Portfolio Analysis of Sex and Gender Differences Research Awardees of Infectious and Immune Mediated Conditions

Funding the Cutting Edge of Sex and Gender Difference Science

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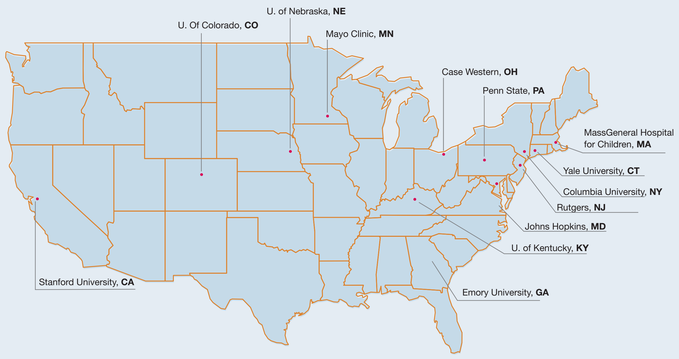
ABSTRACT

Compared to the available pool of high scoring NIAID sex differences applicants, awardees of infectious disease and immune mediated sex and gender differences research grants were more likely to be independent researchers who proposed novel methods/techniques for conducting sex and gender differences research. Within the pool of sex differences researcher awardees at NIAID, three rounds (2013, 2014, 2015) of the infectious diseases and autoimmune related research awardees were analyzed to better understand the characteristics of awardees and the areas of science in which they conduct sex and gender differences research in response to the Administrative Supplements for sex and gender differences research initiative sponsored by the National Institute of Health's Office of Research and Women's Health. Research awardees were analyzed by the type of funding mechanism, areas of science, demographics, stage of career, research environment and type of methods/techniques employed to study sex and gender difference science. It was predicted that research awardees would be established investigators with expertise in clinical research. Findings indicate that investigators were more likely to be a range of researchers including early stage investigators and merit award winning scientists. Areas of science tended to vary from foundational immunological basic research to human studies of familiar conditions such as HIV. Awardees were more likely to be funded through an independent research grant rather than a research network. Methods and techniques included innovative analyses, such as bioinformatics, as well as adding animals or patients to power a study to determine whether sex differences were statistically significant. These findings indicate that sex and gender differences research could enhance research design of vaccine, diagnostics and therapeutic studies and potentially advance the health of individuals living with infectious diseases and immune mediated conditions.

SCIENTIFIC AREAS OF INTEREST FOR SEX DIFFERENCES RESEARCH:

Hiv • Influenza • Vaccine Development • Ebola • Chronic Sinusitis • Lyme Disease • Malaria • Streptococcus Pneumoniae • Hepatitis C • Lupus • Listeria • Natural Killer Cell Memory

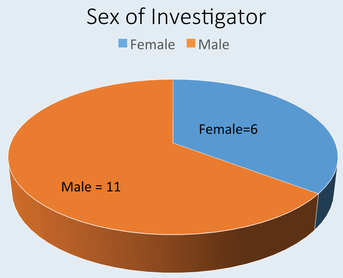


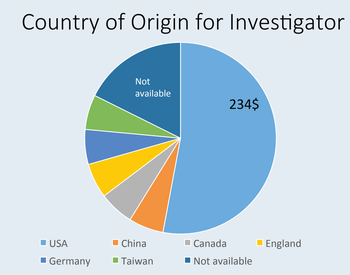
METHODS

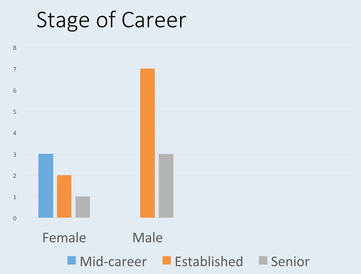
Data was gathered from the grant applications of sex differences research awardees. Internet searches were conducted to identify the country of origin and the academic affiliation. Search terms were used to identify the areas of sciences. All studies were linked with the strategic goals of the National Institutes of Health's Office of Research on Women's Health.

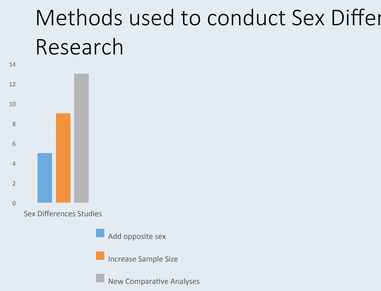
RESULTS

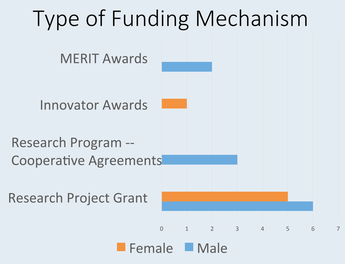
Compared to the available pool of high scoring NIAID sex differences applicants, researcher awardees who conducted sex differences were more likely to be male investigators, who worked at research institutions located in the Northeastern region of the country. Male investigators were more likely to be established investigators with 15-20 years of research experience. Female investigators were more likely to be mid-career, working at academic institutions in the mid-west or west coast. Both male and female investigators conducted basic and translational research studies. The research project grant (R01) was the most likely funding mechanism to be used by an investigator conducting sex differences research.

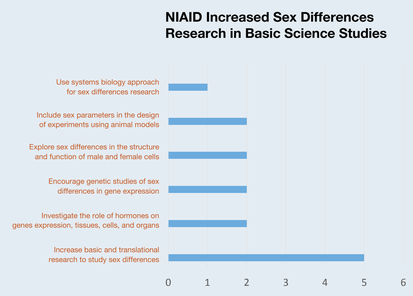












DISCUSSION

The findings indicate that sex difference research on infectious diseases and immune mediated conditions focused on using basic and translational science to better understand the pathobiology, prevention and treatment of disease. Investigators used a range of emerging technologies such as bioinformatics, genome-wide association studies, and animal models to conduct sex differences research. A genome-wide association study is an approach that involves rapidly scanning markers across the complete sets of DNA, or genomes, of many people to find genetic variations associated with a particular disease. Once new genetic associations are identified, researchers can use the information to develop better strategies to detect, treat and prevent the disease. Such studies are particularly useful in finding genetic variations that contribute to common, complex diseases, such as asthma, cancer, diabetes, heart disease and mental illnesses.

FUNDING

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REFERENCES

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