

# Early Women Mathematicians in Princeton

*Margaret A. Ready and Christine Taylor*



Alexander became the first faculty members of the Institute for Advanced Study, along with Albert Einstein, John von Neumann, and Hermann Weyl. Upon finishing her PhD at Chicago, Stafford wrote to Veblen directly and was accepted as one of two women, the other being Mabel Schmeiser Barnes (PhD, 1931, Ohio State) in the inaugural class of seventeen IAS members in mathematics. Around the same time at the Institute, Emmy Noether was a visitor, commuting from Bryn Mawr College. Female mathematicians at IAS in the 1930s and 1940s also included those listed in the sidebar.

During this time there were no women students or faculty at Princeton University. In fact, women were not even allowed to audit courses. In 1954 Matsue Hanaoka visited the Princeton Mathematics Department as an International Rotary Fellow from Japan to work with Salomon Bochner in differential geometry upon the recommendation of Bochner's coauthor Kentaro Yano. Shiing-Shen Chern, a member at IAS, was also involved with inviting Hanaoka. Princeton's Graduate School admitted Hanaoka as a special student, not realizing that Hanaoka was a woman. Upon Hanaoka's arrival in Princeton, the Graduate School quickly found lodging for her outside the Graduate College. Princeton graduate students at the time Robert Gunge

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In the early 1930s Anna Stafford, a graduate student at the University of Chicago interested in topology, asked to transfer to Princeton University to work with Oswald Veblen and James Alexander. She received a postcard from Princeton University saying "We don't take girls." In 1933 Veblen and

**Mary Sinclair**, PhD 1908, University of Chicago

**Marie Johnson Yeaton**, MS 1921, University of Iowa

**Gertrude Stanley**, PhD 1927, University of Oxford

**Olga Taussky-Todd**, PhD 1930, University of Vienna

**Marie Charpentier**, PhD 1931, University of Poitiers

**Alice Lazerowitz**, PhD 1932, University of Wisconsin, PhD 1938, University of Cambridge

**Miriam Becker**, PhD 1934, Yale University

**Dorothy Manning Smiley**, PhD 1937, Stanford University

**Dorothy Maharam**, PhD 1940, Bryn Mawr College

**Sheila Power**, PhD 1941, University of Edinburgh

**Mary Dolciani**, PhD 1947, Cornell University

**Cécile DeWitt-Morette**, PhD 1947, University of Paris

**Verena Huber-Dyson**, PhD 1947, University of Zürich

ning and Joseph Kohn remember Hanaoka as hardworking. She attended courses and tea regularly, and was perhaps not even aware that Princeton was not co-educational. In March 1955, Hanaoka along with Gunning and Kohn were driven by another graduate student to New York to attend a seminar. The car flipped over at a sharp turn, and all the passengers were thrown out. Hanaoka received the worst,

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<sup>2</sup>*Communications from Robert Gunning and Joseph Kohn; Princeton Town Topics Archive [ia600307.us.archive.org/11/items/towntopicsprince952unse/towntopicsprince952unse.pdf](https://ia600307.us.archive.org/11/items/towntopicsprince952unse/towntopicsprince952unse.pdf)*

**PRINCETON UNIVERSITY**  
**Mathematics Graduate Students**  
**1968**



- |                         |                         |                          |
|-------------------------|-------------------------|--------------------------|
| 1) Mehmet E. Bozhiyuk   | 10) William J. Older    | 19) Anthony J. O'Conner  |
| 2) Ibrahim Dibag        | 11) Brian K. Schmidt    | 20) Robert Ephriam       |
| 3) Bonnie Gold          | 12) Lawrence J. Dickson | 21) Robert J. Jackson    |
| 4) Helen Hunt           | 13) John M. Masley      | 22) Leonard M. Lipschitz |
| 5) Martha Katzin        | 14) Mark L. Green       | 23) Daniel H. Saracino   |
| 6) Deborah L. Goldsmith | 15) Edward P. Culp      | 24) Craig Benham         |
| 7) Marjorie L. Stein    | 16) James C. Thorpe     | 25) Kenneth E. Dahlberg  |
| 8) Neil K. Cohen        | 17) Charles N. Friedman | 26) V. Alan Norton       |
| 9) Harry Fedler         | 18) Gerald B. Folland   |                          |

**Figure 1.** In 1968 five woman graduate students entered Princeton's math department.

a head injury. She stayed in a hospital for a few weeks and returned to Japan before the end of the academic year.<sup>2</sup>

A decade later amid the Vietnam War, Princeton very slowly started admitting women into its graduate school, and finally women at the undergraduate level in 1969. In 1968, Princeton's math department admitted women graduate students for the first time (see Figure 1). Elias Stein, then chair of the math department, decided there should be a critical mass of female graduate students for them to be successful. Five women entered Princeton's math department in fall 1968: Bonnie Gold, Deborah L. Goldsmith, Helen Hunt, Martha Katzin, and Marjorie L. Stein (no relation to Elias Stein). Goldsmith and Stein each received a PhD in 1972, Katzin in 1974. Gold transferred to Cornell and received a PhD in 1976, and Hunt did not finish her PhD.

In 1969, Yoko Nakagawa was the only woman admitted into the Princeton PhD program; she received her PhD in 1973 and returned to Japan. In 1973, Joan Birman became a visitor to the Princeton math department, commuting from home in New Rochelle while a mother of three teenagers. Birman's research monograph *Braids, Links, and Mapping Class Groups*, based on a course she gave in Princeton, is still a classic reference for topologists.<sup>3</sup>

#### Photo Credit

Figure 1 courtesy of the Department of Mathematics, Princeton University.

<sup>2</sup>See Joan Birman feature in the current Notices issue (page 250).