



ADAM COHEN



HOME: NEW YORK, NY SCHOOL: HUNTER COLLEGE HIGH SCHOOL AGE: 17 INVENTION: THE ELECTROCHEMICAL PAINTERUSH

ADAM E. COHEN HAS LONG DREAMED OF A CAREER AS AN INDEPENDENT INVENTOR...AND HE IS WELL ON HIS WAY TO MAKING THAT DREAM COME TRUE.



AT AGE FIVE, ADAM BEGAN TO RUMMAGE THROUGH TRASH CANS LOOKING FOR ANY BROKEN MACHINES HE COULD USE FOR PARTS.

AND WHEN HE WAS TEN, HE BUILT AN ALARM CLOCK THAT WOULD AWAKEN HIM BY PLAYING A PRE-RECORDED MESSAGE OF HIS CHOICE.



ADAM VISITED PRINCETON UNIVERSITY WHEN HE WAS FIFTEEN. THERE HE WITNESSED A DEMONSTRATION OF A SCANNING TUNNELING ELECTRON MICROSCOPE...



...AND PROMPTLY WENT HOME AND BUILT ONE OUT OF LEGOS! ADAM THEN DECIDED TO FASHION HIS ELECTRON MICROSCOPE INTO...

...THE ELECTROCHEMICAL PAINTERUSH.



THIS AMAZING DEVICE "PAINTS" MICROSCOPIC LINES OF COPPER SO SMALL THAT IT CAN FORM 50 WORDS END-TO-END IN A SPACE THE WIDTH OF A HUMAN HAIR. THIS IS SIXTEEN TIMES SMALLER THAN COPPER LINES PRODUCED BY DEVICES PRESENTLY USED TO FABRICATE MICROCHIPS.

THIS INCREDIBLE INVENTION WAS AWARDED 1ST PLACE IN THE 1997 WESTINGHOUSE SCIENCE & TALENT SEARCH, AND 2ND PLACE IN THE INTERNATIONAL SCIENCE AND ENGINEERING FAIR.



WHILE THE ELECTROCHEMICAL PAINTERUSH IS BEING PATENTED, ADAM IS STUDYING PHYSICS AND CHEMISTRY AT HARVARD UNIVERSITY.

ILLUSTRATOR: PHIL ROSE

STORY: L. BRANT

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JEREMY KISER



HOME: AKRON, OH SCHOOL: SPRINGFIELD LOCAL H.S. AGE: 17 INVENTION: GUARDIAN ANGEL



EVEN AS A TODDLER, JEREMY KISER DEMONSTRATED HIS FONDNESS FOR ORDER AND STRUCTURE BY SPENDING MUCH OF HIS TIME CREATING ROWS OF RAISINS ACROSS THE KITCHEN FLOOR.



JEREMY SOON PROCEEDED FROM USING RAISINS TO MAKE PATTERNS ON LINOLEUM TO USING A PENCIL AND PAPER TO PRODUCE ART. JEREMY'S TALENTS ARE NOT LIMITED TO ART, HOWEVER, HE IS ALSO A TALENTED WRITER AND INVENTOR.

WHEN JEREMY WAS 7, HIS UNCLE SUGGESTED THE NEED FOR MORE EFFECTIVE SAFETY DEVICES AT TRAIN INTERSECTIONS TO PREVENT COLLISIONS WITH CARS AND BUSES.

THIS GAVE JEREMY THE IDEA FOR THE GUARDIAN ANGEL - AN INVENTION COMPRISED OF TWO SIMPLE PARTS: AN INEXPENSIVE RADIO TRANSMITTER INSTALLED IN TRAINS, AND A RECEIVER INSTALLED IN BUSES AND CARS.



WHEN A VEHICLE APPROACHES A TRAIN TRACK, THE TRANSMITTER SIGNALS THE BUS OR CAR IF A MOVING TRAIN IS WITHIN A DISTANCE OF ONE-FOURTH OF A MILE.

THE GUARDIAN ANGEL RECEIVED 2ND PLACE HONORS IN THE 1997 NSTA/PURCELL SCHOLARSHIP AWARD PROGRAM.



SEVERAL INDIVIDUALS IN STATE GOVERNMENT HAVE EXPRESSED INTEREST IN INSTALLING THESE DEVICES IN TRAINS AND BUSES. JEREMY IS PRESENTLY DEVELOPING HIS INVENTION TO INCLUDE BOTH A STROBE AND A VOICE WARNING SYSTEM.

JEREMY IS UNCERTAIN WHAT HE WILL DO IN LIFE, BUT PLANS TO PURSUE A CAREER IN ART, LAW, OR ENVIRONMENTAL SCIENCE.

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ARIEL KRASIK-GEIGER



HOME: SEATTLE, WA SCHOOL: THE NORTHWEST SCHOOL AGE: 12 INVENTION: CALIBRATED ANGLE AND DEPTH SCISSORS

ARIEL'S PARENTS FIRST RECOGNIZED THEIR SON'S PROBLEM-SOLVING ABILITY WHEN HE BEGAN TO UNSCREW JAR LIDS AT THE AGE OF 6 MONTHS.

BUT ARIEL SOON MOVED FROM TAKING THINGS APART TO PUTTING THINGS TOGETHER.

OVER THE NEXT SEVERAL YEARS HE GENERATED A STRING OF INVENTIONS INCLUDING EVERYTHING FROM A CHERRY PICKER TO A BETTER TOILET PLUNGER CALLED THE "THUNDER PLUNGER."

WHILE DOING A GEOMETRY ASSIGNMENT THAT REQUIRED CUTTING SPECIFIC ANGLES FROM A SHEET OF PAPER, ARIEL GOT THE IDEA FOR THE CALIBRATED ANGLE AND DEPTH SCISSORS.

THESE SCISSORS ARE EQUIPPED WITH A PROTRACTOR THAT ALLOWS THE USER TO EASILY CUT PRECISE ANGLES AND DEPTHS WITHOUT HAVING TO USE A PENCIL.

THE CALIBRATED ANGLE AND DEPTH SCISSORS WON FIRST PLACE AT THE 1997 CRAFTSMAN/NESTA YOUNG INVENTORS AWARD PROGRAM.

ARIEL AND HIS FAMILY WERE FLOWN TO SEARS HEADQUARTERS IN CHICAGO WHERE BOB VELA PERSONALLY PRESENTED THE AWARD.

ARIEL PLANS TO ATTEND COLLEGE AND STUDY ENGINEERING IN ORDER TO FULFILL HIS DREAM OF GOING INTO SPACE AS A CIVILIAN ASTRONAUT.

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KAREN MENDELSON



HOME: WORCESTER, MASS. SCHOOL: POHERTY MEMORIAL HIGH SCHOOL AGE: 16
 INVENTION: INEXPENSIVE FAST OPTICAL METHOD FOR MEASURING CARBON MONOXIDE IN WHOLE BLOOD

KAREN MENDELSON WAS BORN IN CLEVELAND, OHIO, AND MOVED TO MASSACHUSETTS WHEN SHE WAS TWO YEARS OLD.

AT THE AGE OF THREE, KAREN'S NURSERY SCHOOL TEACHER TOLD MRS. MENDELSON TO BUY SOME BOOKS FOR HER BECAUSE SHE WAS ALREADY STARTING TO READ ON HER OWN.

WHEN SHE WAS IN SIXTH GRADE, KAREN DID A SCIENCE PROJECT ON FIBER OPTICS. SHE WAS LATER INVITED TO PRESENT HER PROJECT AT CITY HALL.

IN 10TH GRADE, KAREN READ ABOUT VICTIMS OF CARBON MONOXIDE POISONING. THIS OCCURS WHEN FUELS ARE BURNED IN ENCLOSED SPACES AND CAN CAUSE FLU-LIKE SYMPTOMS, OFTEN RESULTING IN DEATH.

KAREN'S BATTERY-POWERED INVENTION CAN QUICKLY DIAGNOSE CARBON MONOXIDE POISONING BY MEASURING LIGHT TRANSMISSION THROUGH BLOOD THAT IS DRAWN FROM A PIN PRICK.

HER DEVICE WON KAREN 2ND PLACE AT THE INTEL INTERNATIONAL SCIENCE & ENGINEERING FAIR IN 1997, AND HAS BEEN FEATURED ON MSNBC, NBC TODAY, AS WELL AS IN BUSINESS WEEK AND POPULAR MECHANICS.

THE NEXT YEAR, SHE WON 1ST PLACE AT THE INTEL SCIENCE & ENGINEERING FAIR FOR INVENTING A DEVICE THAT CAN MEASURE HEMOGLOBIN WITHOUT DRAWING BLOOD FROM THE PATIENT.

KAREN IS ONE OF ONLY TWO STUDENTS FROM THE U.S. INVITED TO VISIT STOCKHOLM FOR THE AWARDING OF THE NOBEL PEACE PRIZES. KAREN PLANS TO ATTEND COLLEGE AND EARN A PH.D. IN MEDICAL RESEARCH.

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BRIAN SCHREYER



HOME: MORWOOD, NJ SCHOOL: NORTHERN VALLEY REGIONAL H.S. AT OLD TAPPAN AGE: 17 INVENTION: E.T.S. (EMERGENCY TRAFFIC SIGNAL)

ALTHOUGH BRIAN SCHREYER CLAIMS TO BE JUST AN AVERAGE TEENAGER, HIS ACCOMPLISHMENTS ARE ANYTHING BUT AVERAGE.

ASIDE FROM BEING AN ABOVE-AVERAGE MUSICIAN, HE IS ALSO AN ACCOMPLISHED SAILOR, AND WORKS PART-TIME AS AN EMERGENCY MEDICAL WORKER WHERE HE HAS USED CPR TO SAVE LIVES.

FOR BRIAN, THE DEFINING MOMENT IN HIS LIFE WAS HIS EXPERIENCE WITH AN OUTWARD BOUND EXPEDITION WHEN HE MADE A THREE-WEEK TREK THROUGH THE ROCKY MOUNTAINS.

ONCE, WHILE ASSISTING A VICTIM OF AN AUTO ACCIDENT, BRIAN NOTICED THAT THE POLICEMAN ON THE SCENE HAD TO SPEND HIS TIME DIRECTING TRAFFIC RATHER THAN ASSISTING WITH MORE URGENT MATTERS.

THIS GAVE BRIAN THE IDEA FOR A PORTABLE TRAFFIC SIGNAL THAT LAW OFFICERS COULD USE UNDER EMERGENCY CONDITIONS.

HIS INVENTION, THE EMERGENCY TRAFFIC SIGNAL, WAS AWARDED THIRD PLACE IN THE 1995 PURCELLINISTA SCHOLARSHIP AWARD PROGRAM.

DUE TO THE INFLUENCE OF HIS EMERGENCY MEDICAL WORK, BRIAN CREATED A SECOND POTENTIALLY LIFE-SAVING INVENTION -- THE H.E.L.P. (HANDHELD EMERGENCY LINK TO THE POLICE) WHICH WON THE 1995 INTEL SCIENCE TALENT SEARCH. BRIAN PLANS TO PURSUE A CAREER IN EITHER MEDICAL SCIENCE OR LAW.

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STORY: L. GRANT

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BRANDON WHALE



HOME: PITTSBURGH, PA SCHOOL: NORTHWAY ELEMENTARY AGE: 8 INVENTION: PACEMATE

BRANDON WHALE LOVES ANIMALS AND IS A WALKING ENCYCLOPEDIA OF ZOOLOGY.

HE IS ALSO A VERY GIFTED ARTIST AND THE ILLUSTRATOR OF HIS SCHOOL NEWSPAPER.

IN 1995, BRANDON'S MOTHER RECEIVED A PACEMAKER IMPLANT. AFTERWARDS, SHE HAD TO PROVIDE FREQUENT ERG'S TO THE HOSPITAL VIA A TELEPHONE MODEM BY CONNECTING SENSORS TO HER WRISTS.

THESE SESSIONS WERE VERY TIME CONSUMING BECAUSE THE SENSORS WERE TOO LOOSE AND THEY DID NOT PROVIDE A SOLID ELECTRICAL CONNECTION.

BRANDON'S RESEARCH REVEALED THAT PEDIALYTE™, A COMMON CHILDREN'S MEDICINE, CONTAINED ELECTROLYTES WHICH HELP IMPROVE ELECTRICAL CONDUCTIVITY. FORTUNATELY, HE HAD USED PEDIALYTE TO TREAT HIS PET LIZARD, SO HE STILL HAD SOME ON HAND.

BRANDON PREPARED SEALED PLASTIC PACKAGES CONTAINING SMALL ELECTROLYTE-SOAKED SPONGES. HE ALSO IMPROVED THE WRISTBANDS TO PROVIDE A TIGHTER FIT.

THESE IMPROVEMENTS HAVE MADE THE LIVES OF MANY PACEMAKER USERS MUCH SIMPLER.

IN 1998, BRANDON'S INVENTION WON THE STUDENT IPSAS FOR A BETTER AMERICA COMPETITION.

BRANDON'S STORY HAS BEEN REPORTED IN COUNTLESS NEWSPAPERS AND MAGAZINES. HE HAS ALSO APPEARED ON NICKELOD'EON, MAURY POVICH AND THE ROSIE O'DONNELL SHOW.

BRANDON HAS ALSO FORMED HIS OWN COMPANY, PACEMATE, TO PROVIDE OTHER PACEMAKER USERS WITH THESE UPGRADES.

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