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REVIEW SUMMARY; FOR FULL TEXT:
dx.doi.org/10.1126/science.aaf9414

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dx.doi.org/10.1126/science.aaa3761

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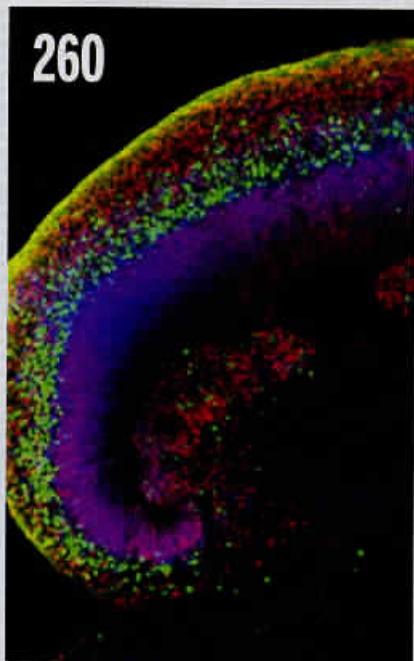
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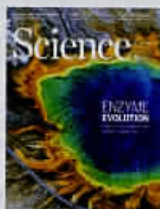
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Grand Prismatic Spring in Yellowstone National Park, illustrating the evolution of life on Earth from hot (middle) to colder environments (edges). Bacteria with different survival temperatures

create the color scale. To study the evolution of enzymatic thermoadaptation, Nguyen *et al.* reconstructed enzyme activity over 3 billion years in response to cooling temperatures. For more on evolutionary memory in modern enzymes, see page 289. Photo: Tom Murphy/National Geographic Creative

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