

## BIOGRAPHICAL SKETCH

NAME Dorothy J. Becker, M.B.B.Ch.	POSITION TITLE Professor of Pediatrics		
eRA COMMONS USER NAME DJBecker			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
<u>Univ of Witwaterstrand, Johannesburg, SA</u>	M.B.B.Ch.	1964	
<u>Baragwanath Hospital, Johannesburg, SA</u>	Intern	1966	Medicine
Johannesburg General Hospital	<u>Intern</u>	1966-67	Surgery, Medicine
Red Cross Hospital, Cape Town, SA	Sr. Intern	1967	Pediatrics
Red Cross Hospital, Cape Town, SA	Resident	1970-72	<u>Pediatrics</u>

**A. Personal Statement.** From 1998 to 2014 I have been Professor and Director of the Division of Pediatric Endocrinology and Diabetes in the Department of Pediatrics. Having stepped down as division director, I now am able to devote more time as a principal investigator and co-investigator of NIH grants having been funded for over thirty five years. As much of my research has been aimed to prevent T1D and its complications, I am acutely aware of the need for scientific research to understand the pathogenesis and heterogeneity of T1D in order to develop appropriate prevention as well as treatment strategies to retain insulin secretory capacity in both new onset T1D patients and those at risk for T1D. Specifically I plan to continue my activities in these areas of research, while continuing to support and help mold young investigators. I will hand over my role as PI, and Director of the Training Program in Pediatric Endocrinology, but will continue to mentor young faculty and fellows and students in this research area to ensure the next generation of T1D investigators. I am involved in a number of NIH funded epidemiology and prevention trials in T1D including TrialNet and TRIGR being the USA PI since its initiation. I am committed to the continued investigations and collaboration with the other researchers of these projects. I have been an Associate Editor of Diabetes Care, on the editorial boards of Diabetes Care (twice) and Pediatric Diabetes and a frequent NIH grant reviewer and am a member of the NDDG, DSMB's including DirecNet, and have also been involved in training and mentoring pre- and post-doctoral students with interests in Pediatric Diabetes.

**B. Positions and Honors.**

**APPOINTMENTS AND POSITIONS**

1967-1968	Dept. of Med., Iron and Red Cell Metabolic Unit, University of Witwatersrand, Research Fellow
1968-1970	Dept. of Child Health, University of Cape Town, Research Fellow
1970-1972	Red Cross Hospital, Cape Town, Pediatric Resident
1/73-7/74	Dept. of Medicine, Groote Schuur Hospital, Cape Town, Endocrinology Resident
9/74-6/76	Dept. of Pediatrics, Children's Hospital of Pittsburgh, Endocrinology Fellow
1976-1982	University of Pittsburgh, School of Medicine, Assistant Professor of Pediatrics
4/77-3/80	Children's Hospital of Pgh., Clinical Assoc. Physician, NIH Clinical Research Center
1982-1990	Univ. of Pittsburgh, School of Medicine, Associate Professor of Pediatrics
1981-1994	Children's Hospital of Pittsburgh, Associate Director, NIH, CRC
1990-Present	Univ. of Pittsburgh, School of Medicine, Professor of Pediatrics with tenure
9/96 -12/97	Children's Hospital of Pittsburgh, Interim Director, Division of Endocrinology
1/98 -1/2014	Children's Hospital of Pittsburgh, Director, Division of Endocrinology and Diabetes

**HONORS, AWARDS, AND SERVICE (examples)**

1982-84	President:Council for Diabetes in Youth - ADA
1983-86	President American Diabetes Association, National Research Committee
1985-86	Midwest Society for Pediatric Research 1987-90
1987-90	Lawson Wilkins Pediatric Endocrine Society, Board of Directors
1989	Award for Outstanding Contributions to Diabetes in Youth; ADA
1992-1997	Metabolism Study Section - NIH (Chairman 1995-97)
2002-2014	DirectNet DSMB; DSMB Chair 2002 – 2008
2008	ISPAD Scientific Achievement Award
2008-2009	Lawson Wilkins Pediatric Endocrine Society - President Elect

2009-2010  
2010-2011

Lawson Wilkins Pediatric Endocrine Society – President  
Pediatric Endocrine society—Past President

**C. Selected Peer-reviewed Publications:** (Publications selected from 299 peer review and 84 invited articles). The following are the most recent and relevant to this application

1. Morran MP, Casu A, Arena VC, Pietropaolo S, Zhang Y-J, Nelson P, Omenn GS, Satin LS, Trucco M, Becker DJ, Pietropaolo M: Humoral autoimmunity against the extracellular domain of the neuroendocrine autoantigen IA-2 heightens the risk of type 1 diabetes. *Endocrinology* 151 (6): 2528-2537, 2010. PMID:PMC2875834
2. Secrest AM, Becker DJ, Kelsey SF, LaPorte RE, Orchard TJ: All-cause mortality trends in a large population-based cohort with long-standing childhood-onset type 1 diabetes: the Allegheny County type 1 diabetes registry. *Diabetes Care* 33:2573-79, 2010. PMID:PMC2992193
3. Wherrett DK, Bundy B, Becker DJ, DiMeglio LA, Gitelman SE, Goland R, Gottlieb PA, Greenbaum CJ, Herold KC, Marks JB, Monzavi R, Moran A, Orban T, Palmer JP, Raskin P, Rodriguez H, Schatz D, Wilson DM, Krischer JP, Skyler JS and the Type 1 Diabetes TrialNet GAD Study Group: Antigen-based therapy with glutamic aciddecarboxylase (GAD) vaccine in patients with recent-onset type 1 diabetes: a randomized double-blind trial. *The Lancet* 378(9788):319-27, 2011. PMID: PMC3580128
4. The TRIGR Study Group: The trial to reduce IDDM in the genetically at risk (TRIGR) study: recruitment, intervention and follow-up. *Diabetologia* 54:627-633, 2011. PMID:PMC3034039
5. Knip M, Virtanen SM, Becker D, Dupre J, Krischer JP, Akerblom H, TRIGR Study Group. Early feeding and risk of type 1 diabetes: experiences from the Trial to Reduce Insulin-dependent diabetes mellitus in the Genetically at Risk (TRIGR). *Am J Clin Nutr.* 94:1814S-1820S, 2011. PMID:PMC3364078
6. Wherrett DK, Bundy B, Becker DJ, DiMeglio LA, Gitelman SE, Goland R, Gottlieb PA, Greenbaum CJ, Herold KC, Marks JB, Monzavi R, Moran A, Orban T, Palmer JP, Raskin P, Rodriguez H, Schatz D, Wilson DM, Krischer JP, Skyler JS and the Type 1 Diabetes TrialNet GAD Study Group: Antigen-based therapy with glutamic aciddecarboxylase (GAD) vaccine in patients with recent-onset type 1 diabetes: a randomized double-blind trial. *The Lancet* 378(9788): 319-27, 2011. PMID:PMC3580128
7. Orban T, Bundy B, Becker DJ, DiMeglio LA, Gitelman SE, Goland R, Gottlieb PA, Greenbaum CJ, Marks JB, Monzavi R, Moran A, Raskin P, Rodriguez H, Russell WE, Schatz D, Wherrett D, Wilson DM, Krischer JP, Skyler JS, and the Type 1 Diabetes TrialNet Abatacept Study Group: Co-stimulation modulation with abatacept in patients with recent-onset type 1 diabetes: a randomized, double-blind, placebo-controlled trial. *The Lancet* 378(9789): 412-19, 2011. PMID:PMC3462593
8. Ize-Ludlow D, Lightfoot YL, Parker M, Xue S, Wasserfall C, Haller MJ, Schatz D, Becker DJ, Atkinson MA, Mathews CE: Progressive erosion of  $\beta$ -cell function precedes the onset of hyperglycemia in the NOD mouse model of type 1 diabetes. *Diabetes* 60:2086-2091, 2011. PMID:PMC3142079
9. Herold KC, Pescovitz MD, McGee P, Krause-Steinrauf H, Spain LM, Bourcier K, Asare A, Zhugong L, Lachin JM, Dosch HM, and the Type 1 Diabetes TrialNet Anti-CD20 Study Group. Increased T Cell Proliferative Responses to Islet Antigens Identify Clinical Responders to Anti-CD20 Monoclonal Antibody (Rituximab) Therapy in Type 1 Diabetes. *The Journal of Immunology* 187:1998-2005, 2011. PMID:PMC3150302
10. Levine RJ, Genel M, Cuttler L, Becker DJ, Nieman L, Rosenfield RL. Overcoming Burdens in the Regulation of Clinical Research in Children. *Proceedings of a Consensus Conference, in Historical Context.* *International Journal of Pediatric Endocrinology* 2011:19, 2011. PMID:PMC3276425
11. Nucci AM, Becker DJ, Virtanen SM, Cuthbertson D, Softness B, Huot C, Wasikowa R, Dosch HM, Akerblom HK, Knip M, The TRIGR Study Group. Growth Differences Between North American and European Children at Risk for Type 1 Diabetes. *Pediatric Diabetes* 1-7, 2012. PMID:PMC3335929
12. Greenbaum CJ, Beam CA, Boulware D, Gitelman SE, Gottlieb PA, Herold KC, Lachin JM, McGee P, Palmer JP, Pescovitz MD, Type 1 Diabetes TrialNet Study Group Fall in C-peptide During First 2 Years from Diagnosis; Evidence of at Least Two Distinct Phases from Composite TrialNet Data. *Diabetes*, 61(8):2066-73, 2012. PMID:PMC3402330
13. Vehik K, Cuthbertson D, Boulware D, Beam CA, Rodriguez H, Legault L, Hyytinen M, Rewers MJ, Schatz DA, Krischer JP, The TEDDY, TRIGR, Diabetes Prevention Trial-Type 1, and Type 1 Diabetes, TrialNet Natural History Study Groups. Performance of HbA1c as an early diagnostic indicator of type 1 diabetes in children and youth. *Diabetes Care*, 35(9):1821-5, 2012. PMID:PMC3425003
14. Helgeson VS, Reynolds KA, Snyder PR, Palladino DK, Becker DJ, Siminerio L, Escobar O. Characterizing the transition from paediatric to adult care among emerging adults with Type 1 diabetes. *Diabetic Medicine* 2013 May;30(5):610-5. PMID:PMC3628931
15. Moran A, Bundy B, Becker DJ, DiMeglio LA, Gitelman SE, Goland R, Greenbaum CJ, Herold KC, Marks JB, Raskin P, Sanda S, Schatz D, Wherrett DK, Wilson DM, Krischer JP, Skyler JS, for the Type 1

- Diabetes TrialNet Canakinumab Study Group\*, and Pickersgill L, de Koning Ed, Ziegler, AG, Boehm B, Badenhoop K, Schloot N, Bak JF, Pozzilli P, Mauricio D, Donath MY, Castano L, Wagner A, Lervang HH, Perrild H, Mandrup-Paulsen T, for the AIDA Study Group\*. Interleukin-1 antagonism in type 1 diabetes of recent onset: two multicenter, randomized, double-blind, placebo-controlled trials. *Lancet* 2013; Jun 1;381:1905-15. PMID:PMC3827771
16. Pescovitz MD, Greenbaum CJ, Bundy B, Becker DJ, Gitelman SE, Goland R, Gottlieb PA, Marks JB, Moran A, Raskin P, Rodriguez H, Schatz DA, Wherrett DK, Wilson DM, Krischer JP, Skyler JS; and the Type 1 Diabetes TrialNet Anti-CD20 Study Group. B-Lymphocyte Depletion with Rituximab and Beta- Cell Function: Two-Year Results. *Diabetes Care* 2013; Sep 11 (Epub ahead of print). PMID 24026563, PMID: Journal in Process
  17. Miller RG, Secrest AM, Ellis D, Becker DJ, Orchard TJ. Changing Impact of Modifiable Risk Factors on the Incidence of Major Outcomes of Type 1 Diabetes: The Pittsburgh Epidemiology of Diabetes Complications Study. *Diabetes Care* 2013; Oct. 29 (Epub ahead of print). PMID 24170748, PMID: Journal in Process
  18. Helgeson VS, Palladino DK, Reynolds KA, **Becker DJ**, Escobar O, Siminerio L. Early Adolescent Relationship Predictors of Emerging Adult Outcomes: Youth With and Without Type 1 Diabetes. *Health Psychology*. 2013 (Epub ahead of print). PMID 23914816
  19. Andersen MLM, Nielsen LB, Svensson J, Porksen S, Hougaard P, Beam C, Greenbaum C, **Becker DJ**, Petersen JS, Hansen L, Mortensen HB. Disease Progression Among 446 Children with Newly Diagnosed Type 1 Diabetes Located in Scandinavia, Europe and North America During the Last 27 Years. *Pediatric Diabetes*. 2013 Nov 25 [Epub ahead of print]. PMID: 24731251 [PubMed - as supplied by publisher]
  20. Orban T, Bundy B, **Becker DJ**, DiMeglio LA, Gitelman SE, Goland R, Gottlieb PA, Greenbaum CJ, Marks JB, Monzavi R, Moran A, Raskin P, Russell WE, Schatz D, Wherrett D, Wilson DM, Krischer JP, Skyler JS, the Type 1 Diabetes TrialNet Abatacept Study Group. Co-Stimulation Modulation with Abatacept in Patients with Recent-Onset Type 1 Diabetes: Follow-up One Year After Cessation of Treatment. *Diabetes Care*, December 2, 2013. Epub Ahead of Print; PMID 24296850
  21. Franciscus M, Nucci A, Bradley B, Suomalainen H, Greenberg E, Laforte D, Kleemola P, Hyytinen M, Salonen M, Martin MJ, Catte D, Cateau J and the TRIGR Investigators. Recruitment and Retention of Participants for an International Type 1 Diabetes Prevential Trial: A Coordinators' Perspective. *Clinical Trials Recruitment and Retention* 2013; *Clinical Trials* 2014 11(2) 15258 PMID 24216218
  22. Charron-Prochownik D, Sereika SM, **Becker DJ**, White NH, Schmitt P, Powell AB, Diaz AM, Jones J, Herman WH, Rodgers Fischl AF, McEwen L, DiNardo M, Downs J, Long-Term Effects of the Booster-Enhanced READY-Girls Preconception Counseling Program on Intentions and Behaviors for Family Planning in Teens With Diabetes *Diabetes Care*. 2013 Dec;36(12):3870-4. Epub 2013 Oct 15. PMID:24130343 [PubMed - in process]
  23. Moran A, Bundy B, **Becker DJ**, DiMeglio LA, Gitelman SE, Goland R, Greenbaum CJ, Herold KC, Marks JB, Raskin P, Sanda S, Schatz D, Wherrett DK, Wilson DM, Krischer JP, Skyler JS; Type 1 Diabetes TrialNet Canakinumab Study Group, Pickersgill L, de Koning E, Ziegler AG, Böehm B, Badenhoop K, Schloot N, Bak JF, Pozzilli P, Mauricio D, Donath MY, Castaño L, Wägner A, Lervang HH, Perrild H, Mandrup-Poulsen T; AIDA Study Group. Interleukin-1 antagonism in type 1 diabetes of recent onset: two multicentre, randomised, double-blind, placebo-controlled trials. *Lancet*. 2013 Jun 1;381(9881):1905-15. Epub 2013 Apr PMID: 23562090 PMC 382771
  24. Hadley D, Cheung RK, **Becker DJ**, Girgis R, Palmer JP, Cuthbertson D, Krischer JP, Dosch HM; TRIGR North America Investigators. Large-scale prospective T cell function assays in shipped, unfrozen blood samples: experiences from the multicenter TRIGR trial. *Clin Vaccine Immunol*. 2014 Feb;21(2):203-11. Epub 2013 Dec 11. PMID: 24334687 [PubMed – in process]
  25. Pescovitz MD, Greenbaum CJ, Bundy B, **Becker DJ**, Gitelman SE, Goland R, Gottlieb PA, Marks JB, Moran A, Raskin P, Rodriguez H, Schatz DA, Wherrett DK, Wilson DM, Krischer JP, Skyler JS; and The Type 1 Diabetes TrialNet Anti-CD20 Study Group. B-Lymphocyte Depletion with Rituximab and Beta-Cell Function: Two-Year Results. *Diabetes Care*. 2013 Sep 11. *Diabetes Care*. 2014 Feb 37(2):453-9. PMID: 24026563
  26. Lyons SK, **Becker DJ**, Helgeson VS. Transfer from Pediatric to Adult Health Care: Effects on Diabetes Outcomes. *Pediatric Diabetes*. 2014 Feb;15(1):10-7 Epub 2013 Dec 18. PMID 24350767 (PubMed in process)
  27. Garg M, Thamocharan M, **Becker DJ**, Devaskar SU. Adolescents with clinical type 1 diabetes display reduced red blood cell glucose transporter isoform 1 (GLUT1). *Pediatr Diabetes*. 2014 Feb 19. [Epub ahead of print] PMID: 24552568

### **Grant Support**

R01 DK 24021-31 (PI: Becker)

03/01/96-05/31/15

NIH/NIDDK

*Juvenile Diabetes Mellitus: Epidemiology and Etiology*

This is a 30 -year study, which evaluates the immunologic, genetic and environmental determinants of the risk of insulin dependent diabetes mellitus in children and families of children with probands with type 1 diabetes .This application is for the competing renewal of this award.

T32 DK 007729-18 (PI: Becker)

07/01/95-06/30/15

NIH/NIDDK

*Research Training in Pediatric Endocrinology*

The goal of this training grant is to provide state-of-the-art training in the molecular, cellular, physiologic, and genetic and biochemical aspects of pediatric endocrinology to ensure that the physician-scientists who graduate from this program are well prepared for productive academic careers in translational research related to pediatric endocrinology.

U01 DK 061058-11 (PI: Becker)

09/29/01-05/30/14

NIH/NIDDK

*TrialNet (Prediction and Prevention of Type 1 Diabetes)*

TrialNet is a collaborative study of 14 centers in the U.S. and 5 in Europe to plan and implement intervention strategies to maintain beta cell function in new onset patients with type 1 diabetes and prevent diabetes in first-degree relatives at high risk.

U01 HD42444-12 (PI: Becker)

09/27/01-06/30/16

NIH/NICHHD

*TRIGR: Trial to Prevent Insulin-Dependent Diabetes in the Genetically at Risk: Nutritional Primary Prevention of Type 1 Diabetes*

This an International double blind, randomized controlled trial in subjects with an affected first degree relative and risk-associated HLA genotypes which enrolled 2060 eligible infants followed in 73 centers in 15 countries.

The 6-8 month intervention is designed to compare the post weaning effects of either hydrolysed casein or standard cow milk based formula over 10 years of follow-up with measurements of serological markers of intact cow milk exposure, diabetes predictive autoantibodies and the clinical and/or metabolic indices of diabetes (the end point at age 10 years). Pittsburgh is a major center and the coordinating center for the United States

R01 DK60586-11 (PI: Helgeson)

07/01/12-06/30/17

NIH/Carnegie-Mellon University

*From Adolescence to Adulthood: Persons With and Without Diabetes*

Assessment of hypoglycemia from patients' glucose meters and evaluation of metabolic control and diabetes-related complications.

U01 DK063790( PI -Krischer)

01/01/07-02/28/15

NIH/NIDDK/University of Southern Florida

*TEDDY; The Environmental Determinants of Diabetes in the Young*

Multicenter epidemiologic study of the environmental pathogenesis of autoimmunity in first degree relatives of subjects with type 1 diabetes.

## **OVERLAP**

There is no scientific or budgetary overlap amongst these studies