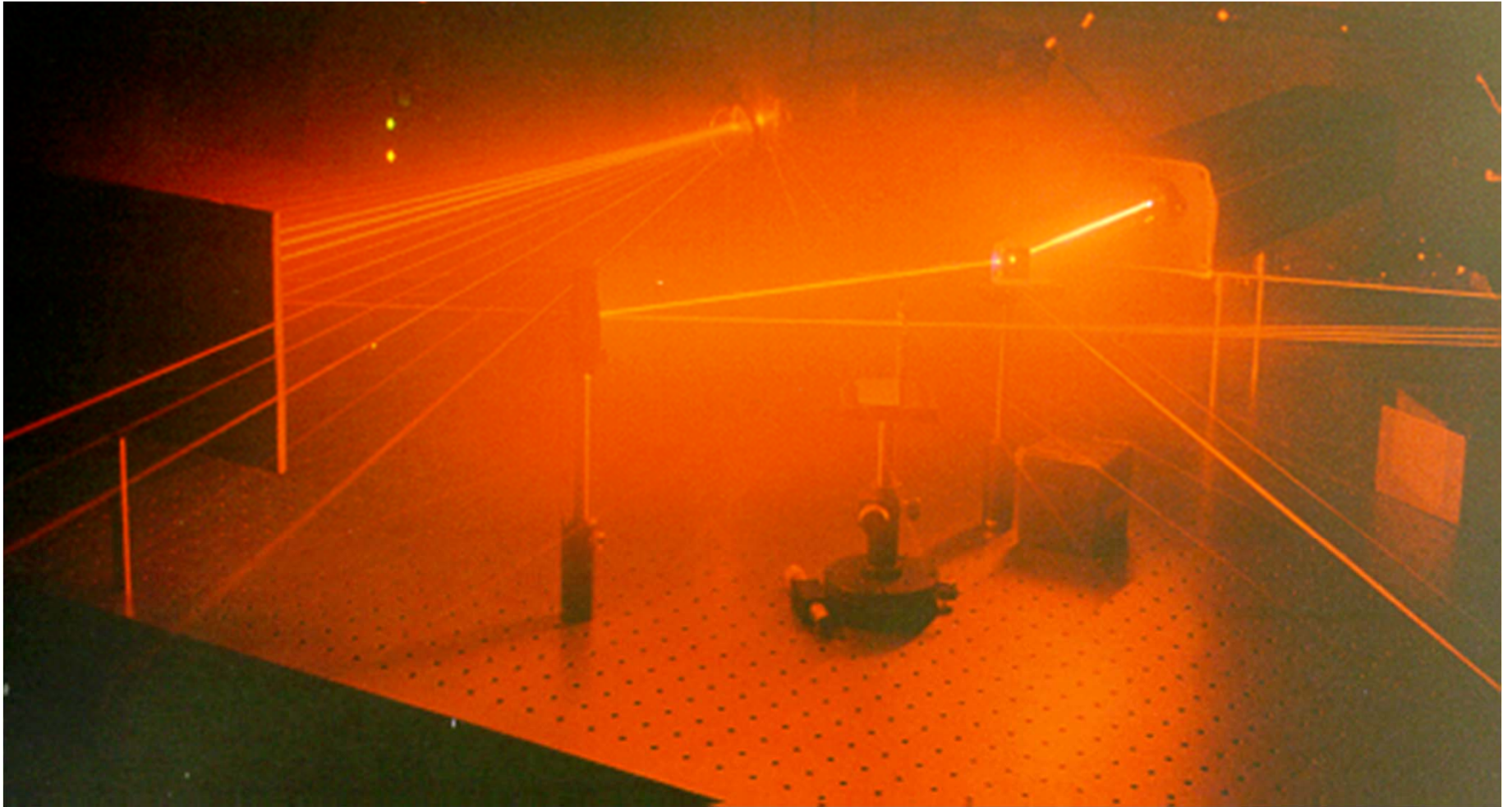


Electro-optics

Engineering and Computer Science
CSU Sacramento

Russ Tatro

<http://www.csus.edu/indiv/t/tatror/>



Surely this is mad science!

No just diffraction through both a prism and a diffraction grating.

Current undergraduate projects:

Satellite reaction jet control.

Variable thrust jet with optical feedback control system.

Jet orifice monitored optically through actuator position.

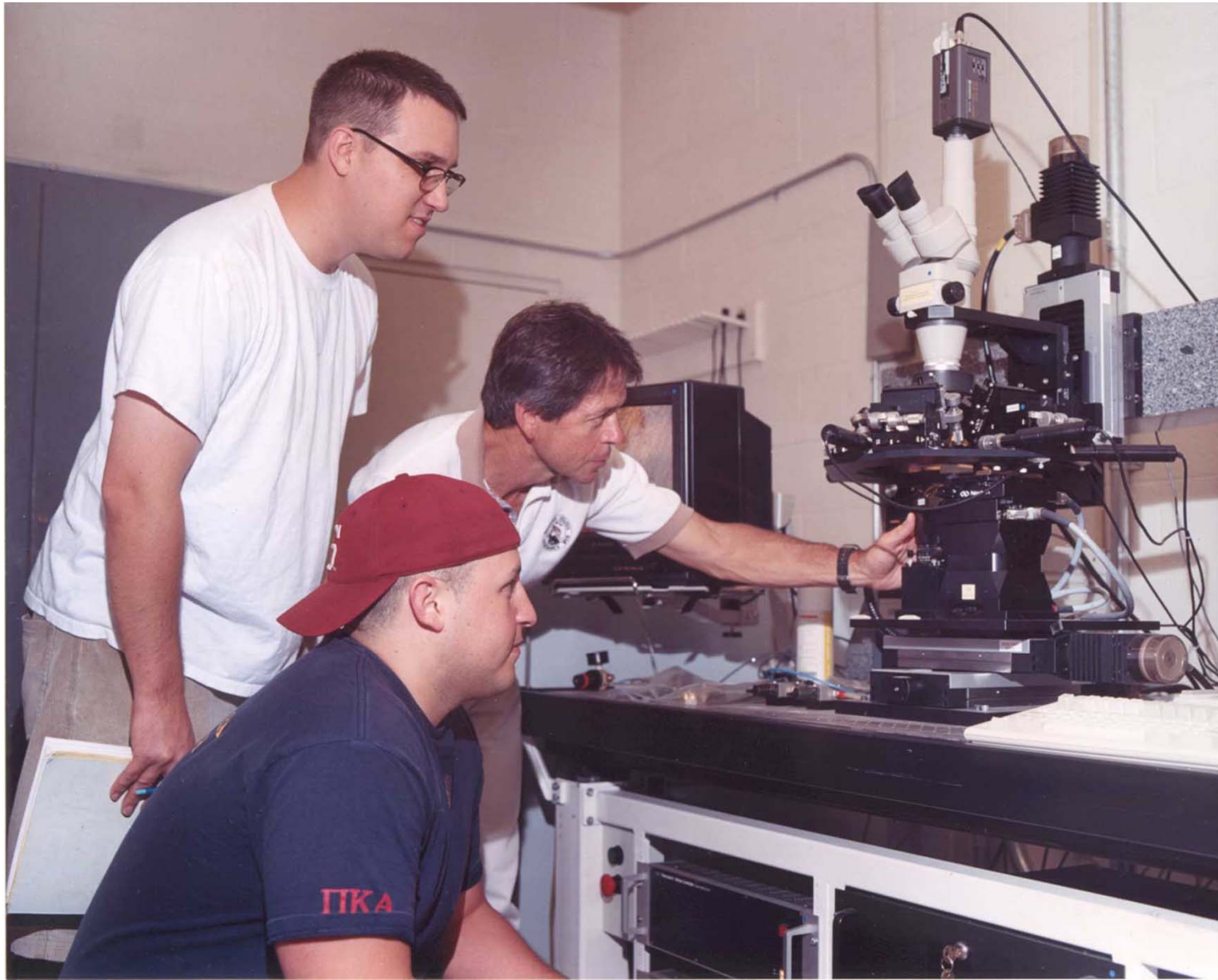
Off-grid photovoltaic power supply.

Human transportable.

Supplies enough energy for a laptop computer.

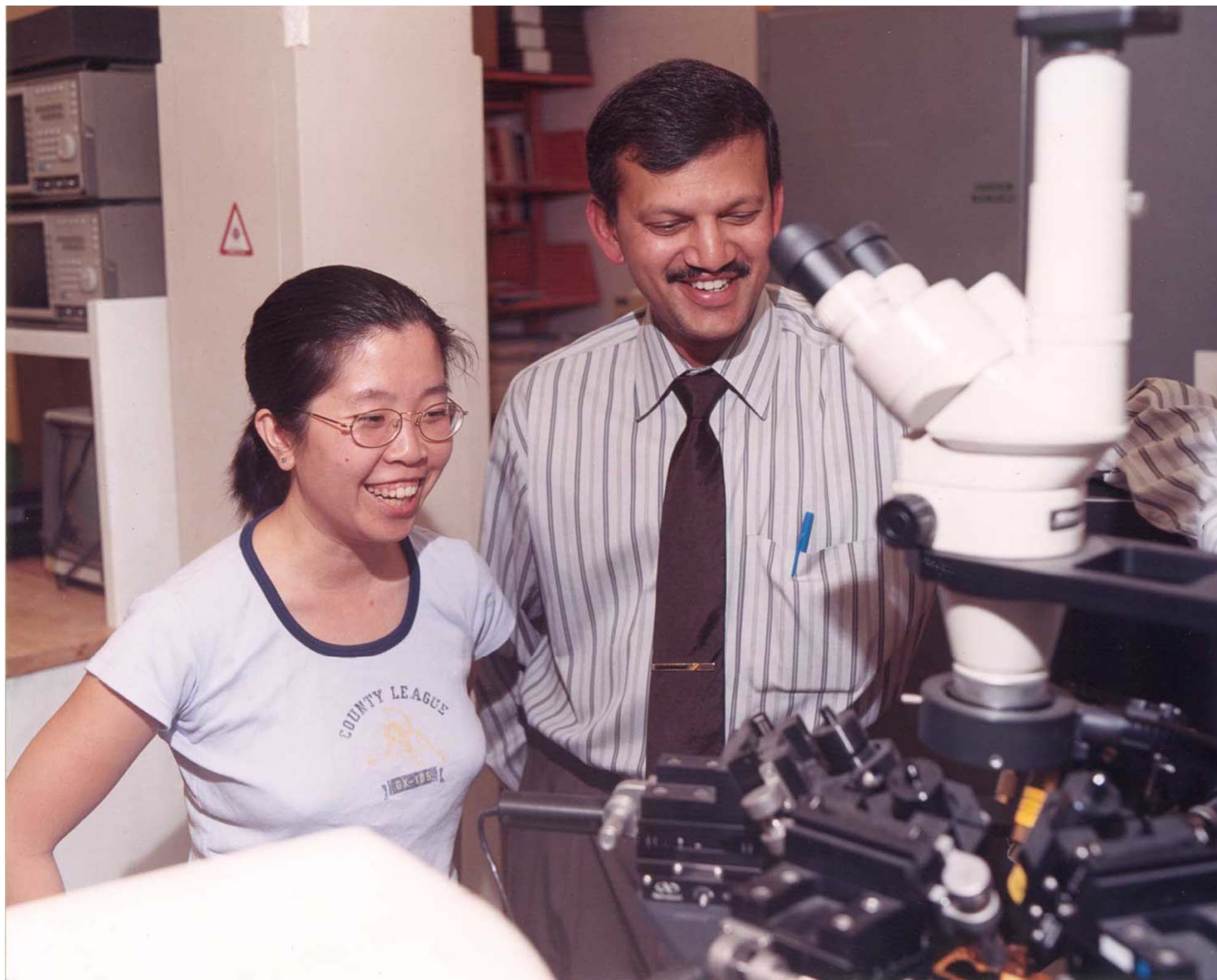
PV system tracks position of the sun for max efficiency.

Smart charging system for max battery life.



Herb Tanzer shows off the fiber welder gifted to ECS by DMEA.





Past projects:

Diffuse IR communication.

Similar to TV remote control with two-way connection.

Secure optical communication. No RF signature.

Allow laptop user to walk around in the environment.

Recent interest as a essential element in the smart home.

Robotic position sensor.

IR detection of walls and objects.

Feedback to micro-vehicle as tracking aid.



Yes, we do papers.

Future Engineers.

The College has an on-going program to encourage high schools students to prepare for engineering career.

As part of a field day at CSUS, the students perform several experiments including optics.

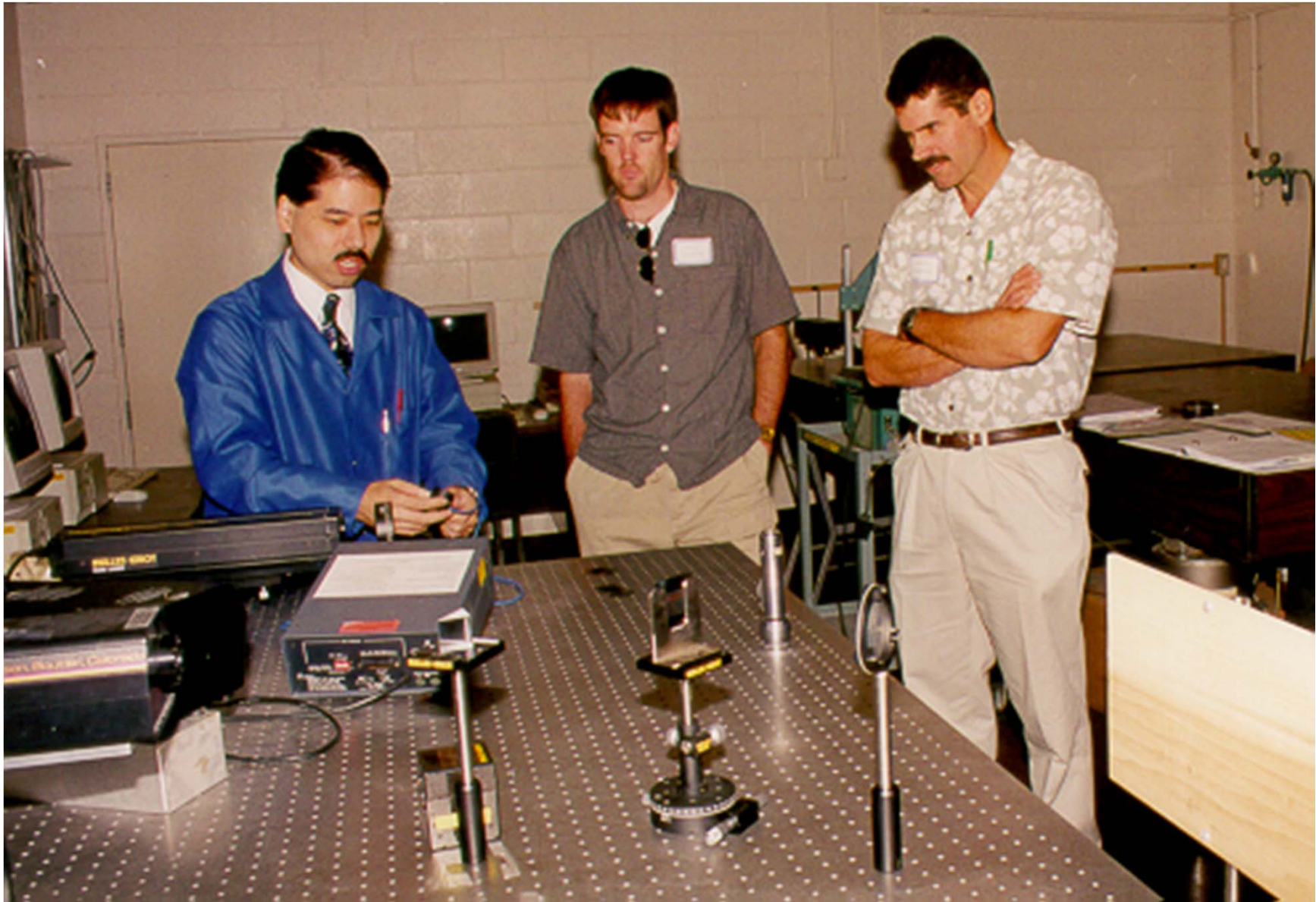




Did we really measure the wavelength of light with a ruler?



Free space communication demonstration.



Mike Fujita reviews diffraction with local high school teachers.

What about a new project?

Optical sensors to measure turbidity and constituents of ground water flowing into Lake Tahoe. Cal Trans proposed project.

LED Display. Build an LED based multimedia display similar to those near Cal Expo but (much) smaller.

Bio-medical sensor such as remote temperature monitor of sick children. Shriners Hospitals for Children is active in device research.

How about a multi-disciplinary project measuring stress in reinforced concrete? Embedded fiber optical sensors are currently used in smart bridges and buildings to track on-going stresses.

Others?



Dr. Ramesh and Dr. Vadhva – shopping for engineers?