miller	D Munn, D Hou Immunotherapy Center	1-MT combined with chemotherapy drug for cancer therapy in mouse tumor model.
Johnson Miller	S Rahimi, M Lee Neurosurgery	Patient and Family Centered Care Study
Johnson Lou	S Eubanks J Wilde Pediatric Emergency Medicine	Appropriateness of Pediatric Inpatient Admissions
Johnson	W Browning Oral Rehabilitation	Comparative study of the Tooth Whitening Efficacy of Colgate White vs. Ultra Brite
Looney Lou	J Martell, C Hall Neurology	Measurement Accuracy and Decision Making for Intracerebral Hemorrhage (ICH)
Waller Lou	R Adams, D Hodo, S Goggans Neurology	Blue Cross and Blue Shield data mining project
Waller	D Bullock, PCoule Emergency Medicine	QuikClot
Waller	D Calhoun, P Coule Emergency Medicine	Touniquet study
Waller Miller	F Ruggeberg, C Arrais Oral Rehabilitation	Effect of curing mode on the polymerization characteristics of dual-cured resin cement system
Waller	N Wilson Pediatrics	Do children with ADHD have a decreased incidence of paternal involvement?
Waller	A Dorrance Physiology	Effects of obesity induced hypertension in the cerebral vasculature.
Waller	C Risgby Physiology	Differential effects of spironolactone between male and female SHRSP
Waller Miller	F Ruggeberg, Doug Dickinson Oral Rehabilitation	Biological effects of near UV radiation from dental light curing sources
Waller	T Swan, D Chreihofer Physiology	Do estrogen and/or soy improve recovery from stroke in rats?
Waller	D Dickinson, M Dasonch Oral Rehabilitation	Light sources and E. Coli project

Biostatistics Faculty	*PI/Department*	*Title*
Waller	G Reed Cardiology	Standard care versus standard care plus IV nesiritide among high-risk patients with acutely decompensated heart failure
Waller	E Howell Orthodontics	Dimensional changes of the initial phase of the Damon System
Waller	J Tucker Pediatrics	Determination of predictors of mortality in children with return of spontaneous circulation with CPR following cardiopulmonary arrest
Waller Lou	M Collins Dental Hygiene	Characteristics and workload of baccalaureate dental hygiene faculty through mail survey
Waller	K Nguyen Steve Goggans Internal Medicine	Differences in adherence to specific treatment guidelines for pneumonia between hospitalists and teaching physicians
Waller	A Owen and D Ferris Family Medicine	Mid-Adult women's knowledge, attitudes and beliefs about receiving the HPV vaccine
Waller Miller	D Smith School of Nursing	Participants knowledge of their medications and usage
Waller	J Morgan Neurology	Parkinson's disease drug study
Waller Lou	L Burkehead Otolaryngology	Projects dealing with swallowing functions
Waller Miller	J Carver Medicine	p-chart calculation
Waller	B Russell Medical Technology	POCT glucose meters and lab reliability
Waller	J Vender Neurology	Baclofen pump and Intercranial pressure projects
Waller	A Awonuga OB GYN	ROC curve for adequate pelvic size by foot size and height
Waller	E Boesen, D Pollock Physiology	Endothelin project
Waller	K McKie, C Hanevold Pediatrics	Microalbuminaria project
Waller	L McCurdy Pediatrics	Breast feeding survey
Waller	T Roemmich Pediatrics	Resident knowledge of immunization schedules
Xu Lou	J St. Louis Thoracic Surgery	Operative results and outcomes in children with Shone's anomaly: A retrospective review of the CMC experience
Xu Lou	J St. Louis Thoracic Surgery	Study to characterize the monocyte surface receptor, CD 163, in a population of young patients undergoing cardiopulmonary bypass.

Educational Activities

Graduate Programs in Biostatistics

The field of biostatistics is in an exciting phase. The demand for biostatisticians in biomedical research far outstrips the supply. Fewer training programs and fewer qualified applicants are available for statistics and biostatistics programs than ten years ago. In order to meet the growing demand for professional biostatisticians, a Masters program in Biostatistics is slated to start in the Fall of 2006. All necessary steps, including office space for our graduate students, to facilitate a smooth and efficient operation of the program are in place. The recruitment of students into the program was highly successful. Our original plan was to recruit 5 students into the program. However, we ended up in recruiting 8 full-time and 1 part-time students, of which 5 full-time students are supported by graduate assistantships. Seven students are residents of the State of Georgia, one from South Carolina, and one is international. The planning for a Masters Program in Clinical and Translational Science (MCTS) and a PhD program in Biostatistics are already underway, and we anticipate these programs will be in place by 2008.

Other Graduate and Undergraduate Teaching

The Department is actively involved in campus-wide graduate and undergraduate education at MCG. We offer a two-semester sequence, Biostatistics I & II (3 credit hours each), for students in various MS and PhD programs in Schools of Allied Health, Nursing and other disciplines. In the Summer semester we offer a 3 credit hour course, Biomedical Statistics, primarily directed to the Biomedical Science doctoral students. It was offered again in the Spring semester for the doctoral students in Nurse Practice. We offer an introductory Epidemiology course during every Fall and Spring, primarily for the MPH and Nursing students. Each Fall we also offer an undergraduate course, Statistics and Research Methodology (3 credit hours), for students in Health Informatics. Starting from Fall 2007, we will offer a course in introductory overview of Biostatistics and Epidemiology for the Clinical Nurse Leader (CNL) Masters Program. All of our Service courses are WebCT-based. In addition, we also run an on-line WebCT course, Research Design & Statistics, primarily for the dental residents.

Campus-wide Courses taught by Biostatistics Primary Faculty in 2005-06

Course #	*Course Title*	*Instructor*	*Term*	*Students*
STAT 7040	Biomedical Statistics	Dias	Summer 05	29 PhD
STAT 4010	Stat & Research Methodology .	Waller	Fall 05	9 students (Seniors)
STAT 7010	Biostatistics I	Dias	Fall 06	14 PhD, DNP & MPH
STAT 7050	Research Design and Statistics	Dias	Fall 05	27 Dental Residents
STAT 7020	Biostatistics II	Dias	Spring 06	6 PhD and MPH
STAT 7040	Biomedical Statistics	Dias	Spring 06	22 PhD, MD and MS
STAT 8130	Introduction to Epidemiology	Weinrich	Spring 06	9 PhD students
STAT 7010	Biostatistics I	Dias	Summer 06	26 DNP
STAT 7040	Biomedical Statistics	Dias	Summer 06	22 PhD

College-wide Student Mentoring

Our faculty members are actively involved in the College-wide training programs for fellows, residents, graduate students and professional students. We serve in the Masters and Doctoral committees upon request by the students, mentor fellows, residents, graduate students and professional students by providing biostatistical and computing support on their research projects. We also participate in the journal clubs of various departments on campus, as circumstances necessitate. Though these activities typically do not result in publications or other rewards, we strongly believe that it is our responsibility to facilitate the advanced medical, nursing, allied health and basic science training programs offered by the Medical College.

Thesis and Dissertation Committees Served				
Level	*Biostatistics Faculty*	*Candidate*	*Department/School*	*Date*
Masters	Dias	Josean Martinez, DMD	School of Dentistry	Ongoing
	Dias	Brian Matthews	School of Allied Health	5/ 2006
	Dias	Juan Reyes	School of Allied Health	12/ 2005
Ph.D.	Johnson	Vanessa Bundy	Biomed. Research Program	Ongoing
	Xu	Eleanor Fennell	School of Nursing	Ongoing

Service Activities

Service at the National Level

George

- Member of the "Kidney, Nutrition, Obesity and Diabetes Epidemiology" (KNOD) Study Section of the National Institute of Health, which meets in Washington, DC three times a year to review grant applications
- Faculty of the NIAMS-funded short course "Frontiers in Statistical Genetics", Atlanta, GA, March 6-7
- Faculty of the NIDDK-funded "Fifth Annual Short Course in Statistical Genetics", San Francisco, CA, March 30-31

Johnson

- Vice President of SouthEast SAS Users Group (SESUG)
- Registrar for the thirteenth annual SESUG conference – SESUG '05 in Portsmouth, VA
- Co-chair of the Statistics and Data Analysis Section at SUGI 31 in San Fransisco, CA

Looney

- Associate Editor for the Journal of Statistical Computation and Simulation

Waller

- Co-Chair of the Serendipity Section and Volunteer Coordinator for the SouthEast SAS Users Group Meeting in Portsmouth, VA, October 2005.
- Session Coordinator for the Statistics and Data Analysis Section for the SAS Users Group International Annual Meeting, San Francisco, CA, March 2006.
- Executive Council Member of the SouthEast SAS Users Group

College-wide Service

Dias

- Curriculum Advisory Committee, School of Graduate Studies, 2004 – present
- University System of Georgia, Academic Advisory Committee, Mathematics Subjects
- Academic Program Director, Department of Biostatistics
- Member of three faculty search committees in the departments of Health Informatics and Respiratory Therapy

George

- Search Committee for the Director of Cancer Center
- Research Training, Education and Career Development Working Group Leader
- Collaborative Statistician for the Department of Neurology
- Planning Committee for the Masters and Certification Programs in Clinical & Translational Science
- Graduate Program Committee, Department of Biostatistics
- Guest lecturer in Career Development 101, November 2005

Johnson

- Poster Judge for Graduate Research Day
- Medical Student rotation lottery randomization
- Monthly Pulmonary Journal Club meetings - Provide assistance interpreting medical literature for faculty and fellows

Waller

- Graduate Council Member
- Graduate Program Committee, Department of Biostatistics
- Department of Surgery Journal Club
- Poster Judge for Graduate Research Day
- Lecture to orthodontic residents regarding study design and the role of a statistician in research, October 2005

Lou

- Ongoing Statistical consulting support for the Department of Neurology

Miller

- Ongoing Statistical education support for the School of Nursing

Manuscript Reviews

Dias: Journal of the American Psychiatric Association

George: Bioinformatics
BMC Genetics

Johnson: Journal of Prosthetic Dentistry

Waller: Journal of Prosthetic Dentistry
Pharmacotherapy Self-Assessment Program, 5th Ed., Am. College Clinical Pharmacy

Xu: Journal of Genomics

Strategic Planning and Major Goals

Educational Environment

The long term educational goal of the Department is be to build a strong MS/PhD program that will be highly competitive, methodologically sound, and which will meet the modern skills and demands of a practicing biostatistician. Dr. Stephen Looney who assumed the role as the Director of Graduate Programs is spearheading a doctoral program in Biostatistics. A formal proposal will be submitted to the Board of Regents by the end of 2006 or early 2007. We anticipate starting the program in the Fall or 2008.

As part of the five-year strategic research mission, MCG is taking a major initiative for the expansion and transformation of its Clinical and Translational Research (CTR) under the leadership of Dr. Frank Treiber (Vice President for Research). Dr. Varghese George plays a major role in this initiative as the Leader of the Research Training, Education and Career Development Working Group. A major component of this initiative is to establish formal mechanisms for training young investigators for cutting edge CTR. Plans are already underway to develop a certificate program and a Masters program in CTR. Dr. Stephen Looney heads a campus-wide planning committee for the two programs. We expect to submit a formal proposal to the Board of Regents by the end of 2006 or early 2007. We anticipate that these programs will be in place within 1-2 years.

During the Fall semester of this year and in subsequent years our faculty members plan to visit relevant undergraduate departments at Colleges and Universities in Georgia and South Carolina, as part of our recruitment efforts.

The Department is in the process of establishing a 3/2 program with the Mathematics Department at the Augusta State University in which students majoring in Mathematics or closely related fields at the Augusta State University will complete the undergraduate course requirements in three years and will continue at MCG for an additional two years to complete a Masters in Biostatistics. This program is approved in principle by the administrations of both institutions. We expect to complete all the necessary requirements and obtain official approvals from both institutions by the end this academic year. We have received serious inquiries from the Mathematics departments at the Armstrong State University in Savannah and at the University of South Carolina in Aiken for establishing similar programs, which we fully intent to explore further.

The Department is fully committed to supporting existing and new academic programs across MCG. All our service courses will be offered this year, as before. In addition, starting this coming year, we will offer a new course every Fall, Introduction to Biostatistics and Epidemiology, primarily for the Clinical Nurse Leader Masters program.

Research Enterprise

The long term goal of the Department is to build a critical mass of faculty members with strong commitment in methodological and collaborative research. Active methodological research by faculty is not only important for the continued professional growth of the faculty, but is also an integral part of a good doctoral program.

As a biostatistician within a biomedical research institution, the most important role is to be a successful collaborative researcher. The biostatistics department should serve as the backbone of scientific research on campus, providing the leadership and support for all statistical needs. Biostatistics faculty should play a key role and serve as co-investigator in every grant application from MCG, submitted to NIH, NSF and other national funding agencies. The Biostatistics faculty members continue to work hard in developing strong partnerships with other departments and individual researchers on campus by meeting with them individually and in groups, attending and giving talks to journal clubs of various research groups, and helping them in their grant proposals. We expect to increase the extramural support within the Department to the level of a minimum of 50% funding for each faculty within the two 3 years, and use those funds to further expand the department. Dr. Varghese George will continue to serve as the collaborative statistician for the Department of Neurology, with additional funding support for Ms. Mimi Lou. Starting from the beginning of FY07, Dr. Stephen Looney serves in a similar role with the School of Dentistry. School of Nursing continues to support Ms. Kelly Miller for Biostatistics educational assistance. We hope to expand such collaborations with other departments and schools on campus.

The upcoming Cancer Center at MCG will open up excellent opportunities for the Biostatistics Department to expand and grow rapidly. We have commitment from the MCG administration that Biostatistics will be a strong partner in the Cancer Center research, providing all the statistical and data management support for the Cancer Center. As a start, Dr. Kapil Bhalla, the new Director of Cancer Center, has already made a commitment to provide one FTE support of Biostatistics faculty for collaborative research with the Cancer Center scientists, immediately. As the Cancer Center grows, we expect to be an integral part of it, serving as its Biostatistics Core.

One of the areas where MCG lacks expertise at present is Epidemiology. All of the Deans, the Cancer Center Director, the Vice President for Research, the Provost, and the President clearly recognize this deficiency and have made firm commitment to provide funding for establishing an Epidemiology Division within the Biostatistics Department. A proposal to that effect has been submitted to the Provost for formal consideration. We fully expect to start recruitment of Epidemiology faculty during FY07.

We will continue the Visiting Faculty Program by bringing in scholars with national and international reputation, to facilitate methodological and collaborative research of our faculty and students.

Faculty Recruitment

With our educational and research goals in mind, the Department is already started the recruitment of at least 2 more faculty members in Biostatistics to complement the existing

strengths of the Department. In addition, with the support of the administration, we hope to establish a Division of Epidemiology with at least 3 faculty members, within the next two years. The newly recruited faculty members will have strong commitment for methodological and collaborative research.

Diversity

The Department is committed to promote diversity of ethnic background, gender and other characteristics. Of the nine full-time personnel in the Department at present, we have 5 women, one African-American, 3 Asians and one of Hispanic origin. We will make every effort to continue fair representation from all groups in our recruitment efforts for faculty, staff and students.

Institutional Communications

The Department will continue to support all existing and new academic programs across MCG, and will continue to mentor students, residents and fellows by assisting them in their projects for statistical and computational needs, serving in their thesis/dissertation committees, and offering short courses and seminars to meet their needs. We will make every effort to build research partnerships and promote strong interdisciplinary research programs by providing collaborative support to investigators across campus. We will continue to work closely with the IT Department of MCG to optimize our computing and IT needs.

Office Space

As the department has grown substantially over the last year, we are faced with the major problem of lack of office space for our personnel. At present we have exhausted all available space allocated to the Department. We are still going through major expansion in terms of faculty, staff and student graduate assistants. Any further addition must come with additional adequate office space. We sincerely hope that space limitations will not stand in the way of growth of the department which is critical for building a nationally competitive research community at MCG.

Major Goals of FY06

Our long term goal is to build a full-fledged department of national reputation, with strengths and competency in graduate teaching, collaborative research and methodological research. Working towards this goal, we plan to accomplish the following during the next year:

- Recruit at least two highly qualified Biostatistics faculty members who are committed to strong methodological and collaborative research, and graduate teaching and mentoring.

- Contingent on funding approval, recruit a leader, at least one other faculty and a staff for the Epidemiology Division.

- Recruit at least 5 graduate students with strong quantitative background and exposure to biomedical science for the next batch of our MS program.

- Start a regular seminar series and a journal club series. Each faculty will be required to present at least one seminar on his/her research and at least one journal club presentation of a relevant and timely article during each year.

- Increase the extramural funding support at a reasonable pace with the goal of a minimum of 50% support for each faculty within the next two years.

- Increase the visibility of the Biostatistics Consulting Center across campus and increase the consulting activities. We have just created a brochure for the Center, and will distribute it among the departments, faculty members, residents and fellows with in campus, and among industries and government agencies across the State and the Nation.

- Continue the support service for students, residents and fellows, and other teaching programs by mentoring, presenting seminars, participating in journal clubs and offering formal courses. We have already made arrangement with the School of Medicine for one of our faculty to teach biostatistics to the first-year medical students. Dr. Jim Dais will be the instructor for Fall 2006.

- Continue the professional growth of faculty by participating in national conferences and continuing education activities, presenting the research in meetings and seminars, and publishing methodological and collaborative research results in peer reviewed journals.

Conclusion

The Department is at its infancy, and it will take considerable efforts from the administration, faculty and staff to build it into a full-fledged department with national and international stature. With the new leadership, the strong support from the administration and the firm commitments form our faculty and staff, we are very confident to achieve our goals in the not-too-far future. The various research initiatives across MCG such as the Cancer Center, Center for Biotechnology and Genomic Medicine, Clinical and Translational Research Transition, and the Georgia Prevention Institute open up the door for Biostatistics to expand and grow into a strong resource for research methodology and a major component of collaborative, interdisciplinary and translational research on Campus. With the inception of the MS program, the planned Doctoral program in Biostatistics, and the Certification and Masters Program in CTR, and continued teaching and mentoring of students in other programs, Biostatistics will also be an integral part of the graduate training programs at MCG. The state of the Department is quite healthy and the future looks very bright and promising.