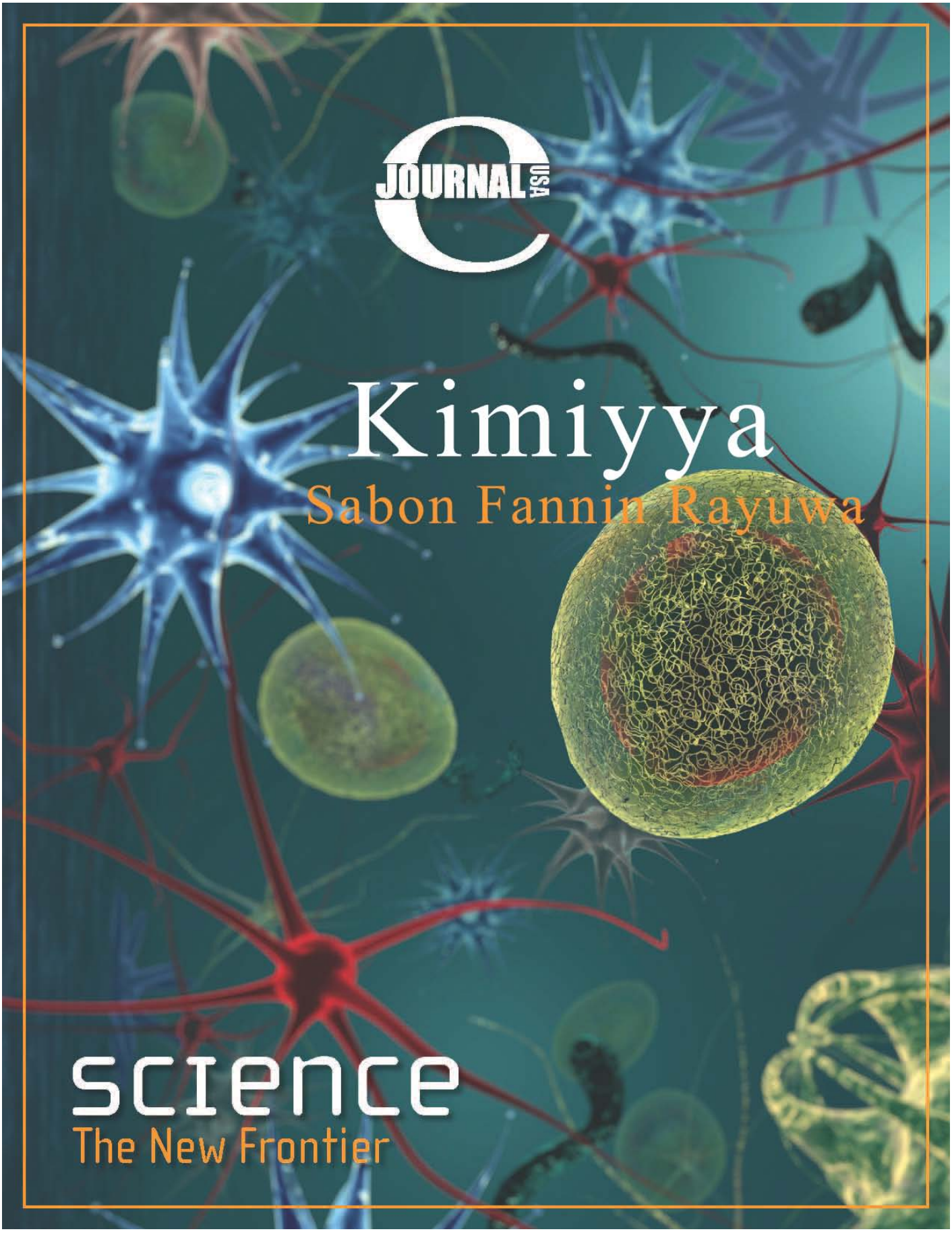

JOURNAL USA
Kimiyya
Sabon Fannin Rayuwa
science
The New Frontier

Kimiyya

Sabon Fannin Rayuwa

GWAMNATIN KASAR AMIRKA
KUNDI NA 17/LAMBA TA 3
An wallafa a watan Janairun 2013

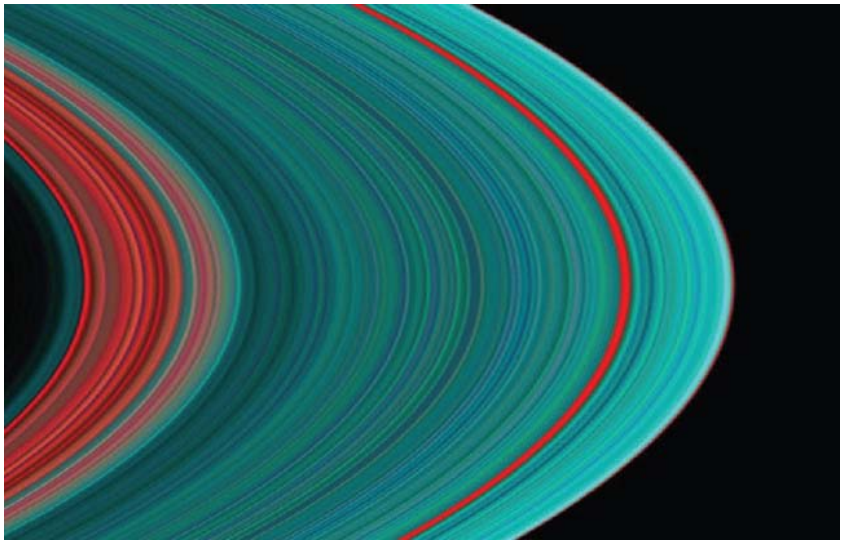
Jami'in Gudanarwa, Dawn L. McCall; Babban Edita, Nicholas S. Namba; Darektan Kasidu, Michael Jay Friedman; Darektar Wallafe-wallafe, Mary T. Chunko; Editan Harkokin Gudanarwa, Andrzej Zwaniecki; Editar Kasidun Kimiyya, Sarah H. Beachy; Jami'ar Dab'i, Michelle Farrell; Jami'an Zane-zane, Dori Walker da Lauren Russell.

Ofishin Harkokin Watsa Labarun Kasashen Waje, na Gwamnatin Kasar Amirka ne, ke wallafa mujallar *eJournal USA.* Kowace fitowa tana bincikar manyan al'amurran da Kasar Amirka da sauran ƙasashen duniya ke fuskanta, da faɗakar da masu karatu, a duniya, game da jama'ar Kasar Amirka da martabobinta da tunaninta da kuma ciboyoyinta.
Kowace mujallar ta *eJournal,* na fitowa ne, a cikin Harshen Turanci, sai kuma waɗanda kan biyo baya, a yanar-gizo, a cikin harsunan Faransanci da na ƙasashen Portugal da Rasha da kuma Spain. Har ila yau, akwai waɗanda ke fitowa a cikin harsunan Larabci da na ƙasashen China da Persia. Kowace mujallar na da kundinta da kuma lambarta.

Ba kuma dole ba ne, kowane ra'ayi aka bayyana, a cikin mujallar ta *eJournal USA,* ya yi daidai da ra'ayoyi da manufofin Kasar Amirka. Gwamnatin Kasar Amirka ba ta haƙƙin duk wani labarin da ya fito, cikin mujallar, ko kuma aka ci gaba da yin amfani da shi, a shafukan yanar-gizon dake da alaƙa da wannan mujallar, irin wannan haƙƙin ya rataya ne, a wuyan waɗanda suka wallafa shafin yanar-gizon. Ana kuma iya naɗar ƙasidu ko hotuna ko kuma zane-zane, a don bugawa ko fassarawa, a wajen Kasar Amirka, amma idan an samu izni daga masu haƙƙin wallafar dake da mujallar.

Edita, mujallar *eJournal USA*
IIP/CD/WC
Gwamnatin Kasar Amirka
2200 C Street, NW
Birnin Washington, DC 20522-0501
Amirka.
Wasiƙar yanar-gizo: eJournalUSA@state.gov

Abubuwan Dake Ciki



Halittar zobban dake zagaye da duniyar Saturn ke nan, kamar yadda aka hango su daga tauraron ɗan adam mai suna Cassini, a watan Yulin 2004.

Bangon Mujallar: Wata basirar wani masanin harkokin zane-zane ne, game da ƙwanduwar halittar jiki a kuma ƙwayoyin ƙananan halittu: © na Giovanni Cancemi/Shutterstock.com

"Me ya fi harkar kimiyya?" hoton ya fito ne daga mawallafansa.

"A wani wuri, akwai wani abin mamakin dake jiran wani ya sani." — in ji Carl Sagan, wani ɗan sama-jannatin Kasar Amirka, da aka haifa a 1934, ya mutu a 1996.

Samun ilmi, game da "wani abinda ke da mamaki" ta hanyar kimiyya, na ɗaya daga cikin manyan abubuwan dake haifar da masanin harkokin kimiyya. Kuma masana harkokin kimiyya na jin daɗin dukan abinda ya shafi aikinsu. Kamar yadda wani ya faɗa, a cikin wannan fitowar cewa, kimiyya "na wadata wata kafar da ba ta da iyaka, wajen ƙalubalantar matsalolin da suka shafi duk wani al'amari ko kuma sha'awa, kuma tana azalzala mu, da mu yi aiki tuƙuru, don fahimtar duniyarmu."

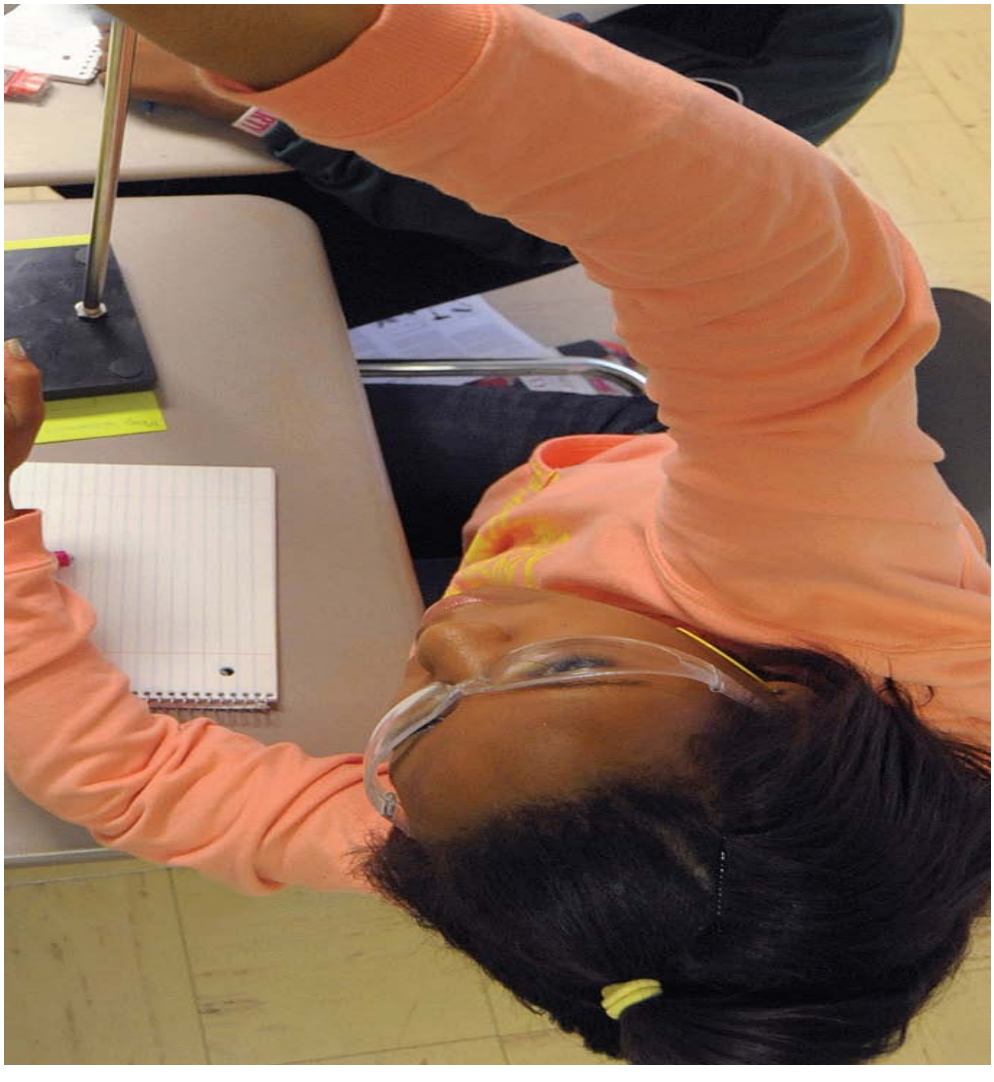
Buɗe saddabarun dake cikin halitta, shine, a kullum, zuciyar harkokin kimiyya, amma, masana harkokin na kimiyya, yau, suna samun wata dama, ta musamman, daga harkokin fasahar zamani, na warware matsalolin dake tattare da ƙalubalar dake damun mu. Amma, yawaita yin amfani da fasahar mai tarin inganci, na da ranarta. Binciken harkokin kimiyya, yanzu, na da bukatar taron dangi, da ƙarin kuɗaɗe da kuma haɗin kan ƙasashen duniya. Kuma tana bukatar tsawon shekarun da za a daɗe ana nazari da samun haɗin kan masana harkokin kimiyya, matasa.

Wannan fitowar ta mujallar *eJournal USA,* za ta binciko wanai al'amari ne, game da irin yadda ake gudanar da harkokin kimiyya, a Karni na 21: da irin yadda harkokin yanar-gizo da

sauran harkokin fasaha ke taimakawa, wajen sake fasalin dukan tambayoyin a masana harkokin kimiyyar ke yi, da kuma hanyoyin da masana harkokin kimiyyar ke amfani da su, da kuma musayar sababbin harkokin ilmi. Har ila yau, da nuna waɗansu daga cikin manya manyan ci gaban da masana harkokin kimiyya, matasa, suka samu, wajen fahimtar tushen ɓullar cututtuka, da muhallinmu dake cikin duniya da kuma yadda ƙwaƙwalwa ke aiki. Wannan hasashen, na su, na kimiyya, shi ke faɗaɗa ilmin ɗan adam, da yin alkawarin inganta rayuwar jama'a, a yau, da kuma nan gaba.— *Edita.*

KIMIYYA: SABON FANNIN RAYUWA

Abubuwan Dake Ciki



MATASHIYA

BUƊAƊƊEN JUYIN HARKOKIN KIMIYYA? *Hira da Ijad Madisch*

Musayar ƙididdigar bincike da sakamako, a bayyane, na iya inganta harkokin gudanar da kimiyya, yadda ya kamata. 7.

SASSA

Halittar jiki ta roba, na iya ceton rai 10. Kai wa duniyoyin al'arshi bara 12. Muhimmancin yanar-gizo 14. Kwaƙƙwarar zuciyar taimaka wa hasashe 16. Karen bana, maganin zomon bana 18. Alfanun Shirin Fulbright 20. Kimiyya babu kama hannun yaro 22.

GAGARUMIN TUNANI

2

SABABBIN MANUFOFI INGANTA HARKOKIN KIMIYYA NAN GABA

Daga Tom Siegfried, mawallafin harkokin kimiyya

Matasan masana harkokin kimiyya na kai hari ga matsaloli da manyan na'urori da kuma sababbin dabaru.

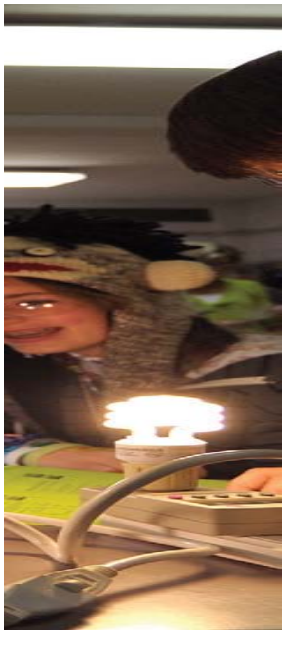
KARIN BAYANI

Bayani 24. Karin Bayani 25.

SABABBIN MANUFOFI

Inganta harkokin Kimiyyar gaba

Daga Tom Siegfried



Daga hagu, (idan an zagaya): Babbar na'urar Hadron Collider ce: wata na'ura domin babbar harkar kimiyya. Sai wani dakin binciken siffar kananan halittu, dake Jami'ar Michigan, dake Ann Arbor. Wani tunanin wani masanin harkokin zane-zane ne, game da tauraruwar dan adam, ta Hukumar Binciken Sararin Samaniya, NASA, da aka kera, don sauka a Duniyar Mars, game da binciken kwanduwar duniyar, mai suna Martian core. Harkar kimiyya abin al'ajabi ce, koda kuwa a makarantar sakandare ne.

Gano wani al’amari a harkar kimiyya tambar hawan Tsaunin Everest ne. A lokacin da ake ƙara hawa, haka ake ƙara arangama da ƙalubale, kuma haka ake dogara da abokin hawan tsaunin.

Kamar shekaru 100 da suka wuce, Ernest Rutherford ya gano fasalin ƙwanduwar ƙaramar halitta ta **atomic** tare da bayanan da ya waɗansu mataimakansa suka tattara, don yin amfani da su, a na’urorin dake kan tebur. A cikin ‘yan shekarun da suka wuce, dubban masana harkokin kimiyya, daga ƙasashe fiye da 36, dake Tashar Kaddamar da Babbar Na’urar Hadron Collider (LHC), wata na’urar dake bincikar ƙura, da yin amfani da na’urar gano nauyin dubban ton, na ƙurar dake komawa **ƙananan ɓungurorin halittar** ta **atomic** da aka yi imanin sune halittar da ake kira **Higgs boson**.

Duba ma’anar waɗannan kalmomin, a ƙarshen ƙasidar, da kuma shafi na 24.

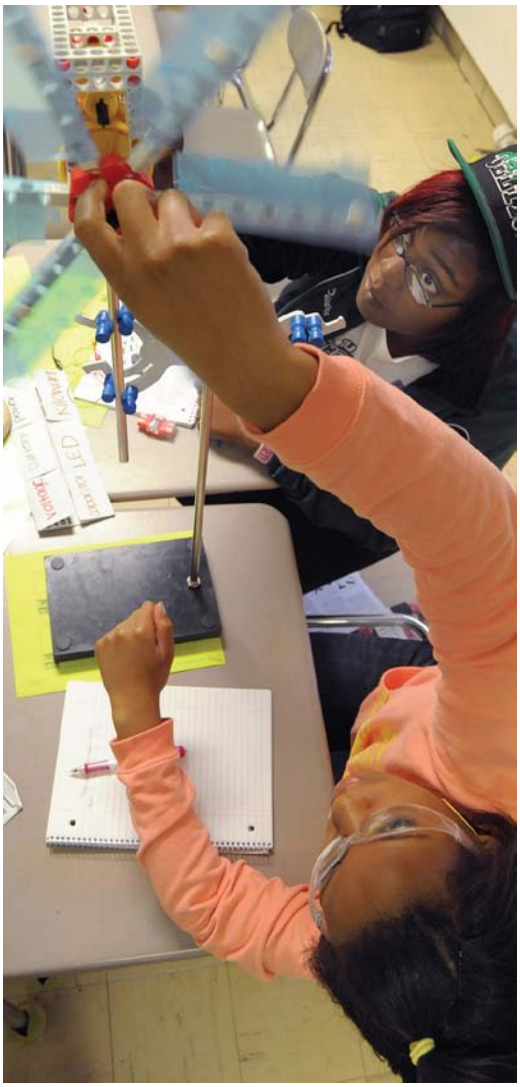
Idan har aka tabbatar, to, wannan ne zai zama matakin farko, wajen tabbatar da hasashen Albert Einstein, game da haɗe dukan sharuɗɗan ilmin jaddawali, a wuri guda.

Ba abin mamaki ba ne, cewa, an yi wata gagarumar nasarar harkar kimiyyar dake da wuyar samu, a yanzu. Wani masanin harkokin ilmin jaddawali, na Kasar Jamus, Max Planck, ya lura cewa, ana samun “sabuwar hujja”, a duk lokacin da aka shiga wani mawuyacin hali: “Idan kuwa bah aka ba, da an gano al’amarin, tuni kafin wannan lokacin.” Planck kuma ya fahimci haka ne, kusan shekaru 90, da suka wuce. Don haka, binciko sauran fasalin halitta ba sauƙi gare shi ba. Kuma har yanzu, akwai sauran rina a kaba.

Hadin Kai da Kayayyakin Aikin Kalubalantar Matsaloli

Duk da dimbin nasarorin da ake samu, a harkar kimiyyar zamani, akwai ɓarɓashin mawuyatan abubuwa da masana ke ci gaba da fuskanta, a kowane lokacin da suka shiga fagen bincike. Alal misali, 'yan sama-jannati da masana ilmin jaddawali, na fuskantar ƙalubalen fahimtar **"halittu na ɓoye,"** wadansu irin halittun da ba a sani ba, a duniya da **"ɓoyayyen sinadari,"** wanda ke sa sararin samaniya na ƙara fadi, fiye da yadda ake tsammani. Masana kimiyyar duniya, na ƙoƙarin gano hanyoyin da za su yi riga-malam masallaci, a duk lokacin da wata gagarumar girgizar ƙasa za ta faru. Masana kimiyyar dake nazarin aikin ƙwaƙwalwa, na ƙoƙarin gano sirrin tunanin zuci da irin yadda yake kasancewa, daga arangamar magunguna da kuma ƙarfin wutar lantarki, a cikin dubban miliyoyin **halittun** dake cikin ƙwaƙwalwa. Kuma masana halittar dan adam, suna binciken hallitar dake gina jiki, watau **DNA,** da neman fahimtar dangantakar ƙananan **halittun** da kuma cututtuka da dama. Binciko irin wadannan abubuwan na ban mamaki, na bukatar runduna, ko ma ƙwarewa (da kuma tsadar) harkokin fasaha, da gagarumin hadin kan ƙasashen duniya — mafi muhimmanci ma, sababbin masana harkokin kimiyyar, masu sabon jinni da tunani.

Irin ci gaban da aka samu ga harkokin fasaha, ya bai wa masu bincike damar ƙara bayar da ƙoƙari, da kuma samun ci gaban magance matsalolin harkokin kimiyya. Ingantattun na'urorin daukar hoton ƙwaƙwalwa, sun ba mu damar sanin irin yadda halittun dake cikin ƙwaƙwalwar ke aiki, yadda ya kamata. Ana da bukatar sababbin na'urorin tantanace ƙananan ɓungurorin ƙura, wadanda suka maye gurbin na'urar LHC, don tabbatar da fasalin halittun. Masana harkokin kimiyya na iya yin amfani da **ƙananan halittun** don gina ƙananan injunan magance cututtukan ƙwaƙwalwa da sauran sassan jiki. Masu binciken sababbin fannonin ƙera sassan jiki na roba, na hango irin yadda za su ƙera sababbin nau'in **ƙananan halittun** halittar jiki.



Sabon Tunani Kan "Bayyanannar Kimiyya"

Yayinda sababbin na'urori ke ƃullowa, don magance matsaloli, haka ake sabunta tunanin ci gaba da harkokin na kimiyya. Sababbin fannonin lissafi sun zame ma na aya. Alal misali irin nasarorin da aka samu kwanan nan, wajen harkar sarrafa lissafi, na taimaka wa tantance mawuyatan **halittu**, ko makamatnasu, ko ma mutanen dake mu'amala ta shafukan yanar-gizo. Waɗannan muhimman hanyoyin lissafin, na iya kasancewa daidai da fahimtar wajen al'amarin, da na ƙwaƙwalwa da na yanayi, ko ma kai-da-komon jama'a.

Amma, ba a rana guda ake samun duk wata nasara ba. Harkokin ilmi, a duniya, na bukatar a sake ma su shiri, don tabbatar da hanyoyi da kuma tambayoyin da ake yi, a Karnin na 21. Bai kamata a riƙa koyar da harkar kimiyya, a ƃoye ba, a riƙa yi, ɗaiɗai da ɗaiɗai, amma, dole a koye shi ta hanyar da za a tunkuɗe duk wani shingen, dake tauye ci gaba.

Dole kuma sauran ɓuraguzan dake kan hanya su kau.

Dole kuma sauran ɓuraguzan dake kan hanya su kau. A kodayaushe harkar kimiyya na girmama haɗin kan ƙasashen duniya, amma, yanzu, ba gobe ba, duniya na bukatar da ta mallaki duk wata albarkar ɗan adam, tun daga ta ƙasashe ya zuwa ta al'adu, don ƙalubalantar gagaruman abubuwan mamakin kimiyyar dake faruwa kullum.

Ko babu komai, haɗin kan ƙasashen duniya na sa ana samun kuɗaɗen gudanar da manya-manyan ayyukan kimiyyar da wata ƙasa ba za ta iya gudanarwa ba, ita kaɗai. Har ila yau, haɗin kan na taimakawa, wajen samun gudanar da binciken da ya yi daidai, ko kuma yake da muhimmancin da, mai yiwuwa, ba za a iya samu ba. Kuma ita kanta hanyar gudanar da harkokin kimiyyar na ingantuwa: "Masana kimiyya… sun bayar da rahoton cewa, yin aiki da jami'an binciken da suka samu horo, a ƙasar waje, na ba su sabuwar basirar sanin yadda ake tunani game da kimiyya," kamar yadda rahoton mujallar RAND na 2002 ya bayyana. "Kirƙira ita ce kimiyya; wannan dangantakar kuma ke sa a yi tunanin ƙirƙire-ƙirƙire."

"Sabuwa hujjar kimiyya ba ta tasiri ga shawo kan kishiyarta, na gane gaskiya, sai dai kishiyarta ta gushe, sabon jinsin, mai kama da ita, ya tsiro." — ***In ji Masanin Ilmin Jaddawali, Max Planck, da ya rayu daga 1858 zuwa 1947.***

Me Amirkawa Ke Tunani Game da Kimiyya?

Mafi yawan Amirkawa, (kashi 84 cikin 100) **sun yi imanin cewa harkar kimiyya da na alfanu ga al'umma** kuma na sawwaƙa rayuwar mafi yawan jama'a.

Amirkawa sun ajiye masana kimiyya, a rukuni na uku, bayan sojoji da malamai, dake **bayar da gudunmawar mafi yawan harkokin al'umma.**

Ma fi yawan Amirkawa, (kashi 60 cikin 100), sun ce jarin da gwamnati ke zubawa ga harkokin kimiyya da na aikin injiniya da kuma fasaha **na sa kwalliya na biyan kuɗin sabulu.**

An samu bayanan ne, daga ƙididdigar Cibiyar Rahoton Bincike ta Pew, da Kungiyar Ciyar da Harkokin Kimiyya Gaba, ta Amirka, na 2009.

“Waɗannan kayayyakin aikin … na matuƙar inganta ɗaukacin zufin tunaninmu, dake ƙara ma na zimma da ƙoƙarin gano bakin zaren warware manyan matsalolin harkokin kimiyya.” — ***In ji Michael Nielsen, masanin ilmin jaddawali da Sake Gano Kirkire-kirkiren 2011.***

Mai yiwuwa waɗansu kayayyakin aikin da ake bukata, wajen samun ci gaban aiki, ba sababbin samfuri ba ne, na madubin ganin halittun da idanu ba sui ya gani, ko kuma na nazarin sararin samaniya, ko na fasa ƙananan halittu, amma sababbin hanyoyin ne, na inganta harkokin sadarwa da kuma haɗin kai.

Tuni rundunar “bayyanannar kimiyya” ta fara tsara rarraba bayanan harkokin kimiyya, ba kamar yadda aka saba wallafa su, a mujallolin harkokin kimiyya. Wallafe-wallafen mujallolin “bayyanannun hanyoyi”, inda ake da takardun bayanai, sai ƙaruwa yake yi. A 2011, an ƙiyasta buga ƙasidu dubu 340, a fiye da mujalloli dubu shida. Kuma shafukan yanar-gizo, irin su ResearchGate, na barin masana harkokin kimiyya na musayar bincike-bincike, kyauta.

Kayayyakin aikewa da saƙonni da haɗin kai, a shafukan yanar-gizo, “na sake fasalin hanyar da masana harkokin kimiyya ke bi na gano al’amurra,” kamar yadda masanin ilmin jaddawali, Michael Nielsen, ya nuna, a littafi mai suna *Sake Binciken Kirkire-kirkire,* na 2011. “Waɗannan kayayyakin aikin … na matuƙar inganta ɗaukacin zufin tunaninmu, dake ƙara ma na zimma da ƙoƙarin gano bakin zaren warware manyan matsalolin harkokin kimiyya.”

Kamar yadda Planck ya nuna, kimiyya wani al’amari ne, “mai ci gaba da haɓaka,” ba “ya daƙile a ilmin da aka daɗe da sani ba.” Kimiyya ba tsaye take a wuri guda ba, ko kuma wani ɗimbin tarin litattafai. Wani tafarki ne, na gano abinda ke cikin duniya, da a gano ba. Don ganin an samu ci gaba, to, dole, a yi amanna da sababbin masu bincike. Nuna gaskiyarta da kuma kuma musayar bayanai, da dukan wanda ke da sha’awa, da ƙoƙarin bayyana al’amura, ke bayar da damar gayyatar dukan sababbin masu gudanar da bincike, zuwa wurare, da sawwaƙa fannin kai wa ga cimma nasarar sababbin binciken kimiyyar.

Tom Siegfried, wani marubucin harkokin kimiyya ne, mai zaman kansa, kuma mawallafi, kuma tsohon babban editan mujallar ***Science News****.*

Ma'anar Kalmomi

Atomic nucleus: Kwanduwar ƙaramar hallita (atom) dake ƙunshe da ƙananan halittun dake zagayarsa, a ciki da waje.
Subatomic particle: Dukan hallitar da ba ta kai girman atom ba.
Higgs boson: Wani ƙaramin halittar da aka yi hasashen girmasa, da ko matsawa ba ya yi, dake da nauyi da kuma ake bukata, don tabbatar da waɗansu hasashen, na tabbatar da nauyin sauran ƙananan halittu.
Dark matter: Kananan halittun da ba a iya gani, kai-tsaye, amma, waɗanda aka bayar da sanarwar cewa akwai su, domin irin yadda suke da ƙarfin jan wata halittar dake zagaya gungun taurari da kuma dandanzon taurarin.
Dark energy: Wata halittar dake da ƙarfin da ake hasashe, wanda ke bijire wa ƙarfin janyo halitta zuwa ƙasa, da ake tunanin na iya ƙara hanzarta faɗaɗar da sararin samaniya ke yi.
Cell: Wata halittar dake zaman kanta, dake da muhimmanci wajen gudanar da ayyukan waɗansu ƙananan halittun, a halitta.
DNA: Wani halittar ruwan dake kama da guba, dake cikin halittun da suka haɓu suka gina yanayin jiki, na gadon-gadon da tsoka za ta yi ƙwari, da aiki.
Gene: Karamar halittar dake yaɗon zama DNA dake ƙunshe da umurnin sa abubuwan gina jiki, su yi yawo.
Nanoparticle: Halittun da ake auna girmansu, da sikili, mafi ƙanƙanta, wanda ya kusa kashi 100 na tsawon mita guda.
Molecule: Wani gundun halittun atom, cure wuri guda.

Ba dole ba ne, ra'ayoyin da aka bayyana, a wannan ƙasidar ya yi daidai da ra'ayoyi da manufofin Gwamnatin Kasar Amirka.

Buɗaɗɗiyar Kimiyya

A Yanar-gizo

Ijad Madisch ***ne ya ƙirƙiro da shafin yanar-gizon*** *ResearchGate****, wani shafin dake bai wa masana kimiyya damar musayar bayanai da haɗin kai. Shafin yanar-gizon, na ResearchGate.net, wanda ke da hedkwatarsa a Birnin Berlin, an kafa shi ne a 2008, inda yanzu yake da***

masu yin amfani da shi, da suka tasamma miliyan biyu, daga ƙasashe fiye da 190.

A da, an san cewa kai ɗalibin koyon masaniya ne game da cututtuka. Me ya s aka canja ra'ayinka, har ka ƙaddamar da wani shafin yanar-gizo don masana harkokin kimiyya?

Domin na hango matsaloli game da harkokin sadarwar ayyukan kimiyya. Na lura cewa, mu masana harkokin kimiyya, ba mu musayar masaniya, yadda ya kamata. Da wuya a wallafa wata ƙasida game da gundarin ƙididdigar bincike or wani sakamakon da ba shi da alfanu, ga hana masana harkokin kimiyya ci gaba. Idan kuwa na gyara wannan fannin, ina tsammanin zan taimaka wajen ciyar da harkokin na kimiyya gaba, fiye da yadda ake tsammani.

Ta yaya musayar masaniya zai inganta da hanzarta binciken kimiyya?

Mafi yawan binciken da ake yi, a harkokin kimiyya, yana ƙarewa ne, wajen gwaje-gwajen da ba su da tasiri. Sai kuma a riƙa yin amfani da ƙididdigar da ba ta tasirin da za ta bayar da wani abu daban da za a yi ta maimaitawa. Amma, har ya zuwa yanzu, ba a wallafa irin wannan ƙididdigar. Wannan ke hana sauran masana harkokin kimiyya yin aiki da irin wannan hanyar binciken don ka da a sake tabka kuskure. Bugu da ƙari, masana kimiyya, da dama, ba su san wanda da za su jiɓinta ba, a duk lokacin da ake gudanar da irin wannan binciken.

Wannan ya sa muke da bukatar wani dandali irin na yanar-gizon *ResearchGate,* inda masana harkokin kimiyya za su iya musayar masaniya da dabaru.

Na fahimci cewa, masu amfani da shafin yanar-gizonka, mafi yawa matasan masana harkokin kimiyya ne. Me ya sa?

Lokacin da na gaya wa shaihina, ɗan shekaru 62, da haihuwa, dake Kasar Jamus cewa, ina son rarraba lokacin da na ke da shi, tsakanin aikin bincikena da kuma yanar-gizon *ResearchGate,* sai ya ce: manta da wannan aikin banzan, masana harkar kimiyya ba su saba da hulɗa da jama'a ba. Watanni, da dama, bayan wannan maganar, sai shaihin ya amince da yanar-gizon ta *ResearchGate.* An kuma ɗauki lokaci, kafin mazan-jiyan su san abinda ake yi. Amma, matasan masana kimiyyar, 'yan bana-bakwai ne suka tallafi wannan yanar-gizon, kuma suka buɗe harkokin kimiyyar da ake amfani da su, a ɗakunan bincike. Mafi yawan masana kimiyyar dake shgia wannan shafin yanar-gizon ta *ResearchGate*, shekarunsu ba su wuce daga 27 zuwa 32 ba.

"Idan kuwa na gyara wannan fannin, ina tsammanin zan taimaka wajen ciyar da harkokin na kimiyya gaba, fiye da yadda ake tsammani."

Shafin yanar-gizon *ResearchGate* na ƙalubalantar al'adun da aka sani, na gudanar da binciken kimiyya, inda masanin kimiyya ke gudanar da bincike, ya miƙa sakamakonsa don takwarorinsa su sake bincikawa, kafin a wallafa shi a wata mujjalar harkokin kimiyya. Menene rashin kyawon wannan tafarkin?

Ana amfani da wannan tsarin ne, lokacin babu yanar-gizo, kuma babu ɗimbin saƙonnin da na'ura mai ƙwaƙwalwa ke aikewa. A yau, wannan ba zai yi aiki ba, yadda ake so. Ba a bayyane yake ba, kuma ba zai bar a bincika ko kuma a tantauna game da sakamakon a zai bayar ba. Aƙalla, ana ɗaukar watanni shida zuwa 12, kafin a buga wata ƙasida game da harkar kimiyya, a mujalla. Ta yin amfani da shafukan yanar-gizo, muna iya buɗewa da kuma ingiza harkokin buga ƙasidu. Shafin yanar-gizon na *ResearchGate* wata hanya ce, mai kyau, ta gudanar da waɗannan ayyukan.

Amma, a matsayinka na masanin kimiyya, kana da bukatar da z aka sanya wa ƙasidun da aka buga lambobi, don inganta aikinka. Ta yaya shafin yanar-gizon na *ResearchGate* zai taimaka ta wannan hanyar?

Kwanan nan muka ƙaddamar da tsarinmu na auna irin martabar da muke da ita, a fannin kimiyya. Abinda muka samu shi zai nuna amfani da kuma ingancin dukan ƙasidun kimiyyar da wani ya wallafa, da kuma ƙididdiga da irin tantaunawar da aka yi. Alal misali, idan ka sanya wata ƙididdiga a yanar-gizo, ta irin gwajin da bai yi wani tasiri ba, ta kuma taimaka wa sauran masana kimiyya, biyu ko uku, to,

wannan na iya ƙara ma ka yawan maki. Ya zuwa yanzu, an tsara yadda za a gudanar da aikin, tare da waɗansu sharuɗɗa, amma, a tunanina, masana kimiyyar za su share shekaru da dama, suna neman aikin da za su yi, ko kuma kuɗaɗe, bisa ga irin yawan makin da suka samu, daga shafin yanar-gizon na *ResearchGate,* maimakon irin ƙasidun da suka buga a mujalloli.

Ta yaya za ka shawo kan ɗakunan gwaje-gwaje, da masana ilmi da kuma gwamnatoci, na da su amince da tsarin bayar da makinka?

Zai ɗauki lokaci, amma shafin yanar-gizon na *ResearchGate* da ire-irensa na ƙaruwa. A cikin shekaru biyu, da suka wuce, yawan ƙasidun da aka wallafa, a shafin yanar-gizon na *ResearchGate,* ya ƙaru matuƙa. Da wuya kuma a ce an yi watsi da mu.

Yadda masanin kimiyya ke cimma BINCIKE

“Ina mamakin idan har wannan launin ya ciza?”

Hasashe — wani hasashen da zai kasance ma’aunin bayar da hujja, ba tare da an yi wani sauti-faɗa ba, game da abinda yake gaskiya.

1. A yi tambaya.

Shin tushen bincike na iya zama (yawan karatu da magana ga sauran masana kimiyya) da tunani game da tambaya.

2. Kirƙiro **hasashe.**

3. Zayyana tsarin da za a gwada hasashen.

4. Gwada hasashe.

5. Tarawa da kuma ƙididdige sakamakon gwaji.

6. Samun matsaya bisa ga abinda ƙididdiga ta nuna.

7. Bincika hasashe da yanke shawarar ko wannan ƙididdigar ta taimaka ko ta musanta hasashen.
Sake bitar musun game da hasashe (wanda ana iya gudanar da shi, giye da gwajin da kuma sake bin tsari).

8. Rubutawa da kuma bayar da wata ƙasida ga mujallar harkokin kimiyya, don a buga.

Sassan Jiki Na Ceton Rayuka

Daga Mary T. Chunko

Ga marasa lafiyar dake bukatar a sanya ma su waɗansu sassan jikinsu, batun cewa wani sashen jiki ya yi daidai da abinda ake so, zai faranta zuciya da sa albarka da huce haushi. Wani abin takaici shine, dukan wanda aka sanya wa wani sashen jikinsa da ya lalace, to kuwa sai an samu wanda kuma zai mutu.

Kananan halittu ne, tsagire da na'urar hydrogels, a ɗakin binciken Ali Khademhosseini.

Ali Khademhosseini, wanda ya samu nasarorin da suka haɗa da waɗansu ayyukansa 16, da kuma lambobin yabo, yana da bukatar canja al'amarin.

Kananan halittun dake yaɗo

Wani masanin harkokin yanayin halittar ɗan adam, ɗan Kasar Iran, wanda kuma mataimakin shaihi ne, a Sashen Harkokin Kimiyyar Kiwon Lafiya da Fasaha na

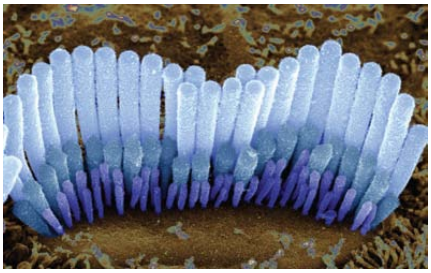
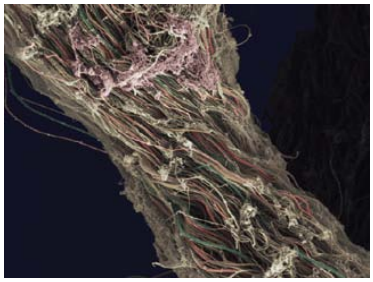
Jami'a Harvard-MIT, ya yi imanin cewa, wata rana masana harkokin kimiyya za yi amfani da wani sashe na jikin marasa lafiya, don yaɗa halittun jikin ɗan adam da waɗansu sassa, domin maye gurbin waɗanda suka ruɓe.

Ɗakin gwaje-gwajen Khademhosseini, yana haɗa ƙananan halittu daga jikin marasa lafiya, irin su zuciya, tare da sauran ƙananan halittu, irin waɗanda suke da alaƙa da halittun dake jikin ɗan adam. Waɗannan halittun ne ke gina abinda Khademhosseini da takwarorinsa, "sassa roba masu rai" — watau waɗansu ƙananan jijiyoyi da kuma tsokar da ake fasaltawa tare da ƙananan halittu — waɗanda ke iya tsara kawunansu cikin wata siffar da ta yi kama da wadda ubangiji ya halitta. Wannan dangantakar kuma ta ƙananan halittun sai ta fara yaduwa.

Wannan ƙirƙirar ta magance matsaloli da dama, ta yin aiki da ilmin sanin fasalin ƙananan halittun da ake dasawa, don yaɗuwa.

Idan aka yi hasashen irin abinda zai zo, in ji Khademhosseini: "Ina son in duƙufa a kan waɗansu ayyukan da muke yi, a ɗakin gwaje-gwaje, da nufin miƙa shi, don yin amfani da shi, wajen yi wa marasa lafiya magana. Yin amfani da bincikenmu, wajen inganta lafiyar marasa lafiya, shine burinmu, kuma ganin hakan ta faru, nan da 'yan shekaru masu zuwa, ba ƙaramin al'amari ba ne."

Kananan Halittun Jiki — Wani ɗan jinsi ne, na halittar dake da kama da wani sashe na jiki, ko aikinsa.
Jijiya — Wata siririyar halitta, mai kama da zare, dake komawa tsoka ko kuma magudanar jini.
Halittun dake mutuwa — Waɗanda ke ruɓewa, bayan sun yi wata rayuwa, kamar ƙananan ƙwayoyin cuta.
Abinci dangin nono — Wata halitta ce, kai ɗauke da ruwan gubar dake da amfani, wajen aiki da kuma rayuwar halittar jiki.

Halittun jiki masu kyau — za ka iya hasashen abinda suke yi?

(akwai amsar a shafi na gaba)

Shugaba Obama ne ke jawabi ga waɗanda suka samu lambobin yabo na 2012.
Amsar wasa ƙwaƙwalwar shafi na 10: 1. Siffar gashin cikin kunnen ɓeran Masar ne. 2. Kananan halittun dake gurunguntsin gwiwa ne. 3. Halittar da ta yi ƙodar mutum ce.

me ya fi kimiyya amfani?

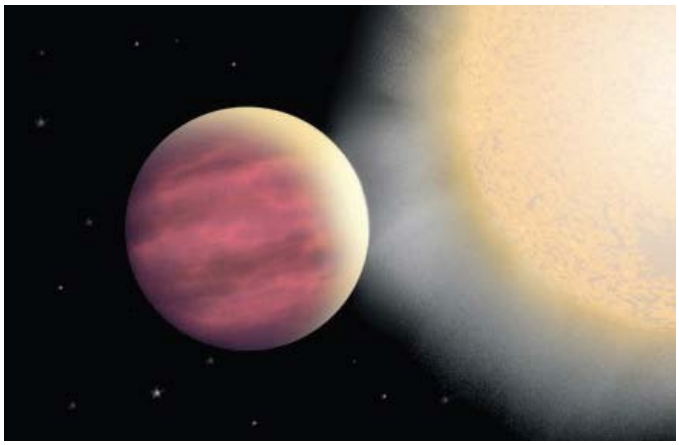
Mu kan tambayi waɗanda suka samu lambobin yabo, na Shugaban Kasa, Game da Almajircin Harkokin Kimiyya da Aikin Injiniya, na shekarun 2011 da 2012 cewa, me ya fi kimiyya amfani. Ga kuma amsoshin da suke bayarwa.

Mariel Vazquez
mataimakiyar shaihi a fannin Lissafi, dake Jami'ar Jihar San Francisco

Babban abinda ya yi armashi game da kasancewa masanin kimiyya shine irin rahar dake cikinta. Shi kansa Lissafi raha ne. Ina amfani da lissafi da kuma na'urori masu ƙwaƙwalwa, don warware matsalolin da suka shafi kimiyya, waɗanda suke da alaƙa da halittun jikin ɗan adam, da kuma irin dangantakar dake tsakanin abincin dake gina jiki, dangin nono, da kuma halittun jikin na ɗan adam. A aikin da na gudanar, na zana hotuna da dama, na yi ta ƙulumboto da zare da ƙyallaye. Har ila yau, na shirya wani ɗan sinima, don ya taimaka min, wajen fahimta da kuma warware matsalolin da nake aiki a kai. A matsayina, na masaniyar kimiyya, na kuma yi tafiye-tafiye, na sadu da jama'a, daga ko'ina cikin duniya, na kuma yi aiki da su. Abin mamaki game da kimiyya shine, tana ƙara buɗe kafofin fuskantar matsaloli, ta kowane fanni, kuma tana ƙara ma ka zimmar yin aiki tuƙuru, don fahimtar wannan duniyar ta mu.

Brent Waters
mataimakin shaihi a fannin fashin baƙi da tsaron na'ura mai ƙwaƙwalwa, dake Jami'ar Texas, a Austin.

Ni kam, abinda na ga ya fi komai amfani, a kimiyya shine, ni kan zaɓi duk wata matsalar da na ke son warwarewa. Idan akwai matsalar dake ba ni sha'awa, ko ta ɗaukar min hankali, sai in mayar da ita ɗawainiyata, in kuma warware ta.



Scott Gaudi

Manazarcin Sararin Samaniya

Daga Andrzej Zwanieck

Daga inda aka fara nazarin sararin samaniya, to, Scott Gaudi ko barci ba ya yi, da dare. Gaudi manazarcin sararin samaniya ne, dake Jami'ar Jihar Ohio, wanda ke bincikar rayuwar **halittun sararin samaniya.**

Babban abinda ya zaƙulo shine a 2006, lokacin da wata tauraruwar dake kusa da jerin taurarin nan da ake kira Scorpius, ta gitta a gaban wata tauraruwar, mai nisan tafiyar shekru dubu 21, daga gare ta. Gaudi ya roƙi jama'ar duniya da sauran ƙungiyoyin ƙwararru da masana nazarin sararin samaniyar, da ma masu koyon nazarin, dake kiran kawunansu OGLE-2006- BLG-109, da su ƙara mayar da hankali ga aikinsu. Shekaru biyu, bayan wannan, sai suka gano irin wannan tattaki na taurarin da na gani. "Wannan kuma sai ya zama tamkar abin koyi a tattakin taurarin na mu," in ji Gaudi, a wani taron da ya yi da manema labaru, wajen bayyana wannan binciken da ya gudanar.

Zayyana Taswirar Sauran Duniyoyi

Kungiyar ta gano yin amfani da maganin ɗagogwarigo, ko kuma maganin ƙananan halittu, da ake amfani da shi, lokacin da wata duniya ko kuma wata tauraruwa ta gitta tsakanin wata, a duniyar sama'u, da duniyar da muke ciki. Taurarin dake kusa da mu, na iya karyo kwana, su sake fasalin haskensu, daga na nesa, inda suke ƙara haske, na waɗansu 'yan kwanaki.

Tun wannan lokacin, Gaudi yake samun lambobin yabo da kuma girmamawa. Waɗansu kuɗaɗen kuma da Asusun Harkokin Kimiyya na Ƙasa, (NSF), ya ba shi, a 2011, na iya taimaka ma sa, ga aikinsa, domin zai taimaka wa gudanar da sababbin ayyuka, irin su zayyana taswirar dukan duniyoyin sararin samaniyar da aka sani. Gaudi ya duba bambancin hanyoyin da ake bi, wajen gano halittun dake sararin samaniyar da kuma tsare-tsaren harhaɗa sakamakon ƙirƙiro Tahirin Halittun Dake Sararin Samaniya, kamar yadda ake kiran aikin.

Gaudi, wanda ya koyar da ɗaliban dake neman takardar shaidar digiri, ya kuma abka cikin aikin nan da ake kira OGLE-2006-BLG-109, na nazarin taurarin dake gittawa a gaban waɗansu halittun na samaniya, a cikin gundun taurari, watau Milky Way. Aikin dai kan zo da "firgici da tsoratarwa", don, dole, masu gudanar da shi su fayyace ƙididdiga, a cikin lokacin, su kuma yi bayani game da sakamakon, a cikin 'yan awowi, kamar yadda Gaudi ya faɗa wa shafin yanar-gizon Examiner.com, wanda ke bayar da labaru, a yanar-gizon. Wannan ya sa aikin ya zo da cin rai, amma abin sha'awa, in ji shi.

Gaudi ya ce, yana son yin aiki da 'yan koyo, domin "ƙalali da sadaukar da kan da suke yi ga kimiyya." Kuma, kamar su, yana jin daɗin yin tambayoyi barkatai, irin

su: Ta yaya ake haihuwar duniyoyin sararin samaniya? Ta yaya duniyoyin sararin samaniyar suka yi kama da irin ta mu? Akwai duniyoyin dake zagaya sauran taurari, kamar duniyarmu? Kuma, akwai halittun dake raye, a kan waɗannan duniyoyin?
Duniyoyin Sama'u — Duniyoyi irin ta mu, dake cikin al'arshi.

Masu nazarin sararin samaniya sun gano cewa, akwai jerin gwanon waɗansu duniyoyin da suka yi kama da ta mu. "Kuma sun yi kama da irin yadda duniyarmu ke zagayawa," in ji Gaudi.

(a sama) wani bincike ne, na sararin sama'u, mai ban mamaki a 2012, inda wani masanin zane-zane ya yi ƙoƙarin bayyana yadda duniyoyi da taurari ke zagaya zafin rana, kamar yadda wannan tauraruwar ta tsinke da gudu. (a hagu) wani masanin zane-zanen ne, ke nuna irin yadda hasken rana yake a wata duniyar mai suna CoRoT-7b, ɗaya daga cikin duniyoyi masu ƙanƙanta, da aka gano, a sararin sama'u.

Duniya Mars

KOI-961.03

KOI-961.02

KOI-961.01

Kepler 20e

Duniya

Kepler 20f

Duba yadda waɗansu ƙananan duniyoyin suke, ga duniya da kuma duniyar Mars.

Waɗanda suke nisa
OGLE-2005-BLG-390Lb

► mai tafiyar shekaru 21, da 500, ya zuwa dubu uku da 300, daga duniya.

► Tafiyar tauraruwar OGLE-2005-BLG- 390L a cikin gundun taurarin da ake kira Andromeda Galaxy.

Mafi kusa
Alpha Centauri Bb

► mai tafiyar shekaru huɗu da watanni, daga duniya.

► Orbits Alpha Centauri B.

► wadda nauyinta ya zarce na duniya, da kashi 10 cikin 100, amma, girmanta kamar na duniya ne.

Dukanmu, mun ci sa'a da kuma wata alfarmar da muke zaune, a wannan lokacin na musamman, na tarihin rayuwar ɗan adam. A karo na farko, da masana kimiyya ke fuskantar wani tsohon al'amari kuma wanda ya fi kowane bayar da damar yin tambayoyin da ba a zato, irin: Ko akwai waɗansu duniyoyin, a sararin samaniya? Ko sun yi kama da duniyarmu? Ko kuma mu kaɗai ne? Ina matuƙar alfahari da kuma godiya da girmamawa, da har na shiga wannan aiki, na ƙoƙarin gano amsoshin irin waɗannan tambayoyi. Kuma ina mamakin ganin, irin yadda, ni ma, na bayar da amsoshin waɗansu tambayoyin. Ba abin sha'awa ba ne?

Na'urar Madubin Hangen Nesa, mai ɗauko hotuna ce, a sararin samaniya, mai suna Hubble, (a hagu), ta ɗauko wannan hoton na Dandazon Taurari da aka sani da suna Tadpole Galaxy (a ƙasa). A duba shafin yanar-gizon www.nasa.gov don ƙarin bayani game da Hubble.

Madubin Hangen Nesa na Hubble

Daga Helen Saad

Amfanin Haɗin Gwiwa

Helen Saad ta yi wani ɗan baitin waƙa, lokacin da take son bayyana dalilin da ya sa take sha'awar gudanar da bincike game da ƙwaƙwalwa. "Kanshin furen kallo, da tunawa da yawon da wani ya yi, a wurin shaƙatawa, da kuma shirya wata tafiya … duk waɗannan waɗansu abubuwan koyi ne, da waɗansu halittu uku, dake cikin kan ɗan adam ke yi," in ji ta.

Amma, Saad ba mawaƙiya ba ce. Tana da ƙaramin digiri ne, a fannin aikin injiyar na'ura mai ƙwaƙwalwa, kuma ta riƙe manyan muƙamai a kamfanoni da dama, na duniya. A ƙarshe dai, irin yadda ƙwaƙwalwa ke aiki, ya ba ta sha'awa, matuƙa, fiye da irin yadda na'ura mai ƙwaƙwalwa ke aiki.

Lokacin da ka ke zama tambar wata jijiya a cikin gungun ma'aikata
A ƙasarta, watau Lebanon, irin dangantakar da ta janyo tunanin hankalin Saad, har yanzu ba ta tabbata ba, kuma ta na jin kamar "ta zama saniyar ware." Don haka sai ta nemi da a ba ta gurbin da za ta yi nazarin aikin da ya danganci dukan harkar aikin injiya, a ƙarƙashin Shirin nan na Kimiyya da Fasaha na Fulbright, a Kasar Amirka, kuma ta zama 'yar ƙasar Lebanon, ta farko, da ta samu wannan damar. Mahaifarta, watau garin Hammana, yana kan Tsaunin Lebanon ne, nan ne kuma take ta wandaƙar da ake yi ma ta karɓar girmamawa.

Saad na karatun digirin-digirgir ne, a Jami'ar California dake San Diego (UCSD). Ta bayyana cewa, hatta wannan gurbin na Shirin na Fulbright, bai kare basirarta ta wallafa baitukan waƙa ba, inda take bayyana su da cewa, tamkar "tsattuwar sinadari ga dangantakar dake tsakanin lakokin dake maƙwabtaka juna," ko ga takaranta masanin kimiyya, da kuma tsatsonsu, da ya kasance "wani gawurtaccen ƙullin haɗin gwiwa." Haka kuma tana haɗa wata rundunar, kuma ta duƙufa ga lura da irin yadda 'yan kasuwarmu za su kasance, nan gaba, da kuma shirya tsarin gasar harkokin kasuwanci, a jami'ar ta UCSD.

Saad ta gudanar da bincike game da sharuɗɗan da suke gudanar da irin yadda alamu da kuma labaru ke gudanar, a tsakanin wannan ƙulallen haɗin gwiwar. Hasali ma, burinta, a fannin bincike, shine ta taimaka wajen gano fasahar warkar da duk wata cuta ta ƙwaƙwalwa, irin su cutar Alzheimer da Parkinson. A kuma ɗakin gudanar da binciken Farfesa In Gabriel Silva, Saad ta gudanar da wani bincike, game da muhimmancin sinadari, da kuma jijiyoyin dake aikewa da saƙonni zuwa ƙwaƙwalwa, wajen kiwon irin yadda jijiyoyin za su riƙa aiki.

Saad ta ƙuduri kafa wata cibiyar gudanar da binciken aikin injiyar magunguna, da abubuwan da suka shafi haka,ta farko, a ƙasar ta Lebanon, da zarar ta dawo ƙasarta. Tana bukatar da ta ƙirƙiro da wani bincike, mai zaman kansa, da ba shi da alaƙa da wani addini, ta kuma haifar da zimmar gudanar da kimiyyar dake da alaƙa da harkokin kasuwanci. Saad ta dogara ne, da wannan haɗin gwiwa, don taimaka ma ta, kai wa ga waɗanda za su taimaka. Har ila yau, dangane da yin amfani da ƙwarewarta, Saad na fatan wannan cibiyar za ta taimaki jama'ar ƙasar ta Lebanon, wajen yin watsi da bambancin kabilanci da addini da kuma ra'ayoyin siyasa.

me ya fi harkar kimiyya?

Daga Curtis Huttenhower
mataimakin shaihi, a fannin sanin halittun ɗan adam, da na'ura mai ƙwaƙwalwa da kuma bayanai game da halittun, a Jami'ar Harvard

Da zarar na kammala aikina, abubuwa, biyu, da na fi maya da hankali a kai, sune kyawon sakamako da kuma irin amfanin da zai yi wa lafiyar ɗan adam. Ba duk ayyuka ke da wannan martabar ba. Daga bisani kuma, ina aiki ne, da mutanen da suka yi fice, a duniya, da kuma taimaka wa kaina da sauran jam'a, wajen koyo daga juna, a kowace rana. Wannan ma wata dama ce.
Bayanan halittu — Yin amfani da na'ura mai ƙwaƙwalwa wajen tsarawa da ajiyewa da kuma ƙididdige duk wata masaniya game da sinadaran halittu.

Gandun dajin ɗundu, a Tsibirin Kasar Lebanon: wurin dake da alfanun gina cibiyar gudanar da bincike, nan gaba?

"Kanshin furen kallo, da tunanin irin yadda ake watayawa, a wurin shaƙatawa, da kuma shirya tafiya

… na daga cikin irin abubuwan da waɗansu jijiyoyi ke tsarawa, a cikin kanmu.” *In ji Helen Saad*

Laka — wata halitta ce dake karɓowa da kuma miƙa saƙonni, daga cikin jiki, zuwa ga ƙwaƙwalwa, ta kuma dawo wa da jikin da duk wani bayanin ya samu.

Tunanin zuciyar a tambayi fuska: wannan yarinyar, ‘yar shekaru bakwai, ta Kasar India, dake tsakiya, an haife ta ne, da makanta, amma, ta fara samun idanunta, saboda wani aikin da aka yi ma ta.

Pawan Sinha

Magance Makanta

Daga Heather Regen

Ga Pawan Sinha, tattakin da ya yi, zuwa ƙasarsa ta Indiya, a 2002, ta zamar ma sa abin ishara. Ya lura cewa, ɗaruruwan yara, makafi, na bara, a rariya, don haka sai ya yanke shawarar da ya yi wani abu, game da wannan. A matsayinsa na farfesa, a fannin kimiyyar ƙwaƙwalwa da makamantansu, a Cibiyar Harkokin Fasaha ta Massachusetts (MIT), Sinha ya yi tunanin ya fara yin aikin idanu, daga bisani kuma ya lura da marasa lafiyar, ba don taimaka wa yaran makafi, gani kaɗai ba, har don ya faɗaɗa fahimtarsa game da irin yadda ƙwaƙwalwar ɗan adam ke karɓar saƙonni, daga idanu. Tun kuma lokacin yake warkar da dubban yaran dake da makanta, ya kuma ɓullo da irin yadda za a warkar da jijiyar ganin dake toshewa, zuwa ƙwaƙwalwa.

Aikin Prakash

A 2005, sai ya ƙaddamar da abinda yake kira Aikin Prakash (wata kalma dake nufin haske). Tare da masana **ilmin magungunan idanu** na Kasar India, da kuma,

masu gudanar da bincike, a jami'ar ta MIT, Sinha ya fara magancen cutar makantar yara, da ta shafi **dundumi**, ta hanyar yi ma su aiki, da kuma koyar da marasa lafiyar, yadda ake lundar idanu. Ya zuwa tsakiyar shekarar 2012, yara fiye da dubu 28, aka bincika suna da cutar ta dundumi, wanda yanzu an warkar da kusan dubu biyu, daga wannan matsalar da idanu. Babu wani binciken da ya danganci kimiyyar wannan aikin, da ya taɓa haifar da wannan ɗimbin aikin.

Bisa ga irin yadda lura da masara lafiya, bayan ya yi aikin, sai Sinha ya yi watsi da waɗansu ra'ayoyin da ake da su, game da maganin makanta. Da farko dai, ƙwararrun likitoci sun yi tunanin cewa haka ya kasance yaran su zama, a cikin makanta, har abada, da zarar sun zarce waɗansu shekarun haihuwar da ake ƙara gani, watau misalin shekaru shida zuwa bakwai. Amma, Sinha, tare da takwarorinsa, sun gano cewa, ko saurayi mai makanta ana yi ma sa maganin da zai riƙa ganin abubuwa. Sai godiya ga wannan tunanin, wanda ya sa likitocin cutar idanu, da dama, a ƙasar ta Indiya, suka fara yi wa matasa aikin idanu. A kuma jami'ar ta MIT, Sinha da sauran masana harkokin bincike, na nazarin irin yadda ƙwaƙwalwa ke gane fuskoki.

Har yanzu kuma ana ci gaba da wannan aiki na neman ladar da Sinha ya fara. Ya gane cewa, yara, da dama, da suka warke ciwon makarantar, bayan da aka yi ma su aiki, ba su samu zuwa makaranta ba, ko samun wani aiki. "Ya kamata mu canja al'amarin," in ji shi, a wata hirar da ya yi da Anne Trafton, wadda aka buga a fitowar mujallar *Technology Review*, wata mujallar yanar-gizon da Jami'ar MIT ta wallafa, a tsakanin watannin Yuli da Agusta.

Don haka, yanzu, Sinha ya shirya gina cibiyar nazari da kuma warkar da makanta, Kasar Indiya, da za ƙunshi makarantar ƙananan yaran da aka warkar wa cutar makantar. "Dukan yaron da muka taimaka wa, tamkar wata gagarumar nasara ce na ƙara samu," in ji Sinha, ga mujallar *Technology Review.*

Likitan Idanu — Likitan da ya ƙware a fannin cututtukan idanu da makanta, tare da gudanar da abincike, da tantance cututtuka da kuma yin fiɗar warkar da su.
Dundumi — Wata cuta ce, dake sa yana, a idanu, wadda ke sa ana gani gararagarara, da za a iya warkarwa, idan an yi fiɗa.

Ya lura cewa, ɗaruruwan yara na bara a rariya, don haka sai ya ƙuduri niyyar yin wani abu.

me ya fi harkar kimiyya?

Pawan Sinha
mataimakin shaihin harkokin na'ura mai ƙwaƙwalwa da kimiyyar da ta shafi laka,
na Cibiyar Fasaha ta Massachusetts (MIT)

Al'adar ɗan adam ce, ya nace kan al'amari. Mun cika kuka, da zarar mun shiga wani mawuyacin hali. Ni kuwa, abinda ya fiye min kimiyya shine, samun horo da kayayyakin aikin, da za ka yi abinda zai kuɓuto ɗan adam daga cikin masifa. Ka tuna da irin yadda uwa ta ji, lokacin da kimiyya ta gano maganin da zai warkar da ɗanta, daga wata mugunyar cuta. Ka tuna da irin farin cikin da mutum ke ji, lokacin da ya je wajen abokinsa, dake fama da kewa, a wata ƙasa, to, kimiyya ce ke haddasa haka. Kuma ana iya bayar da misalai da dama.

Mu kan ji daɗin kawunanmu, idan muka yi wani abu, mai kyau. A matsayina na masanin kimiyya, na samu damar yin wani abu, mai ɗimbin yawa. A kullum, rayuwar masanin harkar kimiyya cike take da damar da zai kyautata canja halin rayuwa. Ba abin mamaki ba ne, kullum suke cikin annashuwa.

Kimiyyar Lada — Nazarin wuren da laka take, ciki har da fannoni irin na sanin sinadarin lakar da kuma gwaje-gwajen tunanin hankali, da suke da alaƙa da kuma yin aiki da lada da kuma ƙwaƙwalwa.

KORAFI

Kai. Sunana Justin Daubenmire. Bayan da na makance, tun ina da shekaru 18, a sakamakon ciwon sukari, sai na tafi jami'a, don yin karatun samun digiri, a fannin sarrara na'ura mai ƙwaƙwalwa. Na kuma sauke kararu, a 2001, na kuma ƙirƙiro da wani shafin yanar-gizo mai suna www.BlindSoftware.com. A shafin yanar-gizon na BlindSoftware.com, na ƙirƙiro da wani linzamin yanar-gizo, don makafi da kuma wasannin na'ura mai ƙwaƙwalwa, don makafin. Ina mutunta wannan

al’amari da na yi, tare da ƙungiyarmu ta makafi, da ya ba ni sha’awar ƙirƙiro wannan linzamin da wasannin, na na’urar mai ƙwaƙwalwa, don makafi. Akwai ma’aikatana, masu ƙwazon sarrafa linzamin na’ura mai ƙwaƙwalwa, da ƙwararrun injiniyoyi, da marubuta, da makaɗa da masu tallace-tallace, da mataimaka, da masu taimakawa ga harkokin rubuce-rubuce da masu gwaje-gwaje, waɗanda dukansu makafi ne, ko kuma suna gani ne, garara-garara.
(An samo ne daga wani ƙorafin da aka buga a shafin yanar-gizon LivingBlind.com)

Koyon sake gani: Pawan Sinha ne, ke jarraba ganin wani sabon yaron da ake yi wa aikin ido. Makafin Yaran Kasar Amirka: Koyo da Nazari.

miƙa “gaisuwa” da keken rubutun makafi

Daga Luis von Ahn

Karen Bana, Maganin Zomon Bana

Luis von Ahn ya tsunduma cikin wata rayuwa, a 2000, lokacin da makeken kamfanin nan na yanar-gizo, mai suna Yahoo! Ya roƙe shi da ya taimaka, wajen magance wasiƙun banzar da aljanin yanar-gizo ke aike wa zuwa akwatin wasiƙun jama'a masu ɗimbin yawa. A wannan shekarar ne, shi da mai ba shi shawara game da samun takardar shaidar digirgir, a Jami'ar Carnegie Mellon, dake Pittsburgh, Manuel Bloom, suka ƙirƙiro wata kalmomi mai suna CAPTCHA. CAPTCHA, wani jagwalgwalon kalmomi ne, dake hana na'ura mai ƙwaƙwalwa karanta wani bayani, don hana soki-burutsu shiga cikin kwararon yanar-gizon dake damun shafukan yanar-gizo fiye dubu 60.

Amma, masu aikewa da soki-burutsun ba su bari ba. Sai suka yi amfani da fasahar jagwalgwalon na CAPTCHA, don dakushe garkuwar da rubutun na CAPTCHA ke bai wa masu amfani da yanar-gizo, dake ɓata ma su lokaci. Von Ahn ya fara tunani game da irin yadda zai yi amfani da wannan lokacin da ake ɓatawa, don amfani jama'a. A 2007, sai ya ɓullo da abinda ya kira reCAPTCHA — wanda ba yanar-gizon kaɗai yake ingantawa ba, har ma taimakawa ya ke yi, wajen ajiyar tsofaffin litattafai da jaridu, a shafukan yanar-gizon. A yau, akwai mutane kusan miliyan 60, zuwa miliyan 70, dake amfani da Kalmar ta reCAPTCHA, don ajiye kalmomi, aƙalla miliyan 100, a rana guda. Har ila yau, Ɗakin Ajiyar Yanar-gizo, da Litattafan Google da kamfanin mujallar *New York Times,* na amfani da ita.

Von Ahn, yanzu, ya mayar da dukan wannan aikin, tare ma da waɗansu abubuwan da ya ƙirƙiro, sun zama na sayarwa, ko sai ka samu lasisi wajen waɗansu manya-manyan kamfanoni. Ya ce ribar da yake samu, ta ba shi 'yancin da zai zaɓi tafarkin rayuwar da yake so. "Da na yi murabus (yadda na ke so)," in ji shi. "Amma, sai ya

ƙi, domin ni kan so koyarwa, ko kuma a ƙalubalance ni.” Don haka yake koyarwa a Jami’ar ta Carnegie Mellon, yake kuma aikin ƙara gano waɗansu ƙirƙire-ƙirƙiren.

Bayan Kalmar reCAPTCHA: Sai dai Tunanin Ɗan Adam

A duk tsawon shekarun aikinsa, von Ahn, ya fi mayar da hankali ne, kan irin yadda zai ɗaukaka ƙarfin tunanin ɗan adam, na warware matsalolin na’ura mai ƙwaƙwalwa, da ita kanta na’urar ta kasa. Ya lura cewa, “mutane za su bayar da ta su gudunmawar ƙarfin tunanin … amma, idan aka daɗaɗa ma su … suka samu ƙwarewa,” in ji shi, ga wata mujallar dake yanar-gizo.

Ya fito da “wasannin na’ura mai ƙwaƙwalwa, masu ma’ana”, wanda kowanne ke taimakawa, ga wasa ƙwaƙwalwar mai yinsa, domin amfana da wani al’amari.

Watan Yulin 2008

500

Linzaman wayar tarhon iPhone:

Karin linzaman har sau dubu ɗaya da 400

Wasan, na kwanan nan, wanda ake kira Duolingo, na bai wa mai yinsa damar "koyon harshe, kyauta, yayinda yake taimakawa ga fassara shafin yanar-gizon" ya zuwa harsunan da ba Turanci ba.

An haife shi ne a Kasar Guatemala, yana kuma ziyartar ƙasarsa, sau biyu, a shekara, don "somin-taɓin fara binciken fasaha da kuma ƙirƙire-ƙirƙire," in ji shi. Har yanzu akwai rauni ga manyan harkokin fasaha, amma, suna ƙara ƙarfi. Ya kuma yi hasashen cewa, "nan da shekaru 10, za a ga irin yadda waɗansu (manyan harkokin fasahar) za su fito daga Kasar Guatemala."

me ya fi harkar kimiyyar?

Daga David Noone

mataimakin shaihi a fannin nazarin kimiyyar sararin samaniya da kuma teku, na Jami'ar Colorado, dake Boulder.

Babu abinda kimiyya ta tanada, irin sanin yadda abubuwa ke aiki. Neman amsoshin tambayoyi ba ƙaramin jidali ba ne. Akwai waɗansu abubuwan dake da cin rai fiye da sake bincika sababbin bayanan da aka tara, ko ganin waɗansu gwaje-gwajen da babu wanda ya taɓa ganinsu, ko ya tambaya irin: "Wannan na nufin duniya tana canjawa ne, ta fannin da ya bambanta daga irin yadda muke tsammani?" Bincikena ya kai ni wurare, masu ban sha'awa, irin su ɗororuwar tsaunin dake aman wuta, na Tsibirin Hawaii, da kan shimfiɗaɗɗar ƙanƙarar nan

dake Greenland, da gandun dajin ɗunɗun dake Colorado. Muna bincika irin yadda ƙwayar ruwa ke zama tsakanin ƙanƙara, da iska da ganyaye, da irin yadda ƙasa da sararin samaniya da giza-gizai suke da alaƙa, a zagaye-zagayensu na wannan duniyar. Ruwa yana da wuyar sha'ani, ga muhallinmu, da aikin noma da kuma al'umma. Taimakawa, wajen warware wata gagarumar matsala, na da ranarta. Amma, kimiyya ma, wani abin dariya ne, kuma ya fi duk wani turken wawa.

1. **Angry Birds,** wani wasa ne.
2. **Facebook,** shafin yanar-gizo ne, na sada zumunta.
3. **Fruit Ninja,** shi ma wasa ne.
4. **Pandora Radio,** linzami ne, na sauraren waƙe-waƙe.
5. **Doodle Jump,** shi ma wasa ne.
6. **Cut the Rope,** shi ma wasa ne.
7. **Skype,** wani linzami ne, na aikewa da saƙonni da kuma wayar tarhon da za ka wanda ka ke magana da shi.
8. **The Weather Channel,** linzamin sanin yanayin duniya.
9. **Words With Friends,** shi ma wasa ne.
10. **Google Search,** Shafin Linzamin Yanar-gizo ne.

Fiye da shekaru huɗu da rabi

Watan Disambar 2012

Linzaman Na’urorin wayar tarhon iPhone da iPad har dubu 700: