This calendar is dedicated to the rat research community worldwide. Thank you for your continued support and encouragement!

WITH APPRECIATION, THE RGD TEAM

“Milo the Science Rat.” Photo courtesy of Sarah Hunt, MartyMouseHouse. https://www.martymousehouse.com/
“Ready or not, here I come.” (left) 4-month-old pet Heterogeneous stock rats Cheddar (back) and Hamilton (front) enjoy a game of hide and seek. Photo courtesy of Gina Giorgio, North Carolina, USA.

“Every family has that one kid.” (right) Photo of rats from the Humane Animal Welfare Society fostered by the family of RGD Bioinformatics Manager, Jeff De Pons. Photo courtesy of Jeff De Pons, Rat Genome Database, Medical College of Wisconsin, Milwaukee, WI, USA. https://rgd.mcw.edu
"The loving rat." Original drawing by Siri Jonnada. Used with permission of the artist. Submitted by her mother, RGD developer, Jyothi Thota, Rat Genome Database, Medical College of Wisconsin, Milwaukee, WI, USA. https://rgd.mcw.edu

Right: “Downunder whiteside”. Downunder is a dominant mutation that results in a ventral pattern that tends to mirror the dorsal pattern. The whiteside mutation is the reason that this ratty girl has “pants”. Rats bred by and photos courtesy of Concepcion Perez, University of California, Berkeley, CA, USA.
Three week old Kwl:Wistar rats (RGD:150520162). Photography by Mr. Takao Nakagawa, Kiwa Laboratory Animals Co., Ltd., Wakayama, Japan. Photos submitted by Dr. Masayuki Anzai, Institute of Advanced Technology, Kindai University, Kainan City, Wakayama, Japan.

https://www.kwl-a.co.jp
https://www.kindai.ac.jp/bost/about/advanced-technology/
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“Miss Squish” (left), “Bae, Suzie, & Mika” (top right) and “Winnifred” (bottom right). Original paintings by Drusilla Kehl, The Illustrated Rat. Used with permission of the artist. https://www.theillustratedrat.com/
“Decorating the world via genome editing.”
Genome-edited Sprague-Dawley (white) rats.
Photo courtesy of Hsiao-hui Chang and caption by Dr. Jason Sung of the National Laboratory Animal Center of NARLabs, Taiwan. https://www.nlac.narl.org.tw/
Sadie, originally a wild rat living under Dr. Kevin Grazier’s porch in New York, became the best of indoor pals. Sadie lived to an astounding 5½ years old! Photos courtesy of Dr. Kevin Grazier. https://www.imdb.com/name/nm0337207/
“Packed Rat.” Chimeric rat generated by injection of DA/Slc X BN/SsNSlc embryonic stem (ES) cells into a Crlj:WI blastocyst (RGD IDs 61111, 1302631 and 2312504, respectively). Photo courtesy of Dr. Masumi Hirabayashi, Section of Mammalian Transgenesis, Center for Genetic Analysis of Behavior, National Institute for Physiological Sciences, Okazaki, Aichi, Japan. https://www.nips.ac.jp/eng/research/group/post-18/
Top left (two photos): BDIX.BDIV-Mss1c/Zte congenic rat strain (BDIX.BDIV-Mss1c; BDIX.BDIV-82.9-105.2 Mb/lfz AKA / Zte, RRRC# 00904, RGD:150520183). Top right (two photos): Hsd:ZUC-Lepr<sup>a</sup> (HsdHlr:ZUCKER-Lepr<sup>a</sup>, RGD:150520161). Bottom: LE-ROSA26em1(CAG-tdTomato)Rrrc rats (RRRC# 00938, RGD:150520182) photographed through a 581 nm filter are glowing red from my head “to-ma-toes” (left) and enjoying an eponymous treat (right). <i>tdTomato</i> is excited optimally at 554 nm and emits light at 581 nm. Photos courtesy of Alexandra DeWitt, Rat Resource & Research Center, University of Missouri, Columbia, MO, USA. https://www.rrrc.us/
“Tricks and treats.” Snowy (left), 2½ year old hairless Dwight (top right) and Michael (bottom right) are ready to celebrate Halloween. Photos courtesy of Dr. April Wittenburg and Kaitlynne Barth, Brook-falls Veterinary Hospital & Exotic Care Inc. Menomonee Falls, WI, USA. https://www.brookfallsveterinary.com/
Nickels is ready to give thanks in a stylish turkey hat! Photo courtesy of Sarah Hunt, MartyMouseHouse.
https://www.martymousehouse.com
This Heterogeneous stock (NMcwiWfsm:HS, RGD:13673907) rat is 5½ weeks old and is the friendliest, most photogenic boy, hoping to be spoiled over the winter holidays. HS rats are a result of 90+ generations of outbred rats that come from 8 original inbred strains. The Solberg Woods lab works with HS rats to study metabolism, obesity, type 2 diabetes and behavioral traits with an end goal to genetically map out metabolic traits. Photos courtesy of TrangDai Bui of the Solberg Woods Lab at Atrium Health Wake Forest Baptist, Winston-Salem, NC, USA. [https://school.wakehealth.edu/Research/Labs/Woods-Lab](https://school.wakehealth.edu/Research/Labs/Woods-Lab)
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Bioinformatics Manager
• Jeff De Pons, BSc

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• Wendy Demos, MSc

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• Jyothi Thota, MSc
• Harika Nalabolu, MSc
• Logan Lamers, BA
• Adam Gibson, BSc
• Ketaki Thorat, BCE, OCJP6

“When you ask...
Do you want to go for a ride?”

Joey (left), a 16-year-old Pointer-Boxer mix and Raj (right), an about 10-year-old Pointer-Weimaraner mix. Photo courtesy of Dr. Anne Kwitek, Rat Genome Database, Medical College of Wisconsin, Milwaukee, WI, USA.
https://rgd.mcw.edu

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Cover Collage
Left:
“Holiday HS Rat.” Photo courtesy of TrangDai Bui of the Solberg Woods Lab at Atrium Health Wake Forest Baptist, Winston-Salem, NC, USA.

Top center:
“Nickels in the Baff.” Photo courtesy of Sarah Hunt, MartyMouseHouse.

Bottom center:
“Whiteside Heart.” Photo of whiteside rats courtesy of Concepcion Perez, University of California, Berkeley, CA, USA.

Top right:
“Dwight.” Photo courtesy of Kaitlynne Barth, Brook-falls Veterinary Hospital & Exotic Care Inc. Menomonee Falls, WI, USA.

Bottom right:
“Hamilton...the rat, not the musical.” Photo courtesy of Gina Giorgio, North Carolina, USA.

Vincent (below)
“Vincent.” Original painting by Drusilla Kehl, The Illustrated Rat. Used with permission of the artist.