Making science a force for social good

Ionatan Kuperwajs
Growing Up in Science
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The ScAAN Model
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- Scientists
  - Outreach
- Legislators
- NGOs
- Public
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![Diagram showing the ScAAN Model]

- Scientists
- Advocacy
- Research
- Legislators
- NGOs
- Public
The ScAAN Model

Core idea: leverage scientific skills for social good

• ScAAN members are graduate students, postdoctoral researchers, and professors who engage in pro-bono science

• Identify a cause that:
  • We care deeply about
  • Has the potential to be turned into policy in the foreseeable future

• Partner with a non-profit advocacy group working on this cause

• In close consultation, collaborate on a project with the group
  • Evidence-based reports
  • Data analysis and visualization

• Stay involved in the follow-up
Project #1: Juvenile Justice

Until recently, NY and NC were the only states to automatically try 16- and 17-year-old criminal defendants as adults.

- No parental notification on arrest
- Processed in adult criminal court
- Placed into adult prison
Project #1: Juvenile Justice

Scientific support for raising the age of criminal responsibility

This report summarizes psychological and neuroscience evidence from 28 peer-reviewed studies. Compiled by the Scientist Action and Advocacy Network. For questions or comments, email info@scaan.net.

Summary

Developmental neuroscience research shows that brain areas (e.g., the prefrontal cortex) that are involved in deliberative decision-making and the regulation of emotions and impulses are among the last to develop, continuing to mature into young adulthood.1,2,3 Because their brains are under construction and malleable, adolescents have a unique ability to learn new behavioral patterns.4,5 Whether the adolescent develops in a prosocial or antisocial direction depends strongly on the adolescent's environment and experiences.6,7,8 This malleability means that incarceration can have a lasting and traumatic impact.3,9,10 Adolescence is a period of rapid social, physical, and emotional development. Incarceration hinders the social and emotional development of adolescents.11 Juvenile justice policy should instead be designed to reduce recidivism, promote rehabilitation, and implement interventions during the formative window of brain malleability.

The choice between these two approaches is particularly important because the cognitive and social skills that develop during adolescence may persist into adulthood.12,13 Therefore, how correctional programs use this unique window of opportunity will likely have lasting impacts on the rest of the affected individuals' lives.

Cognitive ability
- memory
- verbal fluency

Social maturity
- being less impulsive
- resisting peer influence
- understanding risk
- thinking about the future

Source: Steinberg et al., American Psychologist, 2009

Adapted from Dreyfuss et al., 2014
Project #1: Juvenile Justice

NYC council committee

Suffolk County legislature press conference

April 2017
Project #1: Juvenile Justice

Work beyond the Raise the Age campaign

• Report on Miranda rights with The Legal Aid Society
• Developing scientific resources for the legal community
• Teaching seminars to judges and lawyers

Adapted from Gogtay et al. (2004)
Project #2: Waterfront Justice

The New York Times
More Than 40 Sites Released Hazardous Pollutants Because of Hurricane Harvey

By TROY GRIGGS, ANDREW W. LEHREN, NADJA POPOVICH, ANJALI SINGHVI and HIROKO TABUCHI  SEPT. 8, 2017

HUFFPOST
Hurricane Sandy Spills Sewage, Triggers Toxic Troubles

By Lynne Peeples, Lila Shapiro, and Saki Knafo
Project #2: Waterfront Justice

Hurricane Storm Surge

The SMIAAs and their surroundings are highly vulnerable to hurricane storm surge. This map shows that the SMIA boundaries and storm surge zones (as defined by the NYS Emergency Management Office). Facilities handling hazardous substances or toxic chemicals in these areas could represent a threat in the event of a hurricane storm surge.
Project #2: Waterfront Justice

Families Below Poverty Line

This map shows the percentage of families below poverty level population by census tract. Census tracts with dark red denote areas where more than 66% of the community is below poverty level. In fact of the total in addition, approximately 283,000 low-income people, defined as those living below 200% of the poverty level, live in census tracts that are vulnerable to storm surge and that fall within half a mile of the SMIA(s).
Project #2: Waterfront Justice

People of Color

This map shows the percentage of population of people of color by census tract. Census tracts in dark purple denote areas where more than 66% of the community are people of color. As you can see, the majority of areas around SMIs represent populations of color. In fact, of the total 5.5 million people of color in NYC, 2.8 million live in census tracts that are vulnerable to storm surge and approximately 430,000 live in census tracts that are both vulnerable to storm surage and fall with a half-mile of SMIs.
Project #2: Waterfront Justice

Furthermore, using data from the NYC department of Health and Mental Hygiene we can see that SMIAs and the adjacent areas include some of the highest levels of the uninsured people by community district (dark blue), which denotes limited access to health insurance in the event of a toxic exposure. Note that in hatched community districts, estimates of percent uninsured should be interpreted with caution.
Environmental Projects

Single-use plastic bags

Reductions in single-use bag use

- Maryland: plastic fee, paper fee
- Richmond, CA: ban plastic, paper fee
- Chicago, IL: plastic fee, paper fee
- Maryland: reusable bag credit

Climate-friendly supermarkets

ScAAN.net
ScAAN's Broader Role

Panels

Direct advocacy

Workshops

Animal Experimentation in Neuroscience
Past, Present, and Future

Science and Policy Symposium

Bridging the Gap
Neuroscience, Inequality & Social Policy

Union of Concerned Scientists
Science for a healthy planet and safer world
Why participate in science activism?

- Make use of your skills as a scientist on social issues you are passionate about, without being a policy expert or domain specialist
- Develop work that is immediately useful rather than shouting into the void
- Collaborate with and learn from advocacy groups
- Build new technical skills
- Alleviate news-related anxiety

Thanks!