

# **Emergency Medicine**



First Row: M. Gittelman, S. Reeves, W. Pomerantz, R. Bond. Second Row: M. Mahabee-Gittens, J. Reed, C. McAneney, C. Schubert, J. Grupp-Phelan, L. Vaughn. Third Row: S. Iyer, E. Duma, J. Luria, J. Gonzalez, B. Kerrey. Fourth Row: R. Ruddy, M. Mallory, B. Shapiro, R. Strait, N. Timm.

# **Division Data Summary**

## **Research and Training Details**

Number of Faculty	28
Number of Joint Appointment Faculty	1
Number of Research Fellows	3
Number of Support Personnel	33
Direct Annual Grant Support	\$679,729
Peer Reviewed Publications	27

# **Clinical Activities and Training**

Number of Clinical Staff	30
Number of Clinical Fellows	6
Outpatient Encounters	125181

# **Faculty Members**

Richard M. Ruddy, MD, Professor Clinical; Division Director

Research Interests: Pediatric Emergency Care and Research Network; Asthma quality research

Sheryl Allen-Bracey, MD, MEpi, Adjunct Assistant Professor

Berkeley L. Bennett, MD, MS, Adjunct Assistant Professor

G. Randall Bond, MD, Professor Clinical; Medical Director, Clinical Toxicology Service and the Drug and Poison

Information Center

Research Interests: Victims of acute poisonings

Patricia Chambers, MD, Adjunct Assistant Professor

Elena Duma, MD, Assistant Professor Clinical; Clinical Staff Coordinator

Research Interests: Pediatric emergency medicine; child abuse

Michael Fitzgerald, PhD, Field Service Assistant Professor

Research Interests: Feedback in medical education; assessment and evaluation of medical learners

Gary L. Geis, MD, Assistant Professor Clinical; Assistant Director, Simulation Center

Michael Gittelman, MD, Associate Professor Clinical; Co-director, Injury Free Coalition for Kids; Co-director, Safety Store Research Interests: Injury control; behavior change counseling; community prevention

**Todd Glass, MD, MS,** Associate Professor Clinical; *Medical Director, Liberty Campus Emergency Department* **Research Interests:** Pediatric trauma; Traumatic brain injury

**Javier Gonzalez del Rey, MD, MEd,** Professor Clinical; Associate Director, Division of Emergency Medicine; Director, Pediatric Residency Training Program

Research Interests: Medical education and training

**Jacqueline Grupp-Phelan, MD, MPH,** Associate Professor Clinical; Associate Director, Division of Emergency Medicine; Director of Research

Research Interests: Health services research, cost-effectiveness, clinical effectiveness and utilization

Srikant Iyer, MD, MPH, Assistant Professor Clinical

Laurie H. Johnson, MD, Assistant Professor Clinical

Research Interests: Asthma

Stephanie Kennebeck, MD, Assistant Professor Clinical; EPIC IT Leadership

Research Interests: Quality benchmark research

**Joseph Luria**, **MD**, Professor Clinical; Associate Director, Division of Emergency Medicine; Medical Director, Emergency Department

Research Interests: Improvement related to ED quality; patient safety and efficiency and flow

Melinda Mahabee-Gittens, MD, MS, Associate Professor Clinical

Research Interests: Improving parent/adolescent communication about tobacco; tobacco related education

Mia L. Mallory, MD, Assistant Professor Clinical; Associate Director, Pediatric Residency Training Program Research Interests: Resident education

**Constance McAneney, MD, MS,** Associate Professor; Associate Director, Division of Emergency Medicine; Director, Pediatric Emergency Medicine Fellowship Program; Director, Medical Student Education

Research Interests: Medical student education

Mary Patterson, MD, Associate Professor Clinical; *Medical Director, EMSC Center for Education and Simulation*Research Interests: Pediatric trauma management, resuscitation and prehospital care of the pediatric patient

Wendy Pomerantz, MD, MS, Associate Professor Clinical; Co-director, Injury Free Coalition for Kids; Co-director, Safety Resource Center

Research Interests: Injury and poison prevention; epidemiology; geographic information systems; playground related injuries; ATV and motorbike-related injuries

Jennifer Reed, MD, Assistant Professor Clinical

Research Interests: STI testing and notification for adolescents

Scott Reeves, MD, Assistant Professor Clinical; Coordinator, Emergency Department Resident Education Research Interests: Pediatric Emergency Care and Research Network

Charles J. Schubert, MD, Associate Professor Clinical

Research Interests: Service of underserved; child and sexual abuse

**Hamilton P. Schwartz, MD**, Assistant Professor Clinical; *Medical Director, Transport Team; Medical Director, Statline; Pediatric Director, Assistant Medical Director, Cincinnati Fire Department* 

Robert Allan Shapiro, MD, Professor Clinical; *Medical Director, Mayerson Center for Safe and Healthy Children*Research Interests: Sexually transmitted disease; fractures caused by abuse.

Richard Strait, MD, Assistant Professor Clinical

**Research Interests:** Early immunologic response to infectious disease; immunologic response to anaphylaxis; procedural sedation

Nathan Timm, MD, Assistant Professor Clinical; Emergency Preparedness Officer, CCHMC Research Interests: Hospital emergency management

# **Joint Appointment Faculty Members**

Lisa Vaughn, PhD, Field Service Associate Professor

General and Community Pediatrics

Cross-cultural psychology issues especially with latinos, women and children; dyadic relationships (i.e. parent-child, teacher-learner, etc); international global studies; social psychology related

# **Clinical Staff Members**

- Kirsten Ahrens, MD
- Arash Babaoff, MD
- Kate Balkoweic, MD
- Maggie Chan, MD
- Michael Chua, MD
- o Jenny Lynn DeBruer, MD
- Kristen DeMarco, MD
- · Emily Eagen, MD
- o Michelle Eckerle, MD
- Kerry Gorman, MD
- Katie Kerrey, MD
- Pamela Kingma, MD, PhD
- Dawn Manfroy, MD
- Joanna Nacopoulos, MD
- Margaret Orcutt-Tuddenham, DO
- Janice Roeder, MD
- o Rima Rusnak, MD
- Kristin Stackpole, MD
- Michelle Steffen, MD
- Karen Szczepanski, MD
- Elizabeth Templin, MD
- Evan Yeung, MD
- o Brown Angela, PNP
- o Detchon Karin, PNP
- Ekstrand Rachael, PNP
- Ford Karen, PNP
- Schrand Michelle, PNP
- o Widecan Michelle, PNP

## **Trainees**

- o Matthew Mittiga, MD, PL-VII, Children's Hospital of Pittsburgh
- Benjamin Kerrey, MD, PL-VI, Cincinnati Children's Hospital Medical Center
- Stephanie Spanos, MD, PL-VI, Kosair Children's Hospital, Louisville, KY
- · Holly Brodzinski, MD, PL-V, Children's Hospital of Philadelphia
- o Andrea Rinderknecht, MD, PL-V, Cincinnati Children's Hospital Medical Center
- Jennifer Setlik, MD, PL-V, Washington University, St. Louis, Missouri
- o Carolyn Holland, MD, MEd, PL-V, University Hospital, University of Cincinnati College of Medicine, Cincinnati, Ohio
- o Cinnamon Dixon, DO, PL-IV, Kirksville College of Osteopathic Medicine, Bolder, CO
- o Carla Pruden, MD, MPH, PL-IV, Children's Hospital at Montefiore, New York

# Significant Accomplishments in FY08

#### **Research Director Named**

Jacqueline Grupp-Phelan, MD, MPH, was appointed the Research Director of the Division of Emergency Medicine in early 2008. The reserch program has demonstrated increased productivity in publications, national presentations and funding. The research focus teams include Prevention/Health Services, Clinical/Translational, Quality and Education.

#### Simulation and Research Center

Training at the Simulation and Research Center has focused on preparing multispecialty teams to function efficiently in a complex health care environment. They "practice" unusual situations and events so that clinicians are prepared to perform at their best and achieve the best outcomes in difficult situations. Mary Patterson, MD, MEd, and Gary Geis, MD, and a team of specialists have led these efforts.

# **Key Areas of Research**

Several key areas of develpment include work by Dr. Melinda Mahabee-Gittens where she is studying the implementation of ED Based Tobacco Prevention and Cessation projects. This program, funded by a K23 from NCI is in the final phases of a longitudinal trial to determine the effectiveness of an intervention to change an adolescent's smoking knowledge and behavior. Dr. Grupp-Phelan is expanding her program of mental health screening into engagement interventions and is finishing her K23 support through NIMH. She currently is funded through Columbia University to trial a case management approach to improve the likelihood of engagement into mental health services. Both of these prevention efforts are unique in pediatric emergency medicine and of high priority to the health of our childfen in the future.

# Significant Publications in FY08

Corneli H, Zorc J, Majahan P, Shaw K, Holubkov R, Reeves S, Ruddy R: A multicenter randomized, controlled trial of dexamethasone for bronchiolitis. 2007; NEJM, 357:331-339

Federally funded multicenter ED RCT evaluating use of corticosteroids for infants with bronchiolitis which demonstrated no improvement in outcome or short term morbidities.

Gittelman MA, Pomerantz WJ, McNealy T: Reducing injury rates using a community based approach. 2007; J of Trauma, 63(3):S44-49

Community-based interventions offer one approach to reducing injuries; the number one cause of morbidity and mortality to persons aged 1-44 years in the United States. The Injury Free Coalition for Kids of Greater Cincinnati began its injury-reducing efforts within one Intervention Community in 2000. After reviewing injury data, engaging community members, and holding focus groups to assess community needs, specific structural and social alterations were made to engage youth in safe, supervised activities and provide them with safe play places. During the 5 year study period, the injury rate decreased significantly in the intervention community (42%) compared to the mean rate among three control sites (25.7%). Community-based interventions can reduce injuries to youth within high-risk regions of Cincinnati.

Grupp-Phelan J, Delgado S: A randomized control trial of a facilitated mental health referral for children presenting to the pediatric emergency department. 2007; BMC Emergency Medicine 7:12

This was a a randomized control trial looking at the success of a simple referral versus a facilitated referral for children with unrecognzied mental health problems to get into mental health services. The study identified the challenges of getting families back into services and identified strategies for further approaches to improving engagement in mental health services for families presenting to the Emergency Department with unrecognized mental health problems.

Timm N, Grupp-Phelan J, Kroner J: The impact of school closings on hospital staff absenteeism: A case study. 2007; J of Emergency Management, 5(6):70-72

In the event of a community-wide disaster or infectious disease outbreak, primary and secondary schools would be closed. Little is known of the impact this would have on hospital staff absenteeism due to lack of child care. Our study showed that short term school closings during snow emergencies did not result in significant rates of nursing absenteeism due to lack of child care.

Mahabee-Gittens EM, Gordon JS, Huang B, Slap GB: An emergency department intrvention to increase parent-child communication: A pilot study. 2007; Journal of Child and Adolescent Substance Abuse, 7(2):71-83

This project evaluated the feasibility and short term effects of a brief, ED-based parental intervention to increae

parent-child tobacco comunication. At one month follow-up, children whose parents had received the intervention were more likely to report that they would definitely not smoke in the next 6 months, and that there were increases in the number of child-initiated tobacco conversations, times parents talked to them about how to say no to smoking, and times parents talked to them about why they should not smoke.

Stevenson M, Heaton P, Moomaw C, Bean J, Ruddy R: Inhaled corticosteroid use in asthmatic children receiving Ohio Medicaid: Trend analysis 1997-2001. 2008; Annals Allergy Asthma Immunol, 100(6): 538-544

Describes improved adherence to contoller medication (inhaled corticosteroids) prescription filling in high risk underserved children with asthma corroborating improved translation of asthma guideline to community.

# **Division Highlights**

**Pediatric Emergency Care Applied Research Network** 

The other area of exciting clinical research has been the continued expansion of the projects and funding of the Pediatric Emergency Care Applied Research Network (PECARN). Twenty-five Emergency Departments with over 900,000 visits per annum, of which CCHMC is the largest contributor of patients in most of the studies are members of this network. Under the site leadership of Dr. Richard Ruddy and Regina Taylor, CRC IV, some of the funded projects include reducing unnecessary radiation in treating abdominal and head trauma; use of corticosteroids in bronchiolitis; understanding the pediatric C-spine injury population; managing hypothermia in cardiac resuscitation; and biosignatures of infection in febrile 0-2 month olds.

# **Division Collaboration**

**Collaboration with Adolescent Medicine** 

Collaborating Faculty: Mike FitzGerald; Corinne Lehmann

Development and implementation of an instrument for assessing feedback regularity and quality in the clinical setting.

**Collaboration with Adolescent Medicine** 

Collaborating Faculty: Jennifer Reed; Jill Huppert

Adolescent diagnostic testing in sexually trasmitted diseases

Collaboration with Adolescent Medicine; Psychology

Collaborating Faculty: Melinda Mahabee-Gittens; Lorah Dorn; Robert Ammerman

Adolescent smoking prevention

Collaboration with Center for Health Care Quality Research and Education

Collaborating Faculty: Srikant Iver; Peter Margolis

Design of a multi-component intervention to improve acute pain management in the ED

Collaboration with Center for Health Care Quality

Collaborating Faculty: Srikant Iver: Carole Lannon

Improvement advisor for the Joint Commission on Congenital Heart Disease Improvement Collaborative

Collaboration with Allergy and Immunology

Collaborating Faculty: Rick Strait; Fred Finkleman

Immunology of anaphylaxis and of transfusion related acute lung injury.

Collaboration with Allergy and Immunology

Collaborating Faculty: Laurie Johnson; Michelle Lierle

Nebulized magnesium in acute asthma, inter-rater reliability of asthma score and provider impression of clinical severity of exacerbation.

Collaboration with Allergy and Immunology

Collaborating Faculty: Laurie Johnson; Gurgit Khurana Hershey

Gene expression profiles of acute asthma: Subphenotypes of treatment response.

Collaboration with Pediatric Surgery/Trauma

Collaborating Faculty: Berkeley Bennett; Richard Falcone

Racial bias in evaluation of children for non-accidental trauma

Collaboration with Mayerson Center for Safe and Healthy Children

Collaborating Faculty: Berkeley Bennett; Robert Shapiro; Kathi Makaroff

Utility of follow-up skeletal surveys in suspected victims of physical abuse.

**Collaboration with General and Community Pediatrics** 

Collaborating Faculty: Chuck Schubert; Andrew Beck; Melissa Klien; Rob Klein

Retrospective chart review on vaccines; social history and immunization

Collaboration with Pediatric Surgery/Trauma

Collaborating Faculty: Mary Patterson; Richard Falcone; M. Daugherty; Lynn Schweer; Vic Garcia

Multidisciplinary pediatric trauma team training utilizing high fidelity trauma simulation

Collaboration with Pediatric Surgery/Trauma; Center for Health Policy and Clinical Effectiveness

Collaborating Faculty: Mike Gittelman; Wendy Pomerantz; Richard Falcone; Lisa Simpson

Develop a center with coordination of research and outreach efforts to prevent injuries

**Collaboration with Trauma Services** 

Collaborating Faculty: Mike Gittelman; Wendy Pomerantz; Talicia McNealy; Deatra Greene

Injury Free Coalition for Kids of Cincinnati (Emergency Medicine) and Safekids Coalition (Trauma) working together on multiple community outreadh programs, including Walk Child to School.

**Collaboration with Trauma Services** 

Collaborating Faculty: Mike Gittelman; Wendy Pomerantz; Talicia McNealy; Becky Brown; Susan Laurence; Linda White

Collaboration on initial design and maintenance of Safety Resource Store

**Collaboration with Every Child Succeeds** 

Collaborating Faculty: Mike Gittelman; Wendy Pomerantz; Talicia McNealy; Anita Brently

Home safety intervention for youth in Avondale less than 5 years of age.

Collaboration with Endocrinology; Community and General Pediatrics

Collaborating Faculty: Mike Gittelman; Wendy Pomerantz; David Klein; Chris Bolling; Mona Ho; Amy Bernard

Screen and provide a program to reduce the obesity problem among youth in Avondale, providing afterschool curriculum.

Collaboration with Allergy and Immunology

Collaborating Faculty: Rick Strait: Simon Hogan: Marc Rothenberg

Food anaphylaxis

Collaboration with Allergy and Immunology

Collaborating Faculty: Rick Strait: Joerg Koehl

TRALI and complement activation involving FcRs

Collaboration with Personalized and Predictive Medicine

**Collaborating Faculty: Rick Strait; Neeru Hershey** 

Genetics and acute asthma exacerbation

**Collaboration with Infectious Disease** 

Collaborating Faculty: Rick Strait; Ramu Subbramanian; Rebecca Brady

T-cell response in naive influenza infection in infants

**Collaboration with General and Community Pediatrics** 

Collaborating Faculty: Lisa Vaughn; Ray Baker

Cultural dimensions of medical education

**Collaboration with Education and Training** 

Collaborating Faculty: Lisa Vaughn; Rebecca Phillips

Intercultural adjustment

**Collaboration with Education and Training** 

Collaborating Faculty: Lisa Vaughn; Dab McLinden

Cultural health attributions questionnaire

**Collaboration with Education and Training** 

Collaborating Faculty: Lisa Vaughn; Janet Forbes

Resilience and cultural issues

## **Division Publications**

- 1. Bond GR, Pieche S, Sonicki Z, Gamaluddin H, El Guindi M, Sakr M, El Seddawy A, Abouzaid M, Youssef A. <u>A clinical decision rule for triage of children under 5 years of age with hydrocarbon (kerosene) aspiration in developing countries</u>. *Clin Toxicol (Phila)*. 2008; 46: 222-9.
- 2. Chambers P. <u>"Paraphimosis reduction."</u> In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures.* Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 904-907.
- 3. Nadel F, Geis G. "Teaching procedures in the emergency department." In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 69-74.
- 4. Gittelman MA, Pomerantz WJ, McNealy T. Reducing injury rates using a community-based approach. *J Trauma*. 2007; 63: S44-9.
- 5. Gonzalez del Rey JA. <u>"End-tidal carbon dioxide monitoring."</u> In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 755-762.
- Baren JM, Mace SE, Hendry PL, Dietrich AM, Grupp-Phelan J, Mullin J. <u>Children's mental health emergencies-part</u>
   <u>1: challenges in care: definition of the problem, barriers to care, screening, advocacy, and resources</u>. *Pediatr Emerg Care.* 2008; 24: 399-408.
- 7. Grupp-Phelan J, Delgado SV, Kelleher KJ. Failure of psychiatric referrals from the pediatric emergency department. BMC Emerg Med. 2007; 7: 12.
- 8. Hariharan S, Pomerantz W. <u>Correlation between hospitalization for pharmaceutical ingestion and attention deficit disorder in children aged 5 to 9 years old</u>. *Clin Pediatr (Phila)*. 2008; 47: 15-20.
- 9. Iyer S. <u>"The electrocardiogram in infants and children."</u> In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 693-703.
- 10. Kerrey B, Reed J. A neonate with respiratory distress and a chest wall deformity. Pediatr Emerg Care. 2007; 23: 565-9.
- 11. Luria JW. "Introduction to conventional mechanical ventilation." In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 807-815.
- 12. Mahabee-Gittens EM, Gordon J. <u>Acceptability of tobacco cessation interventions in the pediatric emergency department</u>. *Pediatr Emerg Care*. 2008; 24: 214-6.
- 13. Mahabee-Gittens EM, Huang B, Slap GB, Gordon JS. **An emergency department intervention to increase parent-child tobacco communication: a pilot study.** *J Child Adolesc Subst Abuse.* 2007; 17: 71-83.
- 14. McAneney CM. "Basic life support." In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 79-92.
- 15. Huppert JS, Mortensen JE, Reed JL, Kahn JA, Rich KD, Miller WC, Hobbs MM. Rapid antigen testing compares favorably with transcription-mediated amplification assay for the detection of Trichomonas vaginalis in young women. Clin Infect Dis. 2007; 45: 194-8.
- 16. Reed JL, R R. "Informed consent." In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 62-68.
- 17. Reed JL, Thistlethwaite JM, Huppert JS. <u>STI research: recruiting an unbiased sample</u>. *J Adolesc Health.* 2007; 41: 14-8.
- 18. Corneli HM, Zorc JJ, Majahan P, Shaw KN, Holubkov R, Reeves SD, Ruddy RM, Malik B, Nelson KA, Bregstein JS, Brown KM, Denenberg MN, Lillis KA, Cimpello LB, Tsung JW, Borgialli DA, Baskin MN, Teshome G, Goldstein MA, Monroe D, Dean JM, Kuppermann N. <u>A multicenter, randomized, controlled trial of dexamethasone for bronchiolitis</u>. *N Engl J Med.* 2007; 357: 331-9.
- 19. Reeves S. <u>"Pericardiocentesis."</u> In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures.* Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 709-714.
- 20. Stevenson MD, Heaton PC, Moomaw CJ, Bean JA, Ruddy RM. <u>Inhaled corticosteroid use in asthmatic children receiving Ohio Medicaid: trend analysis, 1997-2001</u>. *Ann Allergy Asthma Immunol.* 2008; 100: 538-44.
- 21. Shapiro RA, Schubert CJ. <u>"Forensic examination of the sexual assault victim."</u> In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures.* Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 882-887.

- 22. Forbes EE, Groschwitz K, Abonia JP, Brandt EB, Cohen E, Blanchard C, Ahrens R, Seidu L, McKenzie A, Strait R, Finkelman FD, Foster PS, Matthaei KI, Rothenberg ME, Hogan SP. <u>IL-9- and mast cell-mediated intestinal permeability predisposes to oral antigen hypersensitivity</u>. *J Exp Med*. 2008; 205: 897-913.
- 23. Fox L, Timm N. <u>Pediatric issues in disaster preparedness: meeting the educational needs of nurses-are we there yet?</u>. *J Pediatr Nurs.* 2008; 23: 145-52.
- 24. Timm N, Grupp-Phelan J, Kroner JM. Impact of school closings on hospital staff absenteeism: a case study.. *J Emer Manag.* 2007; 5: 70-72.
- 25. Timm N, lyer S. Embedded earrings in children. Pediatr Emerg Care. 2008; 24: 31-3.
- 26. Timm N, Kennebeck S. <u>Impact of disaster drills on patient flow in a pediatric emergency department</u>. *Acad Emerg Med.* 2008; 15: 544-8.
- 27. Whitaker WT, Pomerantz WJ. "Ocular foreign body removal." In: C King, FM Henretig, eds. *Textbook of pediatric emergency procedures*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008: 550-554.

# **Grants, Contracts, and Industry Agreements**

Strait, R

Grant and Contract Awards		Annual Direct / Project Period Direct
Gittelman, M		
DOAPP Transition Funding		
Robert Wood Johnson Foundation		
63357	11/01/07 - 05/31/09	\$53,056 / \$53,056
Glass, T.		
Decision Rule for Identifying Intra-A	bdominal Injuries	
Centers for Disease Control and Preven	ntion (University of California-D	Davis)
R49 CE 001002	09/01/06 - 08/31/09	\$11,757 / \$31,390
Johnson, L		
Molecular Epidemiology in Children's National Institutes of Health (University		
T32 ES 010957	04/01/08 - 03/31/09	\$51,036 / \$51,036
Mahabee-Gittens, M		
Web-Based Respiratory Education a National Institutes of Health (Intervision		
R41 HL 083540	09/30/06 - 03/31/09	\$2,973 / \$21,191
Improving Parent/Adolescent Commo	unication about Tobacco	
K23 CA 117864	07/01/06 - 06/30/11	\$123,000 / \$639,768
Patterson, M		
In Situ Teamwork Training	N PL .	
Agency for Healthcare Research and C		\$400.07F
U18 HS 016615	09/30/06 - 09/29/08	\$199,675 / \$413,689
Ruddy, R		
<b>EMSC Network Development Demon</b>		
Health Resources and Services Admini	, -	•
U03 MC 000001	10/01/05 - 08/31/08	\$69,973 / \$181,031
Schubert, C.		
Academic Administrative Units In Pr Health Resources and Services Admini		+:)
D54 HP 00168	09/01/05 - 08/31/08	\$26,304 / \$73,443
		Ψ20,0047 Ψ10,440
CDC Immunization Action Plan Projetonio Department of Health (City of Cine		
P00 25X9098	01/01/00 - 12/31/08	\$85,414 / \$664,574
1 30 23/3000	01/01/00 - 12/01/00	ΨΟΟ,ΤΙΤ / ΨΟΟΨ,Ο/Ψ

# **IgG Isotype Regulation of Antibody-Mediated Disorders** National Institutes of Health (University of Cincinnati)

R01 AI 072040

08/15/07 - 07/31/12 \$56,541 / \$306,244

**Current Year Direct** 

\$679,729

**Total** \$679,729