

## Frederick L. Smyth, PhD

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### Positions

2006-present: **Research Assistant Professor**, University of Virginia  
**Director**, Full Potential Initiative

2004-2006: **Postdoctoral Research Associate**, UVa Implicit Social Cognition Lab (Brian Nosek)

### Education

- Ph.D. Quantitative Psychology, University of Virginia, 2004.  
Dissertation: *Measurement Invariance and Selection Effects across Internet and Laboratory Studies of Implicit and Explicit Gender and Math-Science Attitudes* (Advisor, J. J. McArdle)
- M.A. Quantitative Psychology, University of Virginia, 2001.  
Thesis: *Logit and multilevel logit analysis of ethnic differences in science graduation from selective colleges* (Advisor, J. J. McArdle)
- M.A. Liberal Studies, Dartmouth College, 1994.  
Thesis: *Standardized testing in college admission: How the ACT and SAT are used and compared* (Advisor, R. Elliott)
- B.A. English, Magna Cum Laude, McDaniel College, 1980.

### Research & Teaching Interests

Implicit Social Cognition, Attitude & Stereotype Development, Achievement Motivation, Stigma & Intergroup Relations, general Social Psychology, Research Methods & Data Analysis

### Full Potential Initiative, Director, Co-PI (<http://fullpotentialinitiative.org>)

Funded by a National Science Foundation grant (REC-0634041; Total Award: \$826,554) titled “Implicit Cognition in STEM Education,” the Full Potential Initiative (FPI) is a longitudinal study of the development and influence of implicit attitudes about intellectual ability, self-concepts, and academic achievement, particularly in the science, technology, engineering, and mathematics (STEM) domain. The project tests theoretical predictions for the antecedents and correlates of change in these constructs, about their relations with important outcomes, and about nonconscious vulnerability and resiliency in STEM domains over time. Formally begun in December 2006, middle and high school students use the Internet to provide periodic responses to questionnaires and various implicit attitude measures.

## **Grants**

- National Science Foundation (Co-PI: REC-0634041) 12/2006 – 11/2009  
Implicit Cognition in STEM Education Total Award: \$826,554
- University of Virginia Learning Grants Program (PI) 10/2008 – 6/2009  
Implicit Cognition in Differential Equations Total Award: \$1,500  
(From formal manipulations to sophisticated abstract mathematical thinking)

## **Honors and Awards**

- Maury Pathfinder Graduate Prize* (2002) for the Outstanding Master's Thesis of 2002  
University of Virginia Department of Psychology
- Presidential Fellowship* (1997-2001)  
Competitive four-year stipend from University of Virginia College of Arts & Sciences
- Society for Personality and Social Psychology 2004 Annual Conference Student Travel Award*  
One of 40 selected from among 147 applicants based on quality of poster presentation
- Phi Beta Kappa*

## **Graduate School Research Assistantships**

- 2003-2004 Implicit Social Cognition Laboratory, with B. Nosek  
1997-2004 Jefferson Psychometric Laboratory, with J. McArdle & J. Nesselroade

## **Graduate School Teaching Assistantships**

- Structural Equation Modeling* (PSYC 881, Fall 2002)  
*Multivariate Methods* (PSYC 776, Fall 2002)  
*Longitudinal Methods* (APA's *Advanced Training Institute*, Summers 2001 & 2002)  
*Quantitative Methods I & II* (PSYC 771 & 772, two years, Fall & Spring 2000-01, 2001-02)  
*Item Response Theory* (PSYC 882, Spring 2000)  
*Psycho-Epidemiological Data Analysis* (PSYC 881, Spring 2000)  
*Research Methods and Data Analysis* (PSYC 305, Fall 1997)

## **Advanced Training**

- Data Analytic Techniques for Dynamical Systems*  
(Notre Dame Series on Quantitative Methodology: May 2003)

## **Papers in Print**

- Nosek, B. A., Smyth, F. L., Sriram, N., Lindner, N. M., Devos, T., Ayala, A., Bar-Anan, Y., Bergh, B., Cai, H., Gonsalkorale, K., Kesebir, S., Maliszewski, N., Neto, F., Olli, E., Park, J., Schnabel, K., Shiomura, K., Tulbure, B. T., Wiers, R., Somogyi, M., Akrami, N., Ekehammar, B., Vianello, M., Banaji, M. R., & Greenwald, A. G. (2009). National differences in gender-science stereotypes predict national sex differences in science and math achievement. *Proceedings of the National Academy of Sciences*, *106*, 10593-10597.
- Thorndike, F., Carlbring, P., Smyth, F. L., Magee, J. C., Gonder-Frederick, L., Ost, L., & Ritterband, L. M. (2009). Web-based measurement: Effect of completing single or multiple items per webpage. *Computers in Human Behavior*, *25*, 393-401.
- Nosek, B. A., & Smyth, F. L. (2007). A multitrait-multimethod validation of the Implicit Association Test: Implicit and explicit attitudes are related but distinct constructs. *Experimental Psychology*, *54*, 14-29.

- Nosek, B. A., Smyth, F. L., Hansen, J. J., Devos, T., Lindner, N. M., Ranganath, K. A., Smith, C. T., Olson, K. R., Chugh, D., Greenwald, A. G., & Banaji, M. R. (2007). Pervasiveness and correlates of implicit attitudes and stereotypes. *European Review of Social Psychology, 18*, 36-88.
- Smyth, F. L., & McArdle, J. J. (2004). Ethnic and gender differences in science graduation at selective colleges with implications for admission policy and college choice. *Research in Higher Education, 45*, 353-381.
- Smyth, F. L. (1995). Standardized testing in college admission: How the ACT and the SAT are used and compared. *Journal of College Admission, 148*, 24-31.
- Smyth, F. L. (1995, May 26). The SAT's validity for minority students [Letter to the editor]. *The Chronicle of Higher Education*, p. B5.
- Smyth, F. L. (1995). Teaching students about standardized testing in the college admission process. In S. T. Ivory & J. E. Smith (Eds.), *The Admission Practitioner*. (pp. 87-99). Alexandria, VA: National Association of College Admission Counselors.
- Smyth, F. L. (1995). Teaching students about standardized testing in the college admission process. In S. T. Ivory & J. E. Smith (Eds.), *The Counseling Practitioner*. (pp. 123-135). Alexandria, VA: National Association of College Admission Counselors.
- Smyth, F. L. (1992-93, 1993-94, & 1994-95 Editions). What's the deal with all these tests I have to take? *College Times*, pp. 20-24. New York: College Entrance Examination Board.
- Smyth, F. L. (1990). SAT coaching: What *really* happens to scores and how we are led to expect more. *Journal of College Admission, 129*, 7-17.
- Smyth, F. L. (1989). Commercial coaching and SAT scores: The effects on college preparatory students in private schools. *Journal of College Admission, 123*, 2-9.

### **Papers under review or in preparation**

- Smyth, F. L., Greenwald, A. G., & Nosek, B. A. (2010). Gender gap in implicit gender-science associations is greatest among science majors.
- Nosek, B. A., & Smyth, F. L. (2010). Implicit social cognitions predict sex differences in math interest, participation, and performance.

### **Conference Papers/Posters**

- Smyth, F. L. & Nosek, B. A. Identity, Implicit Science=Male Stereotyping, and the Science Pipeline. Poster presented at the 2009 conference of the Society of Personality and Social Psychology. Tampa, FL.
- Smyth, F. L. & Nosek, B. A. Implicit Gender-Science Stereotype Predicts "Natural" Explanation for Science Gender Gap. Poster presented at the 2008 conference of the Society of Personality and Social Psychology. Albuquerque, NM.
- Smyth, F. L. & Nosek, B. A. The Impact of Multiculturalism versus Color-blindness on Racial Bias Revisited. Poster presented at the 2007 conference of the Society of Personality and Social Psychology. Memphis, TN.
- Smyth, F. L., Nosek, B. A., & McArdle, J. J. (2006). "Choosing" to Stereotype: Selection Mechanisms and Effects in an Internet Study of Gender-Science Stereotypes. Poster presented at the 2006 conference of the Society of Personality and Social Psychology. Palm Springs, CA.

Smyth, F. L. & Nosek, B. A. (2005). Implicit and Explicit Attitudes are Related, but Distinct Constructs: A Multitrait-Multimethod Structural Modeling Validation. Poster presented at the 2005 conference of the Society of Personality and Social Psychology. New Orleans, LA.

Smyth, F. L., Nosek, B. A., & McArdle, J. J. (2004). Explicit Math Attitudes as a function of Implicit Math-Gender Stereotype: Gender Matters. Poster presented at the 2004 conference of the Society of Personality and Social Psychology. Austin, TX.

Smyth, F. L., & McArdle, J. J. (2003). Undercurrents in the River: Which Science Majors are Disappearing...and Why? Paper presented at the Annual Meeting of The College Board. New York.

Smyth, F. L., & McArdle, J. J. (2002). Graduation of NCAA Student Athletes as a Function of Demographic, IEC Academic and MBA Indicators. Paper presented at the Semi-Annual Meeting of the Data Analysis Research Network of the National Collegiate Athletic Association, San Francisco.

Smyth, F. L., & Nesselroade, J. R. (2002). Analysis of Change in Student Athletes' Social and Academic Attitudes Across Cohort and Occasion, and Relations with Graduation for the 1995 cohort. Paper presented at the Semi-Annual Meeting of the Data Analysis Research Network of the National Collegiate Athletic Association, San Francisco.

Smyth, F. L., & McArdle, J. J. (2002). Multilevel Analyses of Ethnic and Gender Differences in Science Graduation from Selective Colleges. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans.

### **Presentations**

#### *Implicit Bias (especially in Science and Math)*

- UVa *Tapestry Workshop* for 40 National HS Computer Science Teachers, July 2010
- Worcester Polytechnic Inst *Undergraduate Mathematics Lecture Series*, MA, Dec 2009
- Math Sciences Research Institute *Great Circles Workshop*, Berkeley, CA, April 2009
- *Risk and Prevention in Education Sciences*, Charlottesville, VA, February 2008  
Podcast: [http://curry.edschool.virginia.edu/index.php?option=com\\_content&task=view&id=1402&Itemid=11](http://curry.edschool.virginia.edu/index.php?option=com_content&task=view&id=1402&Itemid=11)
- Young Women's Leadership Charter School of Chicago Faculty, October 2007
- Center for Advanced Study of Teaching and Learning, Charlottesville, VA, July 2007
- Duval County Public Schools Administration, Jacksonville, FL, June 2007
- Young Women's Leadership Charter School of Chicago Student body, February 2007
- St. Anne's-Belfield School Faculty and Students, Charlottesville, VA, November 2006
- Young Women's Leadership Charter School of Chicago Faculty, October 2006

#### *Effects of Commercial Coaching on SAT Scores:*

- Conference of University of California Student-Centered Programs, January 1999
- NBC's *Today* show, January 1992
- National Association of College Admission Counselors (ACAC) Conference, October 1990
- NJ Association of Independent Schools, April 1990
- Southern College Board, February 1990
- Educational Testing Service, February 1990
- Middle States College Board, February 1990
- Educational Testing Service, June 1989
- NJ Association of Independent Schools, May 1989
- Potomac & Chesapeake ACAC Conference, April 1989

*Methods of comparison and use of the ACT and SAT in college admission:*

- Potomac & Chesapeake ACAC Conference, April 1993
- College Board and ETS Officials, October 1993

### **Editorial Experience**

Ad hoc reviewer:

*American Educational Research Journal*  
*Basic and Applied Social Psychology*  
*Cognition and Emotion*  
*Journal of Research on Adolescence*  
*National Science Foundation*  
*Review of Educational Research*  
*Sex Roles*

Chair of Editorial Board: *Journal of College Admission*, 1992-1993

Editorial Board Member: *Journal of College Admission*, 1991-1992

### **Consultation: Data Analysis**

Nosek, B. A., & Hansen, J. J. (2008). The associations in our heads belong to us: Searching for attitudes and knowledge in implicit evaluation. *Cognition and Emotion*, 22, 553-594.

Nosek, B. A., & Sriram, N. (2007). Faulty assumptions: A comment on Blanton, Jaccard, Gonzales, and Christie (2006). *Journal of Experimental Social Psychology*, 43, 393-398.

Teachman, B. A., Woody, S. R., & Magee, J. C. (2006). Implicit and explicit appraisals of the importance of intrusive thoughts. *Behaviour Research and Therapy*, 44, 785-805.

### **Consultation: Research Design**

Greenwald, A. G., Cheryan, S., & Dasgupta, N. (2009). The Baltimore Young Women's Leadership Study.

### **UVa Psychology Department Service**

Coordinator, Social Psychology Area Weekly Lunch Speaker Series, Spring & Fall, 2009

### **Professional Affiliations**

Association for Psychological Science  
Society for Personality and Social Psychology

### **Other Experience**

#### **Navajo Reservation, Kayenta, AZ, 1993-1997**

Resided on the Navajo Reservation in northeastern Arizona where my wife worked as a pediatrician. Though gainful employment was not an option, I was occupied as follows:

1993-1995     Served on the National Association of College Admission Counselors'  
*Commission on the Role of Standardized Testing in the College Admission Process*

1993-1995     Wrote thesis for MA at Dartmouth and several published articles and book chapters

Spring 1995     Full-time student, undergraduate psychology, Northern Arizona University

1995-1997 Primary caretaker of newborn daughter

***Director of College Counseling, The Bullis School, Potomac, MD***  
1985-1993

***Regional Director of Undergraduate Admission, Georgetown University, Washington, DC***  
1984-1985

***Assistant Director of Undergraduate Admission, The American University, Washington, DC***  
1982-1984

***Admission Counselor/Assistant Registrar, McDaniel College, Westminster, MD***  
1980-1982