

Chicago iGIANT Roundtable – February 16, 2016 Impact of Gender/sex on Innovation and Novel Technologies

Venue:

MATTER
222 Merchandise Mart Plaza, Suite 1230,
Chicago, IL

Co-Hosts:

American Medical Women's Association
Women in Bio

The Chicago iGIANT Roundtable brought together a diverse group of stakeholders in the health, technology, law industries with expertise in medicine. The goal of this program was to start a dialogue to raise awareness on sex & gender considerations as they relate to healthcare, technology and innovation initiatives in Chicago. The program integrated experts across the Chicago innovation ecosystem bridging universities, federal labs, incubation & acceleration spaces and capital networks. The cross-section of experts from multidisciplinary institutions and entities catalyzed a dialog to recognize bias or implications for gender and sex in medical treatment or early-stage product development and technology solutions.

Participating Organizations and Representatives

Women in Bio (Co-Host) - Women in Bio is an organization of professionals committed to promoting careers, leadership and entrepreneurship for women in the life sciences.

Alis Gjeci - Chicago Chapter Chair,
Women in Bio

Dima Elissa - Chicago Chapter, Vice Chair,
Women in Bio

American Medical Women's Association (Co-Host) - The American Medical Women's Association is an organization which functions at the local, national, and international level to advance women in medicine and improve women's health. We achieve this by providing and developing leadership, advocacy, education, expertise and mentoring and through building strategic alliances.

Guest Speakers:

Theresa Rohr Kirchgraber, MD
National AMWA President,

Neelum T. Aggarwal, MD
Chief Diversity Officer,
AMWA

Nancy Church, MD
Founding Board Member,
Chicago Consortium,
AMWA

Melissa Lederer,
Head of Marketing,
MATTER Chicago

MATTER Chicago

[MATTER](#) is a community of healthcare entrepreneurs and industry leaders working together in a shared space to individually and collectively fuel the future of healthcare innovation.

Moderators:

Neelum T. Aggarwal, MD, Chief Diversity Officer, American Medical Women's Association

Dr. Aggarwal is a population health neurologist in the Departments of Neurological Disorders and the Rush Alzheimer's Disease Center. She also serves as the Director of Research at the Rush Heart Center for Women and is a [Chicago Innovation/MATTER mentor](#). Neelum has published over 40 clinical research articles on brain diseases and population health and is the Principal Investigator for National Institute on Aging and industry sponsored clinical trials. She was appointed as the first chief diversity officer for the American Medical Women's Association - the oldest women's physician medical organization in the U.S (www.amwa-doc.org), is the Chair of the Chicago [Women In Bio Mentoring](#), Advisors and Peers (MAPs) Committee, and Senior Advisor of [Women's Health Equity, Research, and Policy for the Health Equity Leadership , Exchange Network \(HELEN.\)](#)

Dima Elissa - Chicago Chapter, Vice Chair, Women in Bio

Dima is CEO and founder of [VisMed-3D](#), a biomedical design and consulting firm that has emerged as the leader for 3D biomedical visualization and printing in personalized medicine. She was named to the Chicago Tribune's Blue Sky Vault Top 100 Entrepreneurs in Chicago. Prior to start-ups, she held numerous positions at [NutraSweet](#) in International Marketing, New Business Ventures and M&A. Dima presently chairs the STEM Steering committee for the [Apreció Foundation](#). She serves on the [World Business Chicago Advisory Council for Manufacturing](#), Ms. Tech Executive Council, Vice-Chair of [Chicago Women In Bio](#), is a White House Fellow for the LGBT Tech & Innovation Summit, a member of [Chicago Innovation Mentors](#), [MATTER](#), and mentor at [Chicago Innovation Exchange](#).

Participants/Panelists

Sinai Health Systems

Located on the West and Southwest sides of Chicago, [Sinai Health System](#) is comprised of Mount Sinai Hospital, Holy Cross Hospital, Sinai Children's Hospital, Schwab Rehabilitation Hospital, Sinai Medical Group, Sinai Community Institute and Sinai Urban Health Institute.

The member institutions of Sinai Health System collectively deliver a full range of high-quality outpatient and inpatient services, as well as a large number of innovative community-based health, research, and social service programs. Sinai focuses its collective depth of expertise and passion to improve the health of the 1.5 million people who live in our diverse service area. Sinai Health System, with its team of dedicated caregivers, is uniquely committed to building stronger, healthier communities.

Rachel Dvorken, JD
Executive Vice President & General Counsel

Rachel Dvorken serves as Executive Vice President & General Counsel for [Sinai Health System](#) where she is a member of the executive team and key advisor to the CEO, Senior Management, and the Board of Directors. She serves as executive lead for the Board Governance Committee, as a member of the Board Strategic Planning & Government Affairs Committees, and as a legal advisor to the Finance Committee.

IllinoisVENTURES is committed to helping entrepreneurs and technical founders to build world-changing businesses with the potential to create new market opportunities or significantly expand existing ones. During the course of the past six years [Illinois Ventures](#) has led or collaborated on the initial funding of over 40 new ventures spanning a broad spectrum of scientific and technological innovation across multiple domains.

Kapila Vigés

Director of EnterpriseWorks Chicago

xKapila has over 15 years of experience building early stage technology companies, organizational strategy, and innovation-based economic development policy. As Director of Enterprise Works Chicago at UIC, Kapila has launched a new model for technology and startup incubation operations to support the commercialization of complex research and high-tech innovation from the lab to the market place.

McDermott, Will & Emery LLP

[McDermott Will & Emery](#) is a premier international law firm with a diversified business practice, including expertise in transactional and litigation matters in the corporate, tax, labor and employment, competition, intellectual property and regulatory areas. McDermott's culture is characterized by teamwork, mutual respect and a commitment to excellence. McDermott also has a long history of social responsibility and supporting our local communities, including a commitment to investing in innovation via our [Life Sciences Entrepreneurs Acceleration Program \(LEAP.\)](#)

Krista Vink Venegas, Ph.D., Esq.

Partner – Intellectual Property

Krista is a partner in the law firm of McDermott Will & Emery and represents life science companies in complex patent litigation and Patent Office proceedings, relating to medical devices, pharmaceuticals, and food sciences. She has substantial experience conducting IP due diligence analysis in the context of life sciences portfolio acquisitions and corporate mergers, as well as general IP portfolio counseling.

Nixon Peabody

[Nixon Peabody LLP](#) is a Global 100 law firm, with more than 700 attorneys collaborating across major practice areas in cities across the U.S., Europe and Asia.

Janet Garetto, JD
Partner - Intellectual Property group

Janet is a partner in the Intellectual Property group at [Nixon Peabody](#) and counsels clients in a variety of industries on IP issues. She regularly advises on patent prosecution and litigation prevention issues with a focus on chemical and mechanical technology. Janet works with her clients on brand development strategy, including trademark procurement, trademark portfolio development and maintenance.

iBIO Group - PROPEL Center

[PROPEL](#) helps guide the development of formation-stage and early-stage life sciences companies by providing entrepreneurs with access to specialized resources and expertise to prepare them for early-stage funding. Industry, academia, service professionals, entrepreneurs and government agencies connect to create and support a vibrant entrepreneurial community in Illinois and throughout the Midwest through PROPEL programs.

Barbara Goodman, MBA
Senior VP

Barbara joined the Illinois Biotechnology Industry Organization in 2007 and has nearly 20 years of experience in the planning and implementation of strategic growth initiatives. She is Senior VP of [iBIO Institute's PROPEL Center](#) aimed to increase the success of early-stage life sciences companies in IL as well as supporting iBIO's international activities. She has led corporate strategy and business development at the Rehabilitation Institute of Chicago, Cardinal Health's Medical Products & Services Division, and Chesapeake Corporation.

Rush Heart Center for Women

The [Rush Heart Center for Women](#) features a team of specialists who collaborate to provide you with personalized care, including cardiologists, neurologists, cardio-oncologists, nurse practitioners and nutritionists.

Annabelle Volgman, MD
Medical Director

Dr. Volgman is Professor of Medicine and Senior Attending Physician at Rush University Medical Center. She is Medical Director of the [Rush Heart Center for Women](#) and a recipient of the Madeleine & James McMullan-Carl E. Eybel Chair of Excellence in Clinical Cardiology. Her research includes preventive and management strategies for atrial fibrillation and arrhythmia. She received her MD from Columbia University in New York, and helps raise funds for American Heart Association and WomenHeart.

Neurocern

We give early-stage patients and dementia caregivers a place to transform their concerns into personalized care. [Neurocern](#)

Anitha Rao, MD
President and CEO

Dr. Rao-Frisch is a board-certified geriatric neurologist and medical anthropologist. She obtained a Masters in anthropology and cross-cultural aging, and Neurology subspecialty training in dementia, memory disorders, and Alzheimer's disease at UCSF. She is co-founder and CEO of [Neurocern](#), a software analytical company that unlocks expert knowledge from neuroscience to help assess, treat, or care for someone with a brain health or dementia.

EdgeOne Medical

[EdgeOne Medical](#) Services, Resources, and Facilities support development at any stage in the product life cycle. [DIMA: Do we insert websites here?]

Lilli Zakarija, MBA
Co Founder and President

Lilli is Co-Founder and President of [EdgeOne Medical](#). Her expertise includes development and global launch of various single-use, disposable medical devices and combination products, and was Director of Engineering for the BioScience division of Baxter. She has degrees in Biomedical Engineering and Engineering Management from Northwestern Univ., and an MBA from Kellogg. Lilli serves on the Board of Advisors for Biomedical Engineering and is a Chicago Innovation Mentor (CIM).

Central Line Health

A company dedicated to renewing and restoring the doctor-patient relationship using software to automate updates in Emergency Departments for patients and families.

Carrie Mendoza, MD
Co-Founder and CEO Central Line Health

Dr. Mendoza has a master's degree in Art History and medical degree from The University of Chicago. She completed an Emergency Medicine residency in Denver and a fellowship in Medical Toxicology. After years in a community hospital system, she is now an Attending Emergency Medicine physician at Advocate Illinois Masonic Medical Center. Dr. Mendoza joined MATTER to launch her start-up, Central Line Health, a company dedicated to renewing and restoring the doctor-patient relationship. She developed software to automate updates in Emergency Departments for patients and families.

ADM Diagnostics (ADMdx)

[ADMdx](#) provides neuroimaging studies and data analysis to pharmaceutical companies, emphasizing Central Nervous System disorders. We have developed optimized approaches to the collection, quality control, and analysis of image data to maximize the reliability and interpretability of results.

We have also developed diagnostic software for Alzheimer's Disease and other dementias.

Dawn Matthews, MS MBA,
CEO and Founder

Dawn is CEO of [ADM Diagnostics \(ADMdx\)](#), a Chicago-based company that provides neuroimaging services and data analysis to pharmaceutical companies, and has developed innovative image analysis technology to enable early and accurate diagnosis and prognosis of dementias. She served as CEO of Abiant and MIICRO (a medical imaging tech company) and as Director of Business Development for Motorola BioChip Systems. She was a co-founder of Aksys and a Senior Principal Engineer at Baxter Healthcare.

Roundtable Administrators:

Chicago Women in Bio (WIB)

Membership/Programming Committee - Erica Watson, Shahila Mahboob Christie,
Iwona Maciagiewicz, Elese
Marketing Committee- Ana Mrejeru, PhD, Aparna Y, PhD,

MATTER

Events - Amanda Azadian, Devon Leichtman, Interns – Sam Lee, Katie Albrecht

OVERVIEW OF iGIANT (Impact of Gender/Sex on Innovation and Novel Technologies)

Purpose: To accelerate the translation of research into sex/gender-specific design elements which include policies, products, protocols or programs.

Goal: To improve work performance and the safety and quality of life for men and women.

Background: This initiative was developed by the White House Office of Science and Technology Policy and is now being implemented in the public and private sectors.

The American Medical Women's Association (AMWA) and Women In Bio (WIB) are among many partners helping to set up roundtables around the country. More than 14 to date are now being planned nationally.

This is the fourth roundtable assembled by AMWA. Conclusions from those roundtables are forthcoming. The hope is that these roundtables will branch out into many different sectors

(science, technology, retail, transportation) and that attendees will be continue to set up additional roundtables to reach into their own networks and communities.

Information about the iGIANT program as well as updates from previous roundtables is available at Stanford University's Gendered Innovations website:

genderedinnovations.stanford.edu/igiant.

A symposium will be held in 2016 at Stanford University, inviting all roundtable attendees to gather together and stimulate cross-pollination of ideas.

Discussion Points on Gender in Innovation from the Chicago iGIANT program:

The concept and development of the iGIANT program in Chicago, focused on how best to understand the impact of gender and sex on health, how it can enhance precision medicine (<https://www.whitehouse.gov/precision-medicine>) as well as disease prevention and health promotion strategies. To achieve a broader level of awareness, the program integrates experts to engage and contribute across the Chicago innovation ecosystem bridging universities, federal labs, incubation & acceleration spaces and capital networks.

A diverse group of professionals were assembled to discuss their perspectives and learn how they are optimizing or planning to optimize sex and gender considerations to create the best outcome for their clients and patients. Two themes were discussed via two panels: **(1) Healthcare/Health Innovation/ IT and (2) Start up/ Technology and Law**

Specific Learning Objectives for the Program:

1. Gain an understanding of strategic partnerships and collaboration in the healthcare industry that promote sex and gender considerations/initiatives
2. Learn how business models are being optimized to provide outcomes that are related to sex and gender considerations
3. Learn how each sector is committing to sex and gender initiatives/programming

Perspectives

Panel 1 - Healthcare/Health Innovation/ IT

- ***Annabelle Santos Volgman, MD - Medical Director***

Heart disease is still the number one killer of women and more women are living with heart disease and disabled by heart disease. Since 1984 there were more women than men dying from cardiovascular deaths. Through the efforts of research studies, awareness campaign and evidence based treatment for women there has been a dramatic decline since 2000 and for the first time since 1984, in 2013 there were less women than men dying from cardiovascular disease.

Although sex and gender differences are known in cardiovascular disease i.e medications, prognosis and outcomes, women still arrive later to ED for heart attack or symptoms of disease and therefore, do not receive timely treatments for MI. This impacts the knowledge of learning more about sex/gender differences in addressing signs/ symptoms, treatments in the acute stages and impedes the development of new techniques/ therapies to treatment

Although in Cardiology we routinely talk about the use of medical devices, and sex/gender considerations regarding use, anatomical location for surgical placement, it still is just a comment, and often goes unheard among my colleagues. For example, one patient asked me whether a pacemaker could be placed under the breast for cosmetic reasons. My initial response was I never thought about it, I don't see why not, but I didn't have any data to support whether the pacemaker worked differently in a different anatomical location.

- ***Krista Vink Venegas, Partner --Intellectual Property, McDermott, Will & Emery LLP***

In my legal career, I have been involved in patent litigations involving involving orthopedic implants (such as for hip and knee replacement knee replacement, and spine surgery), cosmetic implants (such as those used for face lift surgery), surgical navigation equipment (used to superimpose pre-operative images for real-time brain surgery), and ultrasound equipment (such as for obstetric care, cardiac care and general imaging).

My discussions with clients largely focuses on the safe and effective use of their devices for providing medical care. The clients I have worked with are aimed at providing individualized and even serving gender specific medical needs. Clients are focused on providing excellent patient outcomes. There are largely inferential, but not express, discussions of gender issues. By way of example, ultrasound devices for obstetric care are necessarily gender focused. Orthopedic implants come on a range of shapes, sizes and angles or are based on individualized scan data such that a women's anatomy should fall within the scope of options or be directly individualized for her needs (e.g., a custom implant).

I feel well positioned to manage considerations related to patient-specific or gender-specific design elements because these issues have been in the forefront of my mind beginning with my graduate education and have continued in my work experience. Before entering law school, I obtained a Ph.D. in Neurobiology and studied the impact of steroid hormones on behavior and brain development—particularly in sexually dimorphic areas of the brain. This intensive study made me aware of the structural and functional differences in brain in animal subjects.

A major discussion point in my practice is whether research and industry will continue to invest in technology aimed at individualized and gender specific devices and medical care, where: 1) markets may be small and return on investment may consequently be male, and 2) where it may be difficult to obtain patent protection on devices or treatments previously known, but customized or maximized for gender specific care.

- ***Rachel Dvorken, Executive Vice President & General Counsel for Sinai Health System***

SUHI serves an area on the South and Southwest Sides of Chicago with some of the City's most vulnerable populations, predominantly low income, Hispanic and African American communities. SUHI focuses on reducing and eliminating health disparities, with most of the work involving interventions aimed at addressing disparities based on income and race and not explicitly on gender. The SUHI and Sinai communities we serve have high rates of single heads of households being women--moms, grandmothers, aunts—participating in our programs to improve their own health, the health of their children and families and their communities. This underscores the overlap of poverty issues and gender issues. Two diseases with unacceptably high rates of disparities include asthma and diabetes. SUHI and Sinai are working with CareMessage, a social impact not for profit company, utilizing text messaging to extend the reach and impact of our programs, with a current RCT trial underway funded by Blue Cross Blue Shield in the area of diabetes.

The SUHI utilized text messaging program to reach many families for care for Asthma and texting was found to be effective.

- ***Carrie Mendoza, MD – Co-Founder and CEO Central Line Health***

1) In general, women and men use Emergency Departments in roughly equal numbers, but women are more present as the family representative if their child, sibling, or elderly relative is in the Emergency Department. Women tend to ask more questions about the care process and condition, and serve as the family "care coordinator" from when they or their relative will be leaving the department to the home care plan. They tend to be at the center of incorporating the medical situation into the family schedule.

2) The smartphone has impacted the emergency department. Patients more often women, research their symptoms prior to coming to the hospital. They want to discuss how my medical decision making dovetails with their internet research.

3) I developed my software, EDLoop, to provide automated patient updates in the Emergency Department. This solves the problem of poor clinician to patient communication during the lengths of stay, often 4-5 hours. I designed this from my own struggles with managing increasingly complex patients and greater volumes while trying to effectively update patients about their process in the department. I set out to use

technology smartly- automate updates- so I could spend more quality time at the bedside and using my critical thinking skills to solve my patient's medical problems.

- ***Anitha Rao, MD -President and CEO***

Approximately 10 million women either have Alzheimer's disease or dementia, or are caring for someone with it. The caregiver burnout rates are very high for Alzheimer's disease and result in caregivers unable to manage the disease at home, often leave the workplace and often have a change for the worse in their medical health.

My company, [Neurocern](#) was developed for early-stage patients and dementia caregivers as a place to transform their concerns into personalized care in order for them to continue to lead their personal and professional lives. When discussing my program to colleagues in my field, there was an opinion of indifference as to the sex/ gender differences in Alzheimer's disease and or why this type of intervention would be helpful. In addition, early on my career, I was told to go on the "traditional" medical pathway and not pursue any entrepreneurial type of activities. Most of this advice came from men. There were very few women role models to guide me in entrepreneurial career.

Panel 2 – Health Innovation/Law/IT

- ***Dawn Matthews, MS MBA, CEO and Founder***

My company conducts and analyzes brain imaging studies for pharmaceutical companies to help them understand whether their drug is working. We use advances in pattern recognition to detect changes in the brain that help to identify Alzheimer's disease and other dementias, and to predict rate of clinical worsening. In our analyses of large imaging data sets, we have seen that men and women's brains are different, for example in the overall brain and the size of the hippocampus. The data also suggest that women with mild cognitive impairment deteriorate faster than men.

We have started discussions about sex and gender differences related to cognitive function, and although it has not yet become a dominant research theme, we believe it is important.

- ***Lilli Zakarija, MBA, CoFounder and President***

During my tenure leading an engineering organization in a global medical device company, a market need was identified and I subsequently co-founded [EdgeOne Medical](#). EdgeOne Medical supports large and small (start-up) companies in the development and commercialization of their medical devices through verification and validation testing, and regulatory/quality consulting. Within our larger client companies, approximately half of our key points of contact are women. However, as we consider the demographic of our start-up client companies, very few women are leading and driving the development of new technologies into the medical device industry. This is unfortunate given that women engineers in the medical device industry have an excellent ability to

assess technical challenges and translate those assessments in to tangible and actionable plans. The difficulty for women may be that the transition from a corporate environment to a start-up environment requires taking a significant amount of risk, and yet the medical device industry, where they have developed their experience, holistically is a conservative and risk-adverse environment. The regulations governing the development process are all about mitigating and eliminating risks. This conflict suggests the need to expose young women engineers to the opportunities within a start-up environment earlier within their career, such that they gain necessary experience to develop technologies within the larger companies but not fall victim to the risk-adverse mentality that is common in the industry.

- ***Barbara Goodman, MBA, Senior VP***

Women entrepreneurs (as well as men) MUST have a thick skin to hear “no” from prospective investors (since there is usually a 1 – 5% success rate for investors) and be very risk-tolerant (since stats are clear that most startups fail). In addition, women entrepreneurs must be comfortable presenting in front of 2 – 200 people and should bring data/facts to support anything.

Gender-related VC Stats

From 2011 – 2013: US companies with a woman on the executive team received 15% of VC investment, up from 5% in 1999; Women CEOs received just 3% of VC invested; Women Partners of US VC firms fell to 6%, down from 10% in 1999. (source: Diana Project, Babson College)

Performance of women-led startups that received VC funding with all-male-partners (all sectors) had 25-30% lower rate of exits (IPO or sale) BUT when VC had at least 1 women partner, the gap disappeared (source: U of MI)

PROPEL’s stats of the life sciences startups in its program haven’t changed over time: 25% of our 40+ active PROPEL companies are led by women. In 2011 this was also 25%. PROPEL has held an annual Business Plan Competition for Illinois life sciences startups since 2009. We’ve had 2 women-led companies win = 29% (including in 2009, our first year) and finals have included either 1 or 2 women in 6 of 7 years (only in 2015 were there no women finalists).

Women are better at coding than men, but only if their gender is not disclosed

Computer codes written by women get higher approval ratings than the code written by men – but only if the gender of the coder is being hidden, says a new study. According to one 2013 survey, women make up a very small percentage of software developers – 11.2%.

- ***Kapila Vigas, Director of EnterpriseWorks Chicago***

The research and innovation space here in Chicago has been growing rapidly and we are working to develop systems that encourage diversity and best practices for all of the communities we reach at Illinois VENTURES. The NIH guidelines and FDA comments regarding sex and gender in research and trials, is known in our communities. What we do see with regards women in the field, is that women in general come better prepared with data and information to the table, and are criticized for not delegating as much as men. They tend to want to manage every aspect of their projects. Interestingly, however, they are more capital efficient, don't spend as much as men and this initial possible "negative" characteristic serves them well from a financial standpoint with the regards to their company.

- *Janet Garetto JD, Partner - Intellectual Property group, Nixon Peabody*

There are lots of day-to-day issues on gender in the legal profession. Women are graduating from law school in higher numbers than men. But the number of women in the partnership ranks at law firms and in law firm management positions is still quite low. Women come but are dropping out of practice (or going to work in companies) because of work-life balance issues. We have an issue with pipeline in my area of trademark law, you have to have a STEM degree in order to practice this type of law. Therefore, the numbers are very low and women colleagues are few and far between. This limits interaction of how sex and gender considerations could even be discussed due to lack of collegial interaction on this topic.

Planned Action Items and Next Steps

- Continue to bring diverse members of the Chicago healthcare innovation ecosystem together to learn more about existing research in this area and possible opportunities for development.
- Focus on dissemination methods to promote sex and gender topics into all sectors of innovation for women throughout the healthcare delivery and innovation systems.
- Convene quarterly meetings to ensure consistent communication on recent developments in the sex and gender area.