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## BIOGRAPHICAL SKETCH

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NAME: BULIK, Cynthia M.

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eRA COMMONS USER NAME (credential, e.g., agency login): cbulik

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POSITION TITLE: Distinguished Professor of Eating Disorders

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EDUCATION/TRAINING:

| INSTITUTION AND LOCATION                            | DEGREE<br>(if applicable) | MM/YY      | FIELD OF STUDY      |
|---|---------------------------|------------|---------------------|
| Univ. of Notre Dame, Notre Dame, IN                 | B.A.                      | 8/78-1/82  | Psychology          |
| Univ. of California at Berkeley, CA                 | M.A.                      | 8/83-12/85 | Psychology (Clin)   |
| Univ. of California at Berkeley, CA                 | Ph.D.                     | 12/85-5/88 | Psychology (Clin)   |
| Univ. of Pittsburgh, Dept. of Psychiatry, NIMH      | (Post-doc)                | 8/88-8/89  | Psychiatry Research |
| Univ. of Pittsburgh, Dept. of Psychiatry, MacArthur | (Post-doc)                | 8/89-7/90  | Psychiatry Research |

### A. Personal Statement

My background is in clinical psychology and I have been conducting research and providing treatment for individuals with eating disorders since 1984. Although I have approached eating disorders from a variety of perspectives from animal models to clinical trials, my greatest contribution has been via research using genetic epidemiologic methods—including family, twin, and molecular genetic designs. I served as the PI of the Wellcome Trust Case Control Consortium 3/GCAN anorexia nervosa genome-wide association study, am the PI of the large multinational Anorexia Nervosa Genetics Initiative (ANGI), and serve as co-chair of the Psychiatric Genomics Consortium Anorexia Nervosa Working Group. I am Co-Director of the UNC Center for Psychiatric Genomics and with Dr. Patrick Sullivan set the research agenda for that center. I direct a new center at the Karolinska Institutet focused on genetic epidemiology of eating disorders. My commitment to training developing researchers has been unwavering and individuals who I have trained in the field have ascended to prominent positions in the field around the globe.

1. Lilenfeld, L.R., Kaye, W.H., Greeno, C.G., Merikangas, K.R., Plotnikov, K., Pollice, C., Rao, R., Strober, M., Bulik, C.M., Nagy, L. (1998) A controlled family study of anorexia nervosa and bulimia nervosa: Psychiatric disorders in first-degree relatives and effects of proband comorbidity. *Archives of General Psychiatry*, 55, 603-610. PMID: 9672050.
2. Bulik, C.M., Sullivan, P.F., Tozzi, F., Furberg, H., Lichtenstein, P., Pedersen, N.L. (2006) Prevalence, heritability and prospective risk factors for anorexia nervosa. *Archives of General Psychiatry*, 63, 305-312. PMID: 16520436.
3. Bulik, C.M., Devlin, B.D., Bacanu, S., Thornton, L., Klump, K., Fichter, M., Halmi, K.A., Kaplan, A., Strober, M., Woodside, B., Bergen, A., Ganjei, K., Crow, S., Mitchell, J., Rotondo, A., Mauri, M., Cassano, C., Keel, P., Berrettini, W., Kaye, W.H. (2003) Significant linkage on chromosome 10p in families with bulimia nervosa. *American Journal of Human Genetics*, 72, 200-207. PMID: 12476400. PMC378626.
4. Boraska, V., Franklin, C.S., Floyd, J.A.B, Thornton, L.M., Huckins, L.M., Southam, L., ... Bulik, C.M. (2014) A genome-wide association study of anorexia nervosa. *Molecular Psychiatry*, 19, 1085-1094. PMID: 24514567. PMC3859494.

### B. Positions and Honors

#### Positions and Employment

|              |   |
|--------------|---|
| 1990-91      | Project Coordinator, Department of Psychiatry, University of Pittsburgh School of Medicine                |
| 1991-94      | Lecturer, Department of Psychology, University of Canterbury, Christchurch, New Zealand                   |
| 1995-96      | Senior Lecturer, Department of Psychology, University of Canterbury, Christchurch, New Zealand            |
| 1996-02      | Associate Professor, Department of Psychiatry, Virginia Commonwealth University                           |
| 2002-03      | Professor, Department of Psychiatry, Virginia Commonwealth University                                     |
| 2003-present | Distinguished Professor of Eating Disorders, University of North Carolina at Chapel Hill                  |
| 2003-present | Founding Director, Center of Excellence for Eating Disorders, University of North Carolina at Chapel Hill |

|              |   |
|--------------|---|
| 2004-present | <u>Professor</u> , Department of Nutrition, Gillings School of Global Public Health, UNC Chapel Hill              |
| 2009-present | <u>Adjunct Professor</u> , Norwegian Institute of Public Health, Oslo, Norway                                     |
| 2013-present | <u>Co-Director, UNC Center for Psychiatric Genomics</u> , University of North Carolina at Chapel Hill             |
| 2014-present | <u>Professor</u> , Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden |

## Honors

|           |  |
|-----------|--|
| 1982      | Phi Beta Kappa   |
| 1982      | BA with Highest Honors   |
| 1982      | University of Notre Dame Distinctive Achievement in Psychology Award   |
| 1984-6    | University of California Regents' Fellowships  |
| 1986      | Founder Region Soroptomists' Fellowship  |
| 1987      | UC Berkeley Outstanding Graduate Student Instructor Award  |
| 1987      | Phi Beta Kappa Dissertation Award  |
| 1987      | Pennsylvania Psychological Association Graduate Student Achievement Award: 1st Place                                     |
| 1989      | Young Investigator Travel Award: Committee on Problems of Drug Dependence  |
| 1996      | Founding Fellow, Academy for Eating Disorders  |
| 2000      | Fellow North American Association for the Study of Obesity   |
| 2001      | Richmond Top Doctors for Women (Eating Disorders)  |
| 2003-2004 | President, Academy for Eating Disorders  |
| 2004      | Eating Disorders Coalition Research Award  |
| 2004      | Special Recognition for Support, Prevention and Work with Eating Disorders in Latin America, Hispano Latino American SIG |
| 2005      | Hulka Innovators Award   |
| 2006      | Carolina Women's Advocacy Award  |
| 2006-8    | Vice-President, Eating Disorders Coalition   |
| 2006      | Academy for Eating Disorders Leadership in Research Award  |
| 2008      | The Price Family National Eating Disorders Association Award for Excellence in Research                                  |
| 2009      | Women's Leadership Council Faculty-to-Faculty Mentorship Award   |
| 2009      | IAEDP Honorary Certification in Eating Disorders   |
| 2011      | UNC Psychiatry Department Research Mentor of the Year Award  |
| 2011      | František Faltus Award Czech Psychiatric Society of the J.E. Purkyně Czech Medical Society                               |
| 2011      | Academy for Eating Disorders Meehan Hartley Advocacy Award   |

## **C. Contribution to Science**

*Contribution 1: Revolutionized the understanding of risk factors for eating disorders by demonstrating the role of genetic factors in influencing risk for anorexia nervosa, bulimia nervosa, and binge eating disorder and escorting the science from twin studies, through linkage and candidate gene studies, into the modern genome-wide association study era.*

At the beginning of her career, eating disorders were widely considered to be purely sociocultural in origin and related to family dysfunction. Unconvinced, Dr. Bulik's dissertation focused on family psychiatric history and family environment in women with bulimia nervosa and identified significantly elevated relative risk for alcohol abuse and dependence. Her work went on to identify the familiarity of eating disorders, the heritability of eating disorders as determined by twin studies, significant linkage peaks for both anorexia nervosa and bulimia nervosa, and the largest GWAS study ever conducted of anorexia nervosa. As the founder of the Genetic Consortium for Anorexia Nervosa (GCAN) and co-recipient of a Wellcome Trust Case Control Consortium 3 GWAS grant, she seeded an even larger movement in the field to amass >25,000 anorexia nervosa samples. She founded and co-leads the Anorexia Nervosa Working Group of the Psychiatric Genomics Consortium and is Principal Investigator of the Anorexia Nervosa Genetics Consortium.

### **\* See citations under Personal Statement**

*Contribution 2: Thoroughly explicated the impact of pregnancy on birth outcomes and maternal outcomes in women with eating disorders.*

Prior to the 2000s, empirical literature on eating disorders in pregnancy was sparse and consisted mostly of studies in small clinical samples. In collaboration with the Norwegian Institute for Public Health, we published a

body of 20 studies using longitudinal data from the Norwegian Mother and Child Cohort Study (MoBa). We addressed diverse questions including the prevalence, course, and risk correlates of eating disorders during pregnancy and the postpartum. We also reported associations between eating disorder exposure and pregnancy, birth and obstetric outcomes, and maternal and offspring health and wellbeing. The findings indicate that eating disorders in pregnancy are relatively common and confer health risks to mother and child related to sleep, birth outcomes, maternal nutrition, and child feeding and eating. Studies are ongoing and will include biomarkers as the children are now entering adolescence—the highest risk period for the onset of eating disorders.

- Watson, H.J., Torgersen, L., Zerwas, S., Reichborn-Kjennerud, T., Knopf, C., Siega-Riz, A., ... **Bulik, C.M.** (2014) Eating disorders, pregnancy, and the post-partum period: A review of findings from the Norwegian Mother and Child Cohort Study (MoBa). *Norsk Epidemiologi*, 24, 51-62. (Review)
- Bulik, C.M.**, Von Holle, A., Hamer, R., Knoph, C., Torgersen, L., Magnus, P., ... Reichborn-Kjennerud, T. (2007) Patterns of remission, continuation, and incidence of eating disorders during pregnancy in the Norwegian Mother and Child Cohort Study (MoBa). *Psychological Medicine*, 37, 1109-1118. PMID: 17493296. PMC2657803.
- Bulik, C.M.**, Von Holle, A., Siega-Riz, A.M., Torgersen, L., Kviem Lie, K., Hamer, R.M., ... Reichborn-Kjennerud, T. (2009) Birth outcomes in women with eating disorders in the Norwegian Mother and Child Cohort Study (MoBa). *International Journal of Eating Disorders*, 42, 9-18. PMID: 18720472. PMC3586575.
- Bulik, C.M.**, Hoffman, E., Von Holle, A., Torgersen, L., Stoltenberg, C., Reichborn-Kjennerud, T. (2010) Unplanned pregnancy in women with anorexia nervosa. *Obstetrics and Gynecology*, 116, 1136-1140. PMID: 20966699. PMC3632206.

*Contribution 3: Developed and disseminated interventions that have improved the standard of care for anorexia nervosa and bulimia nervosa.*

I have designed and participated multiple clinical trials for anorexia nervosa, bulimia nervosa, and binge eating disorder. Innovations have included employing exposure with response prevention in the treatment of bulimia; development of Specialist Supportive Clinical Management for anorexia, which although initially designed to be a control intervention has been disseminated widely across three continents as a evidence-based intervention for anorexia; development of couple-based interventions for all three eating disorders which leverage the power of the family in an age-appropriate manner for the treatment of adults with eating disorders; parenting interventions for mothers with eating disorders; and incorporation of technology into treatment to broaden the reach of evidence-based interventions. I have also conducted comprehensive Agency for Healthcare Quality and Research supported reviews of the state of the evidence for the treatment of eating disorders that have guided research direction and service planning.

- Bulik, C.M.**, Sullivan, P.F., Joyce, P.F., Carter, F.A. McIntosh, V.V., Joyce, P.R. (1998) The role of exposure with response prevention in the cognitive-behavioral therapy for bulimia nervosa. *Psychological Medicine*, 28, 611-623. PMID: 9626717.
- McIntosh, V.V.W., Jordan, J., Carter, F.A., Luty, S.E., McKenzie, J.M., **Bulik, C.M.**, Frampton, C., Joyce, P.R. (2005) Three psychotherapies for anorexia nervosa: A randomized controlled trial. *American Journal of Psychiatry*, 162, 741-747. PMID: 15800147.
- Bulik, C.M.**, Baucom, D.H., Kirby, J.S., Pisetsky, E. (2011) Uniting Couples (in the treatment of) Anorexia Nervosa (UCAN). *International Journal of Eating Disorders*, 44, 19-28. PMID: 20063308. PMC2889168.
- Berkman, N.D., **Bulik, C.M.**, Brownley, K.A., Lohr, K.N., Sedway, J.A., Rooks, A., Gartlehner, G. (2006) Management of eating disorders. Evidence Report/Technology Assessment (Full Report). 135, 1-166. PMID: 17628126.

*Contribution 4: Broadened the understanding of comorbidity in eating disorders by exploring the nature and mechanisms of association with anxiety disorders, major depressive disorder, autism spectrum disorder, and substance use disorders.*

Via clinical, epidemiologic, genetic epidemiologic, and now molecular genetic methodologies explored patterns of comorbidity as well as mechanisms of comorbidity. Historically, eating disorders were often considered to be “variants” of other disorders. By applying a variety of methods, this work made the understanding of comorbidity more sophisticated by explicating patterns of onset and the extent to which both genetic and environmental risk factors are shared across classes of disorders. This work has also informed the well-known phenomenon of diagnostic crossover within eating disorders by revealing both shared and independent genetic

factors influencing anorexia and bulimia nervosa. A natural extension of this work is ongoing calculating genetic correlations across psychiatric and somatic disorders for which GWAS data are available.

**Bulik, C.M.**, Thornton, L., Root, T.L., Pisetsky, E., Lichtenstein, P., Pedersen, N.L. (2010) Understanding the relation between anorexia nervosa and bulimia nervosa in a Swedish national twin sample. *Biological Psychiatry*, 67, 71-77. PMID: 19828139. PMC2851013.

Root, T.L., Pisetsky, E.M., Thornton, L., Lichtenstein, P., Pedersen, N.L., **Bulik, C.M.** (2010) Patterns of comorbidity of eating disorders and substance use in a large population-based sample of Swedish females. *Psychological Medicine*, 40, 105-15. PMID: 19379530. PMC2788663.

Fernández-Aranda, F., Pinheiro, A.P., Tozzi, F., Thornton, L.M., Fichter, M.M. Halmi, K.A., ... **Bulik, C.M.** (2007) Symptom profile of major depressive disorder in women with eating disorders. *Australian and New Zealand Journal of Psychiatry*, 41, 24-31. PMID: 17464678.

#### **Complete List of Published Work in MyBibliography:**

<http://www.ncbi.nlm.nih.gov/sites/myncbi/cynthia.bulik.1/bibliography/41141107/public/?sort=date&direction=ascending>

#### **D. Research Support**

##### **Ongoing Research Support**

N/A 1/1/15 - 12/31/25

Swedish Research Council

Title: World Center for Innovation in Eating Disorders Research

Goals: To develop a center for innovation in genetic epidemiological research to enhance detection, prevention, and treatment of eating- and appetite- related disorders.

Role: PI

N/A (Bulik, PI) 5/6/14-5/5/16

Academy for Eating Disorders TJ's Fund for Biological Research of Eating Disorders

Title: **Role of the Gut Microbiome in Hypermetabolism during Renourishment in Anorexia Nervosa (Pilot)**

Goals: Exploring the role of the gut microbiome in the hypermetabolism phase of refeeding in anorexia nervosa

Role: PI

N/A (Bulik, PI) 1/15-12/17

Hilda & Preston Davis Foundation

Title: **Enhancing Treatment for Binge-Eating Disorder with a Couple-Based Approach**

Goals: Adapting and testing couple-based intervention for binge-eating disorder.

Role: PI

N/A (Bulik, PI) 8/13/13- 8/12/15

Global Foundation for Eating Disorders

Title: **UNiting couples in the Treatment of Eating Disorders (UNITE)**

Goals: Adapting and pilot testing the Uniting Couples (in the treatment of) Anorexia Nervosa (UCAN) manual for bulimia nervosa and binge eating disorder.

Role: PI

N/A (Bulik, PI) 11/17/14 – 5/16/16/

Shire Pharmaceuticals

Title: **BED Epidemiology, Course, Utilization, and Outcome**

Goals: Exploring prevalence, course, health care utilization and outcome of binge-eating disorder in the Swedish national registers.

Role: PI

R24CA186212-01 (Perrin, PI) 9/1/13 - 8/31/15

NCI

Title: **Pass the Popcorn: Children's Perceptions of 'Obesogenic' Culture in Movies**

Goals: Building a trans-disciplinary research team to develop measurement tools to understand the basic processes behind movies' and other cultural factors' effects on such attitudes and behaviors related to obesity.

Role: Investigator

N/A (Jonas, PI) 07/18/13-03/17/15  
Klarman Family Foundation  
**Title: Anorexia Nervosa Genetics Initiative (ANGI)**  
Goal: To collect 8,000 cases and appropriate controls in the United States, Sweden, Denmark, and Australia to conduct a genome-wide association study of anorexia nervosa.  
Role: PI

N/A (Bulik, PI) 12/15/12-12/14/16  
AHRQ/RTI International  
**Title: Topic Refinement and Systematic Review for Management and Outcomes of Binge Eating Disorder**  
Goal: Systematic review of the Management and Outcomes of Binge Eating Disorder.  
Role: Investigator

R01 MH095860 (Bardone-Cone, PI) 08/01/12-05/31/17  
NIH/NIMH  
**Title: Defining Remission and Recovery in Eating Disorders**  
Goal: To test and refine standardized definitions of remission and recovery from an eating disorder.  
**Administrative Supplement: Biomarker Discovery in Anorexia Nervosa** 04/03/13-05/31/17  
Role: Investigator

R01 MH093615 06/11/12 - 05/31/17  
(Bulik/Baucom, PIs)  
NIH/NIMH  
**Title: Enhancing Treatment for Adult Anorexia Nervosa with a Couple-Based Approach**  
Goal: The goal of this project is to further test the efficacy of UCAN, a couple-based therapy that engages patients and partners in reducing the psychopathology of anorexia nervosa and its impact on relationship functioning.  
Role: MPI

T32MH076694 (Bulik, PI) 07/01/07-06/30/17  
NIH/NIMH  
**Title: Postdoctoral Research Training in Eating Disorders**  
Postdoctoral training program for individuals seeking advanced specific training in eating disorders research.  
Role: PI

### **Completed Research Support**

N/A (Bulik, PI) 06/20/12-05/31/14  
Klarman Family Foundation  
**Title: Determining the Role of Uncommon Exon Variation in Anorexia Nervosa**  
Goal: This project will evaluate the role of the uncommon exon variation in anorexia nervosa. The discovery of these variants could provide rapid and actionable insights into the genetic causes of AN.  
Role: PI

R21 MH091496 (Bulik, PI) 07/01/12-06/30/15  
NIH/NIMH  
**Title: iEAT: Information Technology to Enhance Anorexia Treatment**  
Goal: Development of a Health Information Technology (HIT) service to bridge the transition between higher levels of care (i.e., inpatient, partial hospitalization, residential) and outpatient care with the goal of reducing relapse and readmission.  
Role:

1R01 MH080065-01A1 (Bulik, PI) 06/01/08-05/31/13  
NIH/NIMH  
**Title: Optimizing Technology in the Treatment of Bulimia Nervosa**  
Goal: Comparison of face-to-face versus on-line cognitive-behavioral therapy for bulimia nervosa.  
Role: PI