

Stephen Vaisey
Department of Sociology
Duke University
Box 90088
Durham, NC 27708-0088

Academic Positions

2018-	Professor of Sociology and Political Science, Duke University
2016-2018	Professor of Sociology, Duke University
2012-2016	Associate Professor of Sociology, Duke University
2011-2012	Assistant Professor of Sociology, UC Berkeley and Duke University
2008-2011	Assistant Professor of Sociology, University of California, Berkeley

Education

2008	PhD in Sociology, University of North Carolina at Chapel Hill
2004	MA in Sociology, University of North Carolina at Chapel Hill
2001	BA in French and BS in Sociology, Brigham Young University

Academic Publications

* = student or postdoc co-author

- Achim Edelmann and Stephen Vaisey. 2023. "Gender Differential Effect of College on Political Orientation Over the Last 40 Years: A Propensity Score Weighting Approach." *PLoS One*.
- Lauren Valentino and Stephen Vaisey. 2022. "Culture and Durable Inequality." *Annual Review of Sociology* 48: 109-229.
- Underwood, Ted, Kevin Kiley, Wenyi Shang*, and Stephen Vaisey. 2022. "Cohort Succession Explains Most Change in Literary Culture." *Sociological Science* 9:184–205.
- Stephen Vaisey. 2021. "Welcome to the Real World: Escaping the Sociology of Culture and Cognition." *Sociological Forum* 36: 1297-1315.
- Stephen Vaisey and Kevin Kiley*. 2021. "A Model-Based Method for Detecting Persistent Cultural Change Using Panel Data." *Sociological Science* 8: 83-95.
- Kevin Kiley* and Stephen Vaisey. 2020. "Measuring Stability and Change in Personal Culture." *American Sociological Review* 85(3): 477-506.
- Stephen Vaisey and Margaret Frye. 2019. "The Old One-Two: Preserving Analytical Dualism in Cognitive Sociology," pp. 101-114 in *Oxford Handbook of Cognitive Sociology*, ed. W. Brekhus and G. Ignatow. New York: Oxford University Press

- Stephen Vaisey and Lauren Valentino*. 2018. "Culture and Choice: Toward Integrating Cultural Sociology with the Judgment and Decision-Making Sciences." *Poetics* 68: 131-143.
- Andrei Boutyline* and Stephen Vaisey. 2017. "Belief Network Analysis: A Relational Approach to Understanding the Structure of Attitudes." *American Journal of Sociology* 122(5): 1371-1447.
- Stephen Vaisey and Andrew Miles*. 2017. "What You Can—and Can't—Do With Three-Wave Panel Data." *Sociological Methods and Research* 46(1): 44-67.
- Morteza Dehghani, Kate Johnson*, Joe Hoover*, Eyal Sagi, Justin Garten*, Niki Jitendra Parmar, Stephen Vaisey, Rumen Iliev, Jesse Graham. 2016. "Purity Homophily in Social Networks." *Journal of Experimental Psychology: General* 145(3): 366-375.
- Stephen Vaisey and Omar Lizardo. 2016. "Cultural Fragmentation or Acquired Dispositions? A New Approach to Accounting for Patterns of Cultural Change." *Socius: Sociological Research for a Dynamic World*.
- Elizabeth Christine Victor*, Andrew Miles*, and Stephen Vaisey. 2015. "The Role of Moral Worldviews in Predicting Adolescent Sexual Behavior from Adolescence to Emerging Adulthood." *Journal of Adolescent Research* 30(6): 779-799.
- Andrew Miles* and Stephen Vaisey. 2015. "Morality and Politics: Comparing Alternate Theories." *Social Science Research* 53: 252-269.
- Achim Edelmann* and Stephen Vaisey. 2014. "Cultural Resources and Cultural Distinction in Networks." *Poetics* 46: 22-37.
- Kate M. Johnson*, Ravi Iyer*, Sean P. Wojcik*, Stephen Vaisey, Andrew Miles*, Veronica Chu*, and Jesse Graham. 2014. "Ideology-Specific Patterns of Moral Indifference Predict Intentions Not to Vote." *Analyses of Social Issues and Public Policy* 12(1): 61-77.
- Stephen Vaisey. 2014. "Comment: QCA Works—When Used With Care." *Sociological Methodology* 44: 108-112.
- Stephen Vaisey. 2014. "Is Interviewing Compatible with the Dual-Process Model of Culture?" *American Journal of Cultural Sociology* 2: 150-158.
- Stephen Vaisey. 2014. "The 'Attitudinal Fallacy' is a Fallacy: Why We Need Many Methods to Study Culture." *Sociological Methods and Research* 43(2): 227-231.
- Stephen Vaisey and Andrew Miles*. 2014. "Tools from Moral Psychology for Measuring Personal Moral Culture." *Theory and Society* 43: 311-332.
- Kraig Beyerlein and Stephen Vaisey. 2013. "Individualism Revisited: Moral Worldviews and Civic Engagement." *Poetics* 41(4): 384-406.
- Steven Hitlin and Stephen Vaisey. 2013. "The New Sociology of Morality." *Annual Review of Sociology* 39:51-68.
- Kyle C. Longest, Steven Hitlin, and Stephen Vaisey. 2013. "Position and Disposition: The Contextual Development of Human Values." *Social Forces* 91(4):1499-1528.
- Stephen Vaisey. 2012. Review of *The Righteous Mind* by Jonathan Haidt. *European Journal of Sociology* 53(3): 448-451.

- Stephen Vaisey. 2012. Review of *Why Things Matter to People: Social Science, Values and Ethical Life* by Andrew Sayer. *Contemporary Sociology* 41(5):671-672.
- Stephen Vaisey. 2011. Review of *The Theory of Cultural and Social Selection* by W.G. Runciman. *American Journal of Sociology* 116(4): 1377-1380.
- Steven Hitlin and Stephen Vaisey (eds.). 2010. *Handbook of the Sociology of Morality*. Springer.
- Stephen Vaisey. 2010. "What People Want: Rethinking Poverty, Culture, and Educational Attainment." *Annals of the American Academy of Political and Social Science* 629: 75-101.
- Stephen Vaisey and Omar Lizardo. 2010. "Can Cultural Worldviews Influence Network Composition?" *Social Forces* 88(4): 1595-1618.
- Stephen Vaisey. 2009. "Motivation and Justification: A Dual-Process Model of Culture in Action." *American Journal of Sociology* 114(6): 1675-1715.
- Stephen Vaisey. 2009. "QCA 3.0: The 'Ragin Revolution' Continues." *Contemporary Sociology* 38(4): 308-312.
- Stephen Vaisey. 2009. Review of *Fuzzy Set Theory: Applications in the Social Sciences*, by Michael Smithson and Jay Verkuilen. *Sociological Methods and Research* 37(3): 455-457.
- Daniel E. Adkins and Stephen Vaisey. 2009. "Unified Stratification Theory: Structure, Genome, and Status across Human Societies." *Sociological Theory* 27(2): 99-121.
- Jenny Trinitapoli and Stephen Vaisey. 2009. "The Transformative Role of Religious Experience: The Case of Short Term Missions." *Social Forces* 88(1): 121-146.
- Stephen Vaisey. 2008. "Socrates, Skinner, and Aristotle: Three Ways of Thinking about Culture in Action." *Sociological Forum* 23(3): 603-613. [Followed in same issue by a comment from Ann Swidler (pp. 614-618) and my reply (pp. 619-622).]
- Kyle C. Longest and Stephen Vaisey. 2008. "Control or Conviction? Objective and Subjective Religiosity and Adolescent Marijuana Use." *Journal of Drug Issues* 38(3): 689-715.
- Andrew Perrin and Stephen Vaisey. 2008. "Parallel Public Spheres: Distance and Discourse in Letters to the Editor." *American Journal of Sociology* 114(3): 781-810.
- Michael J. Shanahan, Stephen Vaisey, Lance D. Erickson and Andrew Smolen. 2008. "Environmental Contingencies and Genetic Predispositions: Social Capital, Educational Continuation, and a Dopamine Receptor Polymorphism." *American Journal of Sociology* 114(S1): S260-S286.
- Stephen Vaisey and Christian Smith. 2008. "Catholic Guilt among U.S. Teenagers: A Research Note." *Review of Religious Research* 49(4): 415-426.
- Kyle C. Longest and Stephen Vaisey. 2008. "Fuzzy: A Program for Performing Qualitative Comparative Analysis (QCA) in Stata." *The Stata Journal* 8(1): 79-104.
- Stephen Vaisey. 2007. "Structure, Culture, and Community: The Search for Belonging in 50 Urban Communes." *American Sociological Review* 72(6): 851-873.

- Stephen Vaisey. 2007. Review of *Emerging Moral Vocabularies: The Creation and Establishment of New Forms of Moral and Ethical Meanings* by Brian M. Lowe. *Contemporary Sociology* 36(3): 259-260.
- Michael J. Shanahan, Lance D. Erickson, Stephen Vaisey and Andrew Smolen. 2007. "Helping Relationships and Genetic Propensities: A Combinatoric Study of DRD2, Mentoring, and Educational Continuation." *Twin Research and Human Genetics* 10(2): 285-298.
- Stephen Vaisey. 2006. "Education and Its Discontents: Overqualification in America, 1972-2002." *Social Forces* 85(2): 835-864.
- Arne L. Kalleberg and Stephen Vaisey. 2005. "Pathways to a Good Job: Perceived Work Quality among the Machinists in North America." *British Journal of Industrial Relations* 43: 431-454.
- Stephen Vaisey. 2004. Review of *Human Institutions: A Theory of Societal Evolution*, by Jonathan H. Turner. *Social Forces* 83: 432-3.

Invited Presentations

- 2023 "Cohort Effects and Cultural Change." Advanced Methods at Purdue, Purdue University.
- 2022 "Cohort Effects and Cultural Change." Evolution, Culture and Cognition Conference, Saint-Jacut-de-la-mer, France.
- "How Common is Opinion Change?" Center for the Science of Moral Understanding, University of North Carolina at Chapel Hill.
- "The Return of Socialization." Royal Netherlands Academy of Arts and Sciences, Amsterdam, Netherlands.
- "True Interdisciplinarity." University of Nijmegen, Netherlands.
- 2021 "Measuring Stability and Change in Personal Culture." Department of Sociology, University of Texas, Austin.
- "Measuring Stability and Change in Personal Culture." Department of Sociology, University of British Columbia.
- "Methods for Detecting and Measuring Population-Level Cultural Evolution." Diverse Intelligences Summer Institute (online).
- "Shaping Intelligences: An Overview." Diverse Intelligences Summer Institute (online).
- 2020 "Measuring Stability and Change in Personal Culture." Department of Sociology, University of North Carolina at Chapel Hill.
- "Measuring Culture and Cultural Change." Diverse Intelligences Summer Institute (online).
- "Shaping Intelligences." Diverse Intelligences Summer Institute (online).
- 2019 "Methods for Detecting and Measuring Population-Level Cultural Evolution." Diverse Intelligences Summer Institute, University of St. Andrews, UK.

- “Shaping Intelligences: An Overview.” Diverse Intelligences Summer Institute, University of St. Andrews, UK.
- 2018 “Theory and Time: How Past and Present Environments Influence Cultural Change.” University of Cologne.
- “Culture and Cognition.” Diverse Intelligences Summer Institute, University of St. Andrews, UK.
- “Culture, Environment, and Change.” Diverse Intelligences Summer Institute, University of St. Andrews, UK.
- “The Role of Time in Sociological Theory: An Empirical Investigation Using Repeated Cross-Section and Panel Data.” Department of Sociology, University of Pennsylvania.
- 2017 “Measuring Morality: Progress, Challenges, and Prospects.” Kenan Institute for Ethics, Duke University.
- 2016 Invited panelist, Causes and Consequences of Decision-Making in Urban Contexts conference. Radcliffe Institute, Harvard University.
- “Culture and Choice: Bridging the Gap Between Decision Theory and Cultural Sociology.” Paper presented at the Formalizing Culture conference, University of Bern, Switzerland.
- “Cultural Fragmentation or Acquired Dispositions? An Analytic Approach to Accounting for Patterns of Cultural Change.” Department of Sociology, University of North Carolina
- 2015 “Symbolic Boundaries Condition the Strength of Peer Influence: The Case of Religion and Alcohol Use”
- Duke Network Analysis Center, Duke University
 - Networks and Time Workshop, Columbia University
- “Models of Culture and Social Change.” Department of Sociology, Harvard University
- “Cultural Sociology and Moral Psychology.”
- Center for Mind, Brain, and Culture, Emory University
 - Values, Ideology, and Morality Lab, University of Southern California
- “Deliberative and Unconscious Cognition.” Measuring Culture Conference, University of Notre Dame
- 2014 “Measuring Variance in Cultural Depth: Conceptual Clarification, a Method, and an Empirical Test.” Center for Advanced Social Science Research, New York University
- “The Sociology of Morality.” Institute for Advanced Studies in Culture, University of Virginia
- “Accounting for Variance in Cultural Depth.” Center for Cultural Sociology, Yale University
- 2013 “Cultural Durability and Social Change.” Department of Sociology, Penn State University
- 2012 “Tools for Measuring Moral Culture.” Measuring Culture Conference, University of British Columbia, Vancouver

- “Cultural Durability and Social Change.”
- Department of Sociology, UNC-Charlotte
 - Department of Sociology, University of Virginia
 - Department of Sociology, UCLA
 - Department of Sociology, Umeå University (Sweden)
 - Economic Sociology Workshop, Harvard University and MIT Sloan School of Business
- 2011 “Cultural Depth and Social Change.” Culture and Politics Workshop, UNC-Chapel Hill
- 2010 “More Than a Feeling: How Culture Shapes Moral Intuitions and Social Behavior.”
Department of Sociology, Duke University
- “What Is and What Ought to Be: Morals, Models, and Motives in the Study of Culture.”
Kenan Institute for Ethics, Duke University
- “Inside Out: Changing Conceptions of the Actor-Environment Relationship in Social Science.” Haas School of Business, University of California, Berkeley
- “Reframing Norms: Linking Cultural Models and Moral Judgments in Social Research.”
Department of Sociology, Princeton University
- 2009 “You *Can* Take It with You: The Trans-Situational Role of Culture in Action.”
- Department of Sociology, Northwestern University
 - Department of Sociology, Duke University
- “What People Want: Poverty, Aspirations, and Educational Attainment.” Department of Sociology, University of California-San Diego
- “Moral Cultures and Successful Societies.” Meetings of the Successful Societies Program of the Canadian Institute for Advanced Research, San Francisco
- 2008 “Imagination and Desire: Poor/Non-Poor Differences in Future Aspirations.”
Miniconference on Culture and Poverty (sponsored by the Ford Foundation), National Opinion Research Center, University of Chicago
- 2007 “Motivation and Justification: Toward a Dual Process Theory of Culture in Action.”
- Department of Sociology, Washington State University
 - Department of Sociology, University of Chicago
 - Department of Sociology, Indiana University
 - Department of Sociology, University of Michigan
 - Department of Sociology, UC Irvine
 - Department of Sociology, Cornell University
 - Department of Sociology, UC Berkeley
 - Graduate School of Business, Stanford University
 - Department of Sociology, University of Pennsylvania
 - Kellogg School of Management, Northwestern University

Conference Presentations

- 2023 “How Common Is Opinion Change? Evidence from a 17-Wave Longitudinal Survey.” Eastern Sociological Society, Baltimore.
- 2021 “Sociology and Cultural Evolution: Obstacles and Future Directions.” Cultural Evolution Society (online).
- 2018 “Is Cultural Sociology Compatible with the Judgment and Decision Sciences?” Paper presented at the Culture and Class Mini-Conference at the annual meeting of the Eastern Sociological Society, Baltimore.
- “Morality: Meaning and Measure.” Invited panelist at the annual meeting of the American Sociological Association, Philadelphia.
- 2017 “What is the Right Level of Psychological Realism for Cultural Sociology?” Paper presented at the annual meeting of the American Sociological Association, Montréal, Canada.
- “Is Religion Really Just Culture? Is Culture Really Just Religion?” Panel participant at the annual meeting of the American Sociological Association, Montréal, Canada.
- 2016 “Symbolic Boundaries and Peer Influence on Alcohol Use.” Paper presented at the annual meeting of the American Sociological Association, Seattle. (Co-authored, with Achim Edelmann.)
- “Pronoun Use and Cultural Models of the Self.” Paper presented at the annual meeting of the Eastern Sociological Society. (Co-authored, with Lauren Valentino.)
- 2015 “Belief Network Analysis of American Public Opinion: Findings from a Novel Structural Methodology.” Paper presented at the annual meeting of the American Sociological Association, Chicago. (Co-authored, with Andrei Boutyline.)
- 2014 “Affinities of Language, Cultural Tool Kits, Institutional Logics: Advancing Strategies of Action.” Panelist at the annual meeting of the Academy of Management, Philadelphia.
- “Cultural Durability and Social Change.” Paper presented at the annual meeting of the Eastern Sociological Society, Baltimore.
- 2013 “Cultural Sociology and Moral Psychology.” Paper presented at the annual meeting of the American Sociological Association, New York.
- “Value Similarity and Solidarity.” Paper presented at the annual meeting of the American Sociological Association, New York. (Co-authored, with Liana Prescott.)
- 2012 “The Structure of Belief Systems: Ideology and Network Centrality.” Paper presented at the annual meeting of the American Sociological Association, Denver. (Co-authored, with Andrei Boutyline.)
- 2011 “Cultural Models and Altruism.” Paper presented at the annual meeting of the American Sociological Association, Las Vegas.
- 2010 “From Contradiction to Coherence: Theory Building in the Sociology of Culture.” Paper presented at the annual meeting of the American Sociological Association, Atlanta.

- 2009 “Models, Morals, and Motives.” Paper presented at the Junior Theorists Symposium, Berkeley, CA.
- 2008 “The Cultural Consequences of Modernity: Individualization, Rationalization, and Subjective Well-Being.” Paper presented at the annual meeting of the American Sociological Association, Boston. (Co-author, with Andrew Payton.)
- 2007 “Can Cultural Worldviews Influence Network Formation? A Longitudinal Investigation.” Paper presented at the annual meeting of the American Sociological Association, New York.

Grants and Awards

- 2021 Clifford Geertz Best Paper Award (for “Measuring Stability and Change in Personal Culture”). Culture Section of the American Sociological Association.
- 2015-18 Co-Principal Investigator (with Jesse Graham and Morteza Dehghani). “The Spread and Impact of Moral Messages: Machine Learning, Network Evolution, and Behavioral Prediction.” National Science Foundation. **\$640,267.**
- 2014-17 Principal Investigator. “The Social Context and Consequences of Transformative Experience.” John Templeton Foundation. **\$300,000.**
- 2011-13 Principal Investigator. “Developing and Deploying Innovative Methods for Assessing Moral Worldviews and Moral Formation.” John Templeton Foundation. **\$400,000.**
- 2011 Theory Prize for Best Article (for “Motivation and Justification”). Theory Section of the American Sociological Association.
- 2009-12 “Stimulating Innovative Global Research in the Science of Generosity: RFP & Primary Research Initiative on Origins, Manifestations, and Consequences.” (Co-Investigator, with Christian Smith, PI). John Templeton Foundation. **\$4,999,360.**
- 2007-10 “Tracking the Religious Lives of American Youth into Early Adulthood: NSYR Wave 3.” (Co-Investigator, with Christian Smith, PI). Lilly Endowment Inc. **\$1,096,631.**
- 2007-08 Charlotte W. Newcombe Dissertation Fellowship (Woodrow Wilson National Fellowship Foundation)
- 2007-08 Howard W. Odum Award for Excellence (given yearly to most outstanding graduate student by the UNC Sociology faculty)
- 2006-08 Yale University Center for Cultural Sociology Pre-Doctoral Fellowship
- 2003-06 National Science Foundation Graduate Research Fellowship
- 2002-08 Caroline H. and Thomas S. Royster, Jr. Fellowship (Graduate School, UNC)

Graduate Student Advising

Duke University

Dissertation chair: Andrew Miles (2015), Mary Beth Fallin Hunzaker (2017), Lauren Valentino (2019), Joshua Doyle (2020), Kevin Kiley (2021), Susan Jacobs (2022), Nicolas Restrepo Ochoa (2022)

Dissertation committee: Feng Tian (2014), Cyrus Schliefer (2015), Jacob Fisher (2016), Amie Bostic (2016), Jessica Dawson (2016), Raphaël Chénier (2017), Bryce Bartlett (2018), Brent Curdy (2018), Nick Bloom (2019), Simon Brauer (2019), Josh Bruce (2019), Friedolin Herfort (2019), Maria Cristina Ramos Flor (2020), Noah Gibson, Danielle Montagne, Joseph Roso, Tom Wolff

University of California, Berkeley

Dissertation co-chair: Hannah Emery (2013)

Dissertation committee: Alexander Janus (2012)

MA chair: Aaron Platt (2011)

MA committee: Margaret Frye (2009), Dmitri Seals (2010), Andrei Boutyline (2011), Sun Kim (2012), Michael Schultz (2012)

Other institutions

Dissertation committee: Adam Long (University of North Carolina, 2014), Jaime Wright (Graduate Theological Union, 2016), Austin Kozlowski (University of Chicago, 2022), Bridget Ritz (University of Notre Dame, 2022)

Teaching

Data Analysis and Visualization for Business – Duke University
Multilevel and Mixed Models – Statistical Horizons, LLC
Treatment Effects Analysis – Statistical Horizons, LLC
Multilevel and Mixed Models Using R – Statistical Horizons, LLC
Matching and Weighting for Causal Inference with R – Statistical Horizons, LLC
Longitudinal Data Analysis with R – Statistical Horizons, LLC
Classical Sociological Theory (graduate) – Duke University
Graduate Statistics (two-course sequence) – UC Berkeley, Duke University
Sociology of Culture (graduate) – UC Berkeley, Duke University
Introduction to Sociology (undergraduate) – UC Berkeley
Sociology of Culture (undergraduate) – UC Berkeley, Duke University
Social Theory (undergraduate) – UNC-Chapel Hill

Department and University Service

Founding Director, Worldview Lab, Kenan Institute for Ethics, Duke University (2018-present)
Arts and Sciences Courses Committee, Duke University (2016-present)
Faculty Council, Kenan Institute for Ethics (2014-2016, 2018-present)
Director of Graduate Studies, Duke Sociology (2013-2019)
Arts and Sciences ad-hoc committee on plagiarism sanctions, Duke University (2014-2015)
Markets and Management Steering Committee, Duke University (2011-2016)
Graduate Admissions Committee, Duke Sociology (2011-2013)
Founding Co-Director, Moral Judgment and Decision Lab, Duke University (2011-2014)
Graduate Admissions Committee, Berkeley Sociology (2008-2009, 2010-2011)
Faculty Undergraduate Advisor, Berkeley Sociology (2009-2010)

Professional Service

2023-	Member, General Social Survey Board
2022-	Deputy Editor, <i>Sociological Science</i>
2020-	Editorial Board, <i>Social Science Research</i>
2015-	Editorial Board, <i>Poetics</i>
2011-	Editorial Board, <i>Social Forces</i>
2014-22	Consulting Editor, <i>Sociological Science</i>
2019-21	Consigliere, Diverse Intelligences Summer Institute
2018-19	Editorial Board, <i>Sociological Methodology</i>
2008-19	Editorial Board, <i>Journal for the Scientific Study of Religion</i>
2015-18	Editorial Board, <i>Socius</i>
2014-15	Member, Geertz Prize Committee, ASA Section on Culture
2012-15	Elected Council Member, ASA Theory Section
2012-15	Elected Council Member, ASA Section on Altruism, Morality, and Solidarity
2012-13	Chair, Geertz Prize Committee, ASA Section on Culture
2010-13	Elected Council Member, ASA Section on Culture
2010-13	Editorial Board, <i>Sociological Theory</i>
2011-12	Chair, Theory Prize Committee, ASA Theory Section
2011-12	Outstanding Book Award Committee, ASA Altruism Section
2009-12	Consulting Editor, <i>American Journal of Sociology</i>
2008-09	Best Student Paper Award Committee, ASA Section on Culture

Member: Cultural Evolution Society, Sociological Research Association, Society for Sociological Science

Ad Hoc Reviewer: Administrative Science Quarterly, American Journal of Cultural Sociology, American Journal of Sociology, American Sociological Review, British Journal of Sociology, Cognition, Complexity, Journal for the Scientific Study of Religion, Journal for the Theory of Social Behavior, Journal of Health and Social Behavior, Nature Human Behavior, Organization Science, PLoS ONE, Poetics, Political Science Research and Methods, Public Opinion Quarterly, Review of Religious Research, Social Forces, Social Psychological Quarterly, Sociological Forum, Sociological Methods and Research, Sociological Science, Sociological Theory, Theory and Society; Cambridge University Press, Harvard University Press, Oxford University Press, University of Chicago Press; John Templeton Foundation, National Science Foundation