

Collecting Legal Sex Data from University Inventors

A Technology Transfer Office (TTO) User's Guide

A publication of the Women Inventors Special Interest Group (WISIG) of AUTM

This guide provides the AUTM community with:

1. Concrete guidance for TTOs of any size to more easily answer questions about inventor legal sex on the annual AUTM *Licensing Activity Survey*
 2. Information to share with university administrators as well as human resources (HR) and information technology (IT) departments who may be unfamiliar with these types of requests
 3. Inspiration for TTOs to collect more granular inventor data to determine a baseline, track progress, and determine areas of opportunity for innovator outreach and support
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Introduction

Since 2013, AUTM's Women Inventors Special Interest Group (WISIG) has been working to identify actions that could address the gaps in women's participation in the innovation ecosystem. Because accurate and consistent data on women's participation is essential for tracking progress, evaluating initiatives' effectiveness, and identifying targets for future interventions, WISIG recommended that AUTM begin asking questions in its annual *Licensing Activity Survey* to measure women's participation in (1) invention disclosures and (2) new patent applications.

As determined in the first six years of survey results, **barriers still exist for TTOs to provide data on women's participation**. Many institutions reported inconsistently from year to year and indicated they lacked the know-how, resources, and institutional approval to collect and report data on inventor's sex or gender. Therefore, this guide was developed to share **proven processes and methodologies for collecting demographic data** and for increasing institutional participation and consistency of reporting in the AUTM survey.

This document provides [step-by-step guidance](#) on how your institution can be successful at tracking and obtaining inventor sex data with these four steps:

1. Determine data privacy protection capabilities of your TTO's database ([jump to Step 1](#))
2. Check in with Data Governance, Institutional Research, or Human Resources (HR) departments ([jump to Step 2](#))
3. Choose and implement one of three methodologies for obtaining sex data ([jump to Step 3](#))
4. Report the information to AUTM and use it to benchmark your own institution ([jump to Step 4](#))

It also provides [resources for communicating with administrators](#) to secure institutional buy-in on data collection efforts, including research and links/citations. For more information about the impetus for this guide, see [page 1](#).

A Note About the Focus on Legal Sex

AUTM's annual *Licensing Activity Survey* of 2022 data asks questions about the involvement of "women" in invention disclosures and new patent filings, and thus does not account for the full spectrum of gender identities. While the authors acknowledge the importance of allowing individuals to self-select their gender when possible and that the "legal sex" of an individual may not align with their gender, this guidance document focuses on collecting data on "legal sex," which is the sex indicated on government-issued identification and is typically understood to refer to biological sex (Male and Female). The authors understand that some institutions capture legal sex (M/F), while others capture self-identified gender and still others use legal sex–prediction tools.

For simplicity, the rest of this document will use "sex" to refer to "legal sex."

In addition, many institutions have expressed an interest in analyzing racial and ethnic data for their inventor populations. This document focuses on women as a starting point, because data access and analysis were perceived as being less complex to gather than racial/ethnic data. This in should not be interpreted as indicating that there are no other underrepresented groups. With improved data collection on race and ethnicity, the WISIG hopes participation gaps with other underrepresented groups can be addressed in the future.

Step-by-Step Guidance for Obtaining Inventor Sex Data for AUTM's *Licensing Activity Survey*

Two questions in the Intellectual Property Activity section of the AUTM *Licensing Activity Survey* ask:

- How many of the DISCLOSURES included at least one woman on the disclosure form?
- How many of the NEW PATENT APPLICATIONS filed included at least one woman on the application form?

Given the diversity of organizational structures of AUTM member institutions, there is no “right” way to collect sex data to answer these questions. Therefore, this guide provides alternatives that will allow any sized TTO to participate.

Below are a series of steps that AUTM institutions have taken to collect sex data, allowing them to answer AUTM survey questions on women's participation, as well as undertake deeper dives into participation rates for male and female inventors.

Step 1: Determine the Data Privacy Protection Capabilities of the TTO's Database

Regardless of how you obtain the data, you should first determine if your TTO database system complies with personal information data protection requirements. **Speak to your database provider and IT department for help in determining the level of security of the TTO's database.** Keep in mind that if your TTO database is not qualified for storing and managing private data, there are still ways to participate in analysis and reporting of inventor sex, as described in the sections below.

Common TTO databases, such as Wellspring (Sophia), Salesforce, Inteum (Minuet), Tech Tracks (KSS), and Cayuse (Innovate IP), can track some demographic data.¹ As of this writing, most of these databases only allow tracking of sex (male or female), though most can probably be customized if a TTO wants to capture a broader list of gender identities.

In the absence of a database system, TTOs can store data in a spreadsheet, but this file should be stored in a secure location that complies with institutional data security requirements.

Note: If your TTO system is not qualified for storing and managing personal data or your institution does not allow it, you may obtain aggregate data without attribution to individual inventors. Any inventor-identifying data (i.e., prior to aggregating) must be stored outside of the system.

¹ Sohar et al. 2018. Gender Data Gap: Baseline of U.S. Academic Institutions, <https://par.nsf.gov/servlets/purl/10112150> (accessed Jan. 26, 2023).

Step 2: Meet with the Data Governance, Institutional Research, and/or HR Department(s)

It is important to check on your university's data governance practices to ensure compliance with any regulations. **Ask for any guidelines around storage or data privacy around sex or gender data for university employees.**

It can be challenging to find out who is responsible for these rules, since every institution has a different structure and administrative resources. For example, large institutions will have Data Governance or Institutional Research groups, while HR is likely where to start in a smaller organization. Other helpful groups may include your Office for Equity and Diversity, as they should likely be familiar with your institution's data privacy rules, or the equivalent of the Vice President for Research.

Note: If you decide to use [Method 3](#) (Access Sex Data from Your Institution's Database), find out if these groups know what data your institution collects and where it is stored. For more on this, see page .

Communicating the Business Case for Your TTO

As you engage in conversations on this topic, it is important to continually communicate the business case for the TTO obtaining this information. Communicate the following points to your institution's leadership:

- Obtaining inventor sex data will allow your institution to:
 - Determine a baseline for women's participation in technology transfer activities
 - Identify gaps in participation between males and females and determine where to target outreach efforts
 - Increase participation rates and technology transfer metrics (e.g., invention disclosures, new patent filings, start-ups, and licensing revenue)
 - Fulfill the mission of transferring university-based innovations to the public by ensuring all possible innovators are participating
 - Compare data (de-identified, in aggregate) with peer institutions via the AUTM survey and track progress over time
- Peer institutions are analyzing this data and taking appropriate action, and answers to the "gender" questions on the AUTM licensing survey are publicly available in the AUTM STATT (Statistics Access for Tech Transfer) database.
- All data will be handled by the TTO in compliance with institutional data privacy rules. (**Note:** Ensure your TTO's system is qualified for storing/managing personal data if you plan to do this.)
- If the administration's concern is about confidential information or your system is not authorized to store the data, offer that the TTO does not have to view or access any primary (i.e., individualized) data. Instead, a university data professional can provide aggregated data to the TTO based on the list provided by the TTO. Offer to have a TTO staff member as that resource, receiving whatever training is necessary to be authorized to acquire the aggregated data.

Additional information and resources for securing institutional buy-in on data collection efforts are provided in [Appendix A](#).

Step 3: Choose/Implement One of Three Methodologies for Obtaining Data

This section presents three methods for collecting sex information. Each has pros and cons, and there are nuances to every approach. The method your TTO uses to answer the AUTM survey’s sex questions will likely be influenced by:

- Whether sex data at your institution is stored and accessible in a central HR database
- What level of operational support you have available to collect and report data
- Any data privacy laws or regulations at your institution

Reminder

If your TTO system is not qualified for storing and managing personal data, do not store inventors’ legal sex or gender data there. Only aggregate data (without the legal sex prediction attributed to individual inventors) can be stored in such a system.

The table below provides a high-level overview with details provided in the sections that follow. Review all three methods carefully before deciding what will work best for your TTO.

Method	Pros	Cons
1. WIPO Prediction Tool Use WIPO tool specifically designed to ‘predict’ inventor sex from first name	<ul style="list-style-type: none"> – Simplest approach to implement (a good option for small offices) – Doesn’t require input from inventors – Can be quickly implemented by any staff, including students or interns 	<ul style="list-style-type: none"> – Least accurate – Doesn’t let inventors self-identify – Assumes an overly simplistic M/F dichotomy of gender
2. TTO Collects via ID Form Include a sex or gender question on your TTO’s Invention Disclosure Form	<ul style="list-style-type: none"> – Highly accurate approach – Allows inventors to self-report 	<ul style="list-style-type: none"> – More complex to implement – May result in missing data if inventors choose not to respond to the question
3. Access Institution’s Data Access sex data already collected by your institution (e.g., in central HR database)	<ul style="list-style-type: none"> – Most accurate approach – Data likely aligns with AUTM’s question – Inventors have already reported it themselves – Is already collected and stored by the Institution 	<ul style="list-style-type: none"> – May be difficult to access data or find a collaborator who can pull the data – May require specialized database knowledge – Resource and time intensive

Method 1: Use WIPO World Gender Name Dictionary to ‘Predict’ Inventor Sex

The World Intellectual Property Organization (WIPO) has developed a tool to predict inventor gender, called the [“World Gender Name Dictionary”](#) (WGND). The current WGND 2.0 version

consists of 25 million names from 195 countries and notably includes many Asian names. This tool is fairly comprehensive and free to use. While the predictions are not 100% correct, they are highly accurate for male/female predictions. The tool currently makes a male/female prediction based on first name and country of origin, and provides a confidence score.

Importantly, at least one **simple tool is now available that allows TTO's to easily and quickly run lists of inventor names against the WGND 2.0**. The Gender Name Estimator only requires input of a list of first names and country of origin to predict inventor sex. Country of origin can be noted as "US" for all inventors, though it may reduce accuracy.

Method 1 Quick Guide

Collect spreadsheet of inventor first names and country (US)

Run against Gender Name Estimator from Richardson Oliver Insights (MacOs only)

Resolve any blanks or unknowns in the returned data

Aggregate data for analysis and reporting

Directions for TTOs to obtain predictions of sex based on WIPO's Gender Dictionary:

1. **Prepare Disclosures List:** For the AUTM survey question on Disclosures, pull a list of all invention disclosures for the relevant fiscal year and associated inventors' first names. Format the spreadsheet file as follows:
 - a. Include columns with headers of:
 - i. Inventor first name (do not include last name): This is **REQUIRED**
 - ii. Inventor Country of origin: This is **REQUIRED**; can use US for all inventors if country of origin is not easily accessible.
 - iii. Disclosure number: This is **OPTIONAL**, but helpful.
2. **Prepare Patent Filings List:** For the AUTM survey question on new patent filings, pull a list of all new patent filings for the relevant fiscal year and associated inventors' first names. Format the spreadsheet file as follows:
 - a. Use the same columns listed above; inventor first name, country of origin and disclosure number.
3. **Run WIPO's Predictions using the [Gender Name Estimator tool](#):** This tool created by the Richardson Oliver Insights is easy to use and looks up names in WIPO's World Gender-Name Dictionary 2.0. Validation experiments run by the Oliver team using thousands of names with self-reported gender data, have demonstrated it is highly accurate. Note, however, that this tool is currently only available for the MacOs. Questions can be directed to Erik Oliver (erik@roipatents.com), but please keep in mind this is an Open Source project with limited ability to provide user support.
4. **Access the WIPO sex prediction database directly via the [Gender Github Repository](#)** and run the predictions internally. However, the tool currently consists of Excel spreadsheets of thousands of names with associated sex prediction. Running it requires more advanced Excel and database query skills.
5. **Clean Up the Data:** Review the files and manually add sex for any blanks or unknowns.
6. **Aggregate the Data:** Calculate the total number of invention disclosures and new patent filings that involved at least one woman and report to AUTM on their yearly survey.

Method 2: Include a Sex or Gender Question on Your TTO's Invention Disclosure Form

Method 2 Quick Guide

Determine form of legal sex or gender question to be used on the IDF.

Design implementation system compatible with your IDF process and database.

Determining Which Question to Use

The following are example questions to include on your TTO's IDF. Choose the one that best suits your institution's goals, and keep in mind that your TTO should focus on collecting data that will actually be used.

Sex Question

The simplest way to ask for the information needed for the questions regarding women's involvement in the current format of the AUTM survey is:

What is your sex?

- Female*
- Male*
- Other*
- I prefer not to disclose*

Note that you can choose not to include the *Other* option. (Remember: This is sex and not gender.) If you do include it, you will need to determine how to allocate the *Other* responses for the AUTM survey, or leave them off completely.

More Inclusive Gender Question

The wording below asks about inventor gender, instead of sex, and includes an option not to answer. As with the simple sex question above, these versions will also require a decision for reporting to the AUTM survey on how to categorize choices other than Female or Male.

What is your gender identity today?

Please select the relevant option(s) below to describe your gender identity.

- | | | |
|---|--------|---|
| <input type="checkbox"/> <i>Woman</i> | ~ or ~ | <input type="checkbox"/> <i>Woman</i> |
| <input type="checkbox"/> <i>Man</i> | | <input type="checkbox"/> <i>Man</i> |
| <input type="checkbox"/> <i>Another identity (please specify)</i> | | <input type="checkbox"/> <i>Transgender</i> |
| <input type="checkbox"/> _____ | | <input type="checkbox"/> <i>Non-binary</i> |
| <input type="checkbox"/> <i>I prefer not to disclose</i> | | <input type="checkbox"/> <i>Another identity (please specify)</i> |
| | | <input type="checkbox"/> _____ |
| | | <input type="checkbox"/> <i>I prefer not to disclose</i> |

Note: It is best practice to include a statement that provides context as to why the TTO is asking for this information, how it will be used, and a contact for further questions. For example:

Your responses to demographic data are optional and appreciated. This information will be helpful in our effort to _____. All information will be kept confidential and do not affect the outcome of your IP protection or your engagement with our TTO.

Note that the inclusion of a specific contact person for more information will need to be updated as roles in the TTO change. To avoid this issue, consider using a generic/alias email address (e.g., tto_edi@xyz.edu) that forwards to the current contact person.

Consider Asking About Race/Ethnicity

Although the AUTM *Licensing Activity Survey* does not currently ask questions about race and ethnicity, you might consider adding such questions to the IDF if you are modifying the form to include a legal sex/gender question. The following are commonly used options:

American Indian/Alaska Native
Asian
Black/African American
Hispanic or Latino
Native Hawaiian/Other Pacific Islander
White

The question can be phrased for either a single choice (e.g., *What is your primary ethnicity? Select only one*) or multiple choices (e.g., *What is/are your ethnicity(ies)? Select all that apply*).

Design the Data-Gathering Mechanism

There are many ways that this data gathering could be implemented, depending on how your inventors submit invention disclosures and what system you use. Some offices still use IDFs that are word processing documents or PDFs sent in via email, while others have implemented online, web-based forms.

For online submission forms, consider the following in designing the right solution for your TTO:

- Can the database system identify whether sex data already exists for each inventor when a new IDF is submitted? If it can determine when the sex field is blank, trigger an additional question in the IDF (i.e., real-time branching of the online form) to collect the data. Alternatively, send out an “additional information required” form to each inventor that needs to add the data (see next bullet).
- Set up a separate online form that only asks for sex (and ethnicity) data; include an explanation that this is new data being added to the invention disclosure for analysis purposes. Initially, send out the form to all inventors in the system, which will help back-fill for past invention disclosures. Repeat sending it when a new invention disclosure is submitted (triggered only if the sex field is blank).
- If one inventor is submitting an IDF with multiple inventors, can/should they fill in the sex field for others? If not, can the system send a separate “additional information required” form for each inventor that would include the sex question (triggered only if the field is blank)?
- If the system can’t easily implement a “smart” solution, include the question as part of every IDF submission, which may require the data field to be overwritten with each new submission.

Method 3: Access Sex Data from Your Institution's Database

If you will be approaching your institution's HR department or IT department about accessing institutional data, keep in mind that they likely won't provide sex data on your first request, because this data is typically private and restricted. Accessing this data will likely require multiple requests, communicating its importance to the TTO mission and demonstrating that your TTO can appropriately store the data. Refer back to "Communicating the Business Case for Your TTO" on page .

Method 3 Quick Guide

Locate your institution's data on employee's legal sex

Determine your TTO's approach to accessing that data

Determine What Data Your Institution Collects and Where It Is Stored

Find out if your institution collects sex in the university's employee and student database(s) and if that data is considered private and restricted. It can be very helpful to first reach out to your institution's Diversity & Inclusion office—they may already be well versed in your institution's policies or know how to access the data. Chances are they have wanted to use this data as well. In addition, reach out to HR, Data Governance, or Institutional Research offices. Finally, if your institution doesn't have those offices, your Provost's office should know where this type of information is housed.

Determine Your TTO's Approach to Access Sex Data

In trying to access institutional data, consider either of these two approaches: collaborate to obtain aggregate data or import individual data into the TTO database.

Approach A: Collaboration for Aggregate Data

As noted above, your TTO doesn't actually need to have access to primary employee sex data to answer the current AUTM questions around women's involvement. Therefore, consider the following approach:

1. Identify a collaborator within your institution who can access employee data (e.g., a business/data analyst or HR employee with access to the private/restricted data) and who could pull it and send you aggregated results.
2. Provide your collaborator with a list of all inventors' names on invention disclosures and new patent filings for the relevant fiscal year that have been matched with an institutional identification number.
3. Ask your collaborator to augment your list with the sex/data for each inventor and analyze it in aggregate for you to determine how many invention disclosures (or new patent applications) had at least one woman on it?
4. The analyst can send you aggregate numbers without you needing to see any primary data. For example, the information they provide to you might read: "95 invention disclosures out of 200 in FY23 had at least one woman inventor listed."

For Example: The above approach was used at the University of Minnesota. Initially, the TTO was unable to access and store primary sex data on inventors; therefore, the TTO obtained aggregate data by working with a business analyst in the Office of Research Information Systems (ORIS), which is housed under the Vice President of Research (VPR). Over time, the TTO was able to have a member of its operations team trained in the university's data security

procedures. Going forward, the TTO can access and eventually store individual data in a secure location in the TTO database.

Approach B: Import Institution Data in the TTO Database

It is ideal for the TTO to use institutional data—because the data is typically self-reported by inventors to the institution, it is a “gold standard” data set. However, this may be the most involved method, requiring a significant up-front time commitment.

To simplify the connectivity of the datasets, modify the TTO database’s parameter for sex or gender to match the list used by the institution. This will allow you to analyze the data for internal reporting using the terminology already understood by the administration. If your institution uses more than just male and female, determine how you plan on interpreting the other categories for reporting to AUTM. For example, you may choose to report only those classified as “female” to AUTM as women (i.e., a literal interpretation). Regardless of your approach to these determinations, apply that approach consistently each year.

Once you have the appropriate permissions and access, work with the TTO’s database provider/developer to connect the systems, which would allow for continual updates. Alternatively, you could upload a static data set (like a spreadsheet) into the TTO system. The latter approach may require periodic updates to add information on “new” inventors (i.e., new employees or previous employees who didn’t report their sex before).

Step 4: Report Information to AUTM and Analyze Your Data

Now that you have collected sex information about your institution’s inventors, include the aggregate data in your response to AUTM’s annual *Licensing Activity Survey*. Survey participants receive a complimentary copy of the report as well as a subscription to AUTM’s STATT, which is a searchable, exportable database of more than 20 years of academic licensing data collected by AUTM from participating academic institutions.

For information about the timing of AUTM’s annual data gathering efforts, visit <https://autm.net/surveys-and-tools/surveys/licensing-survey> and choose the most recent year from the right-hand menu. Prepare in advance by downloading the worksheet provided to help with data gathering and reviewing the definitions of survey terms.

The authors encourage you to carry out your own analysis of your inventors’ sex/gender data. Consider the following suggestions:

- Early in your efforts, consider limiting your focus to distinguishing between male and female inventors. As you see greater equity being achieved by female inventors, expand your analysis to focus on other underrepresented groups.
- In measuring the gap, refer to WIPO’s blog post at https://www.wipo.int/about-ip/en/ip_innovation_economics/gender_innovation_gap/guidelines.html
- Normalizing by research expenditures allows for comparative analysis across departments and peer institutions to identify areas needing attention. See “The How-To of Tech Transfer Metrics: Gathering, Analyzing, Communicating” blog post at <https://www.fuentek.com/blog-post/techtransfer-metrics-gather-analyze-communicate/> for more on this topic.

- Use the findings of your analysis to identify where to target your in-reach in an effort to move the needle. Focus on departments where invention disclosures from female PIs are disproportionately low, when compared to departmental demographics or when compared to research expenditures.
- Share the analysis and insights with department heads and administrators to secure their buy-in on further in-reach efforts and initiatives designed to increase equity in participation.

Readers are also encouraged to review the slides from the 2022 AUTM conference session “Measuring What Matters: Incorporating Equity, Diversity, and Inclusivity Data into TTO Metrics,” which is available at <https://bit.ly/AUTM-EDI-Metrics>. The downloadable PDF includes details of the WISIG’s analysis of sex/gender data from the FY15–FY20 AUTM surveys, a case study of the University of Minnesota’s efforts to collect inventors’ sex information, and guidance on the type of demographic metrics to collect from innovators.

Conclusions and Next Steps

Global statistics clearly show that there is much work to still be done to ensure equity and full participation among all genders, races, and ethnicities in all aspects of the innovation ecosystem. Gathering demographic data about sex or gender (and eventually race/ethnicity) will help TTOs identify under-engaged innovators and develop programs to improve participation and reach the full innovation potential of their institution. The authors encourage all AUTM institutions to gather data and report it each year to the community via AUTM's annual *Licensing Activity Survey*.

With the baseline data, institutions can pinpoint challenges, track improvements, and review how they “stack up” to peers. The overarching goal is to use data to drive positive change in women's involvement in the innovation process and technology transfer. Raising awareness about the importance of (a) collecting demographic data, (b) increasing institutional participation in data collection, and (c) consistency of reporting is the first step. Understanding what data currently exists, identifying the gaps, and setting standards for data collection efforts will enable tracking diversity data over time.

Accurate and consistent data is going to be incredibly important to tracking progress over time and evaluating the effectiveness of the various initiatives TTOs are undertaking. It will also provide better guidance on where future interventions can be targeted and have the greatest impact.

***We wish you all the best on your data collection endeavors.
Please let us know about your experiences!***

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Appendix A: Additional Resources for Communicating with Administrators

In addition to the advice provided in “Communicating the Business Case for Your TTO” on page , consider using the following summary of the literature to secure the buy-in of administrators and other stakeholders within your institution.

The Need for Data Collection on Inventor Gender

It is encouraging to note that women now make up the majority of college graduates (55%) and are entering academia at the same rate as men, [according to Pew Research Center](#). However, as of 2020, they still make up only 35% of tenured faculty positions, [according to the Society of Women Engineers](#).

Additionally, whether in academia or the corporate world, women are not participating in patenting at the same rate as their male colleagues. According to the U.S. Patent and Trademark Office (USPTO) report “[Progress and Potential](#)” (both the original 2017–2019 report and the 2020 update), only 20% of patents have a woman listed as an inventor and only 12% of inventors are women. At that rate, parity will not be achieved in the U.S. until 2092. Likewise, according to the World Intellectual Property Organization (WIPO), only 30% of patents globally have a woman listed and only 14% of inventors globally are women. At the current rate, parity won’t be achieved globally until 2076.

According to the October 2022 USPTO report “Where are U.S. women patentees? Assessing three decades of growth,” this persistent underrepresentation of women has created an unnecessary drag on American innovation and prosperity. Some economists suggest that if women were to patent at the same rate as men, commercialized patents could increase by 24% and per capita gross domestic product—that is, total economic output adjusted for the U.S. population—could increase by 2.7%.

The status of women in academic-based startup companies represents another opportunity for improvement. According to Osage University Partners 2020 data, out of the 6,000 academic-based companies they tracked, only 11% had a female founder or co-founder (scientific partner). And of the \$164 billion invested in 2020 into over 10,000 companies, less than 3% was invested in women-led startups (Muir et al.).

Gender diversity boosts innovation and productivity in critical ways:

- Diverse innovator experiences and viewpoints help inform, and thus improve, the quantity and quality of innovation.
- Gender diversity expands research into under-appreciated topics, thereby filling overlooked technology gaps.
- Diverse teams view opportunities and challenges in different ways and are poised to see unmet market opportunities more fully.

The technology transfer office (TTO) is the designated office where university inventors submit their potentially patentable new discoveries. The size and capabilities of TTOs varies considerably; therefore, there is much variability in the support services and resources available through these offices for innovators and potential innovators. Providing your institution’s TTO

with access to inventors' sex or gender information will help ensure the necessary data are collected so that gaps in women's participation in the innovation ecosystem can be identified and—more importantly—eliminated.

References and Other Helpful Information

Federal Interagency Working Group on Improving Measurement of Sexual Orientation and Gender Identity in Federal Surveys. 2016. "Current Measures of Sexual Orientation and Gender Identity on Federal Surveys." National Center for Education Statistics.

https://nces.ed.gov/FCSM/pdf/current_measures_20160812.pdf

Ghahramani F, Hall A, and Schoppe L. 2022. "Measuring What Matters: Incorporating Equity, Diversity, and Inclusivity Data into TTO Metrics." AUTM Annual Meeting session slides.

<https://bit.ly/AUTM-EDI-Metrics>

Hall AE. 2021. "Using Innovator Data to Maximize Engagement and TTO Impact: Ideas for Success." AUTM Insight "Equal Measures" archive.

[https://autm.net/about-tech-transfer/newsletter-\(1\)/newsletter-archives/equal-measures-archive](https://autm.net/about-tech-transfer/newsletter-(1)/newsletter-archives/equal-measures-archive)

Hall AE and Ghahramani F. 2022. "AUTM Survey Data Reveals Majority of Patent Filings, Invention Disclosures Include No Women". AUTM Insight "Equal Measures" archive.

[https://autm.net/about-tech-transfer/newsletter-\(1\)/newsletter-archives/equal-measures-archive](https://autm.net/about-tech-transfer/newsletter-(1)/newsletter-archives/equal-measures-archive)

National Academies of Sciences, Engineering, and Medicine, et al. 2022. "Measuring Sex, Gender Identity, and Sexual Orientation." National Academies of Science, Engineering & Medicine.

<https://nap.nationalacademies.org/catalog/26424/measuring-sex-gender-identity-and-sexual-orientation>

Muir J, et al. 2021. "Engaging More Women in Academic Innovation." National Academy of Inventors.

<https://www.ingentaconnect.com/content/nai/ti/pre-prints/content-22.32wisig>

Sohar K, et al. 2018. "Gender Data Gap: Baseline of U.S. Academic Institutions." *Technology and Innovation*.

<https://par.nsf.gov/servlets/purl/10112150>

United States Patent and Trademark Office (USPTO). 2020. "Progress and Potential" reports on Women's Participation.

<https://www.uspto.gov/ip-policy/economic-research/publications/reports/progress-potential>

USPTO. 2022. "Where are U.S. women patentees? Assessing three decades of growth."

<https://www.uspto.gov/sites/default/files/documents/oce-women-patentees-report.pdf>

University of Minnesota's Office for Equity and Diversity. 2022. "Guidance on gender, gender identity, biological sex, and/or sexual orientation demographic information."

(not currently online, but please email hallx412@umn.edu for a copy)

Appendix B: The History of This Guide and AUTM's WISIG

In 2013, a group of technology transfer professionals got together at a meeting of the Association of University Technology Managers (AUTM) and formed the Women Inventors Committee, now referred to as the Women Inventors Special Interest Group (WISIG) to identify actions that could be taken to address the gaps in women's participation in the innovation ecosystem. WISIG consists of volunteers passionate about generating ideas and implementing changes to increase the participation of women in innovation.

Diversity, equity, and inclusion are key AUTM principles and an important component for innovation success based on findings of numerous studies. Recognizing that a central goal of technology transfer offices (TTOs) is to ensure full participation by all innovators in the innovation ecosystem—and at the recommendation of the WISIG—AUTM added two new questions to the annual *Licensing Activity Survey* in 2015. The questions measured the participation of women in two key technology transfer activities: (1) invention disclosures and (2) new patent applications. The questions were supplemental in FY15 and FY16 and became fully integrated in the survey in FY17.

At the 2022 AUTM annual meeting, the WISIG presented the first analysis of six years of data obtained through the annual AUTM *Licensing Activity Survey* regarding women's involvement in invention disclosures and new patent filings. The WISIG's goal was to use data to establish an understanding of women's involvement in technology transfer activities across institutions, with the goal of identifying gaps and—most importantly—eliminating them. We presumed that we would find gaps in women and men's participation rates in innovation metrics, mirroring what has been seen in numerous studies. A summary of the WISIG 2022 study findings can be found at <https://bit.ly/AUTM-EDI-Metrics>.

The analysis found that the majority of invention disclosures and new patent filings from nearly 200 institutions did not include women. The results confirmed WISIG's hypothesis and determined that it is important to continue to strengthen efforts devoted to increasing women's participation and share best practices based on existing programs and processes. We have a baseline and can now track improvement.

The AUTM community responded enthusiastically to the WISIG analysis. Various institutions posed the question: How can we collect and report inventor sex and/or gender data as well? Although participation rates in the two AUTM survey questions regarding women's involvement was strong, the data was incomplete. Many institutions reported inconsistently from year to year and indicated they lacked the know-how, resources, and institutional approval to collect and report data on inventor's sex and/or gender. Based on that feedback, this step-by-step guide was initiated.

Other contributions of WISIG have included several publications. For example, in November 2020, WISIG conducted a customer discovery study with academic women to:

- Understand factors that encouraged and discouraged academic women's participation in technology commercialization
- Better understand the barriers that impede female participation so we can address and reduce these barriers

The WISIG Customer Discovery study resulted in the paper published by the National Academy of Inventors: [Engaging More Women in Academic Innovation: Findings and Recommendations](#). WISIG is using the findings and recommendations from the report to engage with the technology transfer community and other innovation ecosystem stakeholders and synergistic groups to address and reduce the barriers for women in innovation.

For more information about AUTM's Women Inventors Special Interest Group or to get involved with WISIG's activities, email AUTMWISIG@gmail.com.