

The tax effects of temporary differences that give rise to significant portions of deferred tax assets (liabilities) are as follows (in thousands):

	December 31, 2019	December 31, 2018
Deferred tax assets:		
Net operating loss carryforwards	\$ 46,273	\$ 43,869
Research and development credits, net of uncertain tax positions	25,386	22,051
Accruals, reserves, and other	12,021	11,264
Stock-based compensation	3,306	2,628
Depreciation and amortization	2,219	1,952
Operating lease liability	7,061	—
Gross deferred tax assets	96,266	81,764
Valuation allowance	(85,743)	(78,681)
Total deferred tax assets	<u>10,523</u>	<u>3,083</u>
Deferred tax liabilities:		
Deferred contract acquisition costs	(2,245)	(2,256)
Operating lease right of use asset	(7,088)	—
Other	(19)	(13)
Total deferred tax liabilities	<u>(9,352)</u>	<u>(2,269)</u>
Net deferred tax assets	<u>\$ 1,171</u>	<u>\$ 814</u>

Recognition of deferred tax assets is appropriate when realization of these assets is more likely than not. Based upon the weight of available evidence, which includes our historical operating performance and the recorded cumulative net losses in prior fiscal periods, we recorded a full valuation allowance of \$85.7 million and \$78.7 million against the U.S. net deferred tax assets as of December 31, 2019 and 2018, respectively. For the years ended December 31, 2019 and 2018, the valuation allowance increased by \$7.1 million and \$6.2 million, respectively.

As of December 31, 2019 and 2018, we had U.S. federal net operating loss carryforwards of \$193.8 million and \$185.0 million, respectively, and state net operating loss carryforwards of \$84.6 million and \$75.3 million, respectively. The federal net operating loss carryforwards will expire at various dates beginning in the year ending December 31, 2025, if not utilized. The state net operating losses expire in various years ending between 2023 and 2039, if not utilized.

Additionally, as of December 31, 2019 and 2018, we had U.S. federal research and development credit carryforwards of \$15.3 million and \$13.3 million, and state research and development credit carryforwards of \$16.4 million and \$14.2 million, respectively. The federal credit carryforwards will begin to expire at various dates beginning in 2025 while the state credit carryforwards can be carried over indefinitely.

Utilization of the net operating losses and credit carryforwards may be subject to an annual limitation provided for in the Internal Revenue Code Section 382 and similar state codes. Any annual limitation could result in the expiration of net operating loss and credit carryforwards before utilization.

With respect to our undistributed foreign subsidiaries' earnings we consider those earnings to be indefinitely reinvested and, accordingly, no related provision for U.S. federal and state income taxes has been provided. Our intention has not changed subsequent to the one-time transition tax under the Tax Act. Upon distribution of those earnings in the form of dividends or otherwise, we may be subject to both U.S. income taxes subject to an adjustment for foreign tax credits and withholding taxes in the various countries. As of December 31, 2019 and 2018, the undistributed earnings approximated \$13.6 million and \$10.8 million, respectively. Our undistributed earnings through December 31, 2017 have been taxed under the one-time transition tax under the Tax Act.