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LINKS

- **Update your profile and find other SSPers:**
ssp.org/alumni
- **Donate securely to the 2015 Annual Fund:**
ssp.org/donate
- **Join the Facebook group (search for "SSP Alumni")**

SSP MOVING TO BOULDER

After five successful years at beautiful Westmont College in Santa Barbara, SSP is moving to the equally beautiful Univ. of Colorado at Boulder. The campus features an observatory with side-by-side telescopes, allowing two student teams to take observations in parallel. Our classroom, computer lab, dorm, and dining hall will be conveniently nearby.

Boulder is home to a high concentration of scientists and engineers. CU's Dept. of Astrophysical and Planetary Sciences alone has 26 faculty and 48 researchers; Southwest Research

Institute has 80 more. CU physicists have won four Nobel prizes in the past decade. In nearby Denver, Lockheed Martin is building Orion, the next U.S. manned space vehicle.

SSP alumni / former faculty at CU helped initiate the move: astronomer Doug Duncan '68 (TA '74-'76) and physicist Mike Dubson '73 (AD '07).

By coincidence, the news comes just in time for the **Alumni Dinner** on Saturday, Nov. 8th at CU's Fiske Planetarium. See ssp.org/dinner for details, and join us!



The campus observatory is ideal for SSP, with 18" and 16" telescopes side-by-side. Pictured are Dr. Tracy Furutani '79 and Dr. Seth Hornstein, Observatory Director.

EXPANSION PLANNING ACCELERATES

A year ago the Gordon and Betty Moore Foundation funded a \$300,000, three-year process to answer some important questions. Could SSP find a new curriculum, analogous to asteroid orbit determination? If so, could we scale up the organization to enable expansion to a third campus and beyond?

The first step was to cast a wide net for curriculum ideas. A committee of dedicated volunteers drafted an Open Call, distributed it widely, systematically evaluated the 12 proposals submitted, and chose two winners to receive funding for further development. They are:

- ◆ **Dr. Tracy Furutani '79** (faculty '99-'12) of North Seattle College and **Dr. Elana Fertig '98** (TA '03) of Johns Hopkins for their Marine Meta-

genomics curriculum. Each team of students would investigate the microbes found in a particular sample of seawater, and the evolutionary relationships between them.

- ◆ **Dr. Mark Hall** of Purdue for a biochemistry based Plant Pathogen Drug Discovery curriculum. Each team would research how to inhibit an enzyme specific to a particular species of fungus that attacks crops.

The next step, underway now, is to budget and schedule development and testing of both curricula. Next year the Board of Trustees will select one for a trial "mini-SSP". Meanwhile we will seek new, outside funding and a host campus suitable for the expansion. If all goes well, a new, full campus will open in 2017.

2014ERS SAY

"I have found my mindmates; I've found people who share my interests, my sense of humor, my passion and drive and enthusiasm for learning." -Hannah Nikole Almonte

"SSP hasn't just changed me, it has transformed me. I come out a completely different person, ready to take on the challenges of the rest of my life head on."
-Anthony Flores

"I discovered myself at SSP. I am a better me. The conversations, the existentialist crises, the random epiphanies... this was my SSP."
-Saanya Jain

more at ssp.org/quotes

NM TECH CAMPUS



by Dr. Adam Rengstorf,
Academic Director

The students of '14 successfully completed their OD projects in Socorro. In over 100 hours of lecture, they learned to perform astrometry and aperture photometry, to determine their asteroid's orbital elements via the method of Gauss, and to prepare their results for publication and presentation. Because of the good weather, the excellent facilities at Etsorn Observatory, and the unflagging support of Dr. Dan Klinglesmith, all 12 teams collected all of their data locally and submitted it to the Minor Planet Center for publication in the *Minor Planet Circular*.

In my first year as Academic Director, I was fortunate to be joined by wonderful, experienced colleagues. I handled the astronomy, including positional and observational technique, stellar and solar system formation, quasars, and cosmology. Assoc. AD William Ander-

sen did a superb job of lecturing on math, physics, and the OD. By popular demand of the students, he rounded out his lecturing time with a series of lectures on quantum mechanics. I deeply appreciated his advice and counsel. I've no doubt Bill could have covered any topic at anytime. Site Director Leslie Clark is a consummate SSPer and kept me sane during the program. Aaron Bauer did an excellent job teaching the programming based on his own curriculum. He spent a heroic amount of time working directly with the students outside of lecture.

The TAs knew their jobs and did them well. In addition to all of their "regular" work, Michael Wagner organized soccer, ultimate Frisbee, and other games and tournaments; Swing dancing, led by Head TA Elaine Johnson and AJ Lewis, was a big hit again this summer; Elaine scheduled observations; AJ took awesome photographs and videos; Rebecca Cramer ran the student blog; she is proof that an alum can major in linguistics and still return as a successful TA. The talent show, the yearbook, and the T-shirt design were all student planned and executed.

At Etsorn observatory we had exclusive use of a C-14 telescope, CCD camera, and the main control room. On cloudy nights, observing teams did CCD characterization experiments:



Our last visit to Trinity Site? Government budget cuts threaten that tradition.

(Continued on page 6)

WESTMONT CAMPUS



by Dr. Michael Faison,
Academic Director

At the Westmont campus we enjoyed an outstanding group of brilliant, creative, enthusiastic, and fun students. Working with and getting to know them were our greatest rewards as faculty.

For a change, the weather and equipment cooperated nicely, so that all teams were able to take four or more measurable images themselves. All teams completed their orbit determinations successfully, including uncertainty estimates. By departure, students had submitted 58 asteroid positions to the Minor Planet Center's public database.

This year we finally solved the problem of teaching Python programming, using Aaron Bauer's new curriculum as presented by Martin Mason. Martin gave three lectures, each followed by at least two hours of work in the computer lab. As a result, these students quickly became much more confident programmers than students in prior years. Some really took to it, writing GUI interfaces for their centroid/LSPR programs and sophisticated 3D visualizations of their asteroids' orbits. The best programmers even circulated around the lab, helping anyone who needed it.

I've worked with Site Director Barbara Martinez for three summers now. Barb is fantastic ... extremely professional and diligent about logistics and

taking care of students and faculty.

Associate AD Dr. Cassandra Fallsheer did a great job in her first year at SSP. Preparing that many lectures can be exhausting and intimidating. I was impressed with her teaching style and skill. She also led student observing on many occasions.

Our TAs included Daksha Rajagopalan, Andrew Warren, Christine Chang, and James Chang (no relation). Each found a unique niche and related to students in his or her own way. Daksha scheduled the observing, taught yoga, and distributed hugs to anyone who needed one. Andrew gave optional "challenge" lectures on Lagrangian mechanics and abstract algebra, and led a hike to Montecito Peak. Christine maintained the SSP blog, gave extensive advice and comments

(Continued on page 6)



Searching for an asteroid in the computer lab.

2014ERS SAY

"At the core of SSP is one concept: support. You can't get through on your own; everyone needs everyone else, and together we are unstoppable."
-Rachel Cohen

"Every day here, you are pushed to your limits. Reaching my potential was an anticlimactic feeling. There was no fanfare, no ovation. Just a small feeling of knowing that I could do whatever I set my mind to." -Kevin Lee

"SSP has given me infinitely robust bonds, bonds that will catch me when I fall, bonds that will help me shatter my limits. I found a second family at SSP." -Leroy Zhang

more at ssp.org/quotes

NM TECH ACADEMIC DIRECTOR'S REPORT

(Continued from page 2)

does bias depend on CCD temperature?, how does dark current depend on exposure time and CCD temperature?, etc. We enjoyed seven guest lecturers this summer, and took students off campus eight times. The

Trinity Site trip may be unavailable in future years due to federal government budget cuts.

Finally, there is perennial hand-wringing over sleep deprivation at SSP. The fact is that students are not going to stay well-rested. Our goal is

to ensure that they see opportunities for bonding and even fun in the shared challenge of attacking and surmounting the science, rather than thinking, as many teens do, that hard work and fun are mutually exclusive. Most of our students "got it" and were incredible students and researchers.

WESTMONT ACADEMIC DIRECTOR'S REPORT

(Continued from page 3)

on students' writing, and organized the SOTS activities. James spent the most time in the computer lab and graded the programming assignments.

SSP is always much more than the OD. We hosted seven guest lec-

tures, plus the orbit integration project by Southwest Research Institute. Four beach trips and three educational field trips completed the extra-curriculars, including Jet Propulsion Lab (led again by Dr. Stuart Stephens), Caltech, Griffith Observatory, Getty Museum, and Wheeler Gorge for Tracy Furutani's terrific geology hike. Continuing the tradition started

by Dave Pierce and Anna Heinz, Dr. Fallscheer and I taught swing dancing classes.

These students' sense of humor was off the charts. I don't think I've ever laughed so much over a summer. In summary, it was a terrific group of young scientists!



Dr. Rengstorf's first day as Academic Director



Tired but happy in the Westmont computer lab.

55TH ANNIVERSARY ENDOWMENT CAMPAIGN RESULTS

The SSP Endowment Fund provides an important and growing financial cushion to SSP. Within the overall Endowment, "named funds" give donors the option to recognize specific milestones or people important to SSP. The first, *Honoring SSP Faculty*, has attracted \$20,109 to date.

The formal campaign to establish a named fund honoring SSP's 55th Anniversary began last year, and through Sept. 30 received donations



Returns from the Endowment Fund exceed \$1,000 per student per year, providing 14% of SSP's income.

and pledges of \$59,652 from 38 generous alumni, faculty, and parents (listed on pages 4-5.) The campaign was bolstered along the way by \$10,437 worth of stock from Jeffrey Saye '80, \$8,000 from Susan Jerian '79, \$5,000 from an anonymous alum, and ended in rousing fashion when a capstone pledge of \$15,000 came in from David and Susan Heckerman, parents of Jonathan Heckerman '14. David emailed us that "SSP was the best thing Jonathan has ever experienced!"

HELP MAKE SSP 2015 POSSIBLE

Your generous gift will help inspire 72 gifted teenagers to reach their amazing potentials. Return this form with your check, or visit ssp.org/donate.

\$ _____ ☐ \$1000 ☐ \$500 ☐ \$250 ☐ \$100 ☐ \$50 ☐ \$25

Credit to: _____ ☐ alum ☐ parent ☐ faculty ☐ friend

Allocate to: ☐ unrestricted gift (or _____%)
☐ SSP Endowment Fund (or _____%)

SSP c/o J.B. Tarter
 107 S. West St. PMB 432
 Alexandria, VA 22314

Have you moved? Changed your email address? Want to volunteer? Let us know at sspalum@ssp.org.

COLLEGE DESTINATIONS OF '13ERS

Caltech	Catalina-Ana Miritescu, Drew Schaffer, Naveen Arunachalam, Roohi Dalal, Sachi Kamiya, Stephanie Gu
Carleton College	Kiya Govek
Carnegie-Mellon	Austin Richardson, Matthew Zhu
Coe College	Dahlia Baker
Columbia	Manjul Pahwa, Shyan Asson
Dartmouth	Yining Chen
Duke	Huijia Yu
Harvard	Bryan Brzycki, Karl Otness, Omar Embaby, Rebecca Gracia, Wyatt Mackey
Harvey Mudd	Amanda Barth, Nancy Wei
Haverford College	Yuankun Wang
Imperial College	Anna Apsit
Koç University	Kaan Bozkýr
Keck Graduate Inst.	Eliana Lorch
MIT	Caitlin Fischer, Caroline Liu, Daniel Palumbo, Gailin Pease, GiMin Choi, Jacquelyn Liu, Katie Dunn, Kimberly Dauber, Lizhou Sha, Natalie Nicolas, Scott Viteri, William Lopez-Cordero, Irena Martinez, Walburg Wibowo
NM Tech	Ceidric Platero
Ohio State Univ.	Ann Gailliot
Pennsylvania	Raja Atluri
Princeton	Benjamin Lei, Iustina Craciun, Luya Wang, Samhita Karnati
Rice	Aparna Narendrula, Madison Greene
Stanford	Amara McCune, Ashley Taylor, Becca Bauer, Bradley Emi, Christian Valadez, Coleen Holden, David Morales, Denis Russu, Jamie Rodriguez, Lysha Matsunobu, Madeline Saviano, Matthew Estrada-Millican, Sadhana Senthilkumar, Sawyer Birnbaum
Univ. Autònoma de Barcelona	Laia Domingo
UC Davis	Matt Corbelli
UC Santa Barbara	Guadalupe Buenrostro, Tynan Kennedy
Univ. College London	Andrei Cuceu
UCLA	Jiageng Liu, Megan Spencer
Univ. of Alabama	James Parkes
Univ. of Chicago	Quang Tran
Univ. of Colorado	Susan Niederhoff
Univ. of Michigan	Andrea Lin
Univ. of Richmond	Samiullah Malik
Univ. of San Francisco	Brayden Smith
UT Austin	Jiwhan Son
Yale	Karen Yang, Katherine Xiu

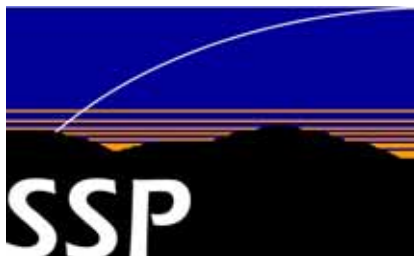
PARENTS SAY

"My son was challenged and enriched intellectually, and made lifelong friends from around the globe. The program far exceeded our expectations. He felt supported and nurtured by the faculty and his peers."

- Mary Pierce,
parent of Jacob
Pierce

"Aditya has been a completely changed person since his return. He has a clearer view of a STEM career. The massive alumni community has strengthened our belief that SSP has been one of the best things to happen in our son's life."

- Shalini and
Manish Khandelwal,
parents of Aditya
Khandelwal



The Summer Science Program
Business Office:
108 Whiteberry Dr
Cary, NC 27519

Address Service Requested

"SSP is an experience that will forever remain significant not only for our daughter, but for us as parents. When you have a high-achieving, driven student, you are constantly striving to meet a unique set of needs all at once. SSP did just this."

- Ron and Michelle
Burch, Parents of
Claire Burch

PRESIDENT'S LETTER

By Michael McKay '78, President

This is my first opportunity to address you, the alumni, friends and supporters of SSP, since my election as President this summer. While I have served on the SSP Board since 2002, it's a very different feeling sitting in "the big chair". I feel fortunate to be starting as President when SSP has never been stronger.

We've just finished our 56th year of delivering on our promise of "the experience of a lifetime" to 72 newly minted SSP alums. We are financially stable, thanks to our steadfast supporters. And we have a "once in a lifetime" opportunity to explore how (or if) we can take what we have learned over 56 years and launch a new curriculum on a third campus in 2017.

As I told the Board at our last meeting,

my biggest dissatisfaction with SSP is not what we do, but what we don't do. We deliver a life-changing experience to 72, but turn away hundreds of highly qualified applicants. I'm hopeful that the two new curricula we have identified will, after further development, allow us to offer the unique SSP experience to many more students.

While I'm saddened to see SSP leave California after 56 summers, and grateful for the past five years at Westmont College, I'm excited by our move to Boulder. We'll always cherish our memories of field trips to JPL, Griffith, and the beaches,

but the Class of 2015 will create new traditions and memories. I encourage you to come to Boulder for the Alumni Dinner on Nov. 8th to see these world-class facilities for yourself!



Student T-shirts on the Westmont campus featured this calligraphy.