GENI-Lab Proposal:

We seek a $3M USD commitment over three years, to pursue Genius Machines—robots with genius-level intellect and sexy android bodies. To start, we propose a $1.5M sponsorship, sustained with an additional $750 per year for two years thereafter. With these funds, we will demonstrate spectacular milestones and deliverables, showing major improvements in performance in the intelligence of the robots and software. These milestones will include early breakthroughs in hardware and software, with a beautiful android ready to show publically in less than a year. Year three will culminate in a human-level general intelligence controlling our human-scale android hardware. The robot will be reproducible at low cost, with an expansive API and software, and will serve as a standardized platform for additional AGI research around the world, as well as real-world applications. We contend that this project will generate huge leaps forward in A.I., accelerating progress towards true genius machines within a decade.

Funding sought: $3M

Major milestones:
- 9 months: complete walking android with beautiful face, conversationally intelligent.
- 12 months: robot gives a presentation at TED, takes interviews with reporters.
- 24 months: robot capabilities integrate the best of AI today: navigate a space, sustain conversation with people indefinitely, see objects, faces, expressions, gestures, etc.
- 36 months: the robot is as smart as an adult narrowly, generally as smart as a small child.

Example sketch by Dr. David Hanson; the final design will be done collaboratively with you

Major Goals:

1. **Development of a Beautiful Female Android (or Gynoid to be more accurate)**
   $700k achieves one fully functional prototype, including basic animated intelligence, walking body, expressive face, and designed for mass-production
   a. In 6-9 months, we will produce a Gynoid (attractive female android)
      i. With a gorgeous, realistic face, the world's best facial expressions, and great sensors (cameras in the eyes, microphone array, gyros, etc).
      ii. Female-proportioned walking body, with gestural hands and arms, integrated with the aforementioned robot face.
      iii. This will be the world's best android ever, designed to be mass-produced at low-cost (with a target of $2k to $5k USD retail price. Note: mass-production will require an additional ~$500k to realize, to pay for tooling and inventory).
   b. Computing infrastructure
      i. We will set up the computing infrastructure to control the robot at demos.
      ii. We will set up a world-wide GENI control infrastructure, including servers for remotely controlling the robots. The Gynoid will interface through a cellphone network to our cloud-service, for enhanced-intelligent control of the android, including OpenCog, ROS, etc.
      iii. In early days, to accelerate software development for the Gynoid, we will use the low-cost Hanson RoboKind robots and Philip K. Dick androids, which are software-compatible with the Gynoid,, and are currently ready for use.
   c. **Hardware Milestones and Deliverables:**
      i. Month 6: working gorgeous robot face and body.

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    ii.   Month 9: fully integrated android tested, with basic walking, gestures and interactivity, including animation controls, face tracking, motion tracking, basic conversational interactivity

    iii.   Month 12: Refinements completed, so that the robot is ready to show at TED 2014. It should walk on stage, give a TED talk, and interact with people afterwards, giving interviews to the press media.

    iv.   Month 12: Designs ready to go into mass production, for a late-2014 delivery

2. **Mind Development (a.k.a. Software)**
   $700k per year for 3 years ($2.1 M total) achieves general intelligence in an android

   a. Open Cog integration with Hanson Robotics system, to allow both expert and adaptive/general intelligent control

   b. Improved robot controls, including further development/Integration of Bio-Drives motivational systems, and integration with ROS, SLAM, additional perception abilities (gestures, objects, gaze detection, etc), improved stabilization and motion planning, and the use of all these abilities in interaction with people and environment

   c. Improved character motivation and animation, for more lifelike behavior that is more pleasing to people

   d. Open source/ Maker outreach (including to other labs, including MIT Media Lab)

   e. **Software Milestones and Deliverables:**

       i.   Month 9: Fully integrated android software showing basic interactivity, conversation, face tracking, gesture response (existing abilities), Basic, integration with Open Cog.

       ii.   Month 12: Presentation at TED 2014.

       iii.   Month 18: Tested integration of Open Cog with ROS, RoboCup SLAM capabilities, additional perception, learning, & navigation of a space.

       iv.   Month 24: Ability to sustain a natural conversation with people for over 20 minutes, convincing 1/2 of people surveyed that the robot is human-level intelligent.

       v.   Month 36: General intelligence par with a 3 year old child (plus showing narrow genius—such as with wordplay, games, etc.). This will be tested by standard psychometrics, as well as by convincing 50% of people that the robot is human-level intelligent.

3. **GENI-Lab Non-Profit**
   $50k founding costs, plus 50k per year for 3 years ($200k total) builds a workspace

   a. To provide the infrastructure for the proposed research, we will found the GENI-Lab as 501(c)(3) non-profit in the U.S., and setup our lab in Hong Kong, where we will integrate Hanson and Goertzel efforts, and efforts with our factory engineers there. The founding costs include the move-in costs, furnishings, and equipment.

   b. The lab will operate in Hong Kong—the ideal location for expanded collaboration with Open Cog and Ben Goertzel, Mark Tilden, and factories there.

   c. Costs include rent, utilities, and basic admin, janitorial, servers, and website, including outreach and repositories for the open source results of our work.