Pediatric Allergy & Immunology

April 16, 2010

A. Wesley Burks

Division Chief

Duke Children's HOSPITAL & HEALTH CENTER

Pediatric Allergy & Immunology

- **Mission - To serve as world class leaders and teachers in advancing the science of Allergy and Immunology through both basic and clinical research. To pursue breakthrough cures and innovative treatments, thereby achieving excellence in patient care.**
- **Who are we?**
- **What do we do?**
- **Where are we going?**

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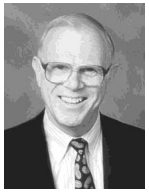
Peds Allergy & Immunology: Who are we?

Rebecca Buckley, MD
Primary immunodeficiency



Michael Frank, MD
Complement, innate immunity

Louise Markert, MD, PhD
Thymus transplantation

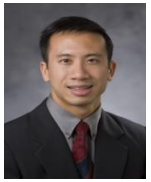
Joe Roberts, MD, PhD
Primary immunodeficiency

Blythe Devlin, PhD
Primary immunodeficiency

Xiaoping Zhong, MD, PhD
Cell signaling

Brian Vickery, MD
Food allergy, AD, anaphylaxis

Michael Land, MD
Clinical allergic disease – children/adults



Ivan Chinn, MD
Primary immune disorders

Wesley Burks, MD
Food allergy, immunotherapy

Pediatric Allergy & Immunology

- **Clinical care**
  - Inpatient service – transplants
  - Consults
  - 2 nurse practitioners - CHC

- **Outpatient specialty**
  - Clinics at 4 sites
    - asthma, allergic rhinitis, atopic dermatitis, food allergy, urticaria / anaphylaxis, recurrent infections, congenital immunodeficiencies, food challenges, insect sting allergy

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Peds Allergy & Immunology Weekly Clinics

CHC – Child Health Center
3AC – Asthma, Allergy, Airway Center
RAL – Raleigh
BURL – monthly

Mondays	CHC		RAL	
Tuesdays	CHC		RAL	BURL monthly
Wednesdays	CHC	3AC	RAL	
Thursdays	CHC	3AC	RAL	
Fridays	CHC			

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Pediatric Allergy & Immunology

- **Education – to train the next generation of pediatric AI for an academic career**
  - **AI training program- 3 year program, 1st year – clinical, 2nd and 3rd year - research**
    - **Hoffman* – Abraham – Pathology**
    - **Adeli – Buckley**
    - **Varshney** – Burks**
    - **Thyagarajan** – Burks**
    - **Firszt – Kraft – adult pulmonary**
    - **Kim** – Benjamin, Burks**
    - **McWilliams* – Kelso – Immunology**
    - **Wu – Frank (Combined Rheum/AI fellow)**
    - **Chin, Boden – Burks**

***PDSP grant**

****AI T-32**

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Pediatric Allergy & Immunology

- **Education**
  - **AI training program- 3 year program**
    - 10 fellows
    - Adult IM colleagues
      - Sundy, Lugar, Metz
  - **Weekly conferences**
    - **Monday –** AI Board Review
    - **Tuesday –** Immunology conference
    - **Wednesday –** Didactic lecture, journal club, research conference
    - **Friday –** weekly clinical review, topical journal review
  - **Mentorship Committees**
    - N = 3, Jr/Sr faculty, PAI & others
    - Meet - 2 x/yr

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Primary Areas of Research

- Primary immune deficiency – SCID and stem cell transplants (non-conditioned)
- Thymus transplantation – DiGeorge Syndrome
- Complement and host defense
- Cell signaling / IgE, immunotherapy and food allergy

Total grant dollars

2008	**2009**
$4,633,067	$5,045,390

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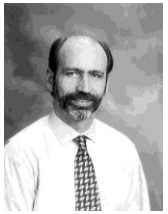
Primary Areas of Research



Laboratory personnel-3

- Primary immune deficiency – SCID and stem cell transplants (non-conditioned)
  - Almost 30 years of BMT
  - Identification of new causes of SCID
    - Genotyping
  - Newborn screening nationally

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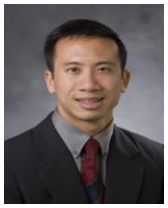
Primary Areas of Research





Postdoc-1
Research Coordinator-1
Nurses-1
Grad student-1
Lab personnel-3

- Thymus transplantation – DiGeorge Syndrome
  - Continuing transplants: thymus and parathyroid
  - Central / peripheral immune tolerance mechanisms
  - Biologic Licensing Application to FDA
- Blythe Devlin, Ph.D.
  - Grant review for Department
    - Scientific critique
    - Strategy to meet new NIH guidelines
    - Editing for clarity of ideas

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Primary Areas of Research

Lab personnel-1

- Hereditary angioedema (HAE) therapy
  - Recent release of new drugs for treatment, NEJM
- Role of complement in HIV infection
- Classical complement pathway on controlling the interaction of complement with IgG Fc receptors (extent of the autoimmune response)

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Primary Areas of Research



Postdoc-6
Research Coordinator/Nurses-4
Grad student-2
Lab personnel-5
Visiting scholars-2
Undergraduate students-3

- Cell signaling – T cells, mast cells
  - DGK - signaling
  - Autoimmune hepatitis model
  - Food allergy model
- Food allergy mechanism and treatment
  - Animal studies on mechanism of IT
  - Different routes of IT treatment – 100 subjects
  - CoFAR – 4 studies – 150 subjects

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Pediatric Allergy & Immunology Where are we going?

- **Clinical**
  - **expansion of clinical services**
- **Education**
  - **Recruiting highly qualified, research oriented fellows**
- **Research**
  - **Cutting edge research**
  - **Thought leaders in respective fields**

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