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**From:** [REDACTED] on behalf of Seth Lloyd <[REDACTED]>  
**Sent:** Saturday, February 25, 2017 4:49 PM  
**To:** jeffrey E.  
**Subject:** Re:

Dear Jeffrey,

He probably can't come but you would enjoy my friend and colleague Max Tegmark.

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I've been following up on your question about symmetry -- or lack thereof -- in biological systems. In fact, the lack of symmetry in biology seems to be related to my observation that most biological equilibria are unstable. Stable equilibria lead to symmetry: think of a planet taking on a spherical form. Unstable equilibria don't have this feature: the system breaks symmetry as it seeks an exit from the equilibrium. Since biological equilibria are dynamic and ultimately unstable, we shouldn't expect symmetric behavior. This shows up in physics as well in the form of spontaneous symmetry breaking.

Yours, <=div>  
Seth

On Sat, Feb 25, 2017 at 6:12 AM, jeffrey E. <jeevacation@gmail.com <mailto:jeevacation@gmail.com> > wrote:

I'll be in Santa Fe all week, anyone I should invite to ranch that you think cutting edge

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Please note

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