Goals

The University of Michigan offers a rigorous and remarkably broad array of graduate and professional degree programs that stand among the very best in the country. The University attracts outstanding students to graduate study and prepares them to make lasting contributions to society. Interdisciplinary study and joint degrees are a special strength of the University. The vibrant community of graduate and professional students on campus is highly diverse in citizenship, demographic background, and intellectual perspective.

Overview

The Horace H. Rackham School of Graduate Studies oversees graduate academic education in partnership with the schools and colleges. In the Fall 2021 term, the University enrolled 9,536 students in doctoral, master's, and graduate-level certificate programs offered by Rackham and the schools and colleges. In addition to earning degrees and certificates, graduate students contribute significantly to research, scholarship and teaching activity on campus. The research enterprise at the U-M benefits enormously from the talent and intelligence of these students.

Another 8,460 students enrolled during the same term in professional and non-Rackham graduate degree programs in medicine, law, business, public health, dentistry, pharmacy, nursing, information, engineering, social work and architecture and urban planning. The schools and colleges administer these degree programs in keeping with each profession's requirements and standards.

The tuition paid by graduate and professional students varies considerably depending on the program. Nearly all Ph.D. students and about half of academic master's students receive financial support.

Professional degree programs are generally more costly than other graduate programs. A large fraction of the students in professional degree programs complete their degrees with loans to repay.

The Rackham Graduate School collects data on the number of entering graduate students who complete Ph.D. programs. Overall, 77 percent of the students who enrolled in such programs between 2006 and 2015 received a Ph.D. The rates vary somewhat by discipline.

Post-graduation plans vary along disciplinary lines. Ph.D. graduates in the humanities and the arts often find academic positions soon after graduation. Graduates in the biological, physical and social sciences frequently take a postdoctoral training position before moving to other employment. Industry positions attract a large number of graduates from engineering and the physical sciences. U-M’s international students tend to remain in the U.S. after graduation, likely reflecting the types and number of opportunities available in this country for those holding advanced degrees.

In several professions, prospective practitioners must pass one or more examinations before becoming a licensed member of his or her chosen field; U-M students in medicine, law, dentistry, and pharmacy have high pass rates.

For more information

Horace H. Rackham School of Graduate Studies (rackham.umich.edu)
U-M Graduate Program Information (rackham.umich.edu/programs-of-study)
Office of Budget and Planning – Campus Statistics (obp.umich.edu)
Reports about the gender and racial/ethnic diversity of graduate students are in Chapter 8.
Charts in Chapter 5

5.1.1 Graduate Academic and Professional Student Enrollment by Level, Fall 2012-2021.
5.1.2 Graduate Academic and Professional Student Enrollment by Percent of Total Enrollment for U-M and AAU Public and Private Universities, Fall 2012-2021.
5.1.3 U-M Graduate Academic and Professional Student Enrollment Headcount, with Percent of Total Enrollment, for Selected Years from 1960 to 2021.
5.1.4 U-M Graduate Academic and Professional Student Enrollment by School/College and Degree Sought, Fall 2021.
5.2.1 Graduate Academic and Professional Degree Tuition and Required Fees, per Semester, 2021-2022.
5.2.2 Graduate Academic Student Tuition and Required Fees, Adjusted for Inflation, per Semester, FY2002-FY2022.
5.2.3 Graduate Professional Student Tuition and Required Fees, Adjusted for Inflation, In-State per Semester, FY2002-FY2022.
5.2.4 Graduate Professional Student Tuition and Required Fees, Adjusted for Inflation, Out-of-State per Semester, FY2002-FY2022.
5.3.1 Graduate Master’s, Academic Doctoral and Professional Doctoral Degrees Awarded for U-M, Peers and Big Ten Universities, 2019-20.
5.3.2 Ph.D. Degrees Awarded by Discipline Group for U-M, Peers and Big Ten Universities, 2019-20.
5.3.3 Master’s Degrees Awarded by Discipline Group for U-M, Peers and Big Ten Universities, 2019-20.
5.3.4 Professional Degrees Awarded by Program for U-M, Peers and Big Ten Universities, 2019-20.
5.4.1 Academic Doctoral Completion Rates by Discipline Group, Enrollment Cohorts from 2006-2015.
5.4.2 Academic Master’s Completion Rates by Discipline Group, Enrollment Cohorts from 2017-2020.
5.5.1 Funding Support for Rackham Ph.D. Students, 20-21
5.5.2 Funding Support for Rackham Master’s Students, 2020-21.
5.6.1 Self-reported Cumulative Undergraduate and Graduate Debt at Graduation by U-M Ph.D. Students, by Discipline Group for Domestic Students, FY210-2020.
5.6.2 Self-reported Debt at Graduation by Graduate Professional Students, by Program, 2010-2020.
5.8.2 Geographic Destinations of U-M Graduate Academic Degree Recipients, Headcount and Percent, by Discipline Group, FY2010-2020.
Total graduate and professional student enrollment has grown at an average annual rate of 1.7 percent since 2021.

### 5.1.1 Graduate Academic and Professional\(^1\) Student Enrollment by Level, Fall 2012-2021.

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Master's Programs</th>
<th>Academic Doctoral Programs</th>
<th>Professional Doctoral Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2012</td>
<td>7,457</td>
<td>5,287</td>
<td>2,716</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>7,535</td>
<td>5,234</td>
<td>2,680</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>7,448</td>
<td>5,162</td>
<td>2,628</td>
</tr>
<tr>
<td>Fall 2015</td>
<td>7,503</td>
<td>5,187</td>
<td>2,649</td>
</tr>
<tr>
<td>Fall 2016</td>
<td>7,750</td>
<td>5,319</td>
<td>2,685</td>
</tr>
<tr>
<td>Fall 2017</td>
<td>8,050</td>
<td>5,423</td>
<td>2,708</td>
</tr>
<tr>
<td>Fall 2018</td>
<td>8,055</td>
<td>5,493</td>
<td>2,850</td>
</tr>
<tr>
<td>Fall 2019</td>
<td>8,315</td>
<td>5,603</td>
<td>2,906</td>
</tr>
<tr>
<td>Fall 2020</td>
<td>8,334</td>
<td>5,568</td>
<td>2,676</td>
</tr>
<tr>
<td>Fall 2021</td>
<td>9,606</td>
<td>5,662</td>
<td>2,728</td>
</tr>
</tbody>
</table>

Total University of Michigan graduate and professional student enrollment is 2,526 larger (+16%) in Fall 2021 compared to Fall 2012.

---

\(^1\) A list of graduate academic and professional degrees is in Appendix C.
Graduate and professional students comprise more than one-third of the total student enrollment, about ten percent more than the average enrollment at AAU public institutions about about 30 percent fewer fraction than the average at AAU private universities.

5.1.2 Graduate Academic and Professional2 Student Enrollment by Percent of Total Enrollment for U-M and AAU Public and Private Universities3, Fall 2012-2021.

Source: U-M Student Data Sets; Integrated Postsecondary Education Data System (IPEDS)

Total University of Michigan student enrollment – undergraduate and graduate – has increased to 50,278 for fall 2021 from 43,426 in fall 2012, while the total graduate enrollment – academic and professional – increased to 17,996 from 15,470.

The average percentages reported for AAU Private and Public Universities are based on the combined enrollment of graduate academic and professional students compared to the total student enrollment at all levels – undergraduate, graduate and professional. (Note: AAU school counts as reported to IPEDS are lagged by one-to-two years from U-M data.)

2 A list of graduate academic and professional degrees is in Appendix C.
3 A list of Association of American Universities (AAU) member institutions is published in Appendix A.
While the total number of graduate and professional students has grown from 8,916 in 1960 to 17,996 in 2021, the fraction of the total student body on the Ann Arbor campus that they represent has varied by less than five percent.

5.1.3 U-M Graduate Academic and Professional Student Enrollment Headcount, with Percent of Total Enrollment, for Selected Years from 1960 to 2021.

SOURCE: U-M Student Data Sets

In the chart, the number at the top of each column represents the total enrollment of graduate academic and professional students in the fall of that year. Over the last 50 years, Ann Arbor campus enrollment increased by about one graduate student for every two additional undergraduates.
The largest academic doctoral enrollment at U-M is in the College of Literature, Science & the Arts. The largest master's program is the M.B.A. in the Stephen M. Ross School of Business.

### 5.1.4 U-M Graduate Academic and Professional Student Enrollment by School/College and Degree Sought, Fall 2021.

<table>
<thead>
<tr>
<th>College/School</th>
<th>Graduate Academic (Rackham)</th>
<th>Other Graduate (Non-Rackham)</th>
<th>Professional Doctors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Masters</td>
<td>Doctors</td>
<td>Master'</td>
</tr>
<tr>
<td>Taubman College of Architecture &amp; Urban Planning</td>
<td>92</td>
<td>34</td>
<td>310</td>
</tr>
<tr>
<td>Penny W. Stamps School of Art &amp; Design</td>
<td>24</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stephen M. Ross School of Business</td>
<td>2</td>
<td>70</td>
<td>1,833</td>
</tr>
<tr>
<td>School of Dentistry</td>
<td>100</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>School of Education</td>
<td>278</td>
<td>99</td>
<td>-</td>
</tr>
<tr>
<td>College of Engineering</td>
<td>1,598</td>
<td>1,706</td>
<td>418</td>
</tr>
<tr>
<td>School for Environment &amp; Sustainability</td>
<td>513</td>
<td>38</td>
<td>-</td>
</tr>
<tr>
<td>Horace H. Rackham School of Graduate Studies</td>
<td>86</td>
<td>242</td>
<td>-</td>
</tr>
<tr>
<td>School of Information</td>
<td>-</td>
<td>127</td>
<td>1,136</td>
</tr>
<tr>
<td>School of Kinesiology</td>
<td>83</td>
<td>37</td>
<td>-</td>
</tr>
<tr>
<td>Law School</td>
<td>-</td>
<td>-</td>
<td>43</td>
</tr>
<tr>
<td>College of Literature, Science &amp; the Arts</td>
<td>509</td>
<td>2,188</td>
<td>-</td>
</tr>
<tr>
<td>Medical School</td>
<td>158</td>
<td>638</td>
<td>111</td>
</tr>
<tr>
<td>School of Music, Theatre &amp; Dance</td>
<td>15</td>
<td>124</td>
<td>155</td>
</tr>
<tr>
<td>School of Nursing</td>
<td>-</td>
<td>17</td>
<td>317</td>
</tr>
<tr>
<td>College of Pharmacy</td>
<td>12</td>
<td>99</td>
<td>-</td>
</tr>
<tr>
<td>School of Public Health</td>
<td>189</td>
<td>229</td>
<td>654</td>
</tr>
<tr>
<td>Gerald R. Ford School of Public Policy</td>
<td>219</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>School of Social Work</td>
<td>-</td>
<td>-</td>
<td>783</td>
</tr>
<tr>
<td>Joint Programs by two Schools/Colleges</td>
<td>-</td>
<td>-</td>
<td>75</td>
</tr>
</tbody>
</table>

**Grand Total, Graduate Students**

<table>
<thead>
<tr>
<th></th>
<th>Masters</th>
<th>Doctors</th>
<th>Master'</th>
<th>Doctors</th>
<th>Professional Doctors</th>
</tr>
</thead>
</table>
|                      | 3,878   | 5,658   | 5,835   | 3       | 2,622

**SOURCE:** U-M Student Data Sets

The professional doctor's degrees include M.D., J.D., D.D.S, Pharm.D., and D.N.P. (Doctor of Nursing Practice).

The Joint Program (last row of table) is offered by the School of Information and the School of Public Health.

Students enrolled in a non-degree-seeking program are listed in either "Rackham-Masters" or "Other-Masters," depending on the nature of the non-degree program.

A complete list of graduate academic (Rackham), other graduate, and professional programs offered by the University of Michigan is found in Appendix C.
Graduate academic and professional tuition and required fees vary by program.

### 5.2.1 Graduate Academic and Professional Degree Tuition and Required Fees, per Semester, Academic Year 2021-22.

<table>
<thead>
<tr>
<th>School/College</th>
<th>Graduate Academic (Rackham) per semester</th>
<th>Professional or Non-Rackham per semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Program</td>
<td>In-State</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,763</td>
</tr>
<tr>
<td>Penny W. Stamps School of Art &amp; Design</td>
<td>M.F.A.</td>
<td>$12,855</td>
</tr>
<tr>
<td>Stephen M. Ross School of Business</td>
<td>M.A./Pre-candidate</td>
<td>$13,141</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$7,191</td>
</tr>
<tr>
<td>School of Dentistry</td>
<td>M.S.</td>
<td>$9,594</td>
</tr>
<tr>
<td></td>
<td>Pre-candidate</td>
<td>$14,200</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,859</td>
</tr>
<tr>
<td>School of Education</td>
<td>M.A./Pre-candidate</td>
<td>$12,855</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,952</td>
</tr>
<tr>
<td>College of Engineering</td>
<td>M.S./Pre-candidate</td>
<td>$14,333</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$8,235</td>
</tr>
<tr>
<td>School of Environment &amp; Sustainability</td>
<td>M.S./Pre-candidate</td>
<td>$12,451</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,736</td>
</tr>
<tr>
<td>School of Information</td>
<td>Pre-candidate</td>
<td>$12,615</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,821</td>
</tr>
<tr>
<td>School of Kinesiology</td>
<td>Pre-candidate</td>
<td>$13,677</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,821</td>
</tr>
<tr>
<td>Law School</td>
<td>J.D.</td>
<td>$32,004</td>
</tr>
<tr>
<td>College of Literature, Science, &amp; the Arts</td>
<td>M.A./M.S. / Pre-candidate</td>
<td>$12,615</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,821</td>
</tr>
<tr>
<td>Medical School</td>
<td>M.S./Pre-candidate</td>
<td>$12,638</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,967</td>
</tr>
<tr>
<td>School of Music, Theatre &amp; Dance</td>
<td>M.A./M.F.A./ Pre-candidate</td>
<td>$12,855</td>
</tr>
<tr>
<td></td>
<td>D.Mus.Arts Candidate</td>
<td>$8,431</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,952</td>
</tr>
<tr>
<td>School of Nursing</td>
<td>M.S./Pre-candidate</td>
<td>$13,000</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,952</td>
</tr>
<tr>
<td>College of Pharmacy</td>
<td>M.S./Pre-candidate</td>
<td>$12,615</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,821</td>
</tr>
<tr>
<td>School of Public Health</td>
<td>M.S./Pre-candidate</td>
<td>$15,640</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,946</td>
</tr>
<tr>
<td>Gerald R. Ford School of Public Policy</td>
<td>M.P.P./M.P.A.</td>
<td>$15,226</td>
</tr>
<tr>
<td>Rackham Interdepartmental Programs</td>
<td>M.A./M.S./ Pre-candidate</td>
<td>$12,615</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Candidate</td>
<td>$6,821</td>
</tr>
<tr>
<td>School of Social Work</td>
<td>M.S.W.</td>
<td>$15,089</td>
</tr>
</tbody>
</table>

SOURCE: U-M Office of Budget and Planning

These are the published rates, although many students receive financial aid. Unless otherwise indicated, students usually attend school for two semesters per academic year. A few additional specialized degrees and joint degree programs are not listed above. The Registrar’s Office posts tuition and fees for these programs: [ro.umich.edu/tuition-residency/tuition-fees](ro.umich.edu/tuition-residency/tuition-fees).

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4 For D.D.S. and M.D. students, an academic year consists of three semesters. Other programs consist of two academic semesters per year.
The inflation-adjusted tuition and required fees (“sticker price”) increased by 41 percent from Academic Year 2002 to AY2022 for both in-state and out-of-state Ph.D. pre-candidacy students. However, more than 90 percent of Ph.D. students receive tuition stipends or other financial support. (See chart 5.5.1.)

5.2.2 Graduate Academic (Rackham) Student Tuition and Required Fees, Adjusted for Inflation, per Semester, Academic Year 2002-2022.

The chart represents tuition and required fees for the typical graduate academic (Rackham) student, as represented by those enrolled in the College of Literature, Science and the Arts. Rates can vary for students enrolled in other graduate academic programs. (See chart 5.2.1)

Effective for the Fall 2010 term, tuition and required fees paid by Ph.D. candidates declined by $1,165 per year, adjusted for inflation (dotted line). This reduction occurred at the same time that the U-M instituted a continuous enrollment policy for Ph.D. students. The policy calls for these students to register every fall and winter semester until they complete their degrees, unless they are on approved leaves of absence. The policy is designed to improve the likelihood that students will complete their Ph.D. degrees, without imposing any new financial burden on students or graduate program budgets.

SOURCE: UM Office of Budget and Planning

The chart represents tuition and required fees for the typical graduate academic (Rackham) student, as represented by those enrolled in the College of Literature, Science and the Arts. Rates can vary for students enrolled in other graduate academic programs. (See chart 5.2.1)

Effective for the Fall 2010 term, tuition and required fees paid by Ph.D. candidates declined by $1,165 per year, adjusted for inflation (dotted line). This reduction occurred at the same time that the U-M instituted a continuous enrollment policy for Ph.D. students. The policy calls for these students to register every fall and winter semester until they complete their degrees, unless they are on approved leaves of absence. The policy is designed to improve the likelihood that students will complete their Ph.D. degrees, without imposing any new financial burden on students or graduate program budgets.

5 Based on the FY2022 U.S. Consumer Price Index (as estimated by the U-M Research Seminar in Quantitative Economics)
The inflation-adjusted tuition and required fees for the M.B.A. and J.D. programs declined slightly this year compared to last.

5.2.3 Graduate Professional and Non-Rackham Student Tuition and Required Fees, Adjusted for Inflation, In-State per Semester, Academic Year 2002-2022.

5.2.4 Graduate Professional and Non-Rackham Student Tuition and Required Fees, Adjusted for Inflation, Out-of-State per Semester, Academic Year 2002-2022.

SOURCE: UM Office of Budget and Planning

† D.D.S. students, starting the Fall 2011 term, and M.D. students, starting the Fall 2020 term, pay tuition three times per year instead of two, with the per-semester rates adjusted downward to be comparable with previous annual totals.

6 Based on FY 2022 U.S. Consumer Price Index (as estimated by the U-M Research Seminar in Quantitative Economics).
The U-M awards more graduate academic and professional degrees combined than any other Big Ten institution, and is among the top ten of its peer universities.


SOURCE: Integrated Postsecondary Education Data System (IPEDS)

The University of Michigan grants the academic doctorates of Ph.D. and D.Mus.Arts and the professional doctorates of M.D., J.D., D.D.S., Pharm.D., and D.N.P.
The U-M produces a large number of Ph.D. graduates in the sciences, technology, engineering and mathematics (STEM).

5.3.2 Ph.D. Degrees Awarded, Headcount, by Discipline Group\textsuperscript{7} for U-M, Peers and Big Ten Universities, 2019-20.

<table>
<thead>
<tr>
<th>Discipline Group</th>
<th>U-M</th>
<th>Peers</th>
<th>Big Ten</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Sciences</td>
<td>174</td>
<td>455</td>
<td>146</td>
</tr>
<tr>
<td>Physical Sciences &amp; Engineering</td>
<td>84</td>
<td></td>
<td>84</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>17</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Humanities &amp; the Arts</td>
<td>84</td>
<td></td>
<td>84</td>
</tr>
<tr>
<td>Multidisciplinary</td>
<td>17</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

SOURCE: Integrated Postsecondary Education Data System (IPEDS)

In the life sciences, physical sciences and engineering – also known as STEM fields (science, technology, engineering and mathematics) – U-M awarded 629 such Ph.D. degrees in 2019-20. The number of graduates in STEM fields is important because labor analyses often indicate that the American workforce needs to add many STEM professionals in the coming years.

To keep the comparisons consistent between U-M and the other schools included here, we assigned all degree awards for Charts 5.3.2, 5.3.3 and 5.3.4 at peer and Big Ten universities to the same academic disciplines and professional categories the U-M uses, even if other schools categorize the programs differently on their campuses.

\textsuperscript{7} A list of disciplines assigned to each group is found in Appendix C.
Half of U-M’s Master's degrees are in the sciences, technology, engineering and mathematics (STEM).

5.3.3 Academic Master's Degrees Awarded, Headcount, by Discipline Group\(^8\) for U-M, Peers and Big Ten Universities, 2019-20.

In the life sciences, physical sciences and engineering – also known as STEM fields (science, technology, engineering and mathematics) – 2,374 U-M students graduated with master's degrees during 2019-20.

To keep the comparisons consistent between U-M and the other schools included here, we assigned all degree awards for Charts 5.3.2, 5.3.3 and 5.3.4 at peer and Big Ten universities to the same academic disciplines and professional categories the U-M uses, even if other schools categorize the programs differently on their campuses.

\(^8\) A list of disciplines assigned to each group is found in Appendix C.
The U-M grants a large number of professional degrees compared to many peer universities.

5.3.4 Professional Degrees Awarded by Program for U-M, Peers and Big Ten Universities, 2019-20.

The U-M awards degrees in five professional programs:
Law, Medicine, Dentistry, Pharmacy, and Nursing Practice (D.N.P.).

To keep the comparisons consistent between U-M and the other schools included here, we assigned all degree awards for Charts 5.3.2, 5.3.3 and 5.3.4 at peer and Big Ten universities to the same academic disciplines and professional categories the U-M uses, even if other schools categorize the programs differently on their campuses.

SOURCE: Integrated Postsecondary Education Data System (IPEDS)

9 Includes professional degrees U-M does not offer, such as in Veterinary Medicine, Optometry, and Communication Disorders.
The profile of U-M doctoral student graduation rates in recent years is fairly consistent across the disciplines. Overall, 79 percent of students who enrolled in a doctoral program on the Ann Arbor campus between Spring term 2006 and Winter term 2015 have graduated with a Ph.D.

5.4.1 Academic Doctoral Completion Rates by Discipline Group\textsuperscript{10}, Enrollment Cohorts 2006-2015.

\textsuperscript{10} A list of disciplines assigned to each group is found in Appendix C.

SOURCE: Horace H. Rackham School of Graduate Studies

This chart examines a range of doctoral entry cohorts and shows the counts and percentages of each cohort that have completed their degrees or are still enrolled as of September 2021.
Of students who enrolled in U-M academic Master’s programs on the Ann Arbor campus at least two years ago, 88% have completed their degrees.

5.4.2 Academic Master's Completion Rates by Discipline Group, Enrollment Cohorts 2017-20

SOURCE: Horace H. Rackham School of Graduate Studies

U-M master’s programs usually require about two years to complete, so the average in the headline does not take into account the completion counts for the master's students who first enrolled in the Fall 2020 term.

11 A list of disciplines assigned to each group is found in Appendix C.
Ninety-eight percent of Rackham graduate students pursuing Ph.D. degrees receive financial support from the University.

5.5.1 Funding Support for Rackham Ph.D. Students\textsuperscript{12}, 2020-21.

In all fields of study, a large fraction of academic Ph.D. students receive both tuition grants and a stipend to help cover living expenses. In many cases, students competed successfully for external funding and did not need additional financial support. Stipends may be paid as part of an appointment as a Graduate Student Instructor (GSI), Graduate Student Research Assistant (GSRA), Graduate Student Staff Assistant (GSSA), or as a fellowship.

\textbf{All Rackham Ph.D. Students} (5,558 students)

\begin{itemize}
  \item Stipend Only: 3%
  \item Tuition Only: 1%
  \item No Support: 2%
  \item Tuition & Stipend: 94%
\end{itemize}

\textbf{Biological & Health Sciences} (1,189 students)

\begin{itemize}
  \item Stipend Only: 3%
  \item Tuition Only: 1%
  \item No Support: 1%
  \item Tuition & Stipend: 95%
\end{itemize}

\textbf{Physical Sciences & Engineering} (2,509 students)

\begin{itemize}
  \item Stipend Only: 3%
  \item Tuition Only: 1%
  \item No Support: 3%
  \item Tuition & Stipend: 94%
\end{itemize}

\textbf{Social Sciences} (1,233 students)

\begin{itemize}
  \item Stipend Only: 1%
  \item Tuition Only: 3%
  \item No Support: 2%
  \item Tuition & Stipend: 94%
\end{itemize}

\textbf{Humanities & the Arts} (627 students)

\begin{itemize}
  \item Stipend Only: 3%
  \item Tuition Only: 1%
  \item No Support: 2%
  \item Tuition & Stipend: 94%
\end{itemize}

SOURCE: Horace H. Rackham School of Graduate Studies

Percentages might not sum to 100% due to rounding.

\textsuperscript{12} A list of disciplines assigned to each group is found in Appendix C.
Financial support provided to Rackham students pursuing master's degrees varies by field of study.

5.5.2 Funding Support for Rackham Master’s Students\textsuperscript{13}, 2020-21.

The five categories of support (No Support, and covering 1%-25%, 26%-50%, 51%-75%, 76%-100% of costs) represent the fraction of the total calculated cost of attendance provided as tuition grants and stipends to students enrolled in master's programs. Loans that master's students may acquire are not included in these calculations.

SOURCE: Horace H. Rackham School of Graduate Studies

Percentages might not sum to 100% due to rounding.

\textsuperscript{13} A list of disciplines assigned to each group is found in Appendix C.
Sixty-one percent of U-M Ph.D. students graduate without any student loan debt.

5.6.1 Self-reported Cumulative Undergraduate and Graduate Debt at Graduation by U-M Ph.D. Students, by Discipline Group for Domestic Students, FY2010-2020.

Fewer than half (39% over the time period shown) of University of Michigan Ph.D. students graduate with student-loan debt that was acquired over the course of their undergraduate and graduate careers. The aggregate averages of Ph.D. graduates with debt by discipline groups vary: Life Sciences (43%), Physical Sciences & Engineering (29%), Social Sciences (47%), Humanities & the Arts (50%).

The issue of student debt remains important to the University of Michigan and higher education overall. Student loan debt presents a serious challenge to scholars just starting their careers, especially for the small number of students who have accumulated student loan debt that exceeds $100,000.

SOURCE: NSF/NIH/USED/USDA/NEH/NASA, Survey of Earned Doctorates

14 A list of the disciplines assigned to each category is in Appendix C.
After adjusting for inflation, the level of student loan debt for U-M graduates of professional degree programs in medicine, law and dentistry is high and somewhat variable from year-to-year.

5.6.2 Self-reported Debt at Graduation by Graduate Professional Students, by Program, 2011-2020.

The debt acquired by professional students is a matter of national concern. For instance, the likelihood of incurring sizeable debt to attend a professional school may contribute to the relatively small proportion of under-represented minorities enrolled in these programs at the University (see Chart 8.6.1).

SOURCE: School’s Dean or Financial Aid Office

15 Based on the FY2020 U.S. Consumer Price Index.
A large fraction of Ph.D. graduates in the physical sciences and engineering go into private or non-profit sector jobs. Ph.D. graduates in the other discipline groups tend to move more toward higher education positions.

5.7 Placement Outcomes for U-M Ph.D. students from 2008 through 2021 graduating classes, by Discipline Group.

### Biological and Health Sciences
- **Unknown**
- **Unemployed/Family care/Other**
- **Self-employed**
- **Medical/Clinical Job**
- **Non-Profit Job**
- **Government/National Lab Job**
- **Business/Industry Job**
- **K-12/Comm. College Job**
- **Other Continuing Education**
- **Post-doctoral Education**

### Physical Sciences and Engineering
- **Unknown**
- **Unemployed/Family care/Other**
- **Self-employed**
- **Medical/Clinical Job**
- **Non-Profit Job**
- **Government/National Lab Job**
- **Business/Industry Job**
- **K-12/Comm. College Job**
- **Other Continuing Education**
- **Post-doctoral Education**

More than half of academic Ph.D. graduates in the biological and health sciences enter post-doctoral training during the first year following graduation. As time since graduation passes, more graduates move into academic positions in higher education or take jobs in industry, government or the non-profit sector.

About the same number of academic Ph.D. graduates in the physical sciences and engineering initially take a position outside of academia as enter post-doctoral training. At five or more years after graduation, graduates are more likely to be employed in industry, government or the non-profit sector, or entering academic positions.

Blue shades represent higher education positions, reds indicate post-doctoral or other post-graduate training, greens are positions outside of higher education, and the grays represent unknown activity or not currently employed.

Note: These charts indicate a fairly large percentage of graduates whose plans are unknown compared to past years. Presumably, this is due in part to disruption of careers due to the coronavirus pandemic.

16 A list of disciplines assigned to each group is found in Appendix C.
5.7 Placement Outcomes for U-M Ph.D. students from 2008 through 2021 graduating classes, by Discipline Group\(^\text{16}\) (continued).

### Social Sciences

- **Unknown**
- **Unemployed/Family care/Other**
- **Self-employed**
- **Medical/Clinical Job**
- **Non-Profit Job**
- **Government/National Lab Job**
- **Business/Industry Job**
- **K-12/Comm. College Job**
- **Other Continuing Education**
- **Post-doctoral Education**
- **Non-Tenure Track, Higher Ed.**
- **Tenure-Track (Foreign Univ.)**
- **Tenure-Track (Other U.S. Univ.)**
- **Tenure-Track (AAU Univ.)**

About a third of academic Ph.D. graduates in the social sciences enter a higher education position during the first year following graduation, with about two-thirds of these on the tenure-track. By five years after graduation, about 45 percent of U-M’s social science Ph.D. graduates have tenure-track positions.

### Humanities and the Arts

- **Unknown**
- **Unemployed/Family care/Other**
- **Self-employed**
- **Medical/Clinical Job**
- **Non-Profit Job**
- **Government/National Lab Job**
- **Business/Industry Job**
- **K-12/Comm. College Job**
- **Other Continuing Education**
- **Post-doctoral Education**
- **Non-Tenure Track, Higher Ed.**
- **Tenure-Track (Foreign Univ.)**
- **Tenure-Track (Other U.S. Univ.)**
- **Tenure-Track (AAU Univ.)**

Ph.D. graduates in the humanities and arts are less likely to pursue postdoctoral training than their counterparts in other disciplines. About one-fifth of humanities and arts Ph.D. graduates are on the tenure track initially, and the fraction doubles by ten years post-graduation.

Blue shades represent higher education positions, reds indicate post-doctoral or other post-graduate training, greens are positions outside of higher education, and the grays represent unknown activity or not currently employed.

Note: These charts indicate a fairly large percentage of graduates whose plans are unknown compared to past years. Presumably, this is due in part to disruption of careers due to the coronavirus pandemic.

\(^\text{16}\) A list of disciplines assigned to each group is found in Appendix C.
U-M Ph.D. programs are attractive to students from all geographic locales.

5.8.1 Geographic Origins of U-M Ph.D. Recipients, Headcount (top) and Percent (bottom) by Discipline Group\textsuperscript{18}, FY2010-2020.

The large number of international students enrolled in physical science and engineering Ph.D. programs is not a surprise, given the attractiveness of these kinds of programs. For the decade displayed here, international students make up 48.6 percent of total enrollment in U-M physical science and engineering Ph.D. programs.

\textsuperscript{18} A list of disciplines assigned to each group is found in Appendix C.
A comparison of geographic origins (5.8.1) and destinations (below) of U-M Ph.D. students illustrates that a large proportion of international students remain in the U.S. after graduation.

5.8.2 Geographic Destinations of U-M Ph.D. Recipients, Headcount (top) and Percent (bottom) by Discipline Group\(^{19}\), FY2010-2020.

SOURCE: NSF/NIH/USED/USDA/NEH/NASA, Survey of Earned Doctorates

\(^{19}\) A list of disciplines assigned to each group is found in Appendix C.
U-M law, medicine, dentistry and pharmacy professional students pass their licensing exams at very high rates.


 SOURCE: Registrar, U-M Law School


 SOURCE: Registrar, Medical School

The U.S. Medical Licensing Examination is administered by the National Board of Medical Examiners in several parts: Step 1 exam at the end of the second year of medical school, and both Step 2 exams (CK=Clinical Knowledge, CS=Clinical Skills) during the fourth year of medical school. The rates are computed based on the first time students take each test. U-M medical students pass these exams at equal or higher rates than the national averages.
U-M law, medicine, dentistry and pharmacy professional students pass their licensing exams at very high rates. (cont.)


SOURCE: School of Dentistry

National Board Dental Examination is now given in two parts at different points in the student's academic career with each part testing different subject areas.

The rates are computed based on the first time students take each test.


SOURCE: College of Pharmacy

The rates are computed based on the first time students take each test.