

## 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.

### 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, students from middle school age through college use the Internet to provide periodic responses to questionnaires and various implicit attitude measures.

### Grants

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

University of Virginia Learning Grants Program (Co-PI) 2012 – 2013  
Implicit Cognition in Differential Equations Total Award: \$2,000  
(Assessing attitude, self-concept, and stereotype change in a ‘transitional’ math course)

### **Honors and Awards**

*Social Psychology course showcased* (2013; selected by current top UVa undergraduates—*Jefferson Scholars*—as demonstration for *Jefferson Scholar Finalists* visiting from high school)  
*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*  
*Phi Beta Kappa*

### **Teaching**

*Research Methods & Data Analysis I* (University of Virginia, PSYC 3005)  
*Introductory Psychology* (University of Virginia, PSYC 1010)  
*Introduction to Social Psychology* (University of Virginia, PSYC 2600)

### **Mentor to Undergraduate Distinguished Majors**

2007-08: Lauren Kunkle, *The effect of serving as a mentor on college women’s implicit strength=male stereotype.*  
2008-09: Sarah Puckett, *The effect of dating activity and school environment on adolescent girls’ explicit and implicit math attitude.*

### **Papers in Print**

Steinman, S., Smyth, F. L., Bucks, R., Macleod, C., & Teachman, B. A. (in press). Anxiety-linked expectancy bias across the adult lifespan. *Cognition & Emotion*.

Menatti, A., Smyth, F. L., Teachman, B. A., & Nosek, B. A. (in press). Reducing stigma toward individuals with mental illnesses: A brief, online intervention. *Stigma Research and Action*.

Lambert, A. E., Smyth, F. L., Beadel, J. R. & Teachman, B. A. (2013). Aging and repeated thought suppression success. *PLOS ONE*, 8(6): e65009. doi:10.1371/journal.pone.0065009

Smyth, F. L., Guilford, W. H., & Nosek, B. A. (2011). First year engineering students are strikingly impoverished in their self-concept as professional engineers. Proceedings of the 2011 ASEE Annual Conference and Exposition. Vancouver, Canada.

Nosek, B. A., & Smyth, F. L. (2011). Implicit social cognitions predict sex differences in math engagement and achievement. *American Educational Research Journal*, 48, 1124-1154. doi:10.3102/0002831211410683

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., & Nosek, B. A. (2013). Male and female scientists' implicit gender-science stereotypes depend on scientific identity, not gender-ratios.

### **Conference Presentations**

Steinman, S. A., Smyth, F. L., Bucks, R. S., MacLeod, C., & Teachman, B. A. (2013, November). *What's next? The effects of anxiety and age on expectancy bias*. Poster accepted for presentation at the annual meeting of the Association for Behavioral and Cognitive Therapies, Nashville, TN.

Smyth, F. L. (2013, May). *Male and female scientists' implicit gender-science stereotypes vary with identity, not gender-ratios*. In *New research directions on gender stereotypes in science, math, and engineering*. Symposium presented at the 25th annual meeting of the Association for Psychological Science, Washington, D.C.

Martin, D., von Oertzen, T., Smyth, F., Melcher, T., & Mitrea, I. (2013, May). *Implicit math gender stereotypes changing over time: An application of latent growth curve modeling*. Poster accepted for

presentation at the 25th annual meeting of the Association for Psychological Science, Washington, D.C.

Magee, J. C., Smyth, F. L., & Teachman, B. A. (2013, May). *A web-based examination of responses to Intrusive thoughts across the adult lifespan*. Poster presented at the annual meeting of the International Society for Research on Internet Interventions, Chicago, IL.

Magee, J. C., Smyth, F. L., & Teachman, B. A. (2013, April). *Methods of controlling unwanted thinking across the adult lifespan*. Poster presented at the annual meeting of the Anxiety and Depression Association of America, La Jolla, California.

Lambert, A. E., Smyth, F. L., Beadel Cruz, J., & Teachman, B. A. (2012, April). *Cognitive control and age differences in thought suppression success*. Poster presented at the Cognitive Aging Conference, Atlanta, GA.

Beadel Cruz, J., Smyth, F. L., & Teachman, B. A. (2012, April). *Cognitive Bias Modification: Change in Arousal, Subjective Fear, and Cognition Over the Course of Training*. Poster presented at the annual meeting of the Anxiety Disorders Association of America, Arlington, VA.

Steinman, S. A., Teachman, B. A., & Smyth, F. L. (2011, November). Challenges of measuring implicit associations for complex clinical issues: Anxiety sensitivity as a prototype. In A. J. Ouimet & A. S. Radomsky (Co-Chairs), *Implicit Cognition in Anxiety Disorders: Development, Maintenance, and Treatment*. Symposium presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, Toronto, Canada.

Gorlin, E. I., Smyth, F. L., & Teachman, B. A. (2011). Reaction Time as a Moderator of the Relationship between State and Trait Affect. Poster presented at the 45<sup>th</sup> ABCT Annual Convention, Toronto, Canada.

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., & McArdele, 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. (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.

## Lectures

### *Implicit Bias in Education & Work*

- *Tackling Bias: Implicit Bias in STEM*, Society for Neuroscience webinar, June 2013
- *Mind Bugs: The Ordinary Origins of Bias*, Cornell University Center for Teaching Excellence, May 2013
- *Implicit Bias in STEM*, University of Virginia ADVANCE Conference, February 2013
- *Implicit Bias in STEM*, Association of American Colleges & Universities conference: *Next Generation STEM Learning: Investigate, Innovate, Inspire*, November 2012
- *Implicit Bias in Science*, Women in Engineering Proactive Network (WEPAN) webinar, February 2012
- *Implicit Bias in STEM*, Jefferson National Accelerator Facility scientists, November 2011
- *Harnessing Implicit Mindsets*, Rutgers-Camden Faculty Diversity Workshop, March 2011
- UVa Leadership in Academic Matters Program, March 2011
- *Transcending Gender & Ethnic Barriers to Full STEM Participation*, AAAS, February 2011
- *Implicit Bias in Science*, STEM Equity Pipeline webinar, February 2011
- *National Diversity Equity Workshop* for Chairs of University Chemistry Depts, January 2011
- UVa Leadership in Academic Matters Program, October 2010
- UVa Teaching Workshop for new faculty and graduate students: *Making It Work for Everyone: How To Teach All Students Effectively*, August 2010
- 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
- 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

*College Admission Practices and Minority Achievement in Science and Math*

- *STEM Success in Selective Colleges: Effects of Relative Strength of Preparation*, Brookings Institution conference, September 2012
- *Undercurrents in the River: Which Science Majors are Disappearing...and Why*, College Board Forum, November 2003

*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*
- *Psychology of Women Quarterly*
- *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: Implicit Gender-Science Bias Education**

Member of the *Expert Group* of professional development consultants to the STEM Equity Pipeline project ([www.stemequitypipeline.org](http://www.stemequitypipeline.org))

**Consultation: Research Design**

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

**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.

**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